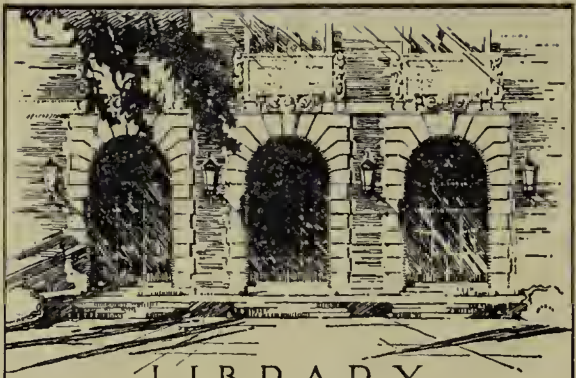

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The Journal

OF THE

American Medical Association

A MEDICAL JOURNAL CONTAINING

THE OFFICIAL RECORD OF THE PROCEEDINGS OF THE ASSOCIATION, AND THE PAPERS READ AT
THE ANNUAL SESSION, IN THE SEVERAL SECTIONS, TOGETHER WITH THE

MEDICAL LITERATURE OF THE PERIOD

EDITED FOR THE ASSOCIATION UNDER THE DIRECTION OF THE BOARD OF TRUSTEES BY

GEORGE H. SIMMONS, M.D.

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AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1909

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Addresses

THE FIELD FOR PROPHYLAXIS AMONG CHILDREN

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON DISEASES OF CHILDREN AT THE SIXTIETH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, 1909

THOMAS S. SOUTHWORTH, M.D.
NEW YORK

The passing of the old-time family physician and the threatened usurpation of his position by the specialist, of which frequent plaint was wont to be made some years ago, no longer occupies even the occasional attention of the lay press. Happily throughout the larger part of our country the old relation of the physician to the family is still maintained, though less stress is laid than formerly on the value of a personal knowledge of the temperament and maladies of a child's forbears, since modern thoroughness in history-taking furnishes the essential data.

To-day the well-equipped practitioner of medicine is in truth a many-sided specialist. The temporary eclipse which he may have suffered through the growth of the specialties has left him more than debtor to those who blazed the way through untried paths so clearly that a competent knowledge of the specialties has become the common property of all well-informed physicians.

With this broader outlook, new criteria of diagnosis and new measures of treatment, the responsibility of the physician for the welfare of his patient has proportionately increased, but in few directions has this responsibility advanced so rapidly as in that of the proper management of the child from infancy to puberty. During this period of phenomenal development, the foundations are laid of those factors which make most for success in after-life—a well-developed body, sound health, and a good digestion. In so far as these fall short of the normal, just so far does the individual miss his full effectiveness in the world's work.

We already know that the loss in this country from a single malady, tuberculosis, has been conservatively estimated at millions of dollars, but the monetary loss caused by the sum-total of physical underdevelopment and avoidable illness would, if measurable, startle the imagination.

The mere consideration of this matter would seem to smack too much of idle speculation were it not for the indisputable fact that we are already in the possession of prophylactic measures of every-day medicine which, if conscientiously applied to each member of the community, would produce incalculable results.

Few will deny that the recent victory of Japan was chiefly due to the maintenance of efficiency in her smaller standing army through the application of the principles of sanitation, which prevented its decimation by disease. What education, better food and better environment have already accomplished in enhancing the effectiveness of the American wage-earners, recruited, as they are, by inundating waves of foreign immigration, is already recognized and can and will be repeated in other directions. So long as it is considered good business policy to study and apply devices which make labor more effective, there is nothing vague or visionary in considering the possibility of applying to the future laborer health-saving devices which will make him physically and mentally fitter for his work.

Since the foundations of a sound physique are laid in infancy and childhood, and if neglected can not be rebuilt, the practical consideration of this question is peculiarly appropriate before this body of children's physicians. In infant mortality, with its enormous loss of potential life and force, we have at the start a concrete problem worthy of our most earnest consideration. We are accustomed in our pride to consider that through cumulative effort not only has the condition of the average infant been improved, but that a material reduction has been accomplished during recent decades in the percentage of infants who die during the first year of life. The researches of Newman in England and of Stowell in this country have recently indicated that, except in certain favored localities, this reduction is not so apparent as we had supposed.

This need not surprise us so greatly if we consider that the overcrowding of our cities, the swamping of our slums with ignorant and inferior classes of immigrants, and an increase in the cost of living out of proportion to the increase of wage, have tended in these centers to enhance rather than lessen those hereditary and congenital weaknesses which lie so largely at the bottom of the conditions which cause deaths in early infancy. When to this is added the steady decrease in maternal nursing, so that larger numbers of infants are exposed to the dangers of artificial feeding, we may readily understand why these factors have not been more markedly offset by the genuine achievements in pediatrics, and more especially by the dissemination of better methods of feeding infants.

The improvement of the antenatal conditions which we have mentioned lies rather in the domain of sociologic endeavor than in that of medicine, but the postnatal factors in early mortality, and especially the unwarranted decline of maternal nursing, offers a field where our influence may be strongly exerted. The medical profession has been partially aroused of late to the fact that women should be urged to nurse their infants, but if the matter is allowed to rest there the work is but half done, for it is further imperative that every assistance should be extended to these women to make the continuation of lactation possible.

A careful study of this problem, which has now extended over some years, has daily convinced me that but a comparatively small number of mothers decline to do their duty, while by far the majority of those who have been unable to nurse, or have prematurely weaned their infants, have been led to make this decision through the ignorance or neglect of their trusted advisers. By this I mean neglect to investigate the actual conditions present, and to correct errors in management, as well as ignorance of the simplest measures which favor a normal secretion from the breast.

In support of this statement, and as bearing on this subject, I may quote from the recently published report of the Special Committee on the Prevention of Blindness in the State of New York, which is significant in this connection as indicating the part played by midwives in controlling the early management of mother and infant in our large cities. The report says:

> In Chicago, in 1904, we find 86 per cent. of all births . . . reported by midwives. In Buffalo, N. Y., . . . nearly one-half the births in one year were attended by midwives. In New York City, in 1905, 43,834, or 42 per cent. of the whole number were attended by midwives. For the year 1907, in New York City, there were 68.186 births reported by physicians, and 52.536 reported by midwives. In September, 1908, the registered midwives in the five boroughs of New York City numbered 1,382.

Of the midwives themselves, the report states:

> Although they are largely employed, especially by foreigners, no adequate provision, with rare exceptions, is made for the examination of midwives before licenses are granted and registration allowed by the departments of health or authorized boards of examiners.

And again:

> Out of 500 midwives visited, less than 10 per cent. (50) could be qualified as capable, reliable midwives.

Yet these women determine the feeding of the infants, and are responsible for much unnecessary weaning.

We can not, however, shift the blame entirely to the shoulders of the midwives. Clinical records show that removal from the breast is countenanced or advised by medical men without adequate investigation or effort to continue the nursing. Dr. Allen's resolution, offered and adopted at the Chicago meeting of this Section, presents this matter with admirable conciseness to the medical profession:

> Resolved, That we strongly urge that at least as much thought and effort be expended to render the mother's milk suitable for the child, as is now expended on the subject of artificial food.

We recognize that not only is the development of the nursing child far more likely to be normal than that of the bottle-fed infant, but that its expectation of life and immunity from disease is greatly enhanced. In so far, then, as we can stay this wave of early weaning, we are doing genuinely constructive life-saving work, but our duty to the infant is not completed when we have simply assured its being breast-fed.

In a certain sense no child is so neglected as the child at the breast. Under the assumption that breast-feeding, if fairly competent, is capable of automatically producing the best results for the infant, the breast-fed baby too often passes from observation and is but rarely placed under continued medical supervision. Few parents realize that an infant who is doing fairly well, and only fairly well on the breast, is not attaining the fullest development of which it is capable. It is, therefore, not unusual for parents and even physicians to be content with an average weekly gain of four ounces during an early period, when the gain should be eight ounces or more, and solace themselves with the belief that the infant who is a pound or two under its normal weight is naturally only a small baby.

Such an infant, if the quantity of its mother's breast milk can not be improved, should, except perhaps in the hottest months, receive supplementary feedings. Supplementary feedings, for the breast-fed infant whose weight is standing still, conserve the breast-milk and turn the balance into satisfactory gains. In similar manner, and with greater certainty, for the infant who is gaining but slowly, a normal gain may be readily inaugurated, and who may say whether the difference between a normal and subnormal development may not be a saving factor at some future crisis? The question is not whether an infant is doing fairly well, but whether it is reasonably receiving all that it is capable of assimilating and transforming into normal growth.

Turning our attention now to the exclusively bottle-fed infant, we find ourselves much better equipped by the clinical investigations and newer methods of the past few years to cope with the difficult case.

The recognition, when they occur, of symptoms produced by imperfect digestion of the fats of cow's milk, and the handling of cases presenting these symptoms with lower fat percentages and malt soup preparations, add greatly to the possibilities of success. While both of these methods seem to allow the use of a somewhat larger amount of milk casein in the infant's food, there is just now to be noted an unfortunate tendency to forget in the employment of a very limited number of formulas what the intelligent use of the percentage system has taught us. Present experience seems to indicate, and doubtless the consensus of professional opinion will eventually declare, that the uniformly best results are to be obtained by incorporating such newer principles in the percentage system, thus maintaining a due regard for the individuality of each infant with reference to his assimilative powers.

Philanthropists who are interested in the distribution of ready prepared modified milk to the poor of our large cities should seriously consider whether they are achieving the greatest good in the best possible manner. Not only are the formulas distributed so few in number and so inelastic as to be unsuited to a certain proportion of the infants, but the system contributes very little to the education of the lower classes in proper methods of infant-feeding. While a commendable stop-gap for infant mortality, these doles of already prepared milk approach dangerously near the futile *panem et circenses* of the Roman Empire, which only served to hasten its dissolution.

Far more productive in its results, and of ultimately greater hopefulness for the offspring of the poor, is the work which is progressing in certain of our outdoor dispensaries for children; for these teach the mothers the right principles of infant-feeding, and through instruction in home preparation and care of the food are slowly but surely overcoming ignorance and tradition, and spreading a leaven which, passed along from neighbor to neighbor, can not fail to produce important results in more intelligent feeding of infants among the masses.

The supervision of the growth and development of the bottle-fed infant during the first two years of life leaves much to be desired. Here, even more than in the case of the infant at the breast, lies a field for wise effort, for in cow's milk feeding there is no physiologic adjustment of supply to demand. Every pound of normal growth is a valuable asset to the infant. Every period, long or short, during which the otherwise normal infant ceases to progress because of a failure to adjust his food to correspond to his power of assimilation, may have a definite influence on his future welfare.

This supervision can not safely be left to the mother or to the nurse. Especially is this true from the seventh to the twentieth month, when the development of the infant often lags from lack of intelligent direction. It is happily beginning to dawn on the more intelligent lay mind that money is better expended in securing periodical inspection and regulation of the infant's condition and diet than by waiting until disturbing symptoms present themselves before seeking the physician, and the results of the two methods when measured in health, body-weight and power of resistance are not to be compared.

Much as a properly adjusted diet is to be insisted on, diet is by no means the only factor which requires medical oversight. Next to a normal proportion of muscular tissue, the hemoglobin may be conservatively called the most important index of the child's resistance. Unless pallor be marked, it is rarely noted by parents. Fresh air, in abundance and at all hours, is one of the most effective hematinics. A drastic rearrangement of the infant's hygiene may be even more necessary than iron in producing improvement.

But fresh air may be of little avail unless the condition of the respiratory passages allows its free and unobstructed entrance to the lungs. Possibly in no single direction has as much been accomplished for the normal development of the child as by the attention given in recent years to obstructive conditions of the pharynx and nasopharynx caused by hypertrophied tonsils and adenoid tissue. That there is still much to be done, the thoughtful inspection of any group of children or of any school in session will make apparent. Thus far attention is rarely paid to these conditions until they have reached a marked stage. Is it wisdom to wait so long until the damage has been done—to wait for narrowing of the chest, non-expansion of the nasal passages, recurrent bronchitis from catarrhal extension, acute and chronic otitis, and permanent facial malformation, to take place before insisting on operative relief? Valid contraindications are but rarely present to an early operation of adenoidectomy, even before the expiration of the first year, if symptoms of mouth-breathing are present. With re-establishment of free nasal respiration, normal development is resumed, tonsillar hypertrophy is less apt to occur, and its minor degrees tend to remain stationary or to recede.

Through the effective medium of school inspection attention has been called to the deplorable neglect of children's teeth. The baleful influence of dental caries on the child's health is not fully appreciated. Not only do these imperfections militate against a proper mastication of the food, and the putrefying contents of the cavities furnish a favorable nidus for noxious organisms, but, as is now being pointed out by able dental surgeons, the premature loss of the first teeth has a serious effect on the normal development of the jaw and leads to irregularity in the eruption, position and apposition of the permanent teeth, with consequent malformations which handicap the child physically and socially. A normal facies, as well as sound health, is an important asset to the individual who must depend on his own resources to make his way in the world.

Among the organs of special sense, the eye, owing to many evident factors which lead to a prompter detection of any considerable deviation from the normal, has received vastly more attention than the ear. Only in the past few years has this latter organ begun to receive prophylactic consideration during the many infectious diseases of childhood which threaten the integrity of its function. To-day the conscientious physician who would do his full duty must carry with him in his pocket forehead-mirror and specula as religiously as he formerly carried stethoscope and hypodermatic syringe. A working knowledge of the protean appearances of the drum membrane in disease and the indications for immediate paracentesis require some measure of experience, but this is imperative and may be acquired by practice. Only those who have systematically examined the ears of a large number of sick children can realize how frequent is aural involvement, and how important and effective is early paracentesis in limiting inflammation, avoiding chronic suppuration, and preventing the more serious accidents from mastoid involvement. More cases of otherwise inexplicable temperature can be traced to the ear than to any other complication, and these cases can be relieved by paracentesis. There is a growing conviction that prompt paracentesis, by relieving congestion, limits the process and is the more conservative procedure as soon as there are reasonable indications of an effusion into the middle ear.

Instances could be multiplied almost indefinitely in which trained observation and prompt interference by the physician may stand between the child and lasting consequences. There is less glory to be attained by patient prophylaxis and early resort to conservative measures than by later successful intervention when the threatened damage is generally apparent; but the meed of honest satisfaction is the greater for the knowledge that dangers have been forestalled and the normal progress of the child secured. Prophylaxis is and ever should be the highest ideal of our profession, and its silent and unheralded victories are worthy to be ranked even higher than the more evident conquests of therapeutics and surgery. Even more on the physician than on the parent lies the responsibility of safeguarding the child. The army of laboratory workers is constantly putting new weapons into our hands. These focus our efforts when disease threatens, and aid in the reduction of mortality, but in our enthusiasm for new modes of diagnosis and treatment, however important, let us bear in mind that the most effective power for human good lies in prevention, and that to conserve a healthy body is a greater achievement than to cure a malady which has resulted, however remotely, from conditions which our timely effort might have averted.

807 Madison avenue.

The Function of the Ventral Group of Nuclei in the Thalamus Opticus of Man.—Winkler, C., and London, D. M., (Proc. Roy. Acad. Sc., Mathematical Physical Class, Amsterdam, 1908) assert that the ventral part of the optic thalamus is concerned in the main with peripheral sensation. There is reported a case in a woman of 77, who had complete loss of sensibility in the right extremities. There were no choreal symptoms and no intensive ataxia of the right side. The sensibility of the head region was scarcely affected; that of the thorax somewhat diminished. There was found in the left thalamus a small cavity with a well localized destruction of circumscribed ventral thalamic nuclei.

OLD AND NEW *

WILLIAM OSLER, M.D.
Regius Professor of Medicine in the University of Oxford
OXFORD, ENGLAND

In the collegiate churches and cathedrals of England, before the sermon the preacher, in what is known as the "bidding prayer," asks the people, often in very quaint phraseology, to pray, among other things, for the estates of the realm, and then he offers a special prayer of thanks for the liberality of founders and benefactors, "men in their generation famous and in ours never to be forgotten." At Oxford in the university church every Sunday in term, it is interesting to hear recalled the memory of Duke Humphrey, Lady Margaret and other worthies. And whoever the preacher may be he finally mentions the founders and famous men of his particular college.

Following this happy custom, I would ask you in the first place to be profoundly thankful to the men of 1799 who gave this faculty to the country and who made this day possible. Out of the speechless years let us recall their good deeds, and I would ask that this occasion be blessed by invoking their memory. Part at least of the success of this faculty may be attributed to the pious care with which their example has been cherished. Long before I knew this city, Dr. Quinan's "History of the Medical Profession of the State of Maryland" was familiar to me; and we have to thank our indefatigable colleague, Dr. Cordell, in whose annals (by far the most complete history of the profession of any state in the union) we can read of the planting of the acorn, of the day of small things in which we had our origin. As Emerson says, "We can not overstate our debt to the past." The plans, the money, the anxious thought, the long hours spent in meetings, the labors of the various committees, represent but the completion of a great work, the foundations of which were laid in other generations. All the same let us be profoundly grateful to the building, finance and arrangement committees, and to our presidents of the past five years—Dr. Brush, Dr. Earle, Dr. Woods, Dr. C. O'Donovan and Dr. Goldsborough—for their extraordinary efforts. I hope that somewhere in this building a brass tablet will permanently record their names.

It would take a long bidding prayer to express the thanks of an academic wanderer like myself, who has had so much given to him in so many places. In deeds rather than in words I have tried to be thankful, but it is hard to find gratitude enough to go round. My heart resembles one of those old manuscripts, the parchment of which has been used over and over again: and, while it looks as if there was only one writing, the expert is able to decipher beneath the palimpsest, as it is called. It is hard on the parchment and it is not always easy to decipher the writing, but the characters traced by my associations in this city must ever remain fresh and clear.

A unique opportunity, indeed, was the founding of the Johns Hopkins Hospital. That those of us entrusted with its organization should have won your esteem and should have been adopted by the city and by the state is by far the best testimonial of our character and of our work. Considering the circumstances, it might easily have been otherwise. But the success of that experiment must not be attributed altogether to the professional side. Such men as Francis T. King, Judge Dobbin, Dr. Carey Thomas and Francis White were equal to the occasion, and we owe much to their wisdom and good management. But to one man more than all others I would like to express my personal thanks—Daniel C. Gilman, whose name will be forever associated with fundamental reforms in American educational methods. And at the Johns Hopkins Hospital we shall always cherish his memory for the work done in connection with its organization, and for his unfailing interest in the work of the medical school. When I heard of his happy death, the words of Elisha rose to my lips: "My father, my father! the chariot of Israel and the horsemen thereof." It is one of my deep regrets to miss on this occasion the greetings of a man whose encouragement and support meant so much in my life here.

I would recall with gratitude the kind reception given to me and to my colleagues by the older men of this faculty, through whose genial influence it was that we were soon made its devoted children. This might, indeed, have been no easy matter had not the way been prepared by a man whose Galenic touch has ever been an "open sesame." Better men than Frank Donaldson, Christopher Johnson, Allan Smith, George Miltenberger, Henry P. C. Wilson, John Van Bibber, John Morris, Aaron Friedenwald, Francis T. Miles and A. B. Arnold never served the state. And there were those of the younger generation with whom the work of the faculty brought me into close contact. Brune, cut off so prematurely, Michel, devoted to its interests, Rohé, so versatile and energetic, Chatard, whose family in this city forms a sort of hereditary Æsculapian guild, Atkinson, type of the ideal physician, George Preston, always faithful and hopeful, and the lovable Ridge Trimble—how glad would they have been to see this day!

The living well know how deeply I appreciate your friendship, of which you have given this new and enduring testimony. It does not often happen that a man is called on to participate in the dedication of a hall to himself. More often it is a posthumous honor for which the thanks are tendered by relatives or friends. It is difficult for me to express the deep gratitude I feel for this singular mark of affection on your part. The distinction is not a little enhanced by the association with corresponding halls in other cities of the names of some of the most distinguished of American physicians—Oliver Wendell Holmes in Boston, David Hosack in New York, and S. Weir Mitchell in Philadelphia.

If by any process from the large lump of your gracious kindness the grains of merit on my part could be extracted they would be found to consist of that all-precious material, faith—the pure gold of faith—which I always had in the future of the faculty. Just twenty years ago I joined this society and began my professional life here by giving the annual oration. Its history and tradition appealed to me strongly and I soon began to find my way to the old quarters under the Historical Society's hall. Dismal, dark and dusty, yet the rooms contained much of interest and there were always a few choice spirits to be found, most often our learned historian, then the librarian, George Preston, Bond, Brune and others. We liked the old place with all its dust and dirt, and it represented much solid effort by better men than ourselves. For years there had been a strongly expressed wish to move to larger quarters, and

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* Annual oration on the occasion of the opening of the new building of the Medical and Chirurgical Faculty of Maryland, May 13, 1909.

with many misgivings and by a not very large majority it was decided in 1895 to buy the house at 847 North Eutaw Street. Our optimistic treasurer, Dr. Ashby, really made us move. Knowing frenzied finance thoroughly and running the faculty on credit, yet he inspired faith in his colleagues who were financial babies in his hands. No one knows how he succeeded in paying for No. 847 and for the hall we there built. We were always hard up, always spending more than our income, and Dr. Ashby had to meet our ever-increasing extravagances, but you all know how well it was done, and how in a few years, somehow, the house and the hall were paid for. With our increasing library it was soon found that we needed skilled assistance, and one extravagance, as some thought, has proved a great blessing. In securing a well-trained librarian, Miss Noyes, to take charge of our books, we did one of the best strokes of business ever done for the faculty, and it appeals to one's sense of the fitness of things that after years of labor in very cramped surroundings she should now have library accommodations equal to the best in the country. How much the success of the meeting is due to the efforts of Miss Noyes and her staff, the members of the various committees can testify.

It is an immense gratification to think that my name will remain permanently associated with this faculty. Among many kind tributes for which I have to thank my friends, none has ever touched me so closely. As a boy some of my happiest recollections, in the early sixties, are of school days in a small Canadian town, where in the summer evenings we paraded the streets, company formation, with a bonnie blue flag bearing a single star and singing "Maryland, My Maryland." Little then—or later—did I dream that my affiliation would be so close with this state, and that with it, through your gracious act to-day, my name may find its most enduring remembrance. These festivals illustrate how quickly the memory of a name perishes. In how many minds did the mention of David Hosack arouse a thrill of remembrance? His works—and they were good ones—have perished, and his most enduring association is with the hall of the Academy of Medicine which bears his name—and this is likely to be my fate. We can imagine a conversation in a library—the year 2009—between two assistants, wearily sorting a pile of second-hand books just sent in.

"What are we to do with all this old rubbish by a man named Osler? He must have had very little to do to spoil so much paper. Where did he live, anyway?"

"Oh, I don't know; Baltimore, I think. Anyhow, they have a hall there that bears his name."

And now that you see fulfilled the desire of your eyes in the possession of this beautiful new building, what is the special message of such an occasion? A double one—to the profession at large and to ourselves in particular. This is the home of the physicians of this state, with all the advantages and associations which we connect with that word. The faculty, as has already been remarked, represents a unique type of organization in this country. State societies exist everywhere, state examining boards are universal, and libraries are multiplying rapidly, but only in this state are the three so combined as to give to the profession its proper solidarity. This means much more than is represented by the Academy of Medicine, New York, the Library Association of Boston and the College of Physicians, Philadelphia, which are local civic institutions. Here the organized profession of the entire state is in control. It is to be hoped that the good example of Maryland may be followed, and that other state medical societies may secure in each capital a building for the accommodation of the examining board, the state society and a library. The leaven of progress and of unity has been working, and the reorganization of the American Medical Association has aroused great activity in the state and county societies. And to the energy and business skill of one man may be attributed much of the phenomenal success of late years of the American Medical Association and its journal, a success of which every member of the profession should be proud.

In part this building may be attributed to the new spirit and we may hope to see before long in Trenton, Richmond, Harrisburg, Albany and other capitals, homes on similar lines. No one can have participated as I did in the work of this society without feeling that it is one of the most potent factors for good in the city and state. The annual and semiannual meetings, benefiting alike hearts and heads, have brought us together in friendly rivalry and have strengthened the bonds of good fellowship. All crave companionship and encouragement, particularly when young, and these gatherings help to counteract the sterilizing influence of that isolation in which so many men have to work. Look about and ask: Who are the happiest men in our ranks? Those who do not neglect the gathering of themselves together at our meetings. Who are the busiest? Those who are the most faithful in the discharge of their duties to the society. Who are the most prosperous? Those who have given to it much of their time and substance. I could enumerate other benefits, but we are fortunate to have this year as our president one of those typical products of the faculty, a man whose family has had affiliation with it since the foundation, and who represents in his character the highest type of physician and the best stamp of citizenship. It is one of the great merits of this society that it holds up to emulation and delights to honor men of this stamp, who have loyally maintained our best traditions while living the exacting lives of general practitioners.

This faculty represents an organic pattern in which the old and the new form the warp and the woof of the life of the profession of this state. Father Time, who plies the shuttle to and fro, has inserted webs of innovation as in 1895 and 1909, but the pattern remains essentially the same. We, the members, pass on—the faculty endures; the lives which make it die, but its life survives. The past has a charm and a use not always evident to ordinary eyes. In the orderly evolution of Nature the old and the new are never dissociated. Of this our bodies offer many illustrations. In the very temple of the mind itself, stowed away in its depths, lies the mysterious pineal gland—the seat of the soul, said the old philosophers; but to him who can read, here, in the presence of the latest and most complicated bit of Nature's mechanism is a remnant of the very old, of a third eye which was of use to an early vertebrate ancestor as he flopped about in the primeval marshes. Why should it be there? Of what use? Why should we be full of these vestiges, useless, often harmful? It is part of the purpose of life ever in this way to blend the old with the new. Habits, customs, opinions, beliefs, influence us out of the past, sometimes helpfully, at others hurtfully. For example, in any medical organization on such an occasion as the present, when a device was needed for the beautiful medal which has been designed by Max Broedel, it was not possible to use anything else but the Æsculapian serpent, an emblem which speaks to us of a long past, when we took our origin in the most gracious and useful of the Grecian cults. Every prescription we write tells of the days when the Arabian was our master, when Avicenna swayed the profession to a unit. And still more does our every-day language call back theories and opinions which have long since passed into oblivion and are as useless as the pineal gland or the vermiform appendix.

The secret of success in an institution of this kind is to blend the old with the new, the past with the present in due proportion, and it is not difficult if we follow Emerson's counsel. "We can not overstate," he says, "our debt to the past, but the moment has the supreme claim; the sole terms on which the past can become ours are its subordination to the present." Let me indicate very briefly how the old and the new may be interwoven in the life of this faculty.

The written records of the profession of the state will be found on our shelves. Let it be known that collections of letters and of documents of all sorts will here be housed in a fire-proof building, catalogued, bound and indexed, and there will soon be additions of value to the interesting papers already in our possession. The Nathan Smith letters should be here on deposit with the story of that noble man's work at Dartmouth and at Yale. Perhaps it might be more fitting to see them in the library of one or other of those institutions, but for three generations the family has been intimately associated with this faculty and with the life of this state. Let people know that we are not greedy in this matter, but only anxious that such priceless treasures should be on deposit where they are absolutely safe. From these records, the private letters of the old doctors written to their friends, patients and relatives, we get a vivid picture of the past and are enabled to reconstruct their lives and their times. Throughout the state there are scores of documents which it is to be hoped will gradually find their way to our archives. In each generation some one man knows the value of such documents and is willing to collect and classify them. It makes one sad to think what we missed in American medical history when the Toner collection slipped out of our hands, and I am glad to think an accident of that sort could never happen again. A good start has been made and you will see treasures which the care of former librarians has preserved. The first medical diploma issued in America, to Dr. John Archer, a Maryland man, hangs on the wall, and a picture of his old medical hall, a sort of private cross-roads medical school. I would urge on the library committee the importance of fostering this side of its work. Nowadays the arrangements for binding, cataloguing and displaying letters and manuscripts have reached a high grade of perfection, and this fireproof building should attract many important documents relating to the profession.

The library has more than doubled since our removal to 847 North Eutaw Street, and now contains 17,533 volumes and 10,869 monographs and reprints. A great majority of these additions are new, the books having been bought by the Frick fund and by the Book and Journal Club. Nothing neutralizes the new more effectively than the presence of old books. An Aldine here and there, a few fine parchment bound Juntas, an Oporinus or a Froben in the original boards and stamped pigskin, a fine Paris Stephanus, an Elzevir or a Plantin give tone to the shelves, just as do the Stuarts and Copleys to the dining room and in an old mansion. The difficulty is that for library purposes nearly all books are old. Nothing ages so quickly as a book—no life so short. Often still-born from the press, not one in ten thousand has the life of its generation, not one in a hundred thousand lives out the allotted years of its author; one or two in each generation are immortal, having in them that potency of life of which Milton speaks. On what principle, then, should a library of this character select books? For reading purposes a decade will age every book issued from the press this year; that, no doubt, is the hidden meaning of the old proverb about every book having its fate. Under such circumstances, deliberately to buy old books may seem a superfluity of naughtiness on the part of a librarian. There is an immense old literature which it is not worth while to seek. In our large collections, miles, literally miles, of shelves are filled with books as dry as the bones in the catacombs.

Some one library in the country must have all the books, and in the Surgeon-General's library there is a collection which aims at completeness. If you wish to see all the Junta editions of Galen, go there; if you wish to see a pamphlet by John Smith, of New Orleans, on the treatment of yellow fever by the application of sulphur to the soles of the feet, go there; all the odd and out-of-the-way literature may there be consulted, and the student who wishes to know the story of Valentine Greatrakes and of Perkins Tractors has only to go to Washington. We can not be too grateful to the men who have established this great national institution, one of the most successful of modern libraries—to Surgeon-General W. A. Hammond, the founder, to Dr. Billings, the maker, to successive Surgeons-General, the promoters, to Dr. Billings and to Dr. Fletcher for the Index-Catalogue, one of the most important works on bibliography ever undertaken.

To the national library, then, may be left the duty of indiscriminate purchase, on the principle that it should have everything that any one can possibly ask for. The local libraries have a much more limited, but not less interesting field to cultivate. In the first place, all the medical literature of the state should be here—the journals, the reports, the transactions and the editions of all the books written by men who have been connected with the state—by no means an easy task; it takes years of anxious hunting to fill gaps. This work generally falls to the lot of some enthusiast on the library committee. Fortunately, keen eyes for many years looked out for these items, and this part of our collection is on a fair way to completion. Then there is a group of books which may be called American medical classics, the more notable contribution to medicine and surgery made in the eighteenth and nineteenth centuries; Morgan's essay which led to the foundation of the University of Pennsylvania, Jones' "Manual of Military Surgery," Nathan Smith on typhus fever—works of this sort should be on our shelves. Thirdly, the bibliography of the more distinguished American physicians and surgeons should be made as complete as possible. Of the writings of some forty or fifty men every scrap deserves to be sought for—men of the stamp of Nathan and Nathan R. Smith, the Bigelows, Samuel D. Gross, Austin Flint, Henry I. Bowditch, W. A. Gerhard, Daniel Drake and Oliver Wendell Holmes.

And, lastly, a library with any ambition will wish to have the original editions of the great medical books of the world. Care must be exercised not to allow a library to be made the dumping-ground for all the old quartos and folios of the seventeenth and eighteenth centuries. There are plenty of very handsome volumes not worthy of shelf-room. This part of the work takes time and money and more of both than are usually at the disposal of the library committee. In every city of this size there is usually a physician with the happy combination of literary tastes, leisure and a long purse, to whom should be entrusted this part of the literary work. With only the taste and the knowledge he can use his colleagues' purses and induce Dr. Blank to give an original Harvey "De Motu Cordis" or a Jenner pamphlet or an early Mundinus. The fine old books on exhibition show that much has been done already in this direction and I have no doubt that within a few years this department will grow rapidly. To mark this happy occasion, and to rejoice Miss Noyes' heart, I could not resist buying in Rome the original edition of Vesalius, 1543—one of the two medical works which has most powerfully influenced modern medicine. Special collections are of exceptional interest and we are fortunate to have the library of Dr. Upton Scott, our first president, the books of Dr. Charles Frick, and a unique group of 120 Edinburgh theses by American students of the colonial and early nineteenth-century days.

With manuscripts and books, pictures are naturally associated and our gallery, old and new, grows rapidly. You remember how the centennial celebration brought out a group of fine portraits and we benefited at that time in getting the Baker, the Buckler, Miltenberger, Wilson, Frick, Arnold, Friedenwald, Archer, Stokes, N. R. Smith, Atkinson, Rohé, Preston and other pictures. There are many others in the state and city whose ultimate destiny should be these walls—if not the original, good copies supplied by the families are very welcome. This is our Pantheon, in which there should be a memorial of some sort to every distinguished old Maryland physician. When we look about and see what has been done since our move to Eutaw Street the faculty may well feel encouraged. One of the most fortunate events of the past fifteen years was the memorial room and library given by Mr. W. F. Frick in memory of his brother Charles, a most distinguished physician of this city and a devoted member of the faculty. To the Frick family we are under a deep debt; not only has the special library been an inestimable boon, as with the money annually given a large proportion of the new books have been bought, but it has been also a happy example followed in the new building and the rooms devoted to the memory of Dr. Aaron Friedenwald and Dr. Samuel Baker. In what happier way could these families have paid for themselves and for us the debt of the past?

But let us not forget that the moment, the now, the present, has, as Emerson says, the supreme claim to which the past must be subordinate. The most important single function of this corporation is educational. This is really a postgraduate college of which the members remain students. I am delighted to see that a room has been provided, through the liberality of Dr. Hugh Young, in which members may do their own laboratory work. This is a feature in the life of the faculty which should develop and be most helpful. It should be the ambition of every young man as soon as possible after registration to join the faculty. Until within the fellowship he can scarcely be called a member of the guild. Take the group which has joined at this meeting, bringing in youth and enthusiasm; year by year they will grow into the life of the faculty and on them time will stamp the slow insensible changes which hall-mark the generations, but which shade so gradually that there is no sharp cleavage, but the seniors and juniors, the new and the old, are blended into one homogeneous body.

By far the most important channel through which the new pours in to mingle with the old is the current literature of all lands with which our shelves groan. An important function of this faculty is to furnish first-hand information from every medical center in the world, and this it does through journals, transactions and reports. A library such as this has to cater to three groups—the laboratory workers, the specialists, the general practitioners; and it has become increasingly difficult to meet their demands. In a city with large laboratories there should be close cooperation, so that expensive journals are not duplicated, and workers should know just where to look for sets of rare proceedings or transactions. In the present congested condition of medical literature, only Washington can hope for completeness, and the laboratory men and specialists must not complain at the large size of the lacunæ on our shelves. It is not so difficult to keep up with the demands of the man in active practice, who wants the current journals, the new editions, the monographs and the systems, and it is on these the main energies of the library must be spent, but it passes the capacity of all but a few great libraries to deal with the perfect avalanche of special literature at the present day. In certain directions the *Index Medicus* is an immense help and meets a pressing demand, but we have reached the stage when every tenth year, or, indeed, every fifth year, stock should be taken by some international cooperative organization which should deal with the large problems of analyzing the data pouring in from every quarter, on every possible subject.

During the next century the new and the old will fight it out in these rooms in keen discussions, just as they have done since the days of Hippocrates. Time and again it will happen that the new will not be true and the true will not be new. The yesterday is forever being brought to trial at the bar of to-day and the verdict is rarely unanimous; often it is wisely a case of judgment deferred. Look over the questions discussed twenty years ago; some are dead—judgment gone by default; some are still pending; a few are settled—or we think they are; many seem antiquated. Turn to the program of the present meeting and we find new problems propounded, sometimes in language which requires interpretation, old problems that the present seems never able to get rid of, and in others we recognize old friends in disguise. How interesting to look back over the faculty attitude toward the subject of tuberculosis, with the modern history with which it is coeval! Brought up in the hazy pretuberculosis days, what did Upton Scott, our first president, think of the young men fresh from Paris, and their demonstrations of Laennec's views? A generation or two later Power and Buckler and Charles Frick were propounding Louis. Then in the seventies the heresies of Niemeyer and Virchow were discussed by Donaldson, Chew, W. T. Howard and others. How the hosts of the past fought against the bacillus when it was announced, and did not prevail, how the public was finally awakened, how tuberculosis was put in the list of preventable and curable diseases—these are questions of recent history. In this quintette of problems bearing on but one disease, which it has taken a century to solve, the new and the old are curiously blended again; they are not in clear-cut strata.

The idea of contagion in tuberculosis goes back to Frascatorius and even earlier, while you will find in Celsus excellent directions for the fresh-air cure combined with a milk diet. To meet the educational side of the faculty the entire organization has been changed and the special sections and the publication of its own journal are important new departures.

Amid these hopeful and splendid surroundings, which can not but influence it profoundly, the old organization enters a new era. Do not forget that it takes some time for the domestic machinery to get into good working order, but the rapidity with which the rooms have been prepared, the books moved and the whole place made comfortable speaks for the great efficiency of the staff.

In one of his Hibbert lectures last year at Oxford, William James made a remark that clung: "We live forward, we understand backward." The philosophers tell us that there is no present, no now—the fleeting moment *was* as we try to catch it. In the opening of this new building we have to-day made a happy addition to a happy past. Toward this day we have all lived forward, and the future should still be in our thoughts. This old faculty must continue to be our rallying ground—once inside its portals, schools, colleges, hospitals, societies, all other affiliations are absorbed in something vastly greater, which includes all and claims from all devoted service, the united profession of the state. The progressive evolution of such an organization demands the loyal support of every member. In all societies differences of opinion are not only inevitable but salutary. From time to time many of you will not approve the policy of the officers of the day —do not let your annoyance dim your loyalty. Professional politics have never been, and I hope may never be, a marked feature of this body, but whenever any of you feel sore at the action of those in charge let me ask you to find a cure in devotion to the scientific work of the sections or to the library.

But the best of all things about this faculty is that subtle force by which the men of the past influence us to-day—not by tradition, by the spoken word, handed on from father to son, teacher to pupil, not by the written record in which one generation reads of the deeds of another, but by that intangible, mysterious force hard to define but best expressed in the words *noblesse oblige*—that obligation to act in a certain way, to foster certain habits, to conform to certain unwritten laws—a sacred obligation, as potent now as in the time of Hippocrates, the alchemy of which at once turns to gold whatever may be leaden in the new of to-day.

Treatment of Burns.—Lejeune of Frankfurt a. M. writes to the *Zeitschrift für aerztliche Fortbildung*, June 1, 1909, to report his method of treating burns. He declares that the burning itself has disinfected the tissues and the exudating fluid is sterile. All that is necessary is to keep it sterile and this he accomplishes by placing the burned part in a position so that the blister forms a spirit level, as it were, with its horizontal surface over the largest area. He then injects into the bulla a little bismuth, leaving the skin intact except where the cannula was inserted. The bismuth soon settles to the bottom of the blister and the fluid contents are then aspirated through the cannula left in place. The blister skin sinks down over the bismuth and the tiny hole is closed with a bit of plaster. The part is then dressed with mull and dry cotton, left for about a week. Burns thus treated heal remarkably fast, often in half the time with other technics, without scars or contraction or even appreciable pigmentation in the burned area.

Original Articles

THE UNRELIABILITY OF THE ASTIGMATIC FAN OR CLOCK DIAL TEST *

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Nearly all books on refraction give a very large and probably undue amount of space to the astigmatic fan test. There have been a considerable number of later writers who affirm that the astigmatic fan test combined with the fogging method even obviates the necessity for the use of cycloplegics. It is my purpose to prove that the test is very unreliable in a large percentage of cases, and that only by accident is it ever accurate.

It is possible to have the lines appear unlike when the patient has no regular astigmatism. Moreover, it is often true that the lines may look alike in the principal meridians, and yet the patient and victim may still have remaining some astigmatism that ought to have been corrected. Considerable fault may be found with the test, for the additional reason that the average patient, from inexperience and lack of concentration, does not know what is expected of him in the test. Experience has demonstrated these points:

1. If there are three lines, the patient may decide by the middle line, or he may notice only the outside lines. If the lines are partly doubled he may fail to refer to the fact. Blackness is often confused with distinctness.
2. The patient often answers according to a view affecting a peripheral part of the lines and not that covering the macular region.
3. Often adjacent lines are the lightest and darkest; thus 60 may be the lightest and 90 the darkest, while the patient only mentions the most distinct.

While all will admit that it is easy for the average patient to misunderstand the fan test even if it be founded on correct principles, yet in our further argument we will assume that answers are always given with scientific accuracy. Our contention is that even under conditions so favorable, the fan test is unreliable. As an example, if such a patient with relaxed accommodation requires a correction of plus 2.00 D. sphere, combined with a plus 1.00 D. cylinder, axis 90, it will be true that if a plus 3.25 sphere is put before the eye, both meridians will be myopic; the diffusion image might in such a case resemble a vertical line, and the vertical line on the clock dial will be the most distinct. If a plus 3.00 is used, the assertion will be made that the diffusion image becomes an exact vertical line, but incidentally it may be stated that in the human eye the diffusion image never resembles a geometric figure. With a plus 2.75 the vertical lines will still be the most distinct, while with a plus 2.50 it is stated that it will give an exact circular diffusion circle and thus all the lines on the dial will look equally distinct. Practically such a condition never occurs, as the diffusion image in the best eyes never becomes an exact circle.

With all lenses weaker than plus 2.50 it will be claimed that the diffusion image becomes horizontal and that these lines in the fan become correspondingly most distinct.

One clock dial enthusiast has asserted that in lowering the lenses from plus 3.00 gradually to plus 2.00, the vertical lines, 90 first, become distinct; next the 60 and 120 become the clearest, and later, in order, 30 and 150, and last the horizontal. This is a very gross error because the diffusion image never assumes the shape of a geometric cross with flexible angles merely by a change in spherical lenses. If such erroneous ideas can be believed, no wonder a few optical, correspondence and postgraduate schools assert that refraction can be learned in a few weeks, and that cycloplegics are unnecessary.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

If the cornea is divided into two halves, either horizontally or vertically, generally it will be found that the center of the diffusion image of each part never corresponds exactly with the center of the other part. In the same way the cornea may be divided into quadrants, or into as many sectors as desired; yet it never can be supposed that the center of the image for each sector lies exactly at the same place as the others.

The serious mistake made by all fogging clock dial enthusiasts lies in supposing that the center of the diffusion image for each sector lies exactly on the theoretic optic axis of the eye. As an illustration, take the case of an eye which can not be improved either by a spherical or cylinder lens, yet in which the upper part of the cornea creates a diffusion image which slightly overlaps that of the lower part (Fig. 1). This overlapping may be compared to that of binary stars which through telescopes are seen to overlap slightly. It sometimes takes years of observation by astronomers to note if the stars revolve before it can be decided whether or not they are double stars.

With such an overlapping diffusion image vertically placed it may be stated that if the refraction is fogged by placing on plus spheres the vertical lines will yet remain the most distinct. If the attempt is made to force the diffusion image into a rectangular or circular outline by plus cylinders placed vertically, the result will be only disaster because the horizontal part of the image will only be diffused and not rendered more distinct. Minus cylinders would have the same effect if both meridians were fogged. Thus the great evil of the fogging system is in failing to give clear and condensed diffusion images, while merely permitting cylinder-diffused images with a somewhat more circular or symmetrical outline.

Even if millions of eyes were corrected with the best possible spherical and cylinder lenses, the resulting diffusion images would have every possible fantastic shape. No two of these would be alike. Take as an illustration a resulting diffusion image, similar to Figure 2, having an angle with one arm placed at an angle of 30 degrees to the horizontal. In such a case the horizontal clock dial lines and those at 30 always ought to be the most distinct when fogged. If the fan is made up of a series of dots, as in Figure 3, it is easy to see what the result would be by placing Figure 2 over each dot.

Figure 4 shows a drawing made up of the diffusion images of each of my eyes, made while looking at a round electric light seen a mile distant at night time. The vision of each of my eyes is more than double the normal, equal 20/10.

In the study of the refraction of an elderly woman's eyes it was found that she could see fairly well with almost every glass in the trial case. I then asked my assistant to put every sphere in the trial case before her, starting with the strongest plus down, and noting the vision with each. I then had the results platted to scale on quadrille ruled paper, the horizontal lines showing the vision and the vertical lines the strength of the lenses. It was perceived that there were two peaks of best vision several diopters apart, showing a rough test for astigmatism.

I then had the patient make a drawing of the diffusion image of a very small gas jet. It was shaped somewhat like a cartwheel, with a very small central hub (Fig. 5). With the retinoscope and further use of the trial lenses it could now be perceived that there was only a very small central part of the cornea to which attention need be given, and that it acted in her case like a pin-hole disc, and, furthermore, that while the peripheral parts were very astigmatic, they interfered but slightly with the vision. Obviously such a case would merely be muddled with the fan test.

It is impossible to find in the United States or in the world a human eye which does not have irregular astigmatism, while there are many that have no regular astigmatism which can be benefited by a cylinder. Some of the ancients drew their star-shaped figures as having five points, and some six, and others more or less. Irregular astigmatism always tends to render the fan test unreliable and worthless.

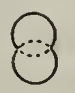


Fig. 1.

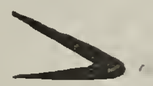


Fig. 2.

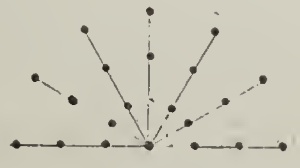
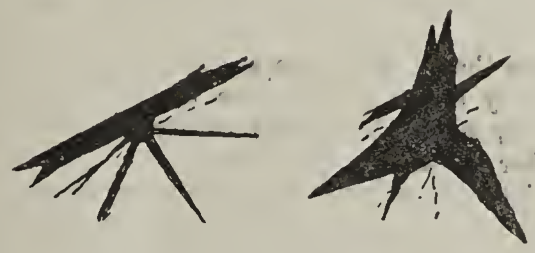


Fig. 3.



Left Eye Right Eye

Fig. 4.

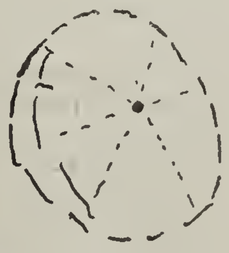


Fig. 5.

Figs. 1-5.—Various forms of diffusion images.

The essentials required in careful subjective refraction are a complete trial case including cross cylinders and test letters. The test with these ought to be made in difficult cases with varying illumination and at varying distances. A weak illumination at a short distance may reduce the obscuration by irregular astigmatism, so that the patient may definitely decide what glass gives the most distinct vision. Furthermore, this may require the faithful use of a reliable cycloplegic, combined with further tests made with enlarged pin-hole discs of two, three and four millimeters diameter. If the patient is told to look exactly through the center of these openings, the shadow of these discs will lie concentric with the macula and therefore practically concentric with the pupil.

As the eye is composed of flexible structures, the best results will follow from the study of a wide average, testing the vision with one eye alone and then with both open, alternating with both fogged and later with one at the most distinct focus. It is also well if the tests can be made both before and after the use of a cycloplegic. In many cases these tests require infinite patience and much time and repeated trials, even by an oculist who may have made a prolonged study of every law of theoretical optics.

In visiting my brother, Mark D. Stevenson, at Akron, Ohio, a short time ago, I noted that his office was without a fan test chart. It is true that many well-equipped oculists' offices will be found in which all clock dials, from Green's many varieties to Verhoeff's finer lines, all may have been sensibly consigned to the waste-basket.

In a recent article[1] by D. B. St. John Roosa, some ideas are expressed which might have appeared correct in the middle of the nineteenth century, but which are not consistent with the scientific progress of the twentieth. Following are a few quotations from the article to which exception may well be taken:

> 1. I present what I conceive to be safe and sane views on this subject. These views I also believe in the main are those of the majority of ophthalmologists.
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> 2. The field of abnormal refraction is actually not entered as far as hypermetropia of a low degree is concerned. It is not reached unless it is of a degree higher than, for instance, two diopters, or unless corneal astigmatism is added to it.
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> 3. I deny the existence of muscular asthenopia, except as dependent on errors of refraction, standing by my views expressed in 1890; I do not find any value in prisms or in decentered glasses, except in cases of paralysis of the ocular muscles, and for years I have not prescribed them, except as above indicated.
>
> 4. To see as well as one can is always desirable, and I have no fear like that so often expressed among the laity, of having glasses too strong either in myopia or hypermetropia, so long as those chosen give the best vision. If they secure this and the patient complains of pain, it may be assumed that the pain is not from the wrong glasses, but from the eye itself.
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> 5. I do not believe that a difference such as a quarter of a diopter will make any essential difference in the vision of a patient, and especially not in his ability to use his eyes without headache or other asthenopic symptoms.
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> 6. Unprejudiced judicial examinations made by thoroughly educated and widely experienced men, in my opinion, show the belief that eyestrain causes neurasthenia to be incorrect.
>
> 7. What I believe to be almost infallible evidence against the existence of eyestrain in a given case is the absence of ocular symptoms. . . . In short, before there is eyestrain, there is always some symptoms in the eye itself.
>
> 8. Migraine and neurasthenia will soon cease to be treated through the muscles or refraction of the eye.
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> 9. Largely counseled by the late Dr. E. G. Loring, I had abandoned retinoscopy as the most difficult and least satisfactory of the methods of determining the refraction of an eye, which contributes nothing that can not be more easily and more expeditiously performed by the upright image.
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> 10. Fortunately the use of the ophthalmometer is easily learned. With a good teacher, in two weeks' daily practice, a man at all skilled by education and experience in other manipulations and observations will be able to go by himself.

As to the second quotation, it may be stated that of all glasses ever given, probably more benefit has resulted from a hyperopia corrected of less than 2.00 D. than of any spherical type. In numberless cases patients of this class have truthfully told their oculists that if their glasses could not be replaced, no money could buy their present ones, as life would be considered unendurable without them.

As to the third statement, it is within the bounds of absolute truth to say that in such conditions as hyperphoria and allied conditions prisms have been of untold value.

Neurasthenia may have many causes, from fatigue to autointoxication, but eyestrain is undoubtedly one of its most prolific causes in this age of overworked vision. As to the severe migraines, such as have a distinct heredity and compel the patient to go to bed, a considerable proportion are not relieved by glasses; yet there remains a large percentage of migraines which have been entirely cured by careful refractive work.

As to the comparison between the objective methods of testing, such as the ophthalmometer, the retinoscope and the direct method, it can be truthfully said that the retinoscope is better than either of the others, as its measurements can be taken from the macular region.

The axis of astigmatism is seldom definitely shown with the direct method and is always uncertain. The ophthalmometer shows only the anterior part of the cornea and therefore it is totally incomplete because it fails to give the lenticular astigmatism, while that of the aqueous, vitreous and posterior layer of the cornea are neglected. The statement that the ophthalmometer takes the place of cycloplegics is not worthy of the least consideration and ought not to pass unchallenged.

Almost every ophthalmologist of fifteen years' active study and practice will affirm that during the last years of his practice his refractive results have improved marvelously, while his former tests were something to be surprised at and possibly ashamed of. In no branch of his study and life-work has more real gain been made by experience and constant education than in his personal refractive training. Refraction is the work of a lifetime and a study that is never completed.

ABSTRACT OF DISCUSSION

Dr. J. Thorington, Philadelphia: Of course most of us prefer to estimate astigmatism with the retinoscope, but when we can not use cycloplegics we must resort to other methods; for instance, the astigmatic clock dial. In the selection of the clock dial it has always appeared to me that the two chief and common meridians are 90 and 180. Dr. Risley and I presented a paper on this subject a few years ago showing that 58 per cent. of the patients selected a plus cylinder, axis 90, or a minus cylinder, 180, or the same if taken against the rule. Therefore, the charts that have the lines running from 9 to 3 and 12 to 6 should have these lines cross at the center of dial. Then properly instructing the patient to fix his vision at the crossing and not allow him to cast his eye indiscriminately at various lines I am careful then to give the patient an opportunity to make exact statements that will guide me in the selection of the axis and frequently give an idea as to the strength of cylinder in given cases. I feel therefore that the astigmatic chart on which the lines do not cross as just suggested is not the unique astigmatic chart of to-day. Now we are delighted that the refracting opticians resort to the astigmatic clock dial because they draw the attention of the public to the fact that the lines do not appear equally black. They make a strenuous effort to correct that condition with the result that the patient frequently goes away dissatisfied, fearing he is wearing the wrong glasses. When he reports to the oculist the latter finds his suspicion correct and is correspondingly delighted—the one good thing about a refracting optician. You know we do not find very many.

In a few cases we have to resort to some subjective way of finding out about astigmatism. In such cases we test first with the astigmatic chart and then at subsequent visits follow with other methods. As Dr. Stevenson says, we omit to present the astigmatic chart at the final visit, but we convince the patient that his correction is what it should be. I therefore do not feel that the chart should be relegated to the waste basket, though my preference would be retinoscopy. As the refracting optician is partial to the chart, however, I think it is wise for each one of us to have a chart of some one of the numerous varieties to hang in the office to convince the patient that we are acquainted with it and know how to use it, while we feel there are other methods superior to the astigmatic chart.

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[1] The Proper Method of Determining Errors of Refraction and Their Actual Relation to the Ailments of the Human Body, The Journal A. M. A., Feb. 13, 1909, p. 543.

In the main I agree with Dr. Stevenson, particularly that there are times when certain lines and certain areas or spots are darker, whatever the test may be. But that brings out this fact: For a long time it was taught that astigmatism was corneal only. Now we know by careful statistics and study that one patient in four has some lenticular astigmatism. This we can bring out with the chart. But we have other ways of bringing it out, and it is not necessarily corneal. We see with the ophthalmometer that there is no astigmatism on the anterior surface of the cornea and therefore we must consider it as lenticular, and it is by the use of the astigmatic chart, the ophthalmometer and the other means that we are able to state whether it is corneal or lenticular astigmatism. In my experience it is mostly the patients with lenticular astigmatism who give the erroneous answers referred to by Dr. Stevenson.

DR. F. W. VERHOEFF, Boston: Dr. Stevenson's highly theoretical objections to astigmatic charts, it seems to me, are based on a fundamental error. He has made deductions from the study of the complicated and intense diffusion image of a very bright source of light. I called attention to this error nine years ago in a paper on monocular diplopia. In fact, strictly speaking, Dr. Stevenson apparently did not study diffusion images at all, since we are to infer from his paper that his eye was accommodated for the source of light. The diffusion images that actually come into play in the tests with astigmatic charts may be studied by observing a small black spot on a white piece of paper, different degrees of blurring being obtained by varying the accommodation or by means of test lenses. The spot should not be too minute, otherwise misleading information will also be given here. The various monochromatic aberrations of the eye undoubtely affect the appearance of the lines in astigmatic charts, often materially, but not to the extent that Dr. Stevenson would have us believe. Dr. Stevenson seems to overlook the fact that these aberrations also affect the appearances of the test letters, rendering some relatively more distinct, others less so. This explains one of the important difficulties in determining astigmatism by reference to test letters alone. My experiments as well as my clinical experience have convinced me that astigmatic charts are distinctly superior to test letters in the determination of astigmatism. When properly used the important aberrations of the eye may be recognized and allowed for. From a psychologic standpoint astigmatic charts are superior, since direct camparisons of very simple impressions are made, whereas with the test letters a present complex impression is compared with the memory of a past one. Astigmatic charts also save much time and are less fatiguing to the patient. After determining the amount of astigmatism by their use an attempt may of course be made to improve on the result by the test letters, but as a matter of fact I am never able to do so. I can not agree with Dr. Stevenson that the text-books on refraction give an undue amount of space to astigmatic charts. On the contrary, I have yet to see a text-book in which the test with astigmatic charts is adequately described. By the manner in which he refers to them I judge that Dr. Stevenson does not understand the principle on which my charts are based, although I am sure that I explained it clearly enough in my original description.

DR. J. W. PARK, Harrisburg, Pa.: I have for the last ten years at least discarded the chart because there are so many unreliable replies. I have found that the retinoscope is the most reliable, and I think every man should practice to become expert in its use. I use the shadow test in all cases even of presbyopia, with a very small mirror and a very small opening in the mirror, not over 6 or 7 mm. and in presbyopes there are a number of small pupils in which you can get a small shadow. But by doing a great deal of that you can determine your axis when the pupil is dilated. There is no great trouble to get the axis of astigmatism, by putting the patient in the chair and putting cylinders on first and then putting on the test lenses; nine times out of ten you will have the axis right, and then it is a question of straightening the cylinder. I make that a particular point, for there are so many who can not judge between the shades of the lines and I think that the retinoscope is the thing to decide that.

DR. OSCAR WILKINSON, Washington, D. C.: In my opinion, the use of the retinoscope even without cycloplegia is much easier than the average man appreciates, and in cases in which I do not wish to use cycloplegia I find that the use of a drop of cocain in the eye will often give us a sufficiently large pupil to do a good retinoscopy in cases otherwise troublesome. In my experience the clock dial or astigmatic fan is the least accurate of all our tests. I have found corneal astigmatism with the ophthalmometer relatively more correct in a larger percentage of cases than is found in the statistics of others. In fact, I think that we are too careless in the use of the ophthalmometer. I have been in the offices of several of my friends who do not appreciate and do not use it, and found the ophthalmometer sitting out in the open room, and they have tried to use daylight, or the electric light in front of the window. I put mine in a dark room and give it an opportunity to show results, and I get results with it.

DR. LEARTUS CONNOR, Detroit: I do not know of any one instrument or process on which we all agree—a fact quite within the limit of what we should expect, as we are unlike both in our methods and habits. In regard to astigmatism tests, taken in connection with the other tests mentioned, I would not dispense with the chart. If I had to depend on it alone to determine astigmatism I should be at fault, as with any other one test. But as to each case I apply every known method to determine the irregularity of cornea and the lens, my results are satisfactory. So my belief is that we shall get the most satisfactory results only when to every case we carefully apply every test. In the case of my own eyes, which are astigmatic, it has been many years since I found any variation from the lines on the chart. They are perfect, and I expect in every intelligent patient to leave a like condition.

DR. EDWARD JACKSON, Denver: My story of the clock dial test perhaps is best expressed by the fact that I do not use them habitually, or do not use them at all, and have not used them since I was busy enough to confine myself to what I believe to be the best tests. The inaccuracies depend very largely—not entirely and not in all cases, but in many cases—on the size of the pupil. With a small pupil they do not exist, or exist only in slight degree. With a pupil dilated by a mydriatic they are serious in almost all eyes; so that the optician without the mydriatic is perhaps at a little advantage over the ophthalmologist who uses the mydriatic. A mydriatic, however, is not necessary to induce the inaccuracies. Most opticians' test rooms and most ophthalmologists' offices are sufficiently dark to get a considerable dilatation of the pupil, so that these inaccuracies are induced, and as a matter of fact if you care to subject the patient to the final test with the psychologic risks that have been referred to, you will find that very few, like Dr. Connor, see the lines equally clearly in all directions. After the best correction there may be astigmatism that will cause them to say one eye is better and the other worse. Getting them all clear is an impossible ideal, unless the patient be so sluggish that he does not notice slight differences.

DR. JOHN GREEN, JR., St. Louis: Especially in the estimation of a dynamic refraction, I regard some form of clock dial as indispensable, and I greatly prefer the astigmatic charts of Dr. Verhoeff. I have been using these charts for four years and I find that, carefully and patiently used, they give results which approach surprisingly near the results we get under cycloplegia. It is necessary to take a good deal of time and to make sure the patient understands what he is to look for. Some years ago Dr. Spratt of Minneapolis made a series of tests with Dr. Verhoeff's charts both without and with cycloplegia and found that the difference in the two results was surprisingly little.

DR. WENDELL REBER, Philadelphia: I was delighted to find myself in Dr. Jackson's class. I practically use the chart not at all, and what Dr. Jackson said about the size of the pupil is the strongest argument against it. It is my humble opinion that the time spent in educating the patient to understand the game of using the chart if spent on other methods would bring better results.

DR. D. W. STEVENSON, Richmond, Ind.: I expected more criticism on advocating that an old plan be done away with. I suppose that there are doctors who are still using sarsapapilla in their mixtures. I have studied this test for years, under such authorities as Dr. Gardiner and Dr. Hotz of Chicago. Hotz's astigmometer was the best instrument ever devised in studying small weak points of light, although the fan test is still unsatisfactory by any method in which the dial is used. The optician, of course, uses fogging methods. Some oculists do not use the fogging method; but if they will wait, time will prove that the fan test is unsatisfactory either with or without fogging. If the pupils are very small, the lines in the fan test will look alike, no matter how it is used in many cases, even those in which there is astigmatism. That ought to be clear, and that is the only hope for any oculist laboring with such a crude test; for after using the drops when the patient comes back he does not see the irregularities that would be there if his accommodation was relaxed. I believe that the fan test will certainly some day be entirely eliminated from all modern ophthalmologists' offices.

DROPSY OF THE OPTIC NERVE SHEATH *

JOHN A. TENNEY, M.D.
BOSTON

Much has been written concerning optic neuritis since von Graefe supposed it to be caused by obstruction in the cavernous sinus, caused by intracranial pressure. The discovery of anastomoses between the ophthalmic and facial veins made that theory untenable. Schmidt-Rimpler and Manz held that the outflow of the venous blood was impeded by pressure on the optic nerve caused by dropsy in its sheath, and as a consequence stagnation of lymph in the papilla. Leber and Deutschmann believe that the neuritis is caused not so much by the pressure as by the toxic quality of the cerebrospinal fluid, which is loaded with the products of tissue change. These theories depend on pressure as the prime factor.

On the other hand, Gowers,[1] Brailey,[2] Edmunds,[3] Mackenzie[4] and others believe that the disease is not due to pressure at all, but to a descending inflammation transmitted from the intracranial cavity. Those who support the mechanical-pressure hypothesis think that it is an ascending process, while those who hold the opposite view think that it is a descending neuritis.

Leber[5] records a case of a patient hydrocephalic from birth, liable to frequent and severe headaches, occasional epileptic attacks and marked loss of sight. At twenty an almost continual dropping of water from the nostril came on, and with it came great relief from the vertigo and epilepsy. The liquid was found to be identical with the cerebrospinal fluid. Similar cases had been reported before by Nettleship,[6] Priestley Smith, Elliotson,[7] Baxter,[8] Paget[9] and Jones,[10] the patient of the latter observer being sixty-seven years old. In all these cases the head symptoms were aggravated when the dropping ceased. Autopsies were held in the cases of Paget and Jones, but no intracranial disease was found.

Leber thought that the cerebrospinal fluid must have passed through a minute opening in the ethmoid bone; but, as there is a normal passage between the third ventricle and the subarachnoid space, it is more probable that the fluid followed the sheath of the olfactory nerve.

Schwalbe many years ago found a communication between the subarachnoid space and the intravaginal sheath of the optic nerve, and it has been demonstrated in recent years that liquids can be forced through these passages artificially. Levinsohn[11] injected cinnabar into the subarachnoid space in rabbits and cats, and later found this substance in the intravaginal spaces of the nerve and along its blood vessels. Kruedener[12] demonstrated in five cases that optic neuritis disappeared after the trephining process, and Abadie[13] reports a patient cured by lumbar puncture.

Case 1.—Six years ago a young woman with light hair and fair skin came to me with double optic neuritis. The vision in the right eye was 3/60, while the other eye could only tell where the windows were in the room. She said she had been troubled with this loss of sight for a year. She had consulted noted specialists in New York and Boston, all of whom told her she would never see again. She vomited every day, often fell down while walking on the street, and had terrible headaches. The length of time that had elapsed since the beginning of the trouble seemed to exclude cerebral tumor, or it must have been of slow growth, it seemed to me. Instead of getting discouraged over the case as others had done, I resolved to act on the assumption that possibly intracranial pressure had produced this state of things. Accordingly, I prescribed potassium iodid in saturated solution, beginning with ten drops three times a day, and increasing by five drops each day. When the patient was taking fifty drops three times a day the characteristic eruption covered her body. The dose was reduced to twenty drops, and arsenic was given to relieve the eruption. In six months she could see 20/20 with either eye.

The treatment in this case was suggested by my experience with a number of patients who came with loss of vision, on whose cases no history would throw any light and no ophthalmoscopic appearances came to my aid. It is in the interest of such patients that this paper is written.

Case 2.—The first of my patients was a schoolgirl of 15, sent by a physician in Plymouth county, fifteen years ago. She said that she had lost the vision of the right eye, and was positive that she had not accidentally discovered blindness that she had had from birth. The ophthalmoscope revealed nothing. The retinal veins looked as well as they do in most cases. On the assumption that pressure on the optic nerve might be the cause of the trouble, potassium iodid was prescribed in moderate doses. In a week the patient could see as well as ever.

Case 3.—In a year or so a girl of the same age came from Maine with the same trouble in the right eye. She said she became blind in that eye the first of May. As it was then the middle of June, there seemed to be little improvement. She was given the iodid, and in ten days she went home. A year afterward she came with the vision more seriously impaired than it had been before. When she looked at a lamp in a dark room she saw a light mist. She said that she had taken the medicine she had before, without effect. The dose was increased; in ten days she went home, and has not been heard from since; the inference is that she has had no more trouble.

In neither of these cases was there any evidence of menstrual or other constitutional disturbance.

Since that time I have seen eight similar cases. I have never used pilocarpin, thinking that the iodid might, with its alterative action, better prevent the return of the disease. In all these cases, marked with sudden loss of vision, with or without headache, in which the ophthalmoscope revealed no changes in the retina, and in which no history threw any light on the trouble, perfect recovery took place.

2 Commonwealth Avenue.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Diseases of the Brain.
2. Tr. Internat. Med. Cong., 1881, iii, 63.
3. Tr. Ophth. Soc. U. Kingdom, i, 112.
4. Brain, ii, 257.
5. Arch. f. Ophth., xxiv, 273.
6. Ophth. Rev., January, 1883.
7. Med. Times and Gaz., Sept. 19, 1857.
8. Brain, January, 1882.
9. Tr. Clin. Soc. London, 1878, xii, 43.
10. Ophth. Rev., vii, 97.
11. Arch. f. Ophth. (Graefe's), lxiv, 3.
12. Arch. f. Ophth. (Graefe's), lxv, 1.
13. Clin. Ophth., April 10, 1903.

ABSTRACT OF DISCUSSION

Dr. L. Webster Fox, Philadelphia: We who have been recently investigating various cases of optic neuritis have seen this accumulation of fluid around the nerve-tracts and sheaths which produces what Dr. Tenney has pronounced edema of the optic nerve and sheath. I have been following Drs. Potts and Weisenberg at the Medico-Chirurgical Hospital. There we have operated on fourteen patients by decompression operations and it has been marvelous to see the results in the nerve-heads. One of the most interesting cases was that of a boiler-worker from Baldwin's who received an injury to the eye, which was enucleated. A short time after he came in and we found he had an optic neuritis. He described it as a temporary blindness; that is, when he bent down he could relieve this blindness. It was a rather interesting thing and I had Dr. MacFarland and Dr. Weisenberg interest themselves in the young man's condition. This temporary blindness became worse and worse, and ultimately I insisted on the patient's coming into the hospital waiting-room. He died suddenly and we obtained an autopsy. Between the third and fourth ventricles there was a small tumor, pedunculated, not larger than an almond. It seemed he could throw it by changing the position of his head and open the space and allow the escape of the fluid accumulated in the third ventricle and his vision would become restored temporarily. According to Professor McFarland he died of paralysis of the brain from overdistention. I think that I have never in my whole career seen anything that so well exemplified dropsy. The head of the nerve showed optic neuritis; not as pronounced as we frequently see it in tumor of the brain. It was not solid—the choked disc of the Germans. The microscopic examination revealed interesting conditions. There was a dilated space between the nerve trunk and the nerve-sheath probably four or five times the diameter usually found in these cases. Dr. McFarland has made an examination of the cases and somewhere in his writings he has quoted it. In any cases such as I have described you can look for death.

Dr. A. R. Baker, Cleveland: Early in my practice as an ophthalmologist I became thoroughly convinced that choked disc, such as we have in brain tumor, was an edema, and among my earliest operations were efforts to remove this pressure by tapping the nerve-sheath. My first operation consisted in simply incising with a cataract knife. I then devised a long curved pointed syringe with the idea of drawing off the fluid. It can be done, and sometimes you will get temporary relief, but the sheath will soon fill up again and the blindness will return. The second operation I always found more difficult than the first, so it was not long until I abandoned it. Then some time later when lumbar puncture became the fashion I thought that at last we had some way of reducing this pressure, and in nearly all my cases I advised this procedure. It too gave temporary relief in many cases, but every now and then a patient would die suddenly, and we gradually abandoned that. So that it has been my practice for many years to trephine. I do not know who devised or named this "the decompression operation." We simply called it trephining to relieve pressure, and I think for twenty years I have been advising it for the relief of pressure, headache and blindness, vomiting, vertigo, and for the purpose of making the patient more comfortable. Until recently I thought every one had been doing that, and I can not but believe that there are many here who have been doing the same thing. When the brilliant work of Horsley came to our notice we began to look for tumors, and I fear, often did more harm than good as only about three or four tumors out of a hundred can be found and removed. But the simple operation of relieving pressure is one that should appeal to all of us as it has in the past.

Dr. J. A. Tenney, Boston: I have always tried everything else before I operated. When I was younger I operated a great deal more than I do now. Fortunately, in these cases I have described, in which there was actually no apparent edema in the nerve-head and we could see nothing with the ophthalmoscope, I found in every case I was able to relieve the patient by mild means, and so it was very satisfactory.

SCISSORS-MAGNET EXTRACTION OF IRON FROM EYEBALL *

[Editor's Note: The article with the above title, by Dr. Edward Jackson, Denver, appeared in The Journal, June 19, before the discussion thereon had been submitted to the speakers for correction. The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

Dr. W. M. Sweet, Philadelphia: Many cases of injury from bodies are not seen by the oculist until weeks or months after the injury; then it is often impossible to remove the steel, owing to the firm fibrous exudation about it; or even if the foreign body is removed, the disastrous effect of the tugging on the uveal structures can not be estimated. It is probable that a large proportion of the cases in which the steel was successfully removed but enucleation was later required on account of iridocyclitis are traceable to the injury caused by the pull of the magnet on the structures binding the foreign body in its imbedded position.

As I showed in a recent paper, bodies in the vitreous chamber in the neighborhood of the equator or near the ciliary body usually drop into this situation after penetrating the anterior segment of the eye, and therefore do not become imbedded in exudation; and extraction is often successful. In one instance a splinter of steel that had penetrated through the upper limbus was localized at the bottom of the vitreous chamber near the equator, and the steel was removed by the magnet through a scleral incision at the first attempt, after the body had remained in the eye for twenty-one years.

In bodies that are imbedded in the retina and chorioid a week may be sufficient for the formation of an exudation about the metal that will resist the power of any magnet to extract it. If the metal is of large size the magnet may pull it loose, but in small particles; the attempts to remove the metal are futile and the eye is lost. Even a large piece of steel may become firmly bound with lymph in a short time. I have seen a case in which a piece of metal 8 by 7 mm. was localized in the retina and chorioid above and to the nasal side of the disc, and which in one week's time was so surrounded by fibrous material that even the giant magnet could not remove it. Sections of the globe after enucleation proved that the body was imbedded in retina and chorioid alone, and had not penetrated into the sclera, as was suspected when the magnet failed to dislodge it. Since these old injuries must receive treatment, any method that will succeed in removing the steel and save the globe, even though useful vision is not secured, is a distinct gain. I was so impressed with the value of the method suggested by Dr. Jackson of securing these imbedded foreign bodies that I have asked an instrument maker to construct a scissors attachment for the 110-volt hand magnet that I use. I believe that we should have the scissors firmly attached to the magnet, as the loose scissors if not in close contact with the magnet are apt to be jerked out of the wound when the current is turned on, as happened in one instance reported by Dr. Jackson. In this scissors attachment the base of the ordinary tip is hollowed out to receive the rounded end of one scissors blade, the circular portion forming a ball-and-socket joint that permits the blade to be moved in any position. The other blade is jointed with the first, with the joint at some distance from the scissors points, so that there will be only a small amount of separation of the blades in the interior of the globe.

Dr. W. B. Marple, New York: I was glad to hear Dr. Sweet mention this little device of his, because I was going to ask Dr. Jackson if he had not difficulty in controlling the scissors. I understand that he does not turn the current on until the scissors are in the eye. It occurred to me just as Dr. Sweet suggests that there might be a good deal of risk. I know how careful one has to be. Our Hirschberg magnet is so arranged that it can be raised and swung around into any position without difficulty. In one case I carelessly forgot that the table was iron and wondered what was pulling the magnet so when the current was turned on, when it occurred to me it was the iron table. We shifted the patient to a glass-topped table and had no further difficulty. I recall the difficulty of removing some of these bodies even when the magnet is in contact with them. I remember a case some years ago in which the patient had carried the foreign body fourteen years. Dr. Sweet localized it. It was almost against the sclera under the attachment of the inferior rectus. I made an incision of 4 mm. right over the body and tried the Hirschberg magnet, which failed. Then I made a transverse incision with the scissors and again the Hirschberg magnet failed, although one could be quite positive that the tip of the magnet was almost in contact with the foreign body. I had again to lengthen the incisions and then with the tip of the magnet in the opening the foreign body came away with a part of the sac in which it was encapsulated. The traumatism was considerable, and I advised the patient then to have the eye removed because it looked so bad when I was through. He insisted, however, on keeping the eye and has it still, although I thought he was going to have sympathetic ophthalmia. I think if some device like Dr. Jackson's had been used the traumatism would have been much less.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Dr. H. Gifford, Omaha: I think we ought to pay more attention in connection with this idea to the inner-pole magnet. This magnet, as you know, has received little attention in English-speaking countries. The magnet is simply a large series of coils of wire making a large and powerful solenoid. In the center of the coil the head of the patient is placed, the current is turned on and the foreign body, as well as the instrument used inside the ring, is magnetized. I can testify after having used this instrument for several years to the extreme neatness with which we can manipulate a small instrument in the center of this solenoid. You can with the utmost ease go into the vitreous, put the instrument just where you please and if the foreign body is not too firmly attached withdraw it. Some of these points are not any bigger than a discission knife. It seems to me if the scissors were used in connection with the inner-pole magnet we would have nearly an ideal arrangement.

Dr. W. H. Wilder, Chicago: In regard to the scissors suggested by Dr. Sweet, it seems to me that one blade might be made of steel and the other of a non-magnetic material, which might prevent them from closing suddenly when it is not so desired; and the magnetic blade would seize the foreign body just as readily. In this connection I wish to mention a procedure for removing the foreign body after it has been drawn into the anterior chamber with the large magnet, which in a number of cases has proved useful in my experience. It consists in introducing into the anterior chamber the points of a fine iris forceps, or better, the small dressing forceps such as are used in cleansing a cataract wound, and then bringing them into contact with the foreign body. An assistant then brings the magnet into contact with the forceps and a gentle current is turned on. The foreign body is more generally removed in this way and there is less likelihood of the iris being dragged into the corneal wound than when the tip of the magnet is placed in or near the incision. Such a procedure will often be of use, especially when one is not provided with a small hand magnet and a variety of delicate tips.

Dr. E. E. Holt, Portland, Me.: It certainly should be our practice to operate at once in cases of steel in the eye. I remember my first series of cases of this kind reported in the American Ophthalmological Society twenty years ago. It was not the practice to remove steel at that time. The criticism on that paper was that the eye would be destroyed. I have kept up the practice ever since. I have used magnetized instruments as Dr. Wilder has suggested. My experience in the past twenty-five or thirty years has been such that I continue to practice it. I remember at an ophthalmologic meeting about ten years ago a case was brought in and examined by the members of the society and no one recommended removing the foreign body by an operation. It was plainly in sight to the ophthalmoscope. It was allowed to remain and the eye was removed afterward. My experience in removing steel is that the earlier you get at it the more likely you are to save the eye, but I have saved the eye after the steel has been in four to six weeks.

Dr. J. A. Donovan, Butte, Mont.: I prefer an X-shaped incision to the incision Dr. Jackson makes. I think it has several advantages. Recently in all cases in which I am reasonably sure there is steel in the eye I give a hypodermic injection of scopolamin and morphin. It makes it easier both for the patient and for the surgeon. I have not used the scissors-magnet method, yet I have had cases in which I wish I had known of it. We know that the current has a much stronger effect on soft iron than on steel, and as the scissors need not be very hard they might be made of softer material. If a notch were made in the end of the scissors it could be used as forceps if necessary and yet would have all the advantages of scissors.

Dr. R. L. Randolph, Baltimore: As most of us have, I, too, have placed almost implicit confidence in and have been guided by *x*-ray localization. I am sure that all of us have at times marveled at the smallness of the foreign bodies, the accuracy with which they have been revealed and the consequent ease with which they have been removed, and it is only recently that my faith has been shaken. A man who had been blind for nineteen years came to me complaining that for some weeks he had been having peculiar attacks of pain and redness in the eye. The history of the case suggested a foreign body in the eye and I had a colleague make a skiagraph of the eye after the Sweet method. He reported negative findings. The redness and pain persisted and I advised that the eye be taken out, to which he consented. I would not have been surprised if the foreign body had been the size of a pinhead, but it was quite as big as my finger-nail. The object had passed through the eye and the smaller part rested in the vitreous and it was imbedded in the posterior segment of the eye near the nerve. I confess it now makes me feel uncertain in dealing with cases of this kind. The specimen which I have here shows the foreign body to have been about the width of the large blade of an ordinary penknife and in appearance not unlike the end of the latter, having a very sharp edge.

Dr. Edward Jackson, Denver: I can see that the form of scissors suggested by Dr. Sweet may be very serviceable. I think, though, that the difficulties of using the ordinary scissors perhaps appear greater than they really are. It is a thing you can easily try for yourself with the magnet and scissors and a tuft of cotton and some steel; you will be surprised at the ease with which you can use the scissors when in contact with the magnet. I use the broad rounded end of the Johnson magnet just at the joint of the scissors; you will be surprised how little it interferes with their manipulation. Of course you have to remember that you are using force there all the time. I can see that the inner-pole magnet would be peculiarly fitted for this operation, but I have never had an opportunity of using it. With reference to non-magnetic blades in scissors, it occurs to me that possibly one blade magnetic and the other non-magnetic possibly would not draw the foreign body in between the points of the scissors. I have tried to use the point of a Graefe knife in contact with the magnet and failed, and I think perhaps the drawing of the foreign body between the two points of the scissors is essential for success. I can heartily agree with Dr. Holt on the importance of operating at once. Both of my patients were operated on within a week of the time I first saw them, but in one case the accident occurred in Alabama and the other in southern Mexico. I think that probably a notch in the end of the scissors or any device to hold the foreign body would be unnecessary. The thing is to get the body in contact with the magnetic steel. The foreign body is rarely scraped off inside the eye.

The Bed Test in Nervous Dyspepsia.—A. Mathieu relates in the *Gazette Méd. Belge* that few physicians appreciate the importance of the information to be derived from the improvement or lack of improvement in nervous dyspepsia when the patients remain in bed for two or three weeks. Besides the avoidance of fatigue and the reduction of the organic wear and tear, the tendency to ptosis is mechanically combated by this *cure d'horizontalité*, as he calls it, and the results supply the needed clue for treatment. The lack of such temporary repose may annul the benefit of other treatment.

CLINICAL FEATURES OF SO-CALLED ACUTE PELLAGRA

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This paper is based on fifty-one cases of pellagra occurring among the colored female insane patients at the Georgia State Sanitarium previous to Jan. 1, 1909.

The first case noted occurred in January, 1906, but was not recognized. It would appear that cases had been seen at this institution previous to that time, but it was not until the articles of Drs. Searcy and Babcock appeared that the nature of the malady was understood.

During the year 1908, 629 insane colored women were treated, of whom 40, or 6.3 per cent., suffered from pellagra. Of 176 patients admitted during the year, 9, or 5.1 per cent., showed symptoms of the disease when admitted.

The inroads of this disease makes it one of the most important with which we have to deal. During the past year, pellagra, as the cause of death among the colored women, ranked second to tuberculosis only. Since it is being more fully recognized, one may safely venture the assertion that large numbers of cases will be reported.

ETIOLOGY

Use of Corn as Food.—Food products of maize form a considerable portion of the daily diet. From April 1, 1908, to Jan. 1, 1909, the corn-meal used at the institution was grown at home. At all other times it was purchased, and, to the best of our knowledge, was made from corn grown in the western states.

In one instance the patient had been suffering from dysentery for six months before symptoms of pellagra appeared. In the case of a second patient, symptoms appeared after she had suffered three months from dysentery. Both patients had been on liquid diet for the entire time and neither had been exposed to sunlight. A severe vaginitis was noted in the second case. Symptoms of pellagra appeared late in the course of a third case. The nature of the dysentery was not determined and autopsies could not be secured. It certainly does not appear that corn was the causative factor in these cases, unless the toxins are retained for long periods of time before their effect becomes apparent.

Sunlight.—In five instances patients had not been out of doors during a period varying from three to eight months previous to the appearance of the malady.

Age.—In our patients this varied from six to seventy-five years.

Season.—Of the 42 cases developing in the institution, 2 began in January, 1 in February, 2 in March, 2 in April, 3 in May, 3 in June, 1 in July, 4 in August, 5 in September, 10 in October, 5 in November, and 4 in December. Perhaps our cases are not sufficient in number to warrant generalization from them, but it would appear that there is a decided tendency for the disease to occur during the fall and winter months instead of in spring.

Color and Sex.—Without definite facts at hand it appears that pellagra is more common among colored than whites and oftener seen among women than men.

SYMPTOMATOLOGY

Inasmuch as it is extremely difficult to obtain reliable information from insane negroes, we can not make any definite statement as to the prodromal symptoms spoken of by older writers, neither can we say what symptoms usually appeared first. In the majority of instances, dermatitis, stomatitis and diarrhea were noted simultaneously. Vomiting occasionally occurs early, and slight elevation of temperature may be noted and indefinite abdominal pains may be complained of.

Dermatitis.—This is almost always symmetrical in position on extremities and frequently so on face and neck. The skin of the dorsal surface of the hands is the most frequent seat of the lesion. The whole dorsal area may be affected and the lesion sometimes extends to the elbows, where it is often well marked. The face, neck and feet not infrequently show the lesion. In two instances inflammation was noted on both breasts and a small area was noted over the umbilicus of one patient.

Contrary to the statement of several recent writers on this subject, involvement of the palmar surfaces of the hands and fingers does occur, as photographs show. Slight involvement of the plantar surface of the foot has also been seen. The dermatitis varies greatly in extent and severity. In the milder cases slight swelling and redness may be followed by desquamation without exposure of raw surfaces. In the more severe cases blebs may form within a few days of the appearance of the initial lesion. These are filled with clear serum, but may easily become infected. When the fluid is evacuated a thin gelatinous substance usually covers the exposed surface; under this material a reddish granular area is to be seen. Blebs have not been seen except on the extremities.

One must remember that more than 50 per cent. of normal adult negroes show thickening and darkening of the skin over the joints of the fingers. This may easily cause confusion. The dermatitis may recur as in chronic cases and has, in the case of one patient, been noted three times within a period of four months. When it does recur it appears very slowly and its real beginning may be difficult to determine. In the late stages comedones sometimes appear on the cheeks adjacent to the nasal folds, on the chin and may extend to the forehead, giving a somewhat characteristic appearance.

Stomatitis.—Stomatitis also varies in extent and severity. There is usually a reddening of the mucous membrane covering the inside of the cheek, the gums, the edges and under surface of the tongue and the floor of the mouth. This is accompanied by an increased flow of saliva. Following the inflammation a dirty whitish pellicle appears. This is most often first seen on the lower gums behind the last molar teeth. It may not extend beyond this position or it may involve any portion or all of the mucous membrane of the mouth. In one instance a small deposit behind the lower molar teeth was followed within twenty-four hours by an involvement of the whole visible mucous membrane of the mouth. Numerous ragged ulcers have been seen on the inner surfaces of the lips and cheeks and on the gums.

Vaginitis.—This occurred in about 12 per cent. of the patients. The inner surfaces of the labia show deposits similar to those seen in the mouth. A deposit within the vagina itself has not been noted, although the mucous membrane in several instances was of a bright red color and a leucorrhea was present.

A condition somewhat similar to that noted in the mouth was seen in the nose of one patient.

Diarrhea.—This has at some time been present in every case. In two or three only was it absent in the beginning. The movements in the majority of cases do not exceed 5 or 6 daily, usually from 3 to 6. In a few cases the number of movements reaches 10 or 12 per day, but as a whole the diarrhea is not severe. Small particles of mucus and some blood are occasionally seen in the stools. In the later stages constipation often replaces diarrhea.

Nervous Symptoms.—These are not constant as would appear from the descriptions of the chronic forms. Many of the cases running an acute course do not show any symptoms of spinal cord lesions. In two patients afflicted with pellagra when admitted the symptoms of involvement of the motor tracts were extremely well marked. In one the clinical picture was that of amyotrophic lateral sclerosis and death was apparently due to bulbar paralysis. In one case only were there symptoms of posterior sclerosis alone. These were confirmed by autopsy.

Just preceding death marked delirium may supervene.

A considerable general mental reduction is present in many cases. The often quoted tendency to suicide by drowning has not been noted.

Of the patients who develop the disease while in the sanitarium a few have recovered. The mental condition of these do not show any material change from their former condition.

Blood.—The blood of one patient presented a typical picture of pernicious anemia: hemoglobin 35 per cent., red cells 862,000, whites 9,400, polynuclear cells 59.4, small mononuclear 32.8, large mononuclear 4.8, eosinophiles 0.4, myelocytes 2.8. In counting 500 white cells, there were noted 34 normoblasts, 15 megaloblasts and 5 free nuclei. The autopsy findings corroborated the clinical picture. Exclusive of this case the blood findings are of some interest in thirteen other cases in which partial or complete examinations were made. Hemoglobin varied from 65 per cent. to 95 per cent., red cells from 2,500,000 to 5,292,000. The white cells were decreased in 2 cases, slightly increased in 4 and within normal limits in 6. In the differential counts no constant findings of interest were noted. Excluding the above-mentioned cases, nucleated reds were found in three of ten cases in which complete counts were made. One of the chief points of interest in this connection is the fact that nucleated red cells may be found comparatively early in the disease and when the hemoglobin is normal or above. A more extended study of the blood may yield some information of value.

MORTALITY

Six patients were removed from the institution before the termination of the disease. Of the remaining 45, 28, or 62 per cent., died; 12, or 26 per cent., have apparently recovered; 5 patients are still under treatment.

Miner's Nystagmus and Traumatism.—Dransart and Famecion (*Arch. gén. de méd.*, December, 1908, No. 12, p. 749), call attention to the influence of traumatism on the development and aggravation of miner's nystagmus. They find that traumatism in general, and especially traumatism of the cranium, aggravates the nystagmus. Slight traumatisms of the eye—contusions, foreign bodies and wounds of the cornea, lesions of the conjunctiva—frequently cause an aggravation of the nystagmus or a transformation of a latent nystagmus into a visible or manifest one, and in a certain number of cases it localizes itself in the injured eye (unilateral nystagmus). They believe that at least 10 per cent. of the coal miners of the north of France suffer from a slight or latent form of nystagmus which renders their labor less productive and the miners themselves more liable to injury.

THE VAGINAL OPERATION FOR PROLAPSE OF THE UTERUS

GENERAL CONSIDERATIONS

LESTER E. FRANKENTHAL, M.D.
CHICAGO

In order to provide grounds for a common understanding of the subject under discussion, I shall make some rather elementary statements.

1. The normal position of the uterus is anteverted.
2. The external os is to be found on a line drawn from the upper border of the symphysis pubis to the lower point of the sacrum (Suppey).
3. The fundus of the uterus, in the woman standing erect, touches a horizontal line drawn across the top of the symphysis.
4. The external os rests on a line drawn across the spines of the ischium.
5. At birth the external os is on a level with the innominate line, and not until puberty is its normal level reached.
6. The entire uterus is freely movable, the only partially fixed part being the cervix.
7. The position of the uterus is maintained: (a) by its ligaments, (b) by its peritoneal covering (a congenitally low insertion of the peritoneum anteriorly and posteriorly to the uterus is etiologically to be considered in this paper), (c) by the intimate blending of this peritoneal covering with the musculature of the uterus, (d) by its vaginal walls, (e) by its vessels, (f) by the working in unison of the atmospheric and intra-abdominal pressure, (g) by its perineal support, and, then (h) (this we consider the most important of all) by its pelvic connective tissue and the pelvic fascia directly connected thereto, (i) by its nerve supply, through the lack of innervation to the musculature.

THE SUPPORT OF THE UTERUS

In order to prove that the nerve supply plays a prominent part in the support of the uterus, we need merely refer to the numerous cases of prolapse of the uterus in cases of spina bifida of the lower lumbar and sacral spine.

If the pelvic floor had as much to do with the support of the uterus (practically all, if we consult the latest articles on that subject—Halban and Tandler), then why is it that so few old women acquire a prolapse in old age? I have not reference to those who go into old age with a partial or complete prolapse; for, surely, in these old women the perineum is atrophic.

I have carefully examined thirty-six inmates of the Old People's Home, ranging in ages from 60 to 90 years, and have found but two cases of prolapse. In one instance the prolapse had been acquired while the patient was quite young, owing probably to a goiter and severe asthmatic attacks. In the other instance, on account of the mental condition of the patient, 90 years old, I could not obtain a history.

To diverge, it may be of interest for me to state that in two of the inmates, whose ages were 81 and 90, respectively, I found a complete senile atresia of the vagina, about one and a half inches from the introitus. In one, 68 years old, I found a fibroid about the size of a man's fist. In seven women, who, among them, had given birth to forty-two children, cystoceles and rectoceles of varying degrees were found. In only two of them was the external os to be found below the spines of the ischium.

From the summary of these thirty-six cases, the atrophic perineum certainly did not cause prolapse of the uterus. I have not seen a prolapse in a complete laceration of the perineum in which the pelvic connective tissue remained intact, so that the retracted musculature could find a hold on the lateral walls of the pelvis, pubes, and so forth, and I failed to find any annotation of the same in the world's literature.

Here, certainly, the perineal body can no longer give any support to the vaginal walls, and they, in turn, can give none to the uterus. When we realize that by far the most frequent cause of the prolapse is labor, instrumental labor, too rapid instrumental labor, too early bearing down during labor, labor in which there is a disproportion between the passage and the passenger, labor in which there need be no injury apparent to the musculature, in which we see the vaginal walls pushed and dragged down ahead of the presenting part, and in which, during delivery, we fear that there is great danger of the pelvic connective tissue being torn from its lateral moorings. When we see prolapse follow in these cases, we can not doubt but what the connective tissue has much to do—yes, most to do—with the support of the uterus.

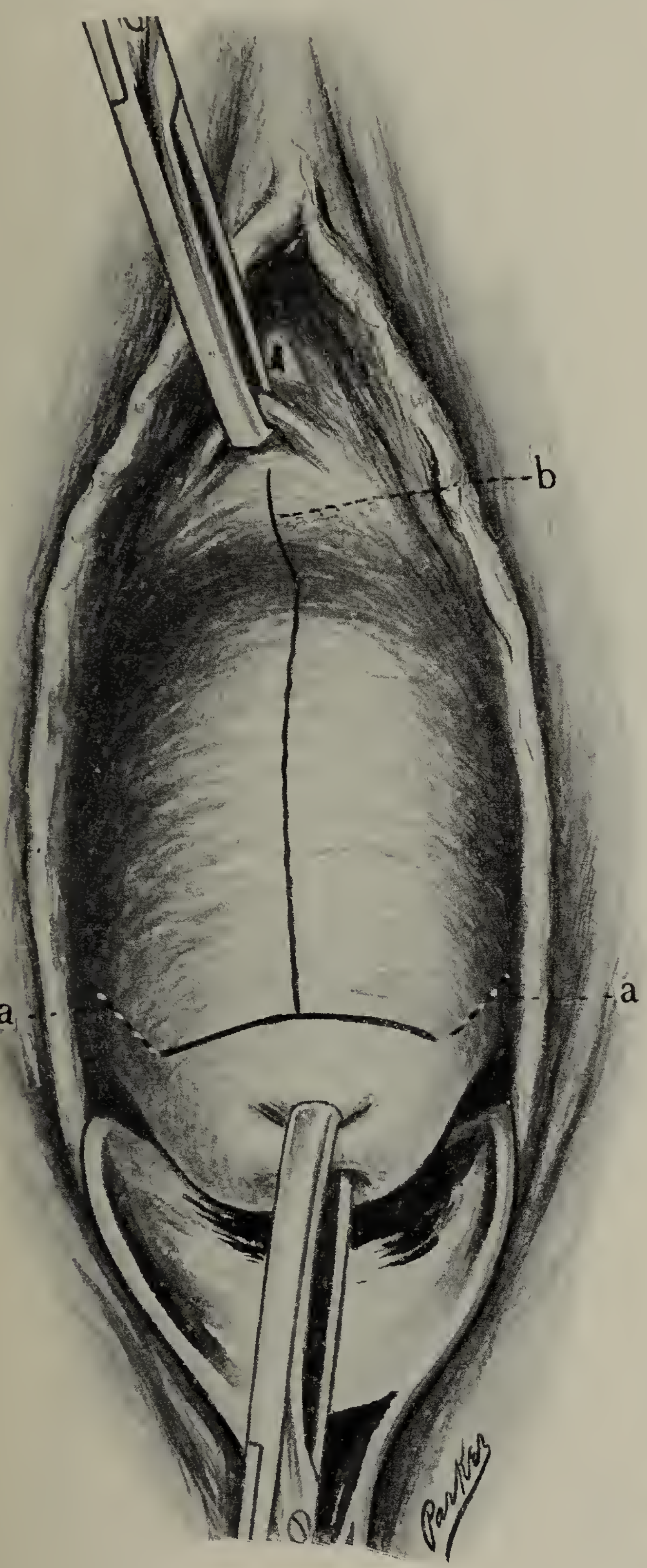

Fig. 1.—Vaginal operation for prolapse of uterus. Step 1 and part of Step 2. (a) straight or U-shaped incision; (b) longitudinal incision.

Goetz cites 67 per cent. of prolapse in difficult labor; 7.5 per cent. in ascites, tumors, pressure from above, and I have added to etiology, stones in bladder (Michael Reese case); 0.8 per cent. in traumatic cases, falls, and so forth; 24 per cent. in mild cases, including the malformed and infantile cases.

Again, we have all experienced in our gynecologic examinations and operations how firmly fixed at its level, though movable backward, forward and sideward, a uterus becomes; practically unapproachable vaginally, since it can not be pulled down during an operation; and then, when we open the abdomen, we find but a few adhesions, and at the time when they become established there existed the old-fashioned connective-tissue inflammation, "cellulitis." It is the scars under that peritoneum that fix that uterus. This again goes to prove how much the connective tissue has to do with the support of the uterus.

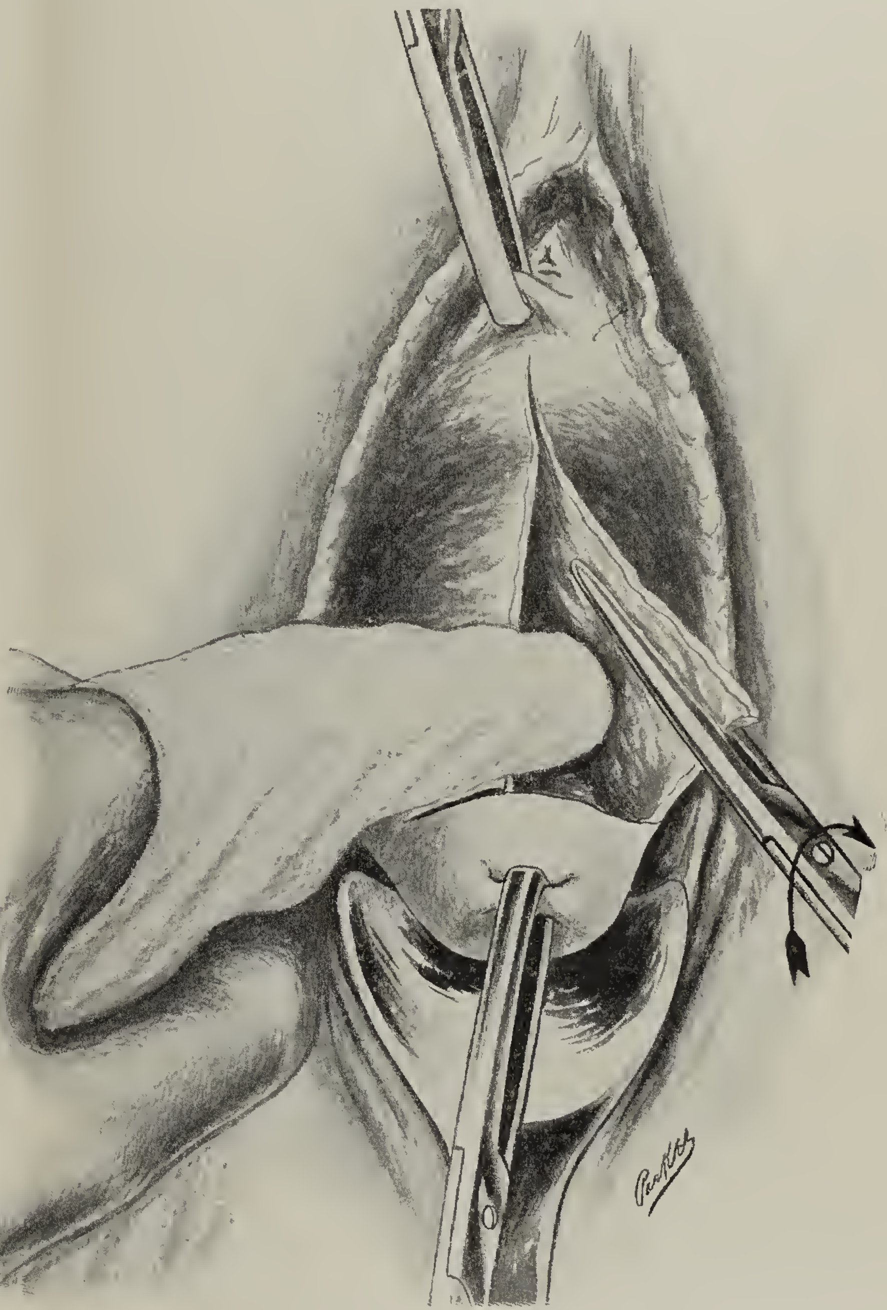

Fig. 2.—Step 2; loosening anterior wall from bladder.

RESULTS OF PROLAPSE

Recently I read somewhere that eroded surfaces on the cervix of a prolapsed uterus were primarily cracks or fissures in the mucosa from the weight of the uterus, and I believe this contention to be correct.

If an anteverted uterus prolapses, the posterior vaginal wall prolapses first. Since this, however, is rare, and since prolapses occur more frequently in retroflexed uteri, the anterior wall prolapses first more frequently. This will be followed by the bladder, the uterus and the posterior vaginal walls, in the order named.

Kolischer says vesical displacements vary in degree from slight to total, from cystocele to complete prolapse. He cites the case in which a cystoscopic examination showed a glowing globe in the vagina.

It is interesting to study Halban's photographs and note the degrees of involvement of the bladder and the peritoneum. The distal portion of the urethra is sometimes involved, though rarely. The proximal end proportionate to the involvement of the bladder.

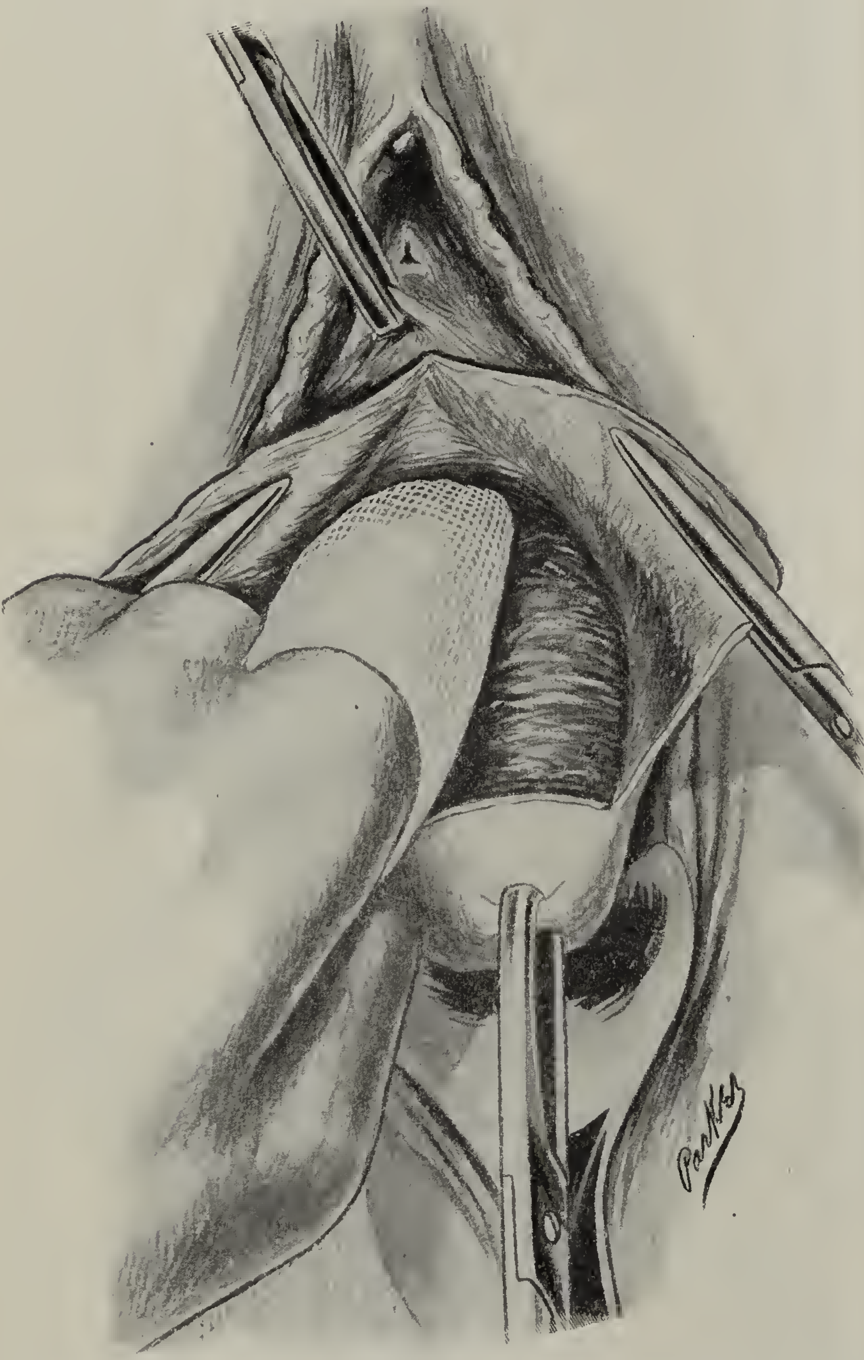

Fig. 3.—Step 3; bladder being pushed up to peritoneal reduplication by finger covered with gauze.

Halban states that he found the pelvic portions of the ureter dilated in 66 per cent. of the cases.

In these cases of complete prolapse with rectocele, it is found to be of extreme importance to establish the exact relationship of the rectum to the posterior vaginal wall and peritoneum (Douglas). This is done the day before the operation. We know that the rectum in these cases first loses its perineal curve, then the rectocele forms, and if feces collect in the same it pouches forward into the vaginal canal, and in severe cases out through the vulvar orifice.

Bearing in mind that the arbor vitæ, the end of the cervix and beginning of the uterine body, the entrance of the uterine artery, the attachments of the peritoneum and the microscopic difference between the cervical and uterine mucosa establish the site of the internal os as accurately as this can be done, it is interesting to note that not only the cervix, as is commonly believed, but likewise the entire uterine body frequently undergoes an elongation.

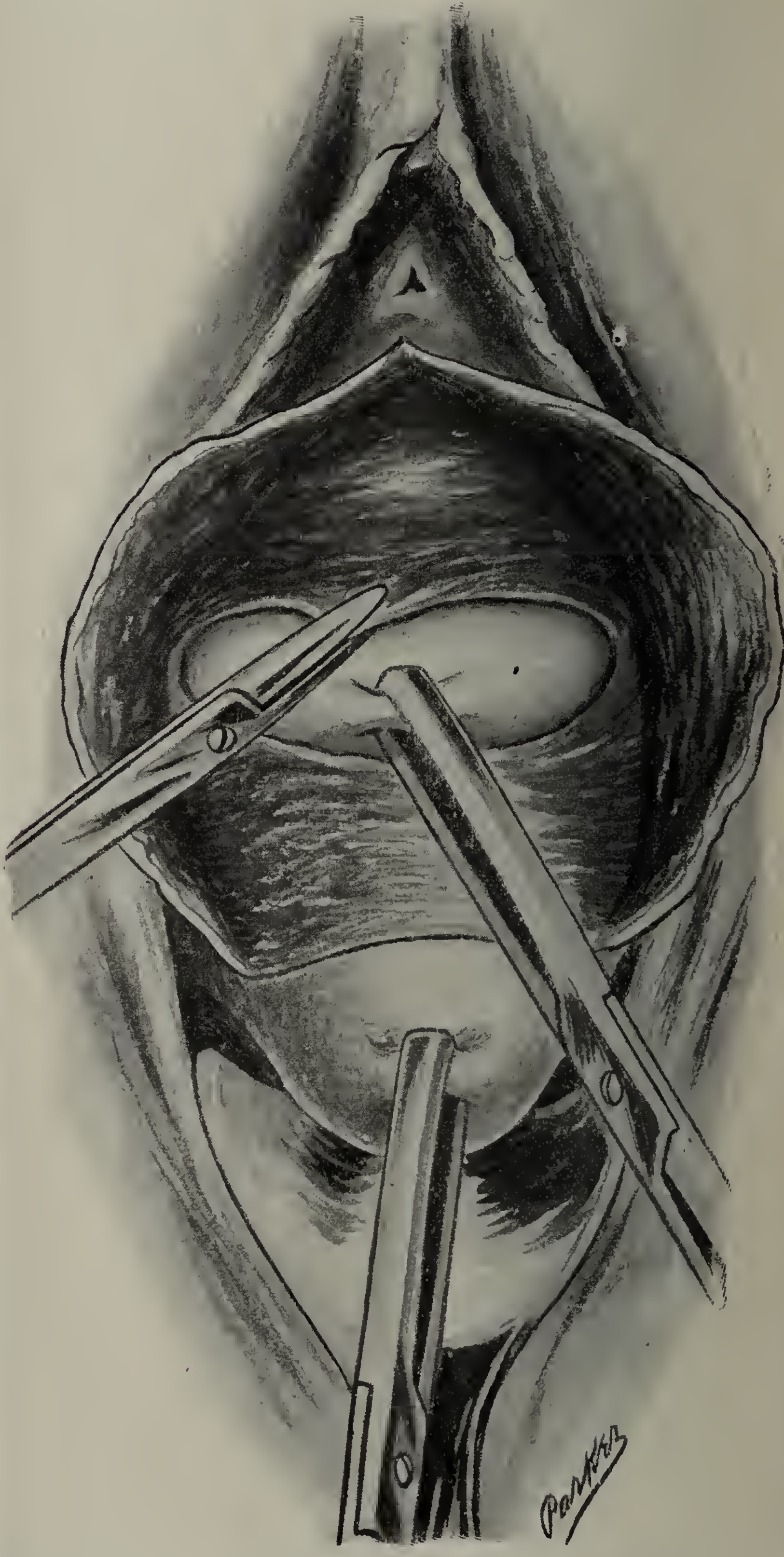

Fig. 4.—Step 4; peritoneum opened; uterus about to be delivered; anterior fold of peritoneum in three-inch clamp.

Halban noticed difference of from 3.75 to 8 cm. from the internal os to the fundus.

In the event of an indication to do an abdominal operation for the relief of prolapse, it is worth while to take into consideration the original suggestion made by Dr. E. E. Montgomery, to add to whatever operation was done the obliteration of the pouch of Douglas, when it is usually low, the result of this procedure being to bring it on a higher plane.

A deep, infantile, low anterior and posterior pouch of Douglas is frequently observed when the abdomen has been opened for the relief of some other pathologic conditions than prolapse.

HISTORY OF THE VAGINAL OPERATION

To W. A. Freund no doubt belongs the credit of having first cited and performed the vaginal operation for the relief of prolapse of the uterus. This operation has been more or less modified by all of us who have had a fairly large experience with the same to suit our own indications and intentions.

Schultze, Mackenrodt, Peter Miller, Frank, Duhrssen, Byford, Montgomery, Berry, Hart and Bellini as early as 1835 all deserve mention for pioneer work, and Kolischer for his cystoscopic descriptions, which, by the way, are the only ones I could find in the literature.

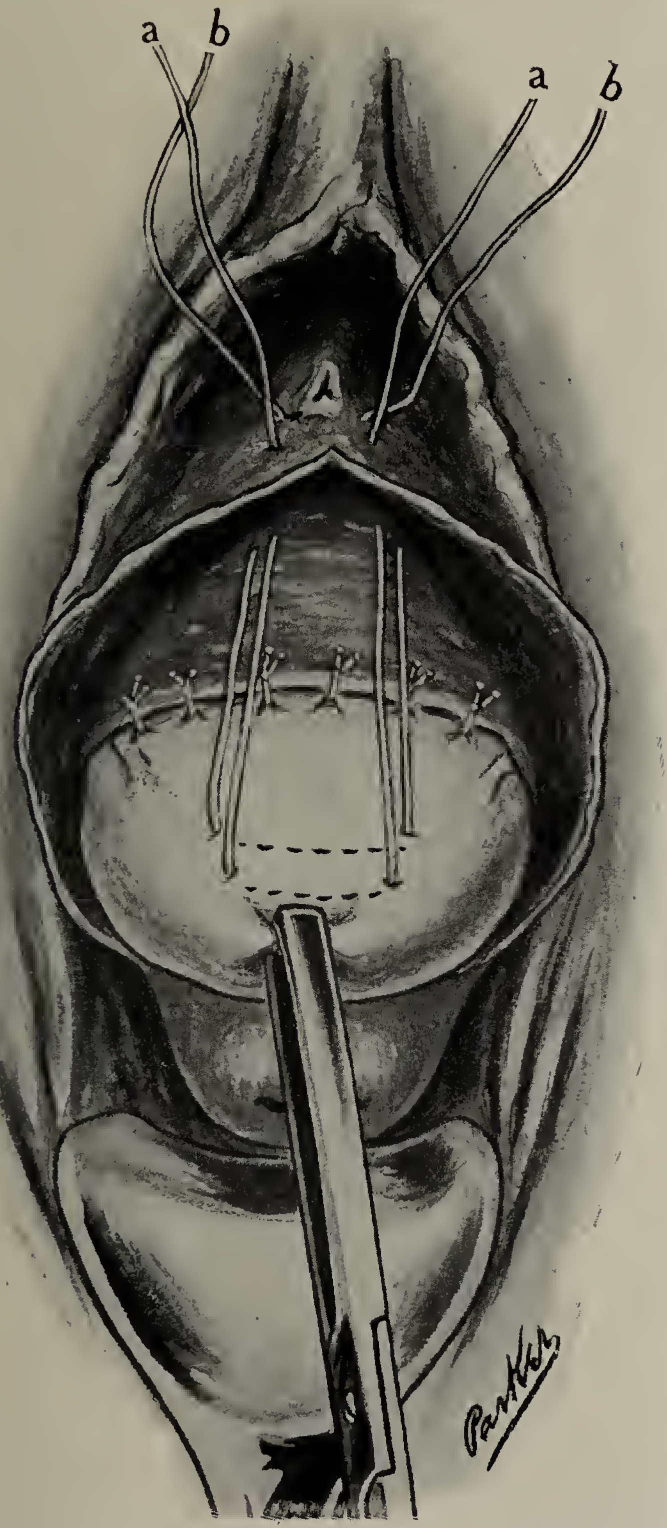

Fig. 5.—Twenty-day chromicized catgut stitches through posterior wall of uterus and vaginal mucosa and connective tissue.

Now, in order that the original Wertheim operation, published in April, 1899, may be better understood, I will briefly summarize the three steps of the operation as originally performed and described by Wertheim:

1. Transverse vaginal cut above cervix; open into anterior pouch of Douglas; deliver uterus; sew angles of cut up to sides of cervix.
2. Denude the anterior vaginal wall from external urethral orifice to within 1.5 cm. of the transverse cut.
3. Denude the posterior wall of the uterus by scraping and then pull it out so far that the uterus can be attached to the freshened vaginal borders all around.

Wertheim suggests in the same report that one might loosen up the vaginal wall sufficiently to cover the entire uterus.

One of the main points in the Wertheim operation is the fact that his sagittal and transverse vaginal cuts do not meet; that the neck remains covered with intact vaginal mucosa. He believes that he thereby increases the stretching of the uterine body. So far as I know, none of us have followed his method in this particular.

Dr. Watkins performed his first operation in January, 1898, but did not publish his method until November, 1899. It was as follows:

> The bladder was separated from the uterus by blunt dissection and the peritoneal cavity opened in front of the uterus. The anterior wall of the uterus was grasped by bullet forceps and the organ anteverted. About two inches of the upper portion of the anterior vaginal wall was excised. The anterior vaginal wall was now sutured to the upper border of the broad ligaments lateral to the uterus, and to the fundus of the uterus with silkworm-gut sutures. The posterior vaginal wall was incised longitudinally in the medium line from the cervix downward about one inch so as to allow the cervix to be displaced upward and backward. The wound in front of the cervix was now closed by silkworm-gut sutures inserted transversely; that is, parallel to the line of incision anterior to the cervix. One silkworm-gut suture secured the cervix in the angle of the incision in the posterior vaginal wall. Emmet's perineorrhaphy was made to correct the prolapse and displacement of the posterior vaginal wall.

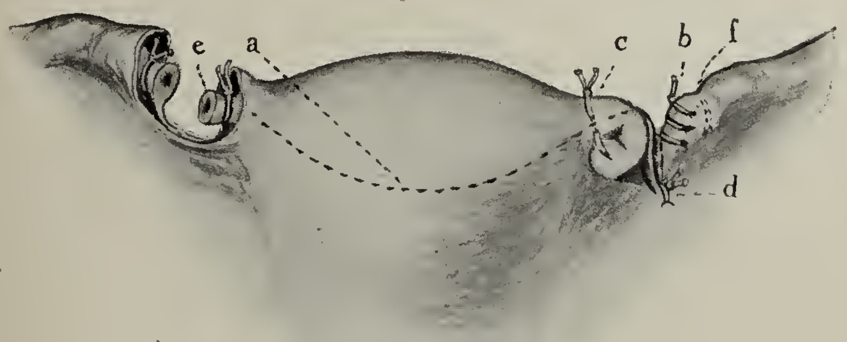

Fig. 6.—Details of Step 7: (a) curved dotted line represents peritoneum attached to posterior wall of uterus; (b) peritoneum covering stump stitched in place; (c) proximal end of tube curled on itself and fixed in that position by stitches; (d) peritoneal screen drawn in between severed parts of tube; (e) proximal end of stump ligated; (f) distal stump of tube ligated, then covered by its own peritoneum, and finally by vesical peritoneum, making it intraperitoneal.

REVIEW OF EXPERIENCES WITH AUTHOR'S METHOD

My first operation was done in the early part of 1900, by the method subsequently to be described. The operation (Record 18602, March, 1902) is described by Dr. A. Merrill Miller, my resident physician, as follows:

> An incision and denudation for an anterior colporrhaphy was done before incising of the peritoneum and eversion of the fundus uteri. The left tube was denuded of peritoneum for about 2 cm., removed, ends tied with silk, and the ends overlocked with catgut sutures. Similar treatment was accorded that of the right side. With the fundus strongly anteverted, silkworm gut was used as anchor stitches, three being put in. A running catgut united the anterior mucous membrane and assisted in holding the uterus anteriorly. A small perineal tear was repaired. The vagina was lightly tamponed with iodoform gauze. The result of the operation was good.

My patients ranged in age from eighteen to seventy-two years; from nulliparæ to women who have given birth to twelve children; they included one virgin, Seven operations were done without anesthesia, in old women, before the use of nitrous oxid gas became so widely recognized as a safe anesthetic during long operations.

Many of the records of my cases have been lost. The greater number of my operations were performed during my service at Michael Reese and St. Luke Hospitals, both of which have moved into new buildings. During the removal, unfortunately, some of the records were misplaced. The greater number of the patients, however, are still under observation; and I have in my possession nearly seventy records of operations done at one hospital. That leaves unrecorded all the operations performed during my service at another hospital during the last eight years and in private, which would bring the number easily above ninety.

Judgment must be used in selecting the cases. For instance, in two cases the prolapse returned because the uterus—in an elderly woman—was exceedingly small, and I could not get sufficient support from the atrophic, narrow uterus to carry the bladder. In another case, that of a young woman, there was a return, due, I believe, to an error in technic. I did not fix the fundus sufficiently close to the urethra, or sew the vesical peritoneum sufficiently low on the posterior wall of the uterus, and fundus and bladder came down together.

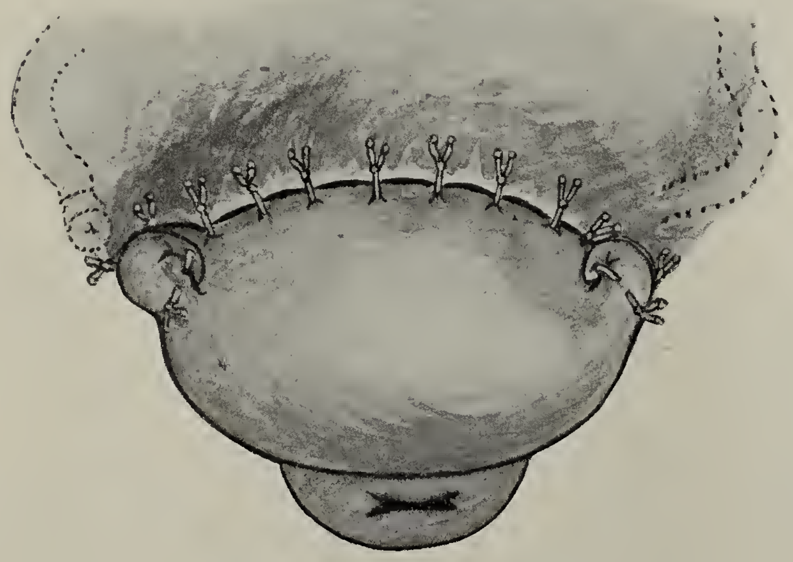

Fig. 7.—Steps 6 and 7; peritoneum attached to posterior wall of uterus; proximal ends of tubes curled on themselves and stitched in place. Dotted lines represent distal and intraperitoneal parts of tubes.

I see my patients frequently at Michael Reese or St. Luke's hospitals, at the dispensary, and in private practice, for one reason or another, and, so far as I know, these three cases are the only returns. Deaths, I have none to report. I can sincerely recommend the operation.

Let me mention one more complication that may follow the operation. In my earliest cases, before I learned to loosen the bladder well from its lateral attachments to the parametrium, I had trouble from that viscus, and in one case a bad cystitis.

My results have been eminently satisfactory. I have intentionally abstained from reporting this operative work until now, so that a sufficiently long time might elapse to justify a final opinion. The object of this paper is to recommend the operation soon to be described, but by no means to condemn any others that are being practiced, except extirpation of the uterus for prolapse pure and simple.

AUTHOR'S OPERATION IN DETAIL

I will now describe the operation in detail, as done by myself for more than eight years, since 1900.

If there is much edema and congestion I keep the patient in bed, with the foot of the bed elevated, for a few days before the operation. If there is an endometritis present, or a lacerated cervix, or an elongated cervix, this is surgically dealt with before beginning the operation proper.

1. If the uterus is very large, a transverse U-shaped incision is made; if not very large, a straight incision, across the anterior surface of the cervix.

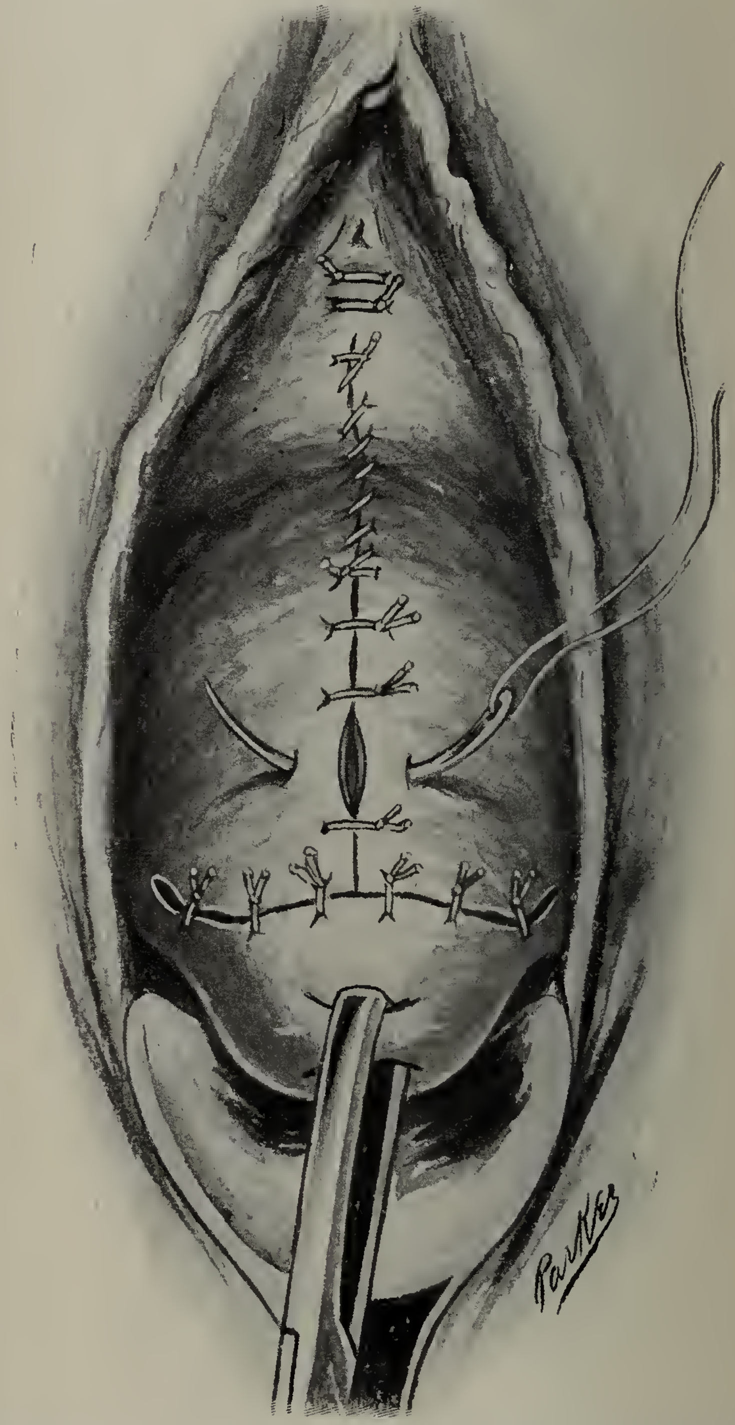

Fig. 8.—Steps 10 and 11; closing of transverse cut; closing of longitudinal cut with running and interrupted stitches.

2. I at once connect this incision with one that starts about 1.5 cm. from the external urinary meatus, to meet the transverse one sagittally. I now prefer to loosen the anterior vaginal wall from the bladder before loosening the bladder from the uterus, believing it to be more easily accomplished while the bladder is still firmly attached. I now check all bleeding, ligating where necessary with 00 chromic catgut.

3. I loosen the bladder up to the peritoneal reduplication. This, in cases of prolapse, is sometimes very difficult, because (a) there may be a congenitally low insertion of the peritoneum, and while I am hunting for the peritoneum at the tip of my finger it is being under-

mined and is riding on the top of the finger which is doing the separation; (b) the anterior pouch of Douglas may have become entirely obliterated through adhesions formed secondarily, after the prolapse is in progress (fatal cases are reported from attempts at replacement of this variety). A male urethral sound, as large as the meatus will permit, passed into the bladder is of great assistance here, and likewise separating the bladder laterally first, will bring one into the correct layers for median separation. Again, all hemorrhage must be checked, the cervical artery being frequently torn. All this time the peritoneal cavity has not been invaded. Now, I separate the lateral attachments of the bladder from the parametrium, for unless this is done the bladder will be held down laterally, while at its middle it will ride on the posterior wall of the everted uterus, resembling a letter U turned upside down. Cystitis due to retention in these pockets will follow. Thus, in one of my earliest cases, I was compelled to do a secondary operation (St. Luke's case), which relieved the condition.

4. I now open the peritoneum, introduce a speculum anteriorly, and push the bladder up against the symphysis and out of the way. Before delivering the uterus, however, I catch the anterior fold of the peritoneum in a three-inch clamp, since it is at times exceedingly difficult to find the peritoneum after the delivery of the uterus through the opening made in the peritoneum. Especially is this true if the uterus is bulky and the introitus of the vagina narrow.

5. I deliver the uterus.

6. I at once sew the anterior peritoneum held in the three-inch clamp to the posterior wall of the uterus with a running catgut stitch, as low as possible, near the internal os, unless I wish to ligate the tubes.

It will be noted that the peritoneal cavity does not remain open for more than a few seconds; besides, no blood and no raw surfaces come in contact with the peritoneal cavity. And, besides, this attachment of the peritoneum serves to hold the uterus in the exaggerated anteflexed position. If, however, the patient is still in the child-bearing period, I do not sew the peritoneum posteriorly quite as low as in the climacteric cases, since we need the peritoneum later on to assist in the perfect separation of the two cut ends of the tubes.

7. I then make a circular cut through the peritoneum of the tubes. About 1.5 cm. from the cornu of the uterus strip the peritoneum back both ways, ligate the tube twice with fine silk, cut out a piece of the tube between the two ligatures, and then draw the peritoneum back over the raw stumps, sewing it up with fine chromic catgut. Then, curling the proximal stump under itself, I sew it once more in that position.

8. I now lead the peritoneum in between the two cut surfaces of the tube and fix it in the gap with one or two catgut stitches. This, technically, is not very easy, but quite possible, and I consider it very essential for many reasons. It makes all of the operation extraperitoneal excepting the distal part of the tube, which is intraperitoneal, though well covered with peritoneum. (I call it a peritoneal screen). And then pregnancy is thereby absolutely prevented (Ries).

If the uterus is very large, a strip may be cut out of it, and if it contains fibroids they may be enucleated.

9. I fix the uterus as close as I possibly dare to the urethra against the pubic bones. I use twenty-day chromicized catgut for this purpose, beginning at the upper end of the vaginal incision, going through the vaginal mucosa to the side of the urethra, then the connective tissue, through the posterior wall of the uterus, and out again on the opposite side of the vaginal mucosa. Two such stitches are placed and closed at once.

10. I now sew up the original transverse vaginal cut.

11. If there is redundant vaginal mucous membrane, more than I need to cover the uterus, I cut this away and close the anterior vaginal wall by short running and interrupted stitches, after having replaced the cervix back into the vagina in the hollow of the sacrum.

12. Last, I do as high a colpoperineorrhaphy as the sexual life of the patient will permit, being assisted in this by the knowledge of the exact relationship of the rectum to the vaginal and posterior pouch of Douglas by the examination made the day before the operation. The vagina is cleansed, packed with vioform gauze to stop all oozing, the bladder emptied and the patient placed in bed.

It takes me about one hour to do the operation, without ligation of the tubes; about one hour and a quarter in cases in which sterilization is indicated.

I let my patients rise to urinate and let them out of bed on the third day (Ries), unless there are some particular reasons for keeping them confined.

SUMMARY

1. The two essential features in this operation are: (a) the tamponing of the vaginal outlet and the support of the bladder by the artificially fixed uterus; (b) the repair of the perineal body, vagina and muscles and the narrowing of the vagina, which sustains the atmospheric pressure, while the intra-abdominal pressure is brought to bear from the direction of the spine and assists in maintaining the fixed uterus in position.

2. Operative cases must be divided into (a) the child-bearing, (b) the non-child-bearing, (c) tumor cases, and they must be dealt with accordingly.

3. It is necessary to differentiate between mere hypertrophic elongation of the uterus and prolapse of the vagina, on the one hand, and simple prolapse of the uterus, on the other. For instance, the fundus might be at its proper height; the external os might be, however, away below the spines of the ischium.

4. To Wilhelm Alexander Freund belongs the credit of first having performed the operation in its most essential features; all subsequent operations done abroad and at home are either valuable additions to or mere modifications of Freund's operation.

5. Pregnancy is the only serious contraindication to the operation other than those mentioned.

6. The operation has its limitations, as described in this paper.

7. For cystocele I know of no better operation.

8. For prolapse of the uterus it is the most serviceable procedure I have employed in the last twenty years.

9. The pelvic connective tissue is the essential factor in the maintenance of the proper elevation of the uterus in conjunction with the other structures referred to.

10. The pelvic floor does not deserve the credit of being the mainstay of the uterus.

11. Complications, such as tumors of the adnexa and uterus, can be dealt with through the same peritoneal incision. Even posterior vaginal drainage could be employed if deemed necessary.

12. The peritoneal cavity (in uncomplicated cases) does not remain open for more than a few seconds;

therefore the dangers of shock, infection, intestinal adhesions, intra-abdominal hemorrhage and the loss of sponges, instruments, etc., in the abdominal cavity are out of the question.

13. Sexual life is absolutely satisfactory.

14. Menstrual complications have never been observed following the operation.

15. The urethra loses its S shape and becomes elongated. but neither incontinence nor retention have followed the operation since I have learned how to avoid them.

16. Pregnancy must not be allowed to occur after the operation just described, so that every possible conservative surgical device must be insisted on to prevent the same.

17. In old women the operation can be done with very little pain without anesthesia. The incision into the peritoneum and later on the skin incision in the perineum are the only painful parts of the operation. The latter could be done under local infiltration anesthesia.

18. All anatomic parts touched during the operation remain extraperitoneal, except the stump of the distal part of the tube, and it is carefully covered with peritoneum.

19. There ought to be no fatalities, barring surgical accident.

20. The permanent results of the operation after eight years' experience are as perfect as after the best known surgical methods of treating any hernia in any other part of the body, two-thirds of 1 per cent. of relapses being my results in nearly a hundred cases.

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THE PROPHYLAXIS OF INTERSTITIAL KERATITIS*

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OMAHA

Considering the great interest to the oculist of interstitial keratitis, the question of its prophylaxis has received very shabby treatment. While it may be discussed in some of the numerous works that I have not seen, I have found no mention of it in any of the dozen English, German, and French text-books and handbooks that I have consulted. The nearest approach to a discussion of the subject that I have seen is in a valuable paper by C. S. Bull, in which the conclusions of Fournier as to the prophylaxis of hereditary syphilis in general are quoted. And yet the subject is one which should receive careful consideration, by the oculist and syphilologist as well as by the general physician.

By interstitial keratitis, in this paper, I refer only to the typical form, which occurs almost always between the ages of three and sixteen years, and almost never after the twenty-fifth year. The more I see of this disease the more convinced I become that Hutchinson is right in attributing practically all of it to inherited syphilis. I know that Panas and Fournier place the ratio at only about 41 per cent. I know also that this disease is caused by tuberculosis more often than was formerly supposed; also that Sedan[2] asserts that in Algiers it is more often caused by malaria than by syphilis; also that Neal[3] has frequently seen it in China apparently as a result of severe diarrhea; but, on the other hand, Mauthner and Silex find the ratio of syphilitics to be 80 per cent. and 83 per cent. respectively; and, in a recent careful study of the subject, Stephenson[4] of London finds a ratio of 69.3 per cent. In the agricultural region in which I practice, where tuberculosis in children is relatively rare and the average nutrition rather high, I find other well-marked signs or histories of inherited syphilis in approximately 90 per cent. of my cases of interstitial keratitis;[5] and when we consider how often it is impossible to get a history in direct infection, I believe it is safe, in the absence of other obvious causes, to make a tentative diagnosis of syphilis in all cases of interstitial keratitis in patients between the ages of two and twenty-five. This, of course, does not mean that syphilis is unusually common in this region, but simply that the other causes of impaired nutrition are relatively inactive. For myself, then, the problem of the prophylaxis of interstitial keratitis resolves itself, for practical purposes, into the prevention and cure of syphilis, particularly of the hereditary form—a field so wide that only a few of its features can be treated here. With the prevention of syphilis in general, with the exclusion of syphilitics from matrimony, with the treatment of the parents, this paper need not concern itself. These points are amply considered in general works. Nor can I attempt to discuss any large part of the diagnosis of hereditary syphilis. I shall merely lay stress on certain peculiarities of the teeth as aids in diagnosis, on the treatment of the disease when it has broken out in one eye and on the prophylactic management of children marked with the disease but without any active manifestations of it.

To take up the last-mentioned phase of the question: I think it is highly probable that if all children between the ages of three and sixteen could be examined for the more obvious signs of inherited syphilis, and if those showing such signs could receive a long-continued course of specific treatment, controlled if possible by the serum diagnosis test, the number of cases of interstitial keratitis and of syphilitic deafness could be greatly reduced. Such examinations should be conducted by the physician in all families in which any member of the family has a history or symptoms which arouse a suspicion of syphilis. In public institutions all children should, on entrance, be inspected with this point in view, and when positive signs are found the appropriate treatment should be carried out. even if the child is otherwise apparently healthy. This recommendation as to treatment may need qualification if it turns out that the serum diagnosis is reliable in inherited syphilis. If this proves to be the case the treatment may perhaps be safely omitted in those showing repeatedly a negative result of the serum test; but even then the latter would have to be repeated at intervals of several years.

THE TEETH AS AIDS IN DIAGNOSIS

In the diagnosis of inherited syphilis the ordinary signs are well enough known. An excellent description of these and of many less common signs is given by

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Med. Rev., April 4, 1908.

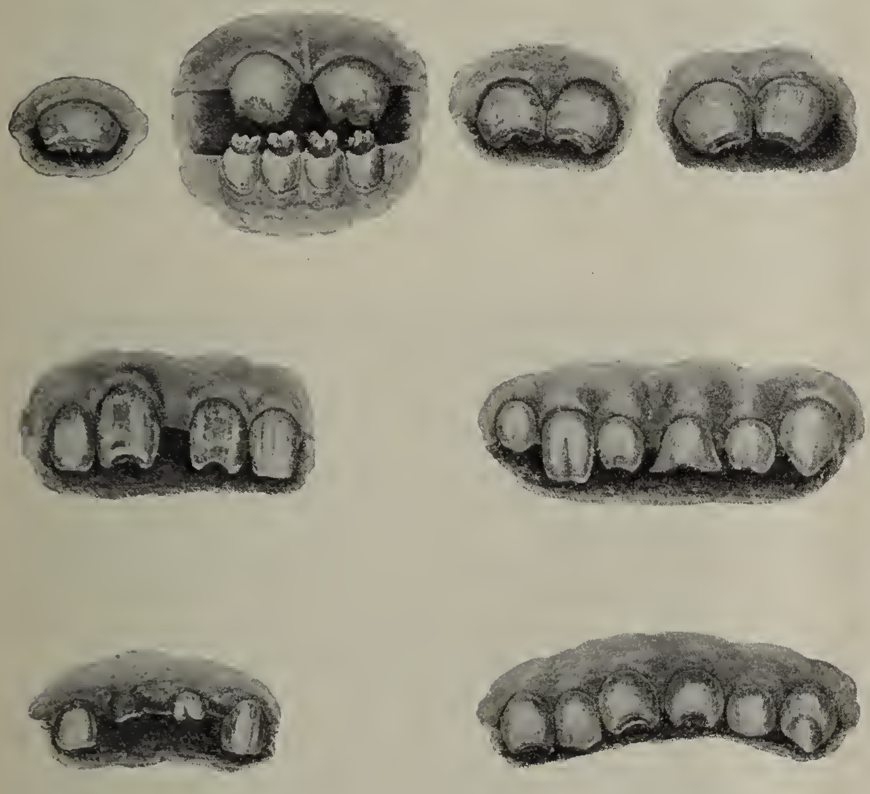
[2] Abstr. in Arch. f. Augenh., 1888, 4, p. 443.

[3] Ann. Ophth., April, 1908, p. 369.

[4] Reprint from Med. Press and Circular, Dec. 25, 1907.

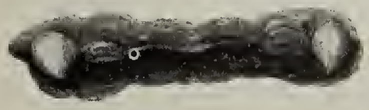
[5] In this estimate I exclude traumatic insterstitial keratitis (known in one of its forms as disciform keratitis), as well as certain one-sided forms of the disease which occur in adult life.

Fournier.[6] I merely wish, in this connection, to emphasize the importance of certain dental peculiarities. The old well-worn Hutchinson incisor is often scandalously misrepresented in otherwise excellent text-books. To give a fair idea of the Hutchinson teeth no one picture can suffice. To illustrate this I reproduce some of the figures (Fig. 1-10) from Hutchinson's original papers.[7] These central permanent upper incisors, on their first appearance, show instead of a notch, a central irregular lobe, as in Fig. 2, which generally wears away soon but which sometimes persists for several years. Later on the notch itself is obliterated by the rapid wearing away to which such teeth are subject. Hutchinson says that the notch is never seen after the age of twenty-five or thirty, but I can not recall a case in which it could be seen well after the age of fifteen. When the notch is gone the character of the tooth can still be recognized in many cases by the fact that the lateral lines after bulging slightly, half-way between the gum and the edge of the tooth, converge slightly till they meet the cutting edge. This bulging of the lateral lines I consider the most permanent feature of the Hutchinson tooth. With regard to the milk teeth, Hutchinson, in his second paper, made some important observations which have practically passed into oblivion; at least I have not seen them mentioned by anyone else. One of these refers to the condition shown in Figure 9, in which the incisors are small and discolored while the canines are healthy-looking. This is a frequent condition in syphilitic children of the age subject to this condition. Figures 10 and 11 show another peculiarity of the milk canines on which Hutchinson lays great stress, and which I have seen a number of times. A central discolored blunt peg projects from and is separated by a shallow groove from a base or collar of normal-looking tooth tissue. If we imagine the same sort of defect occurring in a molar tooth we shall have a defect on which great stress has been laid by Darier, although it was, according to Suker, first described by the elder Fournier. Darier[8] describes these syphilitic first permanent molars as having the summit formed by four tuberosities or tubercles of a yellowish color surrounded by a groove separating them from the whiter enamel-covered body of the tooth, which bulges out on all sides beyond the tuberculated crown. These tubercles soon wear down or become carious so that unless seen in early life one finds simply a carious crown (or, as Edmond Fournier[9] says, if caries does not set in, such teeth later on present a characteristic flat summit devoid of the normal cusps). Figure 12 shows the cast of such a molar from one of my own patients. Figure 13 is a reproduction of the cut accompanying Darier's paper. It shows, instead of four tubercles, which he describes, a central irregularly crenated mass, a form also described by Fournier.



Figs. 1-8. "Hutchinson" teeth; lobed and notched incisors.

I consider these Fournier molars and the peg-shaped milk canine of Hutchinson to be fully as characteristic of syphilis as the Hutchinson incisor, and their recognition is of the greatest importance, since they often can be seen either together or separately at an age when the permanent incisors are not to be seen. The only mention of the tuberculated first molar that I have seen outside the writings of Fournier and Darier is in Suker's paper.[10] Another form of syphilitic tooth on which Darier lays stress is the tuberculated permanent canine shown at the right of Figure 8 and in Figure 14. Hutchinson also mentioned this form but did not consider it so characteristic of syphilis as did Darier. I have only seen a few examples of it, but they have all been in patients with other well-marked signs of syphilis.



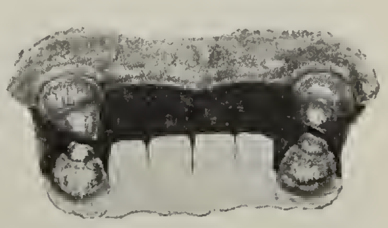


Fig. 9.—Small, discolored incisors with healthy canines.
Fig. 10.—Milk canines in which a discolored blunt peg projects from a base of normal-looking tooth tissue.

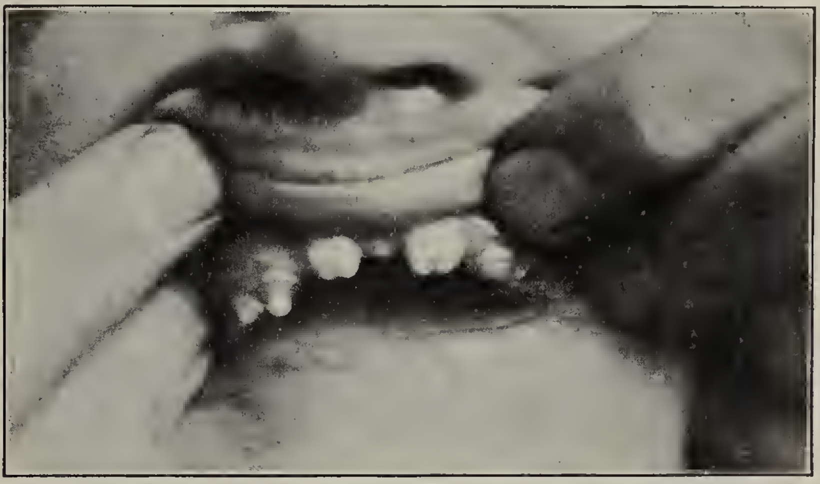


Fig. 11.—Girl, aged 8 years, subject of interstitial keratitis. Note characteristic permanent incisors and equally characteristic temporary canines. This girl also has well-marked Fournier molars.

There is one other form of first permanent molar which I have observed in children with interstitial keratitis and other signs of congenital syphilis, and which I have not seen mentioned by any author. This is what I call the sloped molar, shown in Figure 15. In this form the base of the tooth as it emerges from the gums is much wider than the crown, the cusps being fairly well formed, with little or no tendency to decay. I have seen it only half a dozen times but in all these cases it was of some importance, as the other teeth showed nothing decidedly wrong. It is probably due to the same influences of malnutrition which when acting more decidedly produce the Fournier molar.

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[6] Fournier, Edmond: L'hérédo-syphilis tardive, Paris, Masson & Cie.

[7] Tr. London Path. Soc., ix and x.

[8] Bull. et mém. Soc. franç. d'opht., 1903, p. 216.

[9] L'hérédo-syphilis tardive, p. 100.

[10] Reprint from Medicine, September, 1904.

TREATMENT

As to the prevention of the disease in the second eye, after it has once appeared in one eye, the sentiment appears to be universal that treatment has but little influence in this respect; and for many years, while under the influence of the idea that interstitial keratitis was, at most, a parasyphilitic manifestation of malnutrition, I used the specific treatment with moderation only, and invariably obtained negative results in the attempt to prevent the affection of the second eye; in fact, the immediate effects of antisyphilitic remedies were so slight that I placed little reliance on their use; but since the discovery of the spirochete, the evidence that the disease is due to an active invasion of this germ has become so overwhelming that the necessity for radical specific treatment is patent.

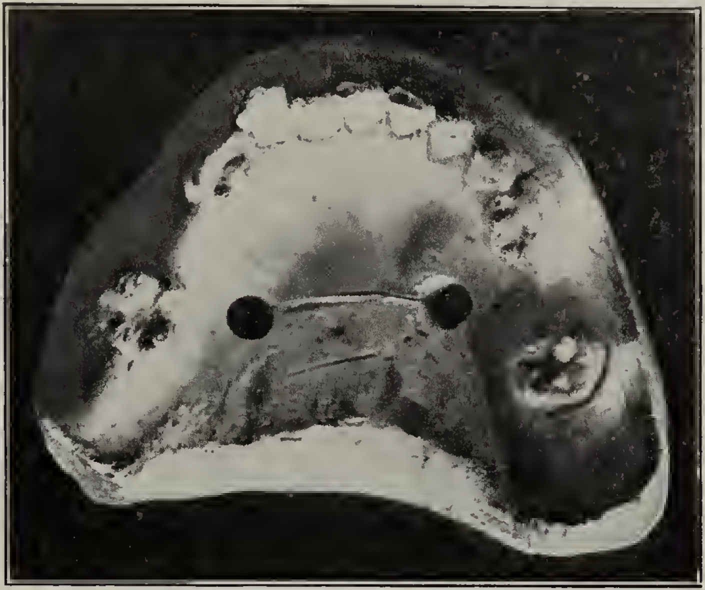

Fig. 12.—From 6-year-old child with interstitial keratitis. First permanent molar at the right is of the Fournier or Darier type.

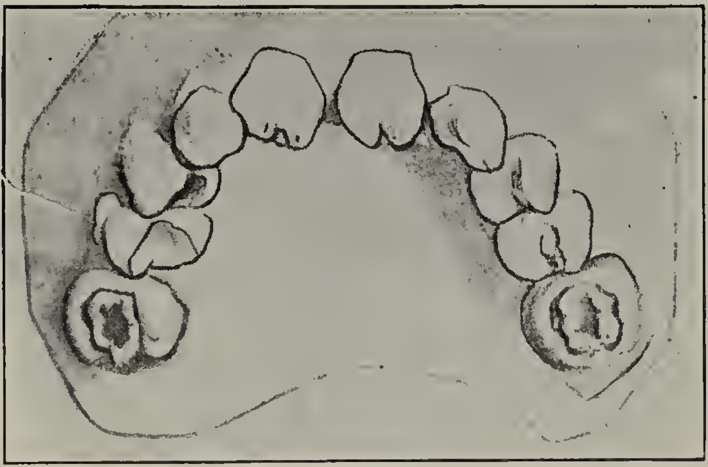

Fig. 13.—Reproduction from Darier's paper showing characteristic permanent molars with central discolored mass crenated, instead of tuberculated.

For the last three years I have treated interstitial keratitis with the same vigorous course of inunctions which I should use in an ordinary syphilitic iritis, having a piece of the mercurial ointment about the size of the patient's thumb (that is, for a man of 150 pounds weight, about 275 grains of the ointment) rubbed in for at least half an hour every day for a week, unless the gums or teeth get sore before that time is up. This course is repeated after a week's rest and then for one week out of every three for the next two to four months, according to the severity of the case; after that the period between the courses is lengthened to from four to six weeks. This is kept up for a year, and for the second year the course is taken for one week out of every two months. All through the active course of the disease atropin and hot applications are used vigorously, and enough salicylate of sodium is given to control the severity of the symptoms of congestion and photophobia. For a full-grown patient from 90 to 150 grains a day for a few days is generally sufficient to break the force of the inflammation, and after this, 90 grains a day on three or four days in the week is generally sufficient. After the congestion has been entirely absent for three weeks, the atropin and salicylate are discontinued and not used again unless the congestion reoccurs. In the interims between the courses of mercury I have used arsenic and iodids in moderation. I have a decided impression that I have been obtaining better results since adding the arsenic to the treatment of this disease, but whether it is best to give it in the form of injections of atoxyl, or some other of the newer preparations, or by the mouth in Fowler's solution, I am not prepared to say Since adopting this line of treatment I am certain that my general results have been decidedly better than they formerly were, and I have seen three typical cases in which the disease has failed to appear in the second eye during periods varying from one to three years. These may be mere coincidences, and I know what long periods are sometimes reported as occurring between

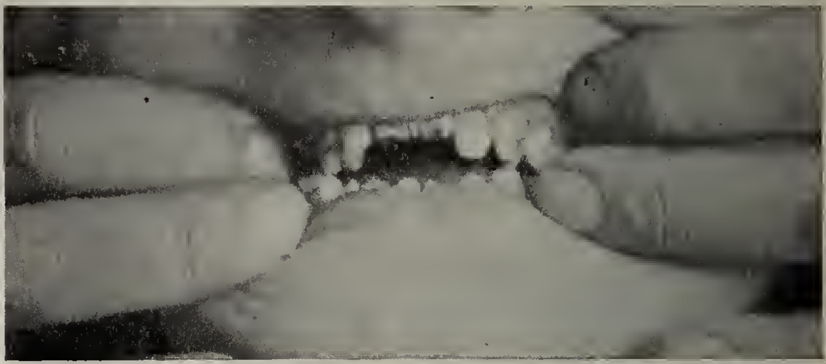

Fig. 14.—Girl of 16 years with interstitial keratitis. Hutchinson central incisors unusually small. Note also, at the right, permanent tuberculated canine.

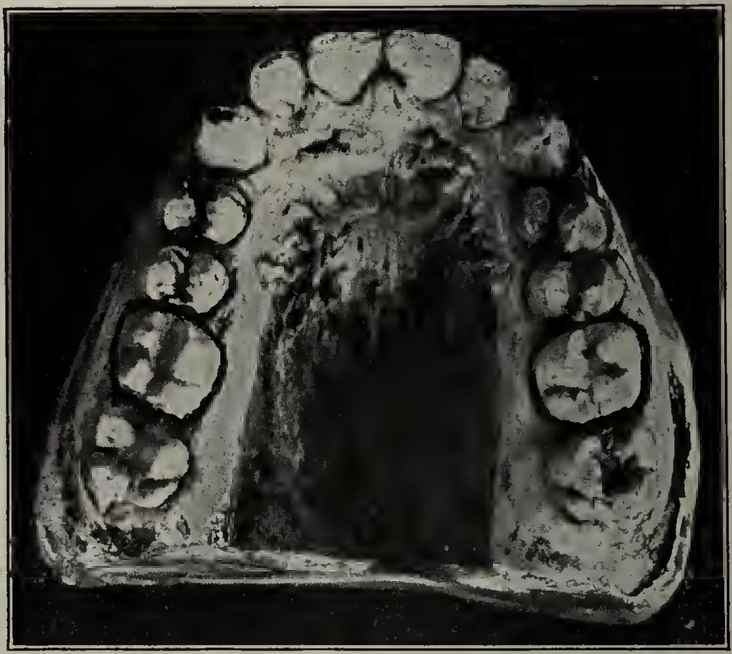

Fig. 15.—"Sloped" permanent molars in boy of 14 years, of robust build and good previous health until puberty, when he developed characteristic bursitis of right knee joint, interstitial keratitis, and necrosis of hard palate. Younger sister, a year later, had similar train of symptoms; teeth otherwise normal.

the infections of the two eyes, but the fact that in twenty-three years of eye practice I have never, before, seen an attack in the second eye postponed longer than three or four months, gives me a decidedly hopeful feeling as to the possibility of preventing the disease in the second eye when the first eye is seen early in the attack.

SUMMARY

To sum up and repeat, I believe that the following points may be made with reference to the prophylaxis of interstitial keratitis. First, in the text-books on ophthalmology and syphilis the diagnosis of hereditary syphilis should receive much more attention than it usually does; and, instead of the single faulty cut so commonly used, at least half a dozen figures should be presented, to show not only the Hutchinson incisors, but the other more important forms of syphilitic teeth. Second, all children in public institutions and in private families who show any of the well-marked signs of inherited syphilis should receive a course of antisyphilitic treatment, even if in other respects they seem to be entirely well; the results and indications of this treatment being controlled, if possible, by the serum diagnosis test. Third, where a case of syphilis, inherited or otherwise, appears in a family, all the other members of the family should be examined for signs of the disease, and if such are found, the bearer should be subjected to specific treatment. Fourth, by an extra-vigorous use of specific treatment the disease may be kept out of the second eye in a larger proportion of cases than has hitherto been thought possible.

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ABSTRACT OF DISCUSSION

Dr. L. Webster Fox, Philadelphia: The treatment of such patients is of very great importance. As a rule, as you all know, interstitial keratitis becomes evident in early childhood. I happened to be under the tuition of Jonathan Hutchinson in London along with other young men who listened to that distinguished general specialist when he called our attention not only to the central incisors, but to the molars as well, and when the French seemed to try to assert that it was a syphilitic condition unlike that of the central incisors, we who were under the great Hutchinson felt that his field had been invaded; those of you who have his monograph in which the drawings occur can see what I mean. Such cases are hard to handle. We see many of them in Philadelphia. I have at present six or eight patients in my clinic undergoing treatment. There is a very peculiar condition that arises and makes you feel that your hypodermic injections of mercury and your inunctions and gray powder in large and active doses do not have the effect they should. In other words, a keratitis goes on almost to the point of breaking down; the patients have been saturated with gray powder and sometimes with hypodermics of sublimate and yet in spite of that active treatment, when you feel you have gone almost beyond the point of endurance, the one eye gets well and then the other eye goes through the same process. What shall we do? There is only one thing, and that is to keep on with the mercurial and prophylactic remedies to prevent the development of these cases. They seem to develop just before early puberty in children that mature from 11 to 13. We have such cases with us constantly; and the English surgeons follow that line of treatment, and have similar results. I have also found that in such cases after the parents have gone through the mercurial treatment the cornea does not become clear. While the discussion was going on in regard to regeneration of the cornea it occurred to me that operation might be available in these cases. And yet I have seen corneas with dense tissues, with no light transmitted, clear up. I have found dionin very efficacious; and I have found that we can clear up these corneas by the use of sugar of salt 5 gr. with dionin.

Dr. S. D. Risley, Philadelphia: The fact mentioned by Dr. Fox, of the frequent occurrence of interstitial keratitis in the second eye after the first was far on the road to recovery, is a quite common experience. Its occurrence while the patient is saturated with mercurials suggests some other etiologic factor than the specific inheritance. In a recent paper I have suggested that it is impossible that the cornea alone would suffer from the syphilitic poison. The ductless glands, including the thyroids, are doubtless also impaired in their function, a fact which may, and doubtless does, account for many features of the symptom-complex characterizing inherited syphilis. Until the function of these glands is restored or reinforced by suitable treatment, recurrence of low forms of disease, especially in the avascular structures, of which the cornea is a type, is to be expected. In the paper already mentioned cases are reported in which rapid recovery of the interstitial keratitis, and striking improvement in the general health, followed the administration of the pulverized thyroid of the sheep after the usual treatment with mercurials, etc., had failed.

Dr. F. H. Verhoeff, Boston: Since it has been shown that in interstitial keratitis the spirochetes are present in the cornea, it would naturally suggest itself that we should endeavor to reach these organisms locally by mercury. So I have used the bichlorid in 1 to 5,000 solution three or four times a day. While in most of my cases both eyes have been affected at the outset, yet in those in which only one eye was affected the other eye has not become affected. Although I have used it in only a limited number of cases, it seems to me better than any other method of treatment; it certainly does no harm and is worth giving a thorough trial.

Dr. Walter L. Pyle, Philadelphia: I heartily approve of Dr. Gifford's plea for the prompt and persistent administration of antisyphilitic treatment in these cases, with the hope that the disease in the second eye will be prevented or greatly modified. The difficulties in proving a positive syphilitic heritage are so many that we are often justified in assuming such a family history in doubtful cases. There is, however, one point I want to strongly emphasize; that is, the urgent necessity of appropriate dietetic and hygienic treatment. We must remember that most of these patients are from the lower classes, and are insufficiently or improperly fed and live in the most unhygienic environments. As ambulant cases they are given prescriptions for the mercurials and iodids, and little attention is paid to the proper regulation of their personal and domestic hygiene. With the possibility of such distressing results as often follow this disease, perhaps forever destroying the victim's usefulness as a wage-earner, it seems almost imperative that many such patients should be admitted to the hospitals, and in their care and treatment the cooperation of the internist and dietetic expert be sought. I would not withhold the antispecific treatment, but I would have it intelligently and discreetly administered and augmented by the necessary hygienic and dietary regulations. It must also be remembered that juvenile malnutrition is not always confined to the homes of the poor. In fact, too often does the pediatrist see improper feeding producing grave nutritional disturbances among the children of the higher classes.

It is now authoritatively stated that many profound disturbances of metabolism may give rise to interstitial keratitis, and also to its associate symptoms, such as irregularities of the teeth, bone deformities, skin lesions, etc. Many observers to-day, particularly in Great Britain, believe that tuberculosis is almost as important a cause as syphilis. Nor must we overlook derangements of the important glandular secretions, and Dr. Risley has done well to call attention to the occasional value of thyroid extract in addition to the ordinary treatment.

Dr. John Green, St. Louis: I feel personally indebted to Dr. Gifford for calling our attention to the signs in the milk teeth in these cases. I believe that it is a matter that should be brought to the attention of the internist and the pediatrist even more than the ophthalmologist. In discussing this subject recently with a pediatrist of wide experience I found that he had but the vaguest idea of the peculiarities of the milk teeth in inherited syphilis.

Dr. Myles Standish, Boston: I think it may be necessary to say a word on the other side of the teeth question. I happen to have treated two children in a family in which there was a clear specific ancestral history and in which there was no doubt that the children had the so-called inherited syphilis, and in which there was a succession of three children with interstitial keratitis at about 8 years of age, and in whom all the teeth were perfect, both the first and second teeth. Therefore we do not want to base our diagnosis as to whether the interstitial keratitis is specific or not on the presence or absence of these teeth.

Of late years I have been led by some of the younger men to believe that a certain proportion of these cases are undoubtedly tuberculous. When they occur in persons of more advanced years—16, 18, up to 30 years of age—the probability is that we shall ultimately find that they are of tuberculous origin. I am not sure of that fact, but I believe that is the trend of the times. And even in cases known to be specific, non-specific treatment is not to be despised. For eight or ten years I believed and taught that interstitial keratitis was not due to the inheritance of the specific infection of the germ of syphilis. I have rather retreated from that position now. But during all of that period I treated all of my patients, both in private practice and in the Massachusetts Charitable Eye and Ear Infirmary, on hygienic principles, exactly as if tuberculous, and I never could see but that my patients did fully as well as those of my colleagues. So that this subject must be considered from both sides; it is not already proved that specific treatment is best, and it is not positively to be stated that all patients with interstitial keratitis have these peculiarities of the teeth.

Dr. G. H. Price, Nashville: I was glad to hear what Dr. Standish has just said in regard to some of these cases of interstitial keratitis, because I have found it difficult at times to discover whether the condition is of specific origin or not. The classical treatment of this condition, namely, that along antisyphilitic lines, I have found sometimes did not reach the case and improvement did not occur as rapidly as we expected.

Dr. A. R. Baker, Cleveland: I endorse what Dr. Risley has said in regard to the use of thyroid. Along the southern shore of Lake Erie we have an unusual amount of trouble from the thyroid gland, and it is said that we have there more operations for the removal of the thyroid than in any other part of the country. It is almost a routine practice with us to give preparations of the thyroid gland in all cases of interstitial keratitis. Before its use became popular we had found from clinical experience that the syrup of the iodid of iron was beneficial. We used it not with the idea that it was antisyphilitic, but on account of its good effect in all such cases. Now, in my early training in London we were taught to give immense doses of mercury, and I think one of the things I may be punished for hereafter is the large doses I gave. It is necessary to use mercury, but the patient must be in good condition first; it must be given so as to improve rather than to injure the general health of the patient. It is sometimes necessary to treat the patient weeks or months before giving the mercury. Generally speaking, now, in a case of interstitial keratitis of one eye, I do not expect the other eye to be involved. I think when I was using mercury alone the second eye nearly always became affected. I also give iron and arsenic, feed the patient, recommend fresh air, etc., as in tuberculosis. A frequent symptom in such cases is enlargement of the knee. The other day three such children were brought into my clinic. All of them had had enlarged knees. We find this almost as constant a symptom as the Hutchinson teeth in syphilitic cases.

Dr. A. E. Bulson, Jr., Fort Wayne: I want to emphasize the statement of Dr. Standish as to the tuberculous origin of such cases. We have been accustomed to attribute them in large measure to syphilis. Recently I have undertaken some tests to determine the number of cases due to tuberculosis and I have been surprised to find how many respond to the diagnostic tests for tuberculosis. Of course the majority of the cases in which the tests have been applied have been those in which a definite syphilitic history could not be established and in which there were no syphilitic stigmata. It seems to me that when we give this subject further study we shall find that syphilis is not quite such a large etiologic factor in the production of these cases as was supposed. I also want to insist on the importance of dietetic management, emphasized by Dr. Pyle. I know a large percentage of the patients will recover under diet alone. I also believe that hygienic treatment is of extreme importance. Often we find children with interstitial keratitis being kept indoors and in darkened rooms. I think that is one of the worst things that can happen; it has been my policy invariably to keep them out, if necessary bandaging the eyes. But above everything else, I regulate the diet, and give the patients good, wholesome, nutritious food.

Dr. H. Gifford, Omaha: There are three points in my paper that I thought were to a certain extent new: In the first place, the importance of looking after children with signs of inherited syphilis whether they have interstitial keratitis or not. Go into the orphan asylums, the public schools, and all institutions for children and if you find them with inherited syphilis look up the families and if any reasonable grounds are found for giving antisyphilitic treatment give it. If they are tuberculous, treat the tuberculosis. If you obtain the reaction for tuberculosis, that is no reason for concluding that the patients have not syphilis. The second point was to use arsenic in connection with mercury in these cases. I have a very definite idea since pushing arsenic with mercury that I have obtained better results than before. Third, in using mercury do it at once, go at it hard and keep at it hard. I used to think that syphilis had little to do with interstitial keratitis, but I have come to the very definite conclusion that it is the active manifestation of the syphilitic organism. Before when I used the iodids, etc., I invariably had the other eye affected within six months; but since giving arsenic and mercury and the salicylate I do not, and I have a very definite idea that the salicylate is of decided value in connection with the other things, and I certainly do not see serious cases such as I used to have.

In regard to Hutchinson's relation to these molar teeth: Hutchinson described a single Fournier molar, but he did not think it had anything to do with syphilis. The point the Frenchman made in regard to it is certainly of importance and value. The form of molar I refer to, what I call the sloped molar, is there when the other teeth are all right. The first case was that of an unusually well-built boy, who had been absolutely well, robust and healthy up to 13; after that he had an inflammation of the knee, interstitial keratitis and necrosis of the hard palate. Then in a couple of years the sister came in with the same thing and I gave her mercury, arsenic and salicylate treatment and she had only one eye affected. I think the point made by Dr. Pyle as to diet is a good one. None of us know too much about diet. I do not think we get too much light from the men who make it a specialty.

Mammalian Cerebellum.—Van Rynberk (*Folia Neuro-biol.*, I, pp. 403-19, 535-51) gives a summary of the recent work on the cerebellum. The work of Bolks on the comparative anatomy of the cerebellum of mammals is especially criticized. Van Rynberk concludes, "From the above, we can consider the cerebellum of the mammalia, from the standpoint of comparative anatomy, as one of the fundamental group of organs, in which (cerebellum) the subdivisions show a varying degree of development and the structural and functional complexes a degree of development comparable to the various muscular divisions of the body." Microscopic anatomy shows the cerebellum to be the turning-point of two chains of reflexes—a somato (and cephalo-cerebellar) and a cerebrocerebellar reflex arc. The first belongs to the propioceptive system (the system of muscular sensation). Functionally the cerebellum serves as a reflex-strengthening organ of the motor nervous mechanism. By means of its somatic and cephalic connections it takes part in the form regulation of all voluntary muscles of the body, and its afferent cerebral connections indicate that it gives strength and constancy to voluntary muscular movements. These functions are controlled from centers in the cerebellum corresponding to the muscle groups of the body. By means of its efferent fibrous tract in the propioceptive system the cerebellum communicates with the cerebrum and thus completes the somatopsychic path.

SIMPLE FIBROMA OF THE ORBIT *

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Professor of Clinical Ophthalmology and Associate Professor of Ophthalmology University of Illinois.

CHICAGO

Simple fibroma of the orbit I take to be one that springs from the retrobulbar connective tissue, i. e., the orbital fascia within that cavity. Orbital fibroma commonly arises from the periosteum of the orbital walls and less commonly from the sheath of the optic nerve; occasionally from the capsule of the lachrymal gland and rarely from the tendons of the muscles (G. Mizno[1]).

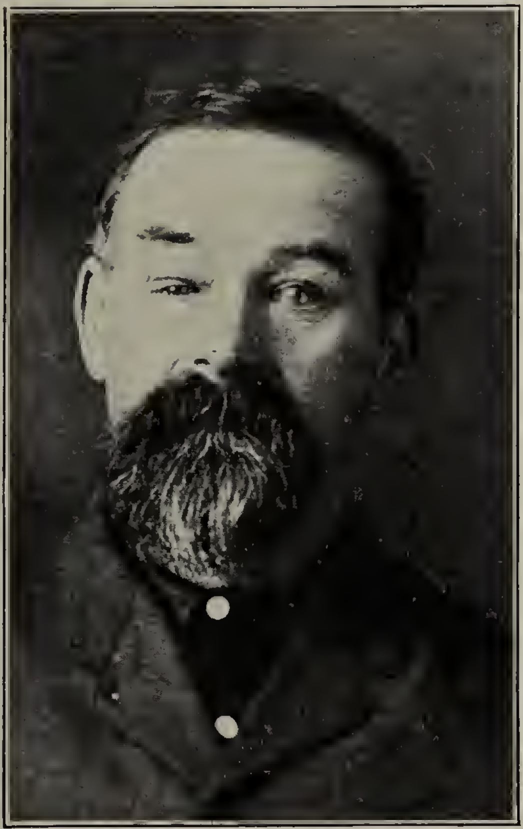

Fig. 1.—Photograph taken 1 year before operation. Deformity not so great as at time of operation.

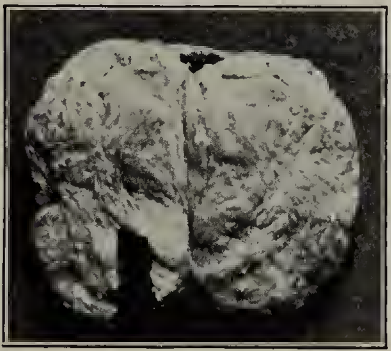

Fig. 2.—Tumor split in halves, showing cut surfaces, hinging on capsule. Gaping portion indicates part removed for section.

Marchetti[2] reports a case of "peripheral fibroma" which developed on the infraorbital nerve "causing elephantiasis of every part of the skin which was supplied by the compressed nerve." It is altogether probable that this tumor should have been classified as plexiform neuroma.

A few reports have been made of subcutaneous fibroma of the eyelids (Mizno[1]).

Fibromata of the skin of the eyelids occur in general fibromata (Oliver[3]).

Heretofore it has not been definitely determined that fibroma is ever derived from retrobulbar connective tissue. Lagrange has collected reports of cases which, to more or less extent, argue such origin.

In my opinion, Goldzeicher[4] comes the nearest to proving the point. He reports a case of freely movable encapsulated tumor in the orbit in a male, 17 years of age. A report of the microscopic examination is as follows:

> Hard connective tissue fibers bound the tumor together, containing sparse, spindle-shaped cells. Fibers generally run parallel; in spite of the hardness of the tumor contain many blood vessels of all shapes. with endothelium, fibers of the periphery of the capsule over the posterior orbital surface were compressed and poor in cells. The impression given is that the neoplasm arose from a vein.

A most careful study of the microscopic section is necessary in order to differentiate between endothelioma and fibroma. It is in the hope of shedding light on this mooted question that the following case is here reported:

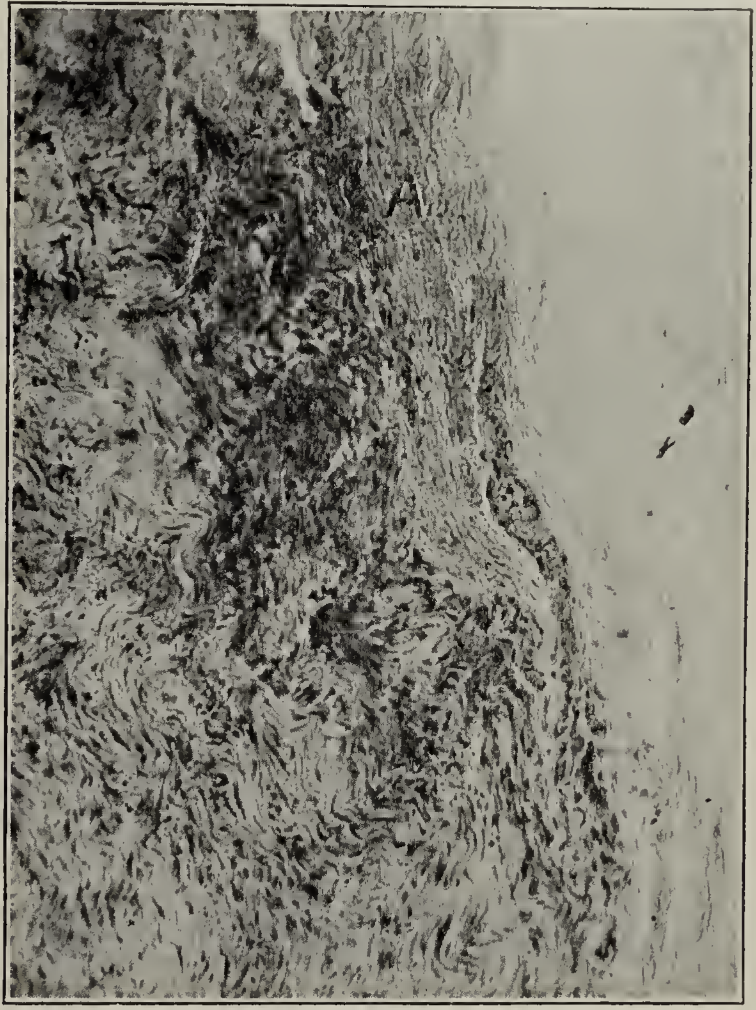

Fig. 3.—Low power: × 125; *a* indicates capsule.

Patient.—Mr. L., aged 55 (Fig. 1), came under my observation Aug. 21, 1905, on account of a drooping of the right eyelid, he having been referred to me by Dr. F. C. Dielman, Fulton, Ind. The patient first noticed this deformity three years before. During the previous six months the deformity had rapidly become worse. There was no history of injury or other disease of the eye. The eye was displaced downward and forward. There was a dull ache when the patient was out in the wind. Vision was 20/20. There was no change in the fundus. Deep pressure with the little finger between middle of the upper orbital margin and the eyeball revealed a hard movable mass which was not tender on pressure. There being no history or evidence of syphilis, I advised an operation.

Operation.—On August 22 an incision was made in the brow, conforming to the supraorbital margin, down to the periosteum. The orbital fat being dilacerated by a grooved director and the pointed scissors, a white, hard, encapsulated tumor about the size of a small hickory-nut came into view (Fig. 2), which was pulled forward and with the aid of the director and fingers was readily enucleated.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Mizno, G.: Nippon Gankwa Gakukwai Zasshi, 1904, v, No. 8.

[2] Marchetti: Ann. di ottal. e Lavori d. Clin. ocul., Naples, 1904, xxxiii, 29.

[3] Oliver: Ophth. Rec., viii, No. 6.

[4] Goldzeicher: Centralbl. f. prakt. Augenh., 1894, xviii, 65.

Tumor.—Microscopic examination (Fig. 3) showed it to be a pure fibroma, homogeneous throughout. Few blood vessels were present. Parsons[5] says that the best test of simple fibroma would seem to be encapsulation, fibrous tissue composing the growth being matted together at the periphery. How well this tumor meets this test is shown by the accompanying photomicrographs (Figs. 3 and 4).

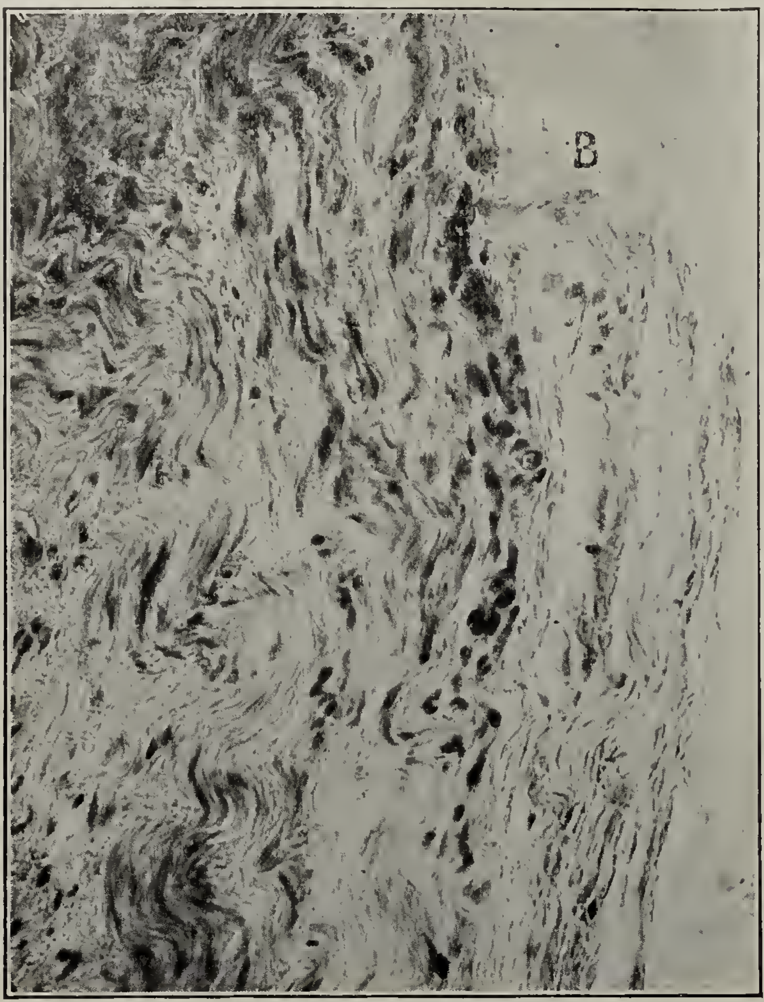

Fig. 4.—High power microscopic view of same section. × 300; *b* indicates capsule.

Postoperative History.—Nearly four years have elapsed since the operation. No recurrence has taken place. The eye is restored to its normal position and the cosmetic effect is good.

I am under obligations to Dr. W. L. Grosvenor, Dr. W. A. Walters for section of tumors, and to Dr. C. G. Darling for photograph.

103 State Street.

ABSTRACT OF DISCUSSION

Dr. George F. Keiper, Lafayette, Ind.: The description of the tumor removed by Dr. Gamble is exceedingly interesting. An examination of the photomicrographs submitted would lead to a desire to examine sections from other parts of the tumor, in order to be sure that the tumor is a simple fibroma. The presence of spindle-shaped cells lends suspicion as to endothelioma. In fact, a section of normal tissue adjacent to the tumor should be submitted. In all cases, in addition to the tumor a piece of normal tissue adjacent to the tumor should also be submitted to the pathologist, that comparison may be made between what is normal and what is supposedly pathologic. At the conclusion of the paragraph quoted from the second volume of Parson's "Pathology of the Eye," is this statement: "Endotheliomata require careful examination in some cases to distinguish them from simple fibromata, and it is not unlikely that further research will eliminate simple fibromata from the list of orbital growths." By the way, the term "endothelioma" should be discarded and sarcoma should be called sarcoma.

Dr. G. C. Ring, Philadelphia: Possibly it has fallen to my lot to see rather more orbital growths than the average ophthalmologist because of my identification with an institution which treats only tumors. I have recently completed the study of a growth that I believe unquestionably belongs in this class. It is not by any means easy clinically to make such a diagnosis. First of all, we naturally expect that a benign growth should be of long standing. The case I have in mind was treated by several physicians; a number are present who have seen it; it had a history of between six and seven years' growth. Now, a history of that length or even more does not eliminate, as we perfectly well know, the possibility of malignant disease. The well-known cases of Lenhart and others indicate that endothelioma, or one of the modifications of sarcoma, may exist for ten or more years. But if it has such a long history, if the rotation of the eyeball is extensive in most directions, all but one or two, and if no metastasis is present, we can at least begin to think of the possibility of a benign growth. If it happens to be displaced downward and inward as the growth I have in mind was, then sinus disease must necessarily be carefully considered. And if we find today, as I think most of us do, that the *x*-ray has not given the final word in sinus diagnosis, and if we likewise find, as I think most of us do, that illumination of the sinus has not given the final word, then it becomes extremely difficult to make a diagnosis in such cases, and I think only exploratory incision and operation and the microscope will give the final word. The patient just mentioned, on whom I have recently operated, gave some symptoms strongly suggestive of sinus disease. Indeed, a sinus disease diagnosis had been made by two most competent men. The case gave some suggestions of a malignant growth, and a corresponding diagnosis had been made. But when all the points were carefully considered, and when one saw the case as I did, having back of me the preliminary study made by the others, it was not difficult to suggest finally that the growth was benign.

I therefore made, in order to eliminate the possibility of sinus involvement, a modified Killian incision and definitely decided that the sinus bore no relation to the symptom-complex. The growth was so situated—had developed up and in—that a Kroenlein operation was decided to be practically out of the question. A large growth, at least as large as a large walnut, was removed and examined by a capable microscopist, who unhesitatingly pronounced it a benign orbital fibroma. There were no metastatic suggestions, and of course while it is far too early to know what the ultimate outcome will be, so far as the records are concerned the growth seems to be a pure orbital fibroma. The microscopic details and entire history of the case will be presented at the coming meeting of the American Ophthalmological Society.

Clinical Notes

TRACHOMA BODIES

POSSIBLY THE ETIOLOGIC FACTOR OF TRACHOMA *

BROWN PUSEY, M.D.
CHICAGO

In April, 1907, Halberstädter and Prowazek[1] described some bodies which they had found in epithelial cells taken from trachomatous conjunctivæ and which, they maintained, were the etiologic factor of trachoma. A few weeks later Greeff,[2] Frosch and Clausen,[3] working together, published papers describing the same bodies and ascribing the same importance to them.

As was to be expected, this discovery and the claims of the discoverers have been the subject of much attention and discussion; just now much is being published on the subject in the German journals. Other investigators have taken up the work, and in suitable cases are confirming it; that is, in acute untreated trachoma they are finding these bodies almost constantly. In the later stages of the disease the bodies are not found in the epithelial cells. Two of the most recent articles on this subject are by Stargardt[4] and Herford,[5] respectively.

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[5] Parsons: Pathology of the Eye, ii, 228.

* From the Department of Ophthalmology, Northwestern Medical School.

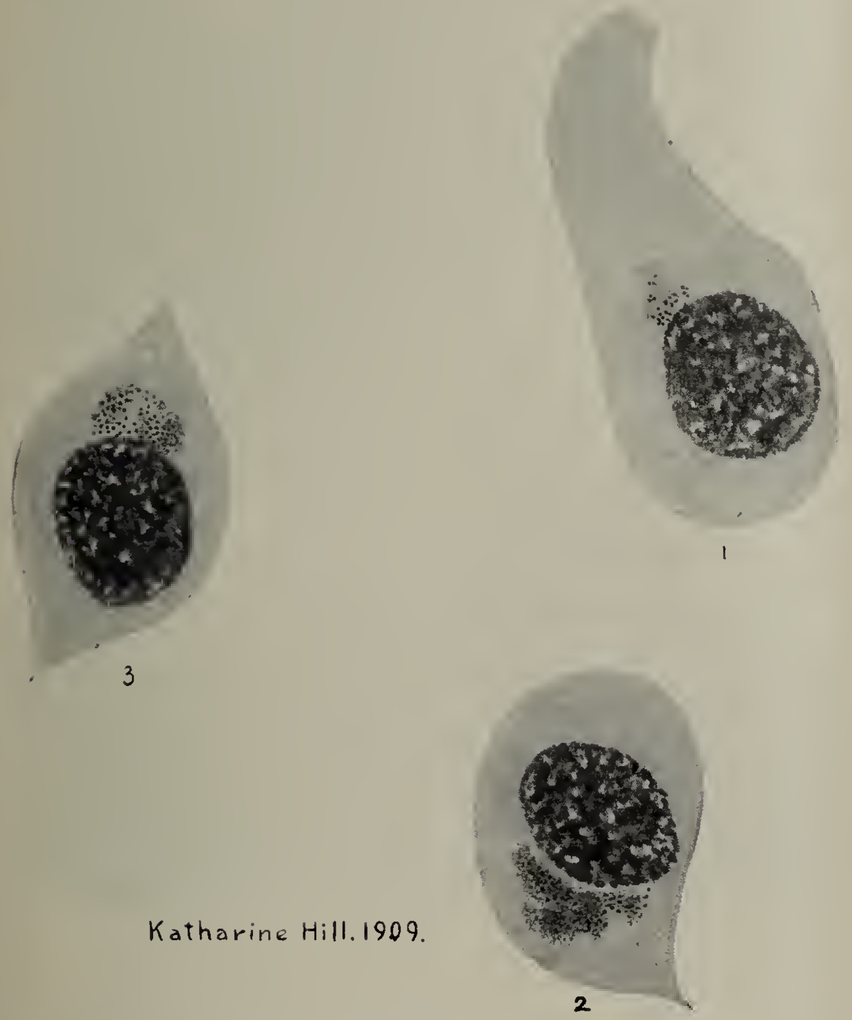
[1] Halberstädter und Prowazek: Ueber Zelleinschlusse parasitärer Natur beim Trachom, Arb. a. d. k. Gsndhtsamte., 1907, xxvi, 1.

[2] Greeff: Ueber eigenthümliche Döppelkornschen (Parasiten) in Trachomzellen, Deutsch. med. Wchnschr., 1907, No. 23.

[3] Greeff, Frosch and Clausen: Untersuchungen über die Entstehung und die Entwicklung des Trachoms, Arch. f. Augenh., 1907, lviii, 1, 52.

Supporting the idea that the bodies found in acute trachoma are the causal factor of this disease is the fact that persistent search by many investigators has failed to reveal similar bodies in normal conjunctivæ or in pathologic conjunctivæ other than those affected with trachoma. Stargardt, in the article mentioned above, reports the search, with negative results, for the bodies in many epithelial cells taken from the conjunctivæ suffering with various affections other than acute trachoma.

Another important fact supporting the idea that these bodies are the causal factor of trachoma is the finding of them in conjunctival cells taken from apes which have been experimentally infected with the disease. This experiment, which has been made several times by various investigators, of course, has been properly controlled.



Trachoma bodies: 1. Beginning of growth of bodies in the cell; 2 and 3, development in later stages.

Lately I have had in my charge a case of distinct clinical acute trachoma in which I found these bodies (see illustration). The smears from which the drawing was made were prepared by scraping the everted conjunctiva with the edge of a cover-glass; the scrapings were spread over the glass and allowed to dry in the air; then the material was fixed for twenty minutes in methyl alcohol; then stained for twenty-four hours with Giemsa's stain. Cell 1 shows the beginning of the growth of the bodies in the cell as described by Prowazek; Cells 2 and 3 show the development in later stages. The separate bodies—trachoma bodies, according to Prowazek—are smaller than small cocci. They are supposed not to be bacteria. Cultural efforts have been without result.

Some investigators maintain that in these bodies we have, without question, the cause of trachoma (Greeff); others are not so sure. Certain it is the matter as it now stands is one of much interest.

70 Madison Street.

A MODIFIED "CORNELL" *X*-RAY TUBE

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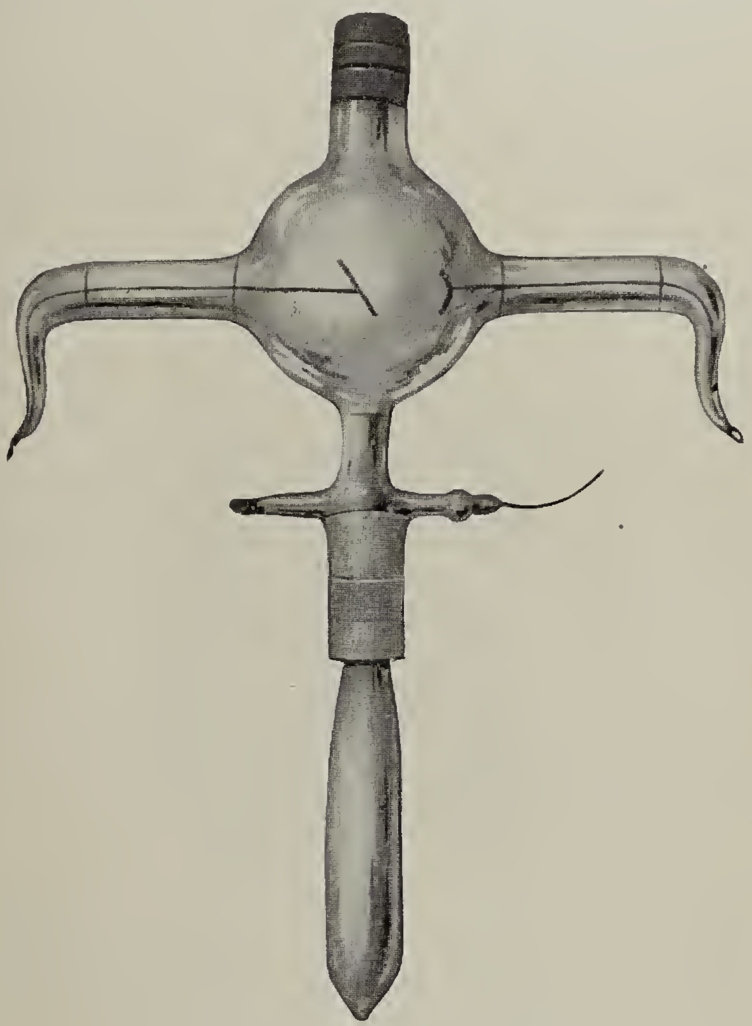
KANSAS CITY, MO.

About one year ago Geyser,[1] of New York, described an *x*-ray tube of new and novel design. This appliance, which he called the "Cornell" tube, was made of heavy lead glass, with the exception of a circular window of flint glass for the passage of the rays. When the tube was in use, this window was applied to the skin, the glass being tightly pressed against the area to be treated.



A modified Cornell *x*-ray tube.

The principal claim advanced for the new apparatus was that when properly employed long exposures could be given without danger of burning the patient. In over 5,000 cases Geyser had never seen any untoward results. Lesser factors in favor of its more general adoption were the increased effect secured from exposures at the closest possible range, the protection of the operator without the intervention of extra shields, and the moderate cost of the tubes.

The principal argument against its use was that many experienced Roentgenologists considered it as yet in the experimental stage, and believed that eventually it would fail to justify the claims of the inventor.

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[4] Stargardt: Ueber Epithelzellveränderungen beim Trachom und andern Conjunctivalerkrankungen, Arch. f. Ophth., lxix.3, 525.

[5] Herford: Beiträge zur Trachomforschung, Klin. Monatsbl. f. Augenh., March, 1909, xlvii, 225.

[1] THE JOURNAL A. M. A., March 28, 1908, p. 1017.

Soon after the publication of Geyser's paper I secured one of the tubes from the makers of the original instrument. My experience with it was such that, shortly afterward, I ordered two more and, later, four more. The main fault I found with the tubes was their instability. Occasionally one would have a working life of fifty or sixty hours; the next would probably puncture the first time it was connected up. In addition to this, the small amount of space in the interior of the bulbs (which average only about 4.5 cm. in diameter) rendered a proper regulation of the vacuum extremely difficult. Because of these objections I had the manufacturers make for me a larger tube, the body being 12 cm. in diameter and the anode and cathode being separated by a space of 7.5 cm.

In order partially to protect the patient from the high-frequency sparks that are given off at the circumference of the window, the barrel is surrounded by a soft rubber band, 4.5 cm. in width, the outer edge of which projects slightly beyond the edge of the tube and comes in contact with the patient's skin. Enough stimulation is secured to ensure protection, and the patient experiences but slight discomfort.

I agree with Snow,[2] that the partial or complete immunity from dermatitis gained by the use of these tubes is due to a stimulation of the tissue activities which the rays ordinarily inhibit. By interposing a broad sheet of soft rubber (1 cm. in thickness) between the window and the closely shaven skin of a guinea-pig I have been able, on two separate occasions, to cause burns with exposures of less than fifteen minutes each.

The larger tube has proved very durable. After more than forty hours of use it is still in excellent condition. Although tubes of the Cornell type can not be satisfactorily employed in all cases, because of either the size of the lesion to be attacked, or the topography of the parts involved, they can be utilized in a large percentage of skin diseases in which the *x*-rays are indicated.

276 Ridge Building.

PENETRATING WOUND OF THE LUNG

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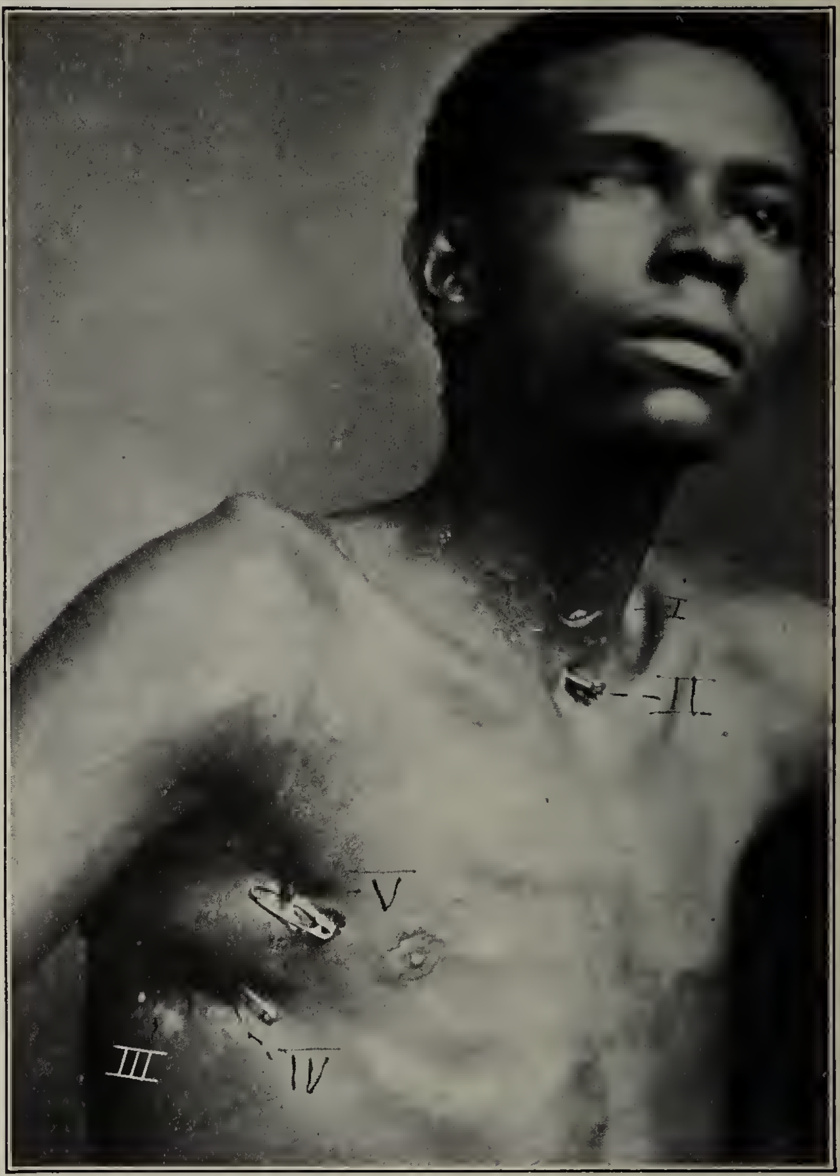
RICHMOND, VA.

The following case is of interest, not only on account of its very extensive character, but also as it illustrates a type of wound that has become extremely rare since men have discarded the spear in battle.

History of Accident.—The patient was a tall, well-muscled negro, 20 years of age, engaged in saw-mill work. On June 22, 1908, about 10:30 a. m., while in a stooping posture in front of his saw he was struck full in the throat by a rough, undressed, blunt-ended, pine strip, eight feet in length, and an inch by an inch and a quarter in diameter. The strip was caught in the teeth of the saw, which was making 6,000 revolutions per minute, and hurled like a javelin with terrific force. It made a ragged wound of entry in the median line of the throat, a half inch below the cricoid cartilage, went downward and to the right, beneath the skin and superficial fascia, behind the sternum and clavicle, over or through the apex of the right lung, crashed through the third and fourth ribs in the midaxillary line, plowed beneath the muscles and fascia and presented beneath the skin over the seventh rib in the posterior axillary line, which it stretched to the utmost. It was submerged eighteen inches from its tip to the wound of entry. After making an effort to pull out the stick, using both hands, the man fell and called for assistance from the other workmen, who also failed to dislodge the strip. The long end was then sawed off, leaving ten or twelve inches for a grip, and a physician summoned.

First Treatment.—Dr. J. T. Doles, of Ivor, Va., reached the patient an hour later. The man was profoundly shocked, and absence of the right radial pulse led to the conclusion that the subclavian artery had been torn. Having stimulated the patient, cleaned the parts and prepared two yards of iodoform gauze for packing, Dr. Doles enlarged the skin wound, without anesthetic, and withdrew the stick, the forefinger being thrust deep into the wound to disengage the splinters which hung on the fascia and muscles when traction was made. There was a tremendous gush of blood, but with long dressing forceps the gauze strips were packed as deeply and tightly as possible into the wound and soon the bleeding was under control. A large hematoma quickly formed over the seventh rib at the point of the stick. This was opened and a quantity of blood evacuated and the wound then packed with iodoform gauze for dependent drainage. Occlusive dressings were applied and moderate stimulation instituted.



From photograph of patient with penetrating wound of lung, taken before the tubes were removed. It shows: (I) the wound of entry healed; (II) a tube in the incision over the suprasternal notch: (III) the wound of exit in the posterior axillary line; (IV) the tube leading into the pleura at point of resection of the seventh rib and midaxillary line; (V) the tube in the upper arm of the U-shaped incision last made exposing the area of greatest trauma.

The next day the patient had recovered enough to travel and was brought to Richmond and put under my care at the Virginia Hospital. On June 23, the second day after the injury, the temperature was 102, the pulse 118; there was no cough or bloody expectoration, and no pain; there was dulness over the upper right lobe, well-marked emphysema under the skin in the axillary region over an area larger than the hand. Respiration was about 22; dressings saturated with blood and serum, throat and side both draining profusely. For a week the patient's condition remained about the same, the temperature never going over 102, the pulse 120, and respiration remaining

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2. Jour. Advanc. Therap., January, 1909, p. 52.

about 22 to 24. He seemed comfortable and gave no evidence of a pneumonia (as commonly accepted). The drainage, still sero-sanguineous, was most profuse. An *x*-ray by Dr. A. L. Gray showed consolidation of the upper lobe, but the iodoform gauze did not cast a sufficiently heavy shadow to map out the track made by the stick, as I had hoped. The drainage strips had been shortened from day to day and on the 29th, the seventh day after injury, I removed, as I believed, all, reaching well below the clavicle to get the buried end, and replacing fresh gauze in both wounds. Dr. Garnett Nelson made a physical examination and reported fluid in the pleural cavity. The patient's temperature was running from 103 to 104 and his pulse 120.

First Operation.—On July 1, the tenth day after injury, the seventh rib was resected in the mid-axillary line, lengthening the wound of exit. A cavity was found as large as the fist but I could touch the lung on all sides. About a pint of dark serum was evacuated and the patient had a lower temperature and seemed much improved for several days. The original wound of exit at the seventh rib had healed. The throat wound was pouring out quantities of green pus, but the high skin flap held this back, puddling it in the wound.

Second Operation.—On July 5, the fifteenth day after the injury, I made an incision under cocain just above the suprasternal notch and with my finger as a guide introduced a large rubber tube over into the apex of the right lung. This drained profusely and kept the cavity empty, the patient being turned on his left side. The improvement following this step was but temporary. The pleural operative wound was all this time draining serum, while pus flowed from the incision in the neck. On July 11, the twenty-first day after the injury, the original counter-incision reopened and drained thick greenish pus.

Third Operation.—On July 15, the twenty-fifth day after the injury, under cocaine, I prolonged the puncture wound upward and backward, following a sinus that led toward the axilla close to the ribs. Several pieces of pine bark escaped. and a good-sized rubber tube was put in. Pus now flowed freely from this wound and the neck incision, but only serum from the pleural cavity.

My conclusions were that the stick had gone diagonally through the apex of the lung (this idea was warranted by the emphysema), burst through the seventh interspace, post-axillary line; that adhesions of parietal and visceral pleura around the wound of exit had taken place; that the splinters and bark had caused the sinus to suppurate and reopen below, leaving the pleura cut off and draining serum. Improvement was again only temporary. Though the drainage was profuse, the patient's temperature ran higher, reaching 104; his pulse was rapid and weak. He began to lose flesh and strength. There was marked dulness behind, extending below the tip of the scapula. Thinking to find pus retained here I again operated, this time under chloroform.

Fourth Operation.—On July 20, the thirtieth day after injury, a large piece of the seventh rib was resected, revealing the lung, now completely collapsed. Next the wound of exit was enlarged and its sinus dissected up toward the axilla, several pieces of bark were removed and a good sized piece of iodoform gauze that lay between the muscles and the ribs. This had been packed in across the chest from above or had gradually worked down the sinus. Two loose pieces shattered from the third and fourth ribs, one and one-half and two inches long were removed. The incision was carried up anteriorly, making a horseshoe flap, which was raised so the area could be thoroughly cleansed and a large drainage-tube placed in the upper angle, giving a more direct route to the infected area. The sharp edges of the ribs from which the pieces had been broken could be plainly felt. The flap was sewed back, leaving small drains below and a tube of good size in the pleura. The throat wound was next explored and a piece of bone as long and as broad as the first joint of the thumb was taken out of the sinus behind and below the clavicle. This evidently was split from the manubrium.

Postoperative History.—Improvement was now rapid, drainage soon materially lessened and he was soon out of bed. Small bits of bark continued to work out. He was required to blow water from one lithia bottle to another several times a day and under this exercise his lung rapidly expanded. Before the tubes were removed a second *x*-ray plate was taken to show the track of the sinus by the drainage tubes. The patient left the hospital August 18, at the end of the seventh week, with a well-expanded lung and but little drainage. The latest report received is dated November 14. The patient is able to do some work, is not as strong as before the accident, but feels well. Wound 2 in the throat still discharges a little and a number of splinters and pieces of pine bark have been extruded. The other wounds have healed.

1000 West Grace street.

A MODIFIED APPARATUS FOR FRACTURE OF THE CLAVICLE

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Of the bones of the body the clavicle is perhaps the one most frequently broken. Hence the frequency with which practitioners are called on to treat this form of injury. In the greater proportion of these cases, as is known, the break occurs near the junction of the middle and outer third of the bone.

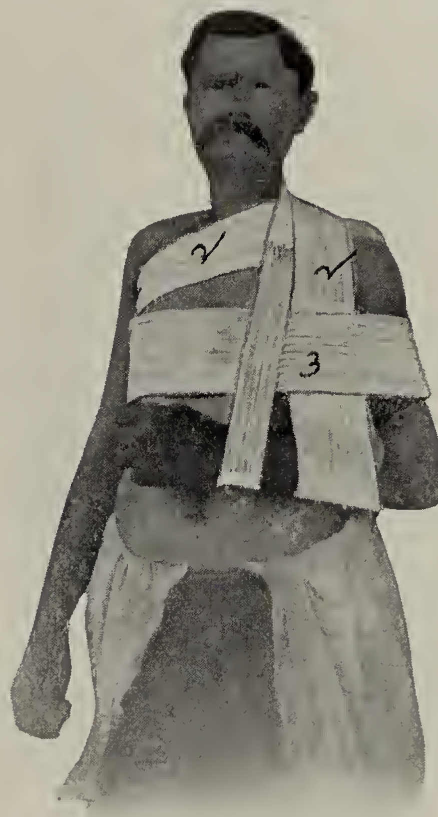

Fig. 1.—Front view of patient with dressing for broken clavicle applied.

The clavicle fills the office of a brace and acts to prevent the shoulder from falling on the thorax. When the clavicle is broken the shoulder will fall downward, forward and inward. The action of three muscles, the sternomastoid, the trapezius and the pectoralis major, are of great importance in considering the proper treatment of these cases. The two former muscles tend to pull the fragments upward. The fibers of the pectoralis major that take their origin from the highest part of the clavicle, because of the semirevolution made by the tendon of this muscle, are attached lowest down along the bicipital groove of the humerus. By forcing the elbow far backward the fibers of the great pectoral are pulled on, the upward pull of the two muscles mentioned is counteracted, and the tendency of the fragments to jut up under the skin and show as a deformity is overcome.

Numerous methods of dressing have been suggested and made use of in the treatment of this condition. The prime indications are to keep the shoulder upward, outward and backward.

The Velpeau apparatus has long been in use and is often resorted to in the present day, but it has objections. In spite of the frequent examinations, the dressing will stretch and almost invariably it becomes loose and displaced, thus permitting falling of the shoulder, separation of the fragments, with the too frequent occurrence of deformity at the point of fracture.

Freer's dressing of adhesive plaster, better known as Sayre's, while an improvement over that of Velpeau, also has its objections. It is sticky and disagreeable to the patient and is very liable to become loosened, and is difficult to keep properly applied. More particularly is this the case in warm weather or when the patient perspires. The results obtained by this method are frequently disappointing.

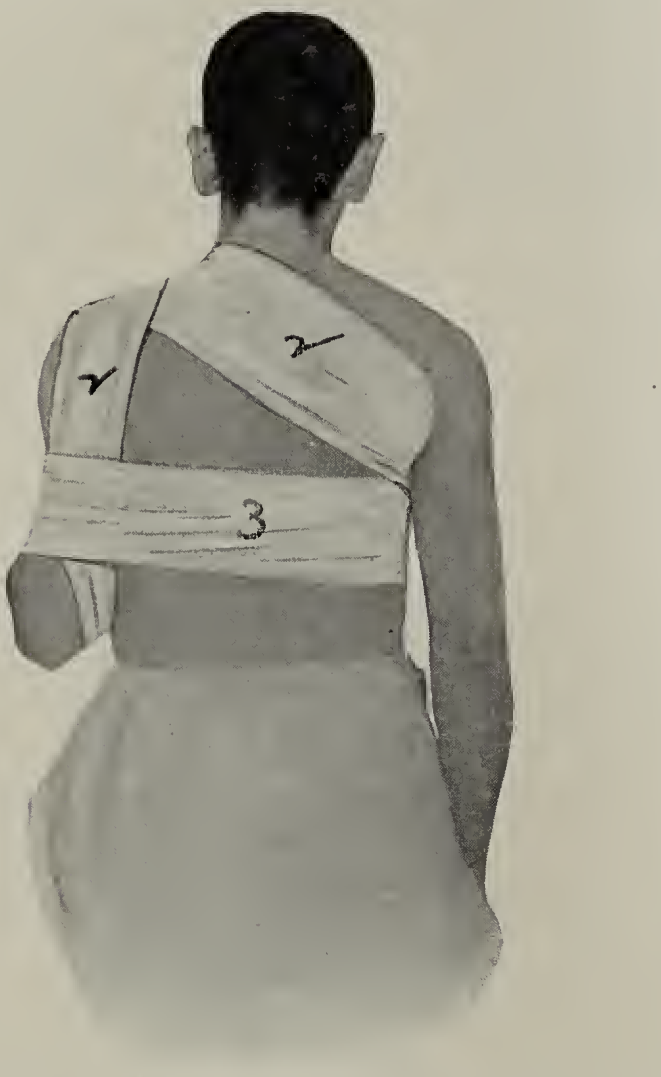

Fig. 2.—Back view of patient with dressing for broken clavicle applied.

In attempting to maintain the fragments in position in the case of a comminuted fracture of the clavicle in the outer third, and after having tried in vain by the use of the other known dressings, I hit on the following plan of fixation, which proved so satisfactory in this and in other similar cases subsequently treated that I have thought that it might be of some interest to give a short description of the method of applying the dressing, etc., with illustrations showing the dressing in position.

The dressing used is a modification of Sayre's and Moore's double figure-of-eight. The elbow is pulled well back and lifted at the same time, so as to lift the shoulder. A strip of adhesive plaster three and a half inches wide and about four feet in length is carried from within, outward, around the arm a few inches above the elbow and horizontally across the back and made to encircle the chest, in the same manner that the first strip of adhesive is applied in the Sayre dressing. By this means the shoulder is secured in correct position and the arm is fixed at the side. This strip of adhesive plaster does not show in the photographs, as it is concealed by Bandage 3 being placed over it. Bandage 2, a four-inch gauze or muslin strip, begins at the side of the neck above the injured clavicle and is carried well outward toward the shoulder, thence beneath the forearm and upward behind the arm over the shoulder of the same side, crossing the chest diagonally at the base of neck to the axilla of opposite side, and thence beneath the axilla and diagonally upward across the back to the point of beginning, forming a single figure-of-eight. Several layers of the bandage are securely applied in the manner above described. By this means a support is furnished to the forearm and elbow, and in addition the combined weights of the arm and shoulder are utilized for the purpose of exerting pressure on the fragments at the intersection or crossings of the bandages. In some cases it will be found necessary to insert a pad under the dressing at the seat of fracture for the purpose of maintaining more pressure on these parts.

Bandage 3 is applied in the same manner shown in the illustrations. It is carried horizontally around the chest over the already fixed arm over Bandage 1, and, while acting to maintain this adhesive strip more securely in place, it also assists in holding the arm more firmly to the side and lessens motion. A support in the form of a sling for the hand and forearm completes the dressing.

Figure 1, from a photograph taken at the time of removal of apparatus some three weeks subsequent to application, shows but a slight degree of looseness and derangement of the dressing, although it was not changed or molested in the interval. The patient was comfortable throughout and the result obtained was highly satisfactory. Figure 2, from a photograph of another patient, taken directly after the dressing was first put on, shows to better advantage the method of applying same than does Figure 1.

In the somewhat limited number of cases, amounting to five or six in all, in which this method of putting up a fractured clavicle was resorted to, for which nothing new or original is claimed, I believe better results were obtained than could have been obtained with the use of either the Velpeau or Sayre apparatus. Less deformity is noticeable after healing of the fracture, and through the thorough fixation of the arm and shoulder a greater degree of comfort is thereby afforded to the patient, the annoyance resulting from the daily examination and rearrangement of the dressing is done away with, and on the whole a more satisfactory outcome is, I believe, obtained.

I trust I may be pardoned for suggesting the trial of the above described modified apparatus to those who may meet with the difficulty so frequently encountered in maintaining the proper reduction and fixation of the parts in treating fracture of the clavicle.

Preventive Hemostasis in the Nose.—Escat has been frequently able to do away with the necessity of postoperative tamponing of the nose by a preventive application to the field of operation of ferric chlorid, or of a 1 or 2 per cent. alcoholic solution of tannin. The patient is then watched for half an hour or so, and if no secondary hemorrhage occurs tamponing is not necessary. The astringent and coagulating action of these drugs is peculiarly effectual in the nose, as he shows by his experience with them related in the *Archives Internat. de Laryngologie*, xxii, No. 3, page 870.

New and Nonofficial Remedies

Since the publication of the book "New and Nonofficial Remedies, 1909," the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections to aid in the revision of the matter before publication in the book are asked for.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

(Continued from page 2107, Vol. LII)

MERCURIC SALICYLATE—Hydrargyri Salicylas.—Hydrargyrum salicylicum (Pharm. Germanica, edit. 4; Pharm. Helvetica, edit. 4).

Mercuric salicylate, $Hg.C_6H_4.O.COO$, is a mercuric salt of salicylic acid in which one atom of mercury has combined with one molecule of salicylic acid by replacing the hydrogen atoms of the phenolic hydroxyl and carboxyl groups.

Mercuric salicylate may be prepared by precipitating the mercuric oxide from 27 parts of mercuric chloride as directed in the case of Hydrargyri Oxidum Flavum, washing, placing in a flask with a little water and 15 parts of salicylic acid, and heating on a water-bath with agitation until the mixture is perfectly white. Collect the precipitate, wash until free from acid, dry at 30° to 40° C. (86°-104° F.), and finally at 100° (212° F.).

Mercuric salicylate occurs as a white amorphous powder, tasteless, odorless and neutral to litmus paper, slightly soluble in water or alcohol, but soluble at the ordinary temperature in solutions of sodium hydroxide and sodium carbonate with formation of a double salt. From these solutions it is reprecipitated by acids. It is soluble also in warm solutions of chlorides, bromides and iodides. On ignition it is entirely volatilized. Strong mineral acids decompose it, especially on heating, and after this decomposition hydrogen sulphide precipitates black mercuric sulphide from the solution.

When shaken with water the resulting solution gives a violet coloration with ferric chloride.

An aqueous solution of mercuric salicylate is not precipitated or colored immediately by hydrogen sulphide or ammonium sulphide.

0.1 Gm. of mercuric salicylate heated in a small tube with a small crystal of iodine produces the characteristic orange to red colored mercuric iodide (Pharm. Germanica. edit. 4). 0.3 Gm. mercuric salicylate mixed with about 3 Gm. sodium chloride and dissolved in 100 Cc. boiling water should upon diluting to 400 Cc., acidifying with hydrochloric acid and passing hydrogen sulphide, yield 0.2 Gm. mercuric sulphide.

Action and Uses.—Antiseptic and antisyphilitic. It has been stated that it is easily tolerated by the stomach and that it does not produce salivation, but it may produce some gastrointestinal irritation occasionally, even when used hypodermically. The lack of salivation is probably due to its insolubility and slow absorption, not to any peculiarity of its effects. It is used as a disinfectant and as a remedy in syphilis and in certain skin diseases.

Dosage.—0.003 to 0.008 Gm. (1/20-1/8 grain). For hypodermic injections a suspension in liquid paraffin, one part in 10, is used; before injecting the mixture must be well shaken in order that the insoluble salt may not remain at the bottom. The needle and syringe should be thoroughly cleansed after each injection, as the insoluble drug readily clogs the instrument. At first, 0.65 Cc. (10 minims) of the mixture described should be injected deeply into the gluteal region every fourth day and this may be increased to every second day if no symptomatic evidences of the action of the drug appear. It is used in the form of dusting powder and ointment (1 in 10). A suspension in a mucilaginous vehicle (1 in 300) is used as an injection in gonorrhea, 1 Cc. (15 minims) being injected at a time. As a disinfectant the salicylate is as powerful as mercuric chloride, its great drawback being its insolubility; in order to overcome this difficulty the following formula has been devised: Mercuric chloride, 1 part; sodium salicylate, 3 parts; dissolved in distilled water, 100 parts.

PICRIC ACID—Acidum Picricum.—Acidum Picricum (Pharm. Française, 1908). An organic acid, $C_6H_3O_7N_3$ or $C_6H_2.OH.(NO_2)_3$ (1:2:4:6), obtained by nitrating phenol.

Picric acid occurs as orthorhombic yellow prisms, odorless, but with a very bitter taste, with a specific gravity of 1.81 and melting at 122° C. (251.6° F.). It is explosive when heated to a high temperature. It is slightly soluble in cold water, imparting a yellow color to a very large volume of water. It is soluble in 81 parts water at 20° and in 25 parts at 80°. It is easily soluble in alcohol and in 5.7 parts of dry pure ether it dissolves to a colorless solution. In wet ether it is 4 times as soluble, producing a yellowish solution. (Pharm. Française, edit. 1908.)

Aqueous solutions dye organic matter such as silk, wool and skin a characteristic yellow, but do not dye vegetable fibre.

1 part picric acid dissolved in 9 parts water at 60° C. and a warm solution of 2 parts potassium cyanide in 4 parts water when mixed give a red color. This solution on being cooled yields reddish brown plates of potassium picrocyanin or isopurpuric acid $C_8H_4KN_5O_6$.

Ammonium sulphide produces a red color in solutions of picric acid which becomes deeper on heating. (Pharm. Française, edit. 1908.)

The absence of salts of picric acid is demonstrated by its complete solubility in ether. (Pharm. Française, edit. 1908.)

Action and Uses.—Picric acid is an irritant to the skin and mucous membrane. Taken internally, it may produce nausea, vomiting and diarrhea. The urine has a yellow or red color and may show signs of nephritis. The skin and mucous membrane may be stained yellow simulating jaundice. Red blood cells are partly dissolved and the white cells are increased in number. It is said to be a very useful application for burns, but the application has been said to be painful in certain cases. Toxic symptoms have been produced in some instances, especially in children, by absorption through the skin.

Dosage.—0.025 to 0.1 Gm. (½ to 2 grains). A solution containing 6 parts of picric acid, 60 parts of alcohol to 1,000 parts of water has been recommended for local application.

PHLORIDZIN — Phloridzinum. — Phlorizin. — A glucoside, $C_{21}H_{24}O_{10} + 2H_2O$, from the root of the apple, pear, cherry, etc.

Phloridzin occurs as minute white slightly pinkish crystals, of a silky texture, or as a pale yellow light crystalline powder, odorless and having a bitter but later a sweet taste. It is sparingly soluble in cold but freely soluble in hot water, from which it crystallizes on cooling. It is soluble in alcohol (1-4) and sparingly soluble in ether. The solutions are lævogyrate. At 100° C. (212° F.) it loses water and at 107° C. (224.6° F.) melts. When heated to 130° C. (266° F.) it becomes solid again and then melts again at 17° (338° F.). At 200° (392° F.) it assumes a red color, due to the formation of rufin.

Boiled with dilute acids it is converted into sugar, phlorose and phloretine. Exposed to air in the presence of ammonia it assumes a purple color. Cold concentrated sulphuric acid dissolves it to a yellow solution and at 25°-50° C. (77°-122° F.) it becomes red.

Action and Uses.—Phloridzin destroys malarial parasites. When administered to man or animals, it produces glycosuria of renal origin. Polyuria is also produced. It has been recommended as an antiperiodic in malaria, but its use is not justified in view of the possible injury to the kidney which it may cause. It is used as a means of testing the functional activity of the kidney.

Dosage.—To test the permeability of the kidney 0.005 Gm. (1-12 grain) is dissolved in 1 Cc. (15 minims) of a 0.5 per cent. solution of sodium carbonate and injected hypodermically. Glucose should appear in the urine in from 15 minutes to one-half hour and the secretion of sugar should continue for from two to four hours. The test gains in diagnostic value if the urine of each kidney is collected separately. Phloridzin may be given per os in pills massed with glucose syrup or suspended in a mixture with acacia or tragacanth. The internal dose is 0.3 to 0.6 Gm. (5 to 10 grains).

UREA.—Urea, $CO(NH_2)_2 = CH_4ON_2$, is the diamide of carbonic acid.

Urea occurs as colorless transparent prismatic crystals almost odorless having a cooling saline taste. It is somewhat hygroscopic. It is soluble in water (1-1), more readily in hot water. Soluble in alcohol (1-7) and (1-1) in boiling alcohol. It is insoluble in ether and chloroform. It fuses at 132° C. (269.6° F.), evolving ammonia and ammonium cyanate. Kept at 150° C. (302° F.) for some time most of it is converted to biuret. If the temperature is raised to 170° C. (338° F.) the biuret evolves ammonia and is converted to cyanuric acid. Heated with water under pressure it is decomposed into ammonium carbonate. It is not alkaline but is a weak base and though a diamide, forms salts like a monacid base; these are acid to litmus. By hydrolysis it is converted into ammonia and carbon dioxide. Nitric and oxalic acids produce precipitates when added to concentrated solutions of urea.

Action and Uses.—Urea is an active diuretic; it is rapidly eliminated and is not poisonous. It has been claimed, without convincing proof, to have the power of dissolving urinary calculi. It has been recommended in the treatment of tuberculosis, but this use of it is generally being abandoned. It may be employed where diuresis is indicated, though it appears irrational in primary renal disease.

Dosage.—0.5 to 4 Gms. (10 to 60 grains). Urea is given in solution, or it may be enclosed in cachets.

(To be continued)

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[*For other information see second page following reading matter*]

SATURDAY, JULY 3, 1909

FURTHER STUDIES ON ANAPHYLAXIS

There has just been issued a bulletin entitled "Further Studies on the Phenomenon of Anaphylaxis,"[1] which is the fourth bulletin issued by the Public Health and Marine-Hospital Service on this subject. It will be recalled that the first publication in English dealing with the phenomenon of anaphylaxis was issued by that service in 1906,[2] and the above-mentioned bulletin is a continuation of these studies.

Rosenau and Anderson have devoted themselves largely to studies of the intimate nature of the factors that make up the phenomenon of anaphylaxis, subordinating for the time being the more or less unprofitable discussion of the theory of its mechanism. In their last publication they endeavored to determine what practical use there would be, in the prevention of anaphylaxis, in the administration of various hypnotics; and for this work they used urethane, paraldehyd, chloral and magnesium sulphate, but found that none of these substances had any influence on the fatal outcome of anaphylaxis.

In order to determine whether the effect of heat in modifying the anaphylactic properties of proteins depends on its rendering the proteins insoluble, rather than on any chemical changes it may have wrought, the authors had recourse to a very ingenious experiment. This was, first, to dry the proteins, then to heat them to the desired temperatures, redissolve them and test them for their anaphylactic properties. It was found that horse serum and egg-white, when dried and then heated, would stand a temperature of 130 C. for two hours or 170 C. for ten minutes without appreciably modifying the anaphylactic properties of the respective proteins. These experiments seem to confirm the authors' suggestions as to the way in which heat acts in modifying the anaphylactic properties of proteins.

They present preliminary evidence that there are antibodies concerned in the mechanism of anaphylaxis. It was found that, by mixing the blood serum of a sensitive guinea-pig with normal horse serum, apparently the toxicity of the horse serum was decidedly increased for sensitive guinea-pigs. The authors report that, on a test of the susceptibility of a guinea-pig that had received its first injection of serum 1,096 days before, it was found that the animal was still extremely sensitive; from which they conclude that guinea-pigs probably retain their susceptibility during their entire life.

These studies, as is the case with the previous studies of Rosenau and Anderson on the same subject, are characterized by minute attention to detail and caution in drawing conclusions on the limited data. As the authors themselves state, caution must be observed in work on anaphylaxis in drawing conclusions from limited data, because of our lack of knowledge of the principles involved.

LAY MOVEMENTS FOR THE IMPROVEMENT OF PUBLIC HEALTH

The initiative long ago taken by the medical profession of the United States in behalf of the public health and a national bureau of public health is at last receiving gratifying support from the laity. The fact that medical societies are to-day holding open meetings to which the people are invited, not only to listen but to participate in the discussion of the great health problems of to-day, is probably the greatest factor in public enlightenment on this question. In a number of states the public health administration is organized with reference not only to its executive value, but also to its educational worth to the people. In several states the county health officers are called in annual convention, sometimes called "schools," for the serious study of hygienic questions and for their discussion with the people. In view of this sort of activity it can not be otherwise than that a reflex influence should set in; or, in other words, that the people themselves should begin to take the initiative.

The most conspicuous example of this sort of movement was originated something like two years ago as the result of a paper that Professor J. Pease Norton read before the American Association for the Advancement of Science. This resulted in the organization of the now well-known Committee of One Hundred on National Health, with Professor Norton as executive secretary. The personnel of this committee is probably as influential in molding public sentiment as any that could be selected. It is far reaching in its influence, which is made all the more extensive through its official publication, *American Health.* The example set before the country by Professor Norton may be well emulated by others, and the National Committee of One Hundred might well be imitated in every state. There is, indeed, no reason why state, and, for that matter, county committees, might not be organized in confederation with the now existing national committee. This movement is already well advanced in Ohio under the management of Mr. Ben LaBree, Jr., as state organizer, acting under the auspices of the original Committee of One Hundred. If this plan is carried out, the resulting influence will be great beyond present foretelling.

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[1] Rosenau, M. J., and Anderson, John F.: Further Studies on the Phenomenon of Anaphylaxis, Bull. Hyg. Lab. No. 50, U. S. P. H. and M.-H. S., Washington, April, 1909.

[2] Rosenau, M. J., and Anderson, John F.: A Study of the Cause of Sudden Death Following the Injection of Horse Serum, Bull. Hyg. Lab. No. 29, U. S. P. H. and M.-H. S., Washington, 1906.

Further action along this same line was taken at the Atlantic City Session of the American Medical Association when, on June 10, the House of Delegates passed two important resolutions. One of these was addressed to all county medical societies, requesting each of them to hold at least one open meeting each year, to which the public should be invited as active participants and which should be devoted to the consideration of public-health problems. The execution of this resolution rests with the Bureau of Medical Legislation and an active campaign will be at once inaugurated for the purpose of carrying out its purpose. The other resolution was one requesting the women physicians, members of the American Medical Association, to institute and conduct a similar campaign through the avenue of the women's clubs, mothers' associations and similar organizations. The fact that the execution of this resolution has been placed in the hands of an influential committee under the chairmanship of Dr. Rosalie Slaughter Morton, of New York, and of which Dr. Lillian K. South, of Kentucky, is one of the other officers, is a presage of large and beneficial results.

PARALYSIS OF THE LEFT RECURRENT LARYNGEAL NERVE DUE TO MITRAL STENOSIS

The change of voice and production of the so-called "brassy" or "goose" cough dependent on paralysis of the left recurrent laryngeal nerve is usually attributed to the pressure of a thoracic tumor. Indeed, such an adductor paralysis has been considered almost pathognomonic of aortic aneurism, particularly if associated with cyanosis and attacks of dyspnea. But other tumors in the mediastinum may cause similar pressure palsies of this nerve. Among other causes now recognized may be mentioned atheroma of the aorta, tuberculosis of the apex of the lung, thickened pleura in the same region, and calcified peribronchial glands. Osler has recently laid stress on paralysis of the left recurrent laryngeal nerve in cases of mitral stenosis. The confusion possible with thoracic aneurism can be imagined when the picture is known to include paroxysms of dyspnea, cyanosis, the "cracked" voice, and a paralysis of the vocal cord shown by the laryngoscope, together with a visible pulsation in the second left intercostal space close to the sternum. Ortner was the first to point these facts out. His first case of laryngeal paralysis and unequal carotid pulses was shown at autopsy to have a mitral stenosis and compression of the left recurrent nerve between the aorta and a considerably dilated left auricle. This compression has been found in other cases to be due to enlarged pulmonary veins, and in Fischauer's case to the left branch of the pulmonary artery. Of course, such a paralysis as that which occurs in diphtheria must be ruled out. One of Osler's patients gave a history of diphtheria, but the diagnosis was made clear by the fact that the change in voice antedated the diphtheria. The importance of keeping in mind mitral stenosis as a possible cause of laryngeal paralysis must be emphasized. The first of Osler's cases was diagnosed as aneurism plus a mitral lesion by no less an authority than the late Professor Nothnagel.

THE CARROLL FUND COMPLETED

It will gratify all to learn of the completion of the fund for a home for the wife of Major Carroll of yellow-fever fame. Major Ireland, of the medical corps of the Army, who so kindly assumed charge of the receiving of remittances, announces that the contributions now in his hands are sufficient to pay off the entire indebtedness on the property and leave a small balance. Further contributions for this fund are, therefore, unnecessary. The committee is to be congratulated on the able and rapid manner in which it has raised this amount, and the profession at large, and others, are to be thanked for the manner in which they generously and promptly responded to the appeal for contributions. The success of this undertaking is an evidence of the honor and esteem in which Dr. Carroll's memory is held for his self-sacrifice which led indirectly to his fatal affliction. In suffering himself to be bitten by yellow-fever mosquitoes as one of the necessary steps in solving the problem of that disease, Dr. Carroll merely followed what seemed to him to be in the line of duty. But history inscribes his name among the heroes and martyrs, and enrolls among his debtors not only his profession and science, but also commerce, his nation and the whole world.

MEETING OF THE NORTHWEST MEDICAL SOCIETIES

The fact that all roads in the Northwest lead to Seattle because of the Alaska-Yukon-Pacific Exposition has facilitated the arrangement of a notable medical convention there. The medical associations of British Columbia, Idaho, Washington and Oregon are all to be concentrated in Seattle, July 20-23. In the order named, these are the tenth, seventeenth, twentieth and thirty-fifth annual meetings of these bodies. Part of the programs naturally are separate, and part are united.

We congratulate the northwest physicians on their taking advantage of this opportunity and hope that a most pleasant and profitable session will result.

Blood and Thunder.—Last Thursday was the one-hundred and thirty-fourth anniversary of the Battle of Bunker Hill It was celebrated so vigorously in Boston that 119 persons were treated in Boston hospitals for injuries received from fireworks at the celebration. This, however, is but a prelude and a sample of what will happen on next Fourth of July. Criminal penalties and civil suits for damages should follow such destructive patriotism.—*Christian Advocate*, N. Y., June 24.

Medical News

MAINE

Graduation.—At the annual graduation exercises of the Medical School of Maine, Brunswick, a class of 19 was graduated.

Personal.—Dr. Edwin A. Porter has been appointed U. S. pension examining surgeon at Skowhegan.——Dr. Garcelon has been elected chairman of the Lewiston Board of Health.——Drs. Franklin A. Ferguson, Byron F. Barker, Robert H. Donnell and Langdon T. Snipe compose the new attending staff of the Bath Hospital.——Dr. Jacob L. Horr has been elected chairman of the Westbrook Board of Health.

Medical Society Meetings.—The fifty-seventh annual session of the Maine Medical Association was held in Portland June 16 and 17. The following officers were elected: President, Dr. Galen M. Woodcock, Bangor; vice-presidents, Drs. Stanley P. Warren, Portland, and Stephen E. Webber, Calais; secretary, Dr. W. Bean Moulton, Portland; treasurer, Dr. Edwin W. Gehring, Portland; delegate to the American Medical Association, Dr. Alfred D. Sawyer, Fort Fairfield; necrologist, Dr. James A. Spalding, Portland; and councilors: First district, Dr. George B. Swasey, Portland; second district, Dr. Herman L. Bartlett, Norway; third district, Dr. George H. Coombs, Waldobouri; fourth district, Dr. George R. Campbell, Augusta; fifth district, Dr. Eben H. Bennett, Lubec, and sixth district, Dr. Ralph H. Marsh, Guilford.——At the meeting of Kennebec County Medical Association, held in Waterville May 26, the standard constitution and by-laws was adopted.——At the annual meeting of Aroostook County Medical Society, held in Houlton, June 1, the following officers were elected: President, Dr. Sherman W. Boone, Presque Isle; vice-president, Dr. Charles E. Thomas, Caribou; secretary, Dr. Frank H. Jackson, Houlton; treasurer, Dr. Wiley E. Sincock, Caribou, and censors, Drs. Charles E. Thomas, Caribou, Frank Kilburn, Presque Isle, and Francis O. Hill, Monticello.

MARYLAND

Baltimore

Released.—After serving eight years and four months of a ten years' sentence, Dr. George C. Worthington, convicted of manslaughter in 1900, for alleged illegal operation, has been released from the Maryland Penitentiary.

Fund for Physicians' Widows.—Wives of physicians of Baltimore met June 4, at the building of the Medical and Chirurgical Faculty of Maryland and discussed plans for raising a fund to aid the widows and orphans of physicians. Dr. Eugene F. Cordell described the work undertaken and emphasized the urgency of the need. It is planned to buy a country home in the suburbs and to raise a fund of about $100,000.

MASSACHUSETTS

State Society Election.—At the one hundred and twenty-eighth annual meeting of the Massachusetts Medical Society, held in Boston June 15 and 16, the following officers were elected: Dr. Silas D. Presbrey, Taunton, president (re-elected); Dr. Joseph G. Pinkham, Lynn, vice-president; Dr. Walter L. Burrage, Boston, secretary, vice Dr. Francis W. Goss, Boston, who had served as secretary for thirty-four years and declined re-election; Dr. Edward M. Buckingham, Boston, treasurer (re-elected), and Dr. Edwin H. Brigham, Boston, librarian (re-elected). A report of the proceedings will appear in The Journal.

NEW JERSEY

Against Tuberculosis.—At the annual meeting of the State Association for the Prevention and Relief of Tuberculosis, held in Newark May 20, the following physicians were elected officers: President, Dr. Gordon K. Dickinson, Jersey City; vice-presidents, Drs. William Gray Schauffler, Lakewood, and William H. Murray, Plainfield; executive committee, Drs. Gordon K. Dickinson, Jersey City; William H. Murray, Plainfield; Benjamin Van D. Hedges, Plainfield, James A. Exton, Arlington, and Theodore W. Corwin, Newark; directors, Drs. Philip Marvel, Atlantic City; George B. Philhower, Nutley; William E. Ramsey, Perth Amboy, and Addison B. Poland, Newark.

Personal.—Dr. John W. Wade has been elected president and Dr. H. Garrett Miller, vice-president, of the Millville board of health.——Lieutenant Colonel William G. Schauffler, Lakewood, medical inspector N. G. N. J., has been appointed aide-de-camp on the staff of the governor.——Dr. Henry O. Carhart, Blairstown, collector of Warren county, was seriously injured in a runaway accident near Blairstown, June 18.——Dr. J. Wellington Crane, Newark, has been appointed prison physician, vice Dr. Samuel F. Stanger, deceased.——Dr. Herman C. H. Herold, president of the board of health of Newark, and internal revenue collector, is reported to be seriously ill at his home.

NEW YORK

Personal.—Dr. Willis G. McDonald, Albany, has been made a member of the State Board of Medical Examiners, and Dr. William S. Ely, Rochester, has been reappointed a member of the board.

Alumni Election.—The Alumni Association of Syracuse College of Medicine held its annual dinner and election June 7. Dr. Frederick Flaherty, Syracuse, was elected president; Dr. Alfred W. Armstrong, Canandaigua, vice-president; Dr. William D. Alsever, Syracuse, secretary, and Dr. A. Clifford Mercer, Syracuse, treasurer.

Blackwell Society Election.—The Blackwell Medical Society, Rochester, held its annual meeting in Williamson, June 17, the guests of Dr. Anna Lapp, and the following officers were elected: Dr. M. May Allen, president; Dr. Kathleen L. Buck, vice-president; Dr. May Nickerson, secretary; Dr. Ida M. Porter, treasurer, and Drs. Evelyn Baldwin and Cornelia White-Thomas, councilors.

Sanatorium for Brookhaven.—Dr. Eugene H. Porter, State Commissioner of Health, has given his approval to the application of the committee on tuberculosis of the Brooklyn Central Labor Union for permission to establish a camp and sanatorium for the treatment of tuberculosis in Brookhaven. This is the first application passed upon since the enactment of the new law providing that state instead of local authorities shall pass upon these applications. The local authorities last year refused to permit the establishment of this institution.

Tuberculosis Sanatoria Opposed.—A hearing was held recently before Dr. Eugene H. Porter in Patchogue, L. I., on the proposal to establish a tuberculosis sanatorium near Medford. Certain citizens of Brookhaven vehemently oppose the plan to erect a sanitarium in their neighborhood. Two years ago an application was made for such an institution, but had to be withdrawn because of public clamor. It is believed that Dr. Porter will not withhold his consent if adequate financial support is assured.——It is rumored that the question of the appropriation of $1,000,000 for the proposed tuberculosis hospital in Richmond, Staten Island, has become a political issue, and will figure largely in the coming election of a Borough president.

New York City

Leaves Estate to Hospital.—The will of Edward O. Kindberg leaves his estate, valued at more than $50,000, to the Presbyterian Hospital.

Anesthetist Wanted.—The Medical Board of St. John's Hospital, Brooklyn, announces that the position of visiting anesthetist is vacant. Applications for this position should be addressed to Frank Henry Knight, Secretary of the Medical Board, Albany and Atlantic avenues.

Ferry Boat for Tuberculosis Fight.—Miss Mary Harriman has presented one of the Erie ferry boats to the Brooklyn Committee on the Prevention of Tuberculosis and the Brooklyn Red Cross Society. Attendants and physicians will be provided for the boat, which will be used as a day camp for tuberculosis patients.

Commencement.—The first annual commencement exercises of Fordham University School of Medicine were held June 9, when a class of 11 was graduated. The rectorial address was given by Rev. Daniel S. Quinn, S. J., president of the university, and the address to the graduates was made by Dr. James J. Walsh, dean of the school.

Post-Graduate School Profits by Hewitt Will.—The will of Frederic Charles Hewitt of Owego has been admitted to probate and according to its terms, the Post-Graduate Medical School and Hospital will receive $2,000,000, and the Free Industrial School for Crippled Children and the Sheltering Arms Society of New York will each receive $200,000.

Personal.—Drs. Henry W. Frauenthal, Arthur R. Green and Francis Delafield have sailed for Europe.——Dr. Walter Bensel has been appointed by President Taft to be first lieutenant in the medical reserve corps of the United States Army.——Dr. William H. Park has been appointed a member of the Board of State Medical Examiners to succeed Dr. Floyd M. Crandall.

East Side Tuberculosis Exhibition.—This exhibition is being held at the Educational Alliance, East Broadway and Jefferson street, and will continue until July 1. Isador Stras presided at the opening meeting, and Commissioner Robert

W. Hebberd of the Department of Charities and Dr. Samuel A. Knopf spoke. Both Yiddish and English lectures have been arranged for every evening.

Asks Children to Make Less Noise.—William H. Maxwell, superintendent of schools, has written a letter which he has asked the principals of the various schools to read to the chilren, asking that during vacation they refrain from making noise near hospitals or houses where they know someone is sick, and asking especially that they should not explode any fireworks near a hospital on the Fourth of July.

Board of Ambulance Service Named.—Mayor McClellan has appointed Nathan Bijur and Harold Pratt as the two citizen members of the new Board of Ambulance Service which was authorized by the last legislature to provide new regulations for the control of the ambulance service of this city. The other members of the board are the police commissioner, the commissioner of charities and the president of the board of trustees of Bellevue and Allied hospitals.

Open Convalescent Home.—The Children's Aid Society has just opened the Chappaqua Convalescent Home in Westchester county, with accommodation for 200 crippled children. This institution was made possible by the gift of $500,000 by Mrs. A. A. Anderson. The mothers are also taken where it is not advisable to separate the children from them. The same society has also opened a new ward in the Coney Island Health Home. Last year 985 women and 2,173 children were cared for at this institution.

Hospital Alumni Elections.—The Alumni Society of the New York Skin and Cancer Hospital has elected the following officers: President, Dr. Jerome Kingsbury; vice-presidents, Meara, professor of therapeutics and clinical medicine; Dr. Fred Wise, and treasurer, Dr. H. A. Pulsford.——The Society of Ex-Internes of the Jewish Hospital, Brooklyn, was recently organized and the following officers were elected: President, Dr. William F. Bozenhardt; vice-president, Dr. August G. Horstman; secretary, Dr. Joshua Ronsheim, and treasurer, Dr. William Lintz.

New Professors Announced.—At the June meeting of the Cornell Board of Trustees, the following faculty appointments were made for the medical department: Dr. Frank Sherman Meara, professor of therapeutics and clinical medicine; Dr. Charles N. B. Camac, professor of clinical medicine; Dr. William J. Elser, professor of bacteriology; Dr. John A. Hartwell, professor of clinical surgery; Dr. William B. Coley, professor of clinical surgery; Dr. Silas P. Beebe, assistant professor of experimental therapeutics, and Dr. John R. Murlin, assistant professor of physiology.

Work Among the Crippled.—The People's University Extension Society carried on twenty-three classes for the physical training of crippled children last year with an enrolment of over 350 pupils, and 96 free classes in manual and domestic training had an enrolment of about 900 crippled children. There were also 24 free classes for mentally defective children. Crippled and blind men and women from 60 to 80 years old were members of some of the adult classes. The annual report of the society gives details of more than 1,100 classes, having an enrolment of about 19,000 pupils.

Fighting Sale of Cocain.—William J. Schiefflin, president of Schiefflin & Co., wholesale chemists, warmly endorses the stand taken by Commissioner Bingham in urging on the chairman of the Senate Finance Committee the importance of placing a prohibitive tariff on cocain. In his letter to the Finance Committee, Commissioner Bingham states that there are at least 63 drug stores in this city which are suspected of carrying on the illicit sale of cocain. A prohibitory tariff would confine the sales to the American producer. With these measures the sale of cocain in the United States would be cut in half, the abuse of the drug would be checked and the hands of the druggist would be clean.——A druggist recently arrested by Board of Health detectives on the charge of selling cocain, pleaded guilty, and was sentenced to imprisonment for one year in the pentitentiary.

NORTH CAROLINA

Pellagra.—Drs. Robert H. Bellamy and Edward J. Wood, Wilmington, are doing extensive work in the investigation of pellagra. They have found 17 cases of the disease in New Hanover county.

Hospital Dedicated.—The Episcopal bishop of North Carolina formally dedicated at Raleigh on May 26, the new St. Agnes Hospital for Colored Patients. It is a substantially built structure of modern type, with accommodation for sixty patients.——The cornerstone of the Thompson Sanatorium, Troy, was laid with proper ceremonies, May 27.

State Society Election.—At the fifty-sixth annual meeting of the Medical Society of the State of North Carolina in Asheville, June 15-17, the following officers were elected: President, Dr. James A. Burroughs, Asheville; vice-presidents, Drs. Edward J. Wood, Wilmington; John Q. Myers, North Wilkesboro, and Lacy D. Wharton, Smithfield; secretary, Dr. David A. Stanton, High Point (re-elected); treasurer, Dr. Herbert D. Walker, Elizabeth City; orator, Dr. Cyrus Thompson, Jacksonville; essayist, Dr. R. V. Walker, Salisbury; delegate to the American Medical Association, Dr. Thomas E. W. Brown, Asheville, and alternate, Dr. James V. McGougan, Fayetteville. Wrightsville Beach was chosen as placce of meeting for 1910.

OHIO

Victims of the Law.—For selling drugs without being a registered pharmacist, J. A. Vincent, Cleveland, is said to have been fined $20 each on four counts, the State Board of Pharmacists conducting the prosecution.——G. T. Dimm, Fostoria, found guilty of practicing medicine without a license, is said to have been sentenced to imprisonment for ninety days in the Seneca county jail, and to pay a fine of $50 and costs, June 2. The jury recommended that the sentence be suspended so long as the defendant refrained from practice.——In the case of Dr. Norman M. Geer, Cleveland, said to have been sentenced to four years' imprisonment in the penitentiary on the charge of performing an illegal operation, the circuit court reversed the decision of the lower court and the defendant was released from jail. An attempt will, it is said, be made to retry the defendant.

Cincinnati

The Eichberg Fund.—Dr. Nathaniel P. Dandridge has reported to the Cincinnati Academy of Medicine that the Joseph Eichberg fund for the establishment of a memorial chair of physiology in the medical department of the University of Cincinnati, now amounts to $45,000. Before the actual acceptance and transfer of this money can take place, it will be necessary for the academy to become an incorporated body.

PENNSYLVANIA

New State Antitoxin Stations.—The state health commissioner has established a number of new antitoxin stations. This addition increases the number of distributing stations in the state to 633.

State Medical Examinations.—The annual spring examinations of the State Medical Examining Board were held in Philadelphia and Pittsburg, June 22-25. There were 270 men examined in Philadelphia and about one-third that number in Pittsburg.

Railroad Casualties.—According to statistics compiled by the State Railroad Commission, the forty-four street railways in the state, during the quarter ended March 31, killed 37 persons and injured 765 others. Six of the killed and 56 of the injured were children not more than 15 years. The greatest number of persons killed was in Philadelphia. The highest number of injuries was on the Pittsburg company's lines, the non-fatal accidents being 311.

Hospitals and Sanatoria.—The state department of health has opened a dispensary for tuberculosis at Wilkinsburg, in charge of Dr. James M. McNall. The dispensary will furnish free medical treatment and advice to poor tuberculosis patients of Allegheny county, and they will be supplied with fresh eggs and milk daily.——Hazelton Society for the Prevention of Tuberculosis has begun negotiations for the acquisition of five acres of ground near the State Hospital, on which to erect a sanatorium.——The contract for the erection of a group of buildings at South Mountain Sanatorium, Mount Alto, has been awarded for about $50,000.——The cornerstone of the Philadelphia Jewish Sanatorium for Consumptives, Eagleville, was laid with appropriate ceremonies June 13. The site is about four miles north of Valley Forge and contains seventy acres. The proposed plans include a mess hall 30x80 feet, an infirmary of the same dimensions, four shacks each 16x40 feet and two sun parlors, each 16x75 feet. The institution will cost about $50,000, and will accommodate 150 patients.——The cornerstone of the Mid-Valley Hospital, Blakely, was laid May 31. The main building of the hospital is to be 65x106 feet and a ward building on either side 39x85 feet. The hospital will accommodate 41 patients.

Philadelphia

Personal.—Dr. John S. Sharp has been appointed visiting physician to the Bryn Mawr Hospital.——Drs. Morris Longstreth, William G. Moore and George F. Nickerson have sailed for Europe.

Contagious Hospital Receives Patients.—The first transfer of patients from the old Municipal Hospital to the new institution was effected June 25, when the scarlet fever patients, numbering 181, were taken to the new building. The remainder of the inmates of the old hospital have now been removed to the new institution.

Heat Mortality.—Philadelphia was one of the hottest cities in the United States during the past week, the maximum daily temperature ranging from 90 to 94. June 21-26 is recorded as the hottest period between those dates in the history of the local weather bureau. Deaths from the heat up to midnight June 26, aggregated 22.

Hospital Buys Site.—The Pennsylvania Hospital has purchased the property at 724 Spruce street for about $20,000. The property is on a lot 24 feet 9 inches by 250 feet. The Pennsylvania Hospital now owns all but one piece of property in the block opposite to its present buildings, and when the growth of the institution demands it, the site will be utilized as annexes to the hospital.

Bequests.—The will of the late Mrs. Julia Grey Dayton contains a bequest of $7,000 to the Hospital of the University of Pennsylvania, to endow a free bed in the surgical department as a memorial to her husband, William C. Dayton.——The will of the late William J. McAllister bequeaths $10,000 to the Orange Home of Hatboro, Pa., $3,000 to the Presbyterian Hospital, and $5,200 to the Presbyterian Hospital to endow a free bed to be known as the William J. McAllister bed.

WASHINGTON

New Medical Board.—The newly organized State Board of Medical Examiners met for organization June 1, and elected the following officers: President, Dr. Frank P. Witter, Spokane; vice-president, Dr. Edward J. Taggart, Bremerton; secretary, J. Clinton McFadden, Seattle; and treasurer, Dr. George H. Dow, Chehalis.

New Marriage Statute.—Under the provisions of the new marriage laws which went into effect June 10, issuance of marriage licenses is prohibited to persons suffering from tuberculosis in advanced stages, or from several other contagious diseases, and to habitual criminals and drunkards. The law provides that applicants must undergo medical examination, excepting where the woman is 45 years of age or over.

GENERAL NEWS AND COMMENT

Hospital Authorities to Meet.—The eleventh annual conference of the American Hospital Association will be held in Washington, September 21-24.

Spanish Edition of Pharmacopeia.—The Spanish edition of the United States Pharmacopeia, to which reference has been made elsewhere, will be sold at retail at the following prices, fixed by its Board of Trustees: for the cloth binding, $5; cloth binding, interleaved, $6; sheep binding, $5.50; sheep binding, interleaved, $6.50; flexible leather binding, $6. Erroneous prices have been given by some other publications; the above are official.

Inspection of Viruses.—Radical changes in the regulation governing the sales of viruses, serums and toxins, and analogous products, have been made by a board, consisting of the surgeons general of the Army, Navy and Public Health and Marine-Hospital Service. Under the new regulation, an unannounced inspection is to be made at least once a year of all establishments making serums and viruses, and licenses are to be issued only after inspection and examination of the products.

Protection of Public Health.—Application has been made for a certificate of incorporation for the National Association for the Protection of Public Health, whose objects are to promote among the people of the United States a better understanding of the laws of health and sanitation, to disseminate proper and accurate information to this end in order that the national health shall be improved without referring to any special interests that may be damaged thereby. The directors of the association are Dr. Henry W. Frauenthal, Campbell MacCulloch and Dr. William R. Hitchcock, all of New York City.

Personal.—Medical Director John C. Wise, U. S. Navy, sailed for Europe, June 19, as representative of the government to the International Antitubercular Congress at Stockholm, July 8-10, to the International Scientific Congress on Leprosy at Bergen, August 16-19, and to the International Medical Congress, Budapest.——Surgeon Frank L. Pleadwell, U. S. Navy, sailed for Europe June 19, and will represent the government at the second International Conference for the Revision of Nomenclature of Diseases and Causes of Death, at Paris, July 1-3, and at the twelfth International Congress on Alcoholism to be held in London July 18-24.——The degree of D.Sc. has been conferred by Brown University on Col. William C. Gorgas, Medical Department, U. S. Army, chief sanitary officer of the Canal Zone.

Elections.—At the twelfth annual meeting of the Association of the Medical Officers of the Army and Navy of the Confederacy, held in Memphis, June 9, 10 and 11, Dr. Gustavus B. Thornton, Memphis, was elected president, and Dr. Edwin D. Newton, Atlanta, Ga., secretary. The association will meet next year in Mobile, Ala.——At the fifth annual meeting of Atlantic Coast Line Railway Surgeons, held in Wilmington, N. C., the following officers were elected: President, Dr. James H. Pittman, Jacksonville, Fla.; vice-presidents, Drs. William H. H. Cobb, Goldsboro, N. C., Alexander M. Brailsford, Mullins, S. C., and John M. Spence, Camilla, Ga., and secretary-treasurer, Dr. Charles P. Aimar, Charleston, S. C. (re-elected).——On the occasion of the fourth annual meeting of the New England Alumni Association of the Baltimore Medical College, held in Boston, June 16, the following officers were elected: President, Dr. Henry J. Keaney, Everett, Mass.; vice-president, Dr. Thomas J. Dougherty, Somersworth, N. H.; state vice-president, Drs. Lawrence E. Willard, Saco, Maine; William E. Lawrence, North Haverhill, N. H.; E. R. Lynch, Brattleboro, Vt.; James F. Cuddy, Athol, Mass.; C. B. O'Rourke, Providence, R. I.; and George M. Burroughs, Danielson, Conn.; secretary, Dr. Charles S. Gilman, Boston, and treasurer, Dr. Thomas B. Alexander, Scituate Harbor, Mass.

Physicians of Northwest to Meet.—The first meeting of the Medical Associations of the Pacific Northwest, which includes those of British Columbia, Idaho, Oregon and Washington, will be held in Broadway High School, Seattle, July 20-23. At this time the tenth annual meeting of the British Columbia Medical Association, the seventeenth annual meeting of the Idaho State Medical Association, the twentieth annual meeting of the Washington State Medical Association, and the thirty-fifth annual meeting of the Oregon State Medical Association will be held. July 21 has been set aside as medical day at the Alaska-Yukon-Pacific Exposition, and on the 22d an excursion to the Navy Yard at Bremerton has been arranged for. The wives of the visiting physicians will be entertained by the King County Medical Society and the Medical Women's Club. On the first day executive sessions will be held by the various component associations. In the afternoon there will be a general session, over which Dr. Clarence A. Smith, Seattle, will preside. Addresses of welcome will be made by Hon. M. A. Hay, governor of Washington, and Hon. John F. Miller, mayor of Seattle. Responses will be given by Dr. Simeon E. Josephi, Portland, on behalf of Oregon; by Dr. R. Eden Walker, New Westminster, on behalf of British Columbia; by Dr. R. L. McCalla, Boise, on behalf of Idaho, and by Dr. Wilson Johnston, Spokane, on behalf of Washington. Addresses will follow by Dr. James B. Herrick, Chicago, on "General Infections and Metastatic Lesions Due to Gonococci;" by Dr. Roswell Park, Buffalo, N. Y., on the "Relation of Internal Secretions to Surgical Diseases," and by Hon. A. W. Frater, Seattle, on the "State Care of the Insane." On the first afternoon, the secretaries of the county societies will meet. A general session on "Tuberculosis" will be held on the afternoon of July 22, under the auspices of the Washington Association for the Prevention and Relief of Tuberculosis, and one in the evening on "Public Health and Sanitation," under the auspices of the Pacific Coast Public Health Association. The work of the component associations will be undertaken in four sections—surgery, medicine, ophthalmology and otolaryngology, and urology.

The Carroll Fund Completed.—It is a pleasure to announce the raising of the amount which was needed to complete the payment of the mortgage, interest, taxes, etc., on the house which Major Carroll purchased for his family shortly before his death. Lists of contributions have been published from time to time in THE JOURNAL since April 1, when the committee began its work. The receipt of these funds has been under the charge of Major M. W. Ireland of the Surgeon-General's office of the War Department, Washington, D. C. The following contributions have not been previously acknowledged:

Medical Officers, U. S. Army	$ 10.00
Houghton County Medical Society, Calumet, Mich	10.00
State Medical Association of Texas	100.00
Santa Barbara County Medical Society, Cal	8.00
Dr. Hermann G. Klotz, New York City	3.00
Orleans Parish Medical Society, New Orleans, La., et al.	1,248.50

Contributed as follows:

Visiting Staff of Touro Infirmary	$160.00
Physicians other than Touro Infirmary	250.00
United Fruit Company	100.00
New Orleans Progressive Union	50.00
S. Pfeiffer & Co	10.00
R. B. Scudder & Co	5.00
New Orleans Picayune	25.00

New Orleans Furniture Manufacturing Co.	5.00	
A. B. Griswold & Co.	10.00	
Vaccaro Bros. & Co.	25.00	
"N"	1.00	
James J. Reiss Company	5.00	
Seaboard Refining Company	5.00	
"M.D."	2.00	
I. L. Lyons & Co.	10.00	
Leon Godchaux Clothing Co.	2.00	
"Cash"	1.00	
New Orleans Cotton Exchange	165.00	
B. F. Glover & Son	25.00	
Smith Brothers Co.	10.00	
A. M. & J. Solari	5.00	
Bluefields Steamship Co.	25.00	
Penick & Ford Co., Ltd.	10.00	
Isidore Newman & Son	25.00	
D. H. Holmes Co.	10.00	
J. B. Camors	10.00	
H. Guenard	2.00	
S. A. Cosulich	5.00	
A. K. Miller & Co.	5.00	
National Rice Milling Co.	10.00	
W. G. Coyle & Co.	10.00	
W. W. Carre Co.	5.00	
Ruddock Cypress Co.	10.00	
E. C. Palmer & Co.	25.00	
Stauffer, Eshleman & Co.	10.00	
Louisiana Bankers Association	100.00	
New Orleans Railway & Light Co.	10.00	
Louisiana Glass & Mirror Works	5.00	
Southern Pacific Co. (Atlantic Steamship Line).	100.00	
Sixty-fifth Regiment, N. G. N. Y., Buffalo, N. Y.		50.00
Coos and Curry County Medical Society of Oregon, Marshfield, Oregon		10.00
Dr. Seldom B. Overlock, Pomfret, Conn.		2.00
Dr. Nathan Mayer, Hartford, Conn.		1.00
B. McKee, San Francisco		5.00
Dr. Frank K. Hallock, Cromwell, Conn.		5.00
Total		$1,452.50

FOREIGN

The Fifth International Congress for Obstetrics and Gynecology.—The Russians are again making an effort to hold this international gathering in their land, the authorities having given their consent and approval to invite the congress to meet at St. Petersburg in September, 1910. The last congress had been invited there, but conditions were too unsettled at the time appointed and the congress was held elsewhere.

Compulsory Education in Spain.—The Spanish parliament has recently passed a law making education compulsory for children, with penalties for parents who do not send their children to school, and disqualifying all who do not learn to read and write from participation in state privileges which others enjoy. The *Siglo Medico* comments joyfully that this bill was introduced and its adoption secured by a member of the medical profession, C. M. Cortezo, who is a senator and one of the three editors of our esteemed Madrid exchange.

Recent Honors in Memory of Members of the Profession.—A memorial to Kussmaul was unveiled at Freiburg, May 15, with much ceremony, and our German exchanges of the first week in June contain views of the bust that surmounts the shaft and the allegorical figure on the base representing the art of healing. A tablet to Auenbrugger, the "father of percussion," has also recently been installed at Vienna, and a large statue of Pettenkofer unveiled at Munich. A memorial to Mikulicz was also unveiled at Breslau, May 27; it stands in front of the clinic he made famous, and the address was delivered by his successor, H. Küttner. In Madrid, also, a tablet was installed in the Colegio de Medicos the same week, to the memory of F. G. Roel, noted in connection with the first description of pellagra. His will is said to be such an interesting document that the Academy of Medicine is to republish it shortly.

The Daniels Souvenir Number of Janus.—The current issue of *Janus* is dedicated to C. E. Daniels, of Amsterdam, on his seventieth birthday. He was one of the four founders, in 1896, of *Janus*, the international archives for the history of medicine and medical geography, and has contributed many articles on the history of medicine, besides founding the medico-pharmaceutic museum at Amsterdam which has attracted so much attention. Daniels has been prominent in the organization of the profession in Holland, serving in various capacities and as chief of the information bureau for medical positions and for the museum of colonial medicine. The souvenir number contains over 250 pages and 20 articles on various historical subjects, including one by D'Arcy Power on "The Fees of Our Ancestors," and another by E. T. Withington on "John Locke as a Medical Practitioner," which states that Locke is the most celebrated man that ever belonged to the medical profession in Great Britain. Another communication cites the Sinclair Letters to the effect that the inventor of the balloon, Montgolfier, gave the credit for his invention to the Scotch chemist, Joseph Black, 1728-1799.

First Russian Congress of Factory Physicians.—This congress was held at Moscow in April, with a large attendance of physicians, manufacturers and delegates from working men's organizations. Among the questions discussed was the advisability of medical examination of the workman when first entering the factory, with a uniform card catalog of the findings; this is in the interests of the workman, to warn him and instruct him in prophylactic measures, and also to collect data for statistics. The labor representatives protested against this measure unless the medical examiner was a state official and not dependent on the manufacturer. The chief topic of interest was cholera, which Bronstein stated is permanently endemic, and "truly deserves the name of Russian cholera." The consensus of opinion was that serotherapy had proved disappointing, and, as there is no specific, palliative measures are the only reliance in treatment, but protective inoculations have demonstrated their efficiency and harmlessness, and were urgently recommended by a number of the medical and other speakers. The cholera germs are found not only in the stool of the patients, but in the blood, bile and urine. Bacteriologic diagnosis is especially necessary in suspicious cases when there is no epidemic prevailing, in atypical affections, and in the convalescents to complete bacteriologic recovery. One speaker stated that protecting serum inoculations reduced the number of cases of cholera to one-fifth. In some of the epidemics all the patients died at first, but later the mortality averaged 42 per cent. An important palliative measure is to keep the patients warm. The full report of the congress is in the *St. Petersburg. med. Wochenschrift*, June 5.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, June 12, 1909.

Fifty Years of Social Progress

The Local Government Board has issued a useful "bluebook" to illustrate in a convenient and readily intelligible form various important matters in the study of social conditions, such as the growth of population, mortality, and public health administration, the changes in the occupation of the people, the recurring periods of industrial prosperity and depression, pauperism and the action of the poor law, local taxation and local debt. While each subject is dealt with as briefly as possible a very complete survey is given of the period covered. By the free use of charts the various movements are shown graphically and the meaning of the huge masses of figures rendered rapidly intelligible. The work is so important that it must become a standard book of reference for all interested in social questions. Indeed it may be doubted if ever such an important body of figures and other information was ever brought together within a moderate compass before. Among the most salient facts of medical interest are the following. The population of the United Kingdom in the middle of 1908 was estimated at 44,500,000; in 1901 it was 41,500,000; in 1851 27,000,000. Thus in the half century between the last two dates the population increased by 51.5 per cent. In the last three decades the number of births in proportion to the population has been decreasing but the number of deaths has also declined though not in the same proportion. The net result is that the annual increase of population shows a slight diminution. In the period 1851-55 the average annual birth rate was 33.9 per 1,000 and the death rate 22.7. The former has steadily fallen to 26.3 in 1907 and the latter to 11.3. This decline of the birth rate is common to most European countries and the curve in this country almost exactly follows that in France and fairly closely that in Prussia and Belgium. The tendency of the population to aggregate in urban areas is shown by the fact that while in 1851 it was almost equally divided between urban and rural areas, in 1901 77 per cent. was urban. The mortality of the rural districts is about 23 per cent. lower than that of the urban districts. With regard to the causes of death the mortality from nearly all the principal diseases has decreased materially in the last 30 years. The most important exceptions are pneumonia, diphtheria, and cancer. Typhoid fever has greatly declined and typhus fever and smallpox have almost completely died out. Scarlet fever also shows a persistently downward curve, while phthisis has steadily diminished.

The Radium Treatment of Cancer

With the foundation of the Radium Institute the eyes of the profession are naturally turned towards the radium treatment of cancer. The lead taken by the French both in the discovery and in the therapeutic use of radium has made them for the time our teachers. The newly-appointed director of the Radium Institute, Captain Pinch, F.R.C.S., has returned from Paris where he has been studying the methods of the radium institute in that city. Its director, Dr. Louis Wickham, has delivered before the dermatologic section of the Royal Society of Medicine a brilliant address on "The Therapeutic Application of Radium to Cancerous and Other Tumors." The address, which was delivered in English, was listened to with great interest and was illustrated by lantern slides. He first showed the destructive power of radium on the tissues by paired pictures of pigmentary and vascular nevi and rodent ulcer. But his main subject was not the destructive power of radium but its apparently specific power of affecting certain diseased tissues without affecting normal tissues. This action had been demonstrated with regard to four conditions—eczema, angioma, keloid and cancer. Its application would arrest such morbid processes, such as deep cancers, without injuring the superficial tissues. But its successful application depended on overcoming great difficulties in estimating accurately the dosage.

Presentation to Mr. Lynn Thomas and Mr. H. Skryme

The occasion of the presentation at Cardiff to Mr. Lynn Thomas and Mr. Skryme of a fund subscribed to defray the heavy costs to which they had been put in consequence of a patient recovering damages from them, principally because they had treated a fracture on lines not laid down in the text-books—without applying a splint—was a remarkable professional function. The case has been fully narrated in previous letters. It was appropriately arranged that the distinguished French surgeon, M. Lucas-Championnière, who is the apostle of the modern treatment of fractures by massage and mobilization and of the discarding of splints should make the presentation. To a crowded meeting of the Cardiff Medical Society he delivered an address on "The Modern Treatment of Fractures," a subject peculiarly his own. The great interest taken in the function was natural. The occasion was felt by the profession to be important for it was vindication of its right of freedom of thought and action.

PARIS LETTER

(From Our Regular Correspondent)

Paris, June 10, 1909.

Comparative Statistics of Population in France in 1908

From the official statistics of the population which have just been published by the ministry of labor, it appears that the situation of France in regard to population has appreciably improved during the last year. In 1907 the number of deaths was 19,920 more than the number of births (The Journal, Oct. 17, 1908, li, 1346). In 1908, on the other hand, an excess of 46,411 births over deaths is reported. This figure is appreciably larger than that of the five-year period from 1902 to 1907, in which the annual average excess of births over deaths was 34,802, but one must acknowledge that it is mainly to a great diminution of the number of deaths that the excess of births during the year 1908 is due. The number of deaths, in fact, was less by 48,266 than the corresponding number in 1907, while from the one year to the other, the number of births has increased only by 18,067. In 1908 there were 791,712 births in place of 773,645 in 1907. In spite of the slight increase of births recorded last year, the years 1907 and 1908 are the only ones since the beginning of the nineteenth century which have furnished fewer than 800,000 infants born alive. The number of births registered in 1908 remains less by 15,135 than the corresponding figure of 1906, and less by 48,131 than the annual average of the decennial period 1896 to 1905.

As for the number of deaths, it continues to decrease, thanks to the progress of hygiene and to the spread of comfort and well-being. There were recorded last year 745,271 deaths, a figure less by 31,108 than the annual average of the decennial period 1896 to 1905. The number of deaths per 10,000 inhabitants fell last year to 190, the lowest proportion recorded in France since the beginning of the nineteenth century. The relative increase of the population, the annual average of which was 18 per 10,000 inhabitants from 1901 to 1905, fell to 7 per 10,000 in 1906, and gave place in 1907 to a diminution of 5 per 10,000. It has gone up during the year 1908 to 12 per 10,000.

It would be, however, a mistake to believe that the improvement mentioned for the last year was general for the population of the whole of France. There were only 45 departments, those of the regions of the north, of Brittany, of the eastern frontier, of the Limousin, and of Corsica, in which the births exceeded the deaths. In the 42 other departments, those in the regions of the Garonne and the Rhône valleys, the deaths were in excess of the births.

In regard to the number of marriages, however, France occupies a front rank. There were recorded during the last year 315,928 marriages, This is the largest number that has been recorded since 1873, in which 321,238 marriages were celebrated. There is an increase of 1,172 by comparison with the corresponding figure for 1907, which was higher by 8,269 than the corresponding number of 1906. The proportion of newly married persons continues to increase; from 153 per 10,000 inhabitants in 1904, it has become 160 in 1907, and 161 during the last year.

The Centenary of Amédée Bonnet

The memory of the illustrious surgeon, Amédée Bonnet, author of well-known works on diseases of the joints and their treatment, on cauterization, etc., was celebrated June 7, at Amberiou in Bugey (a large town of the department of the Ain), in which he was born March 19, 1809; Professor Chauveau, member and delegate from the Academy of Medicine, presided over the ceremony, at which there were a great number of French and foreign physicians, including Professors Boeckel of Strasburg, Reverdin, Girard of Geneva, and Sonnenberg of Berlin. Professor Poncet, who occupies at the College of Medicine of Lyons the chair of clinical surgery, made illustrious by Bonnet (who died at Lyons, Dec. 1, 1858), sketched the work of the great surgeon in an excellent speech.

To Prohibit Sale of Nursing Bottles with Tubes

It is proposed in the senate to forbid the sale of nursing-bottles with tubes, under penalty of a fine of 25 to 100 francs, and, in case of a second offense, of imprisonment of eight days to a month.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, June 10, 1909.

Campaign Against Infantile Mortality in Germany

On June 4 the Empress Augusta Victoria House for the Repression of Infantile Mortality in the German Empire was opened in Charlottenburg in the presence of the empress, who is the protectress of the institution. This institute owes its existence to the increased effort to oppose the high infant mortality in Germany. In 1907 no fewer than 351,046 children died during the first year of life in Germany and about two-thirds of these died from disturbances of nutrition. If this mortality is compared with that of other countries, there appear distinct differences to the discredit of Germany. In 1906, among 100 children born living, there died during the first year of life: In New Zealand, 6.2; New South Wales, 7.5; South Australia, 7.6; Norway, 8.1; England (1907), 11.8; Holland, 12.7; Switzerland, 12.7; France, 14.3; Germany, 18.5; Hungary, 20.5; European Russia, 27.2.

The increase of population has diminished of late years because the number of births has fallen off. A further reduction of the increase of population can only be prevented by a further reduction of the total mortality. But this can only be reached by reducing the high infantile mortality.

The means for building were contributed mostly by private donations. The city of Charlottenburg gave the land, about three acres, on the occasion of the silver wedding of the imperial pair, the kaiser and empress contributed about $6,000, and collections in the empire have furnished more than $360,000. The functions which have been assumed by the institution are as follows:

1. The practical and scientific investigation of the questions pertaining to the nutrition and care of infants as well as the care of mothers.
2. The collection of data on infantile mortality and on the organization of institutions for the care of infants in the German empire and in other civilized countries.
3. To make the results of scientific and practical investigations available to the public by its publications and to offer information and counsel to officials and to public and private associations as well as private individuals.

In regard to the clinical and scientific studies it is proposed to receive pregnant women months before their expected delivery and retain them and their children in the house for months after delivery for the purpose of constant observation of the physiology and pathology of pregnancy. The healthy children will be kept under supervision after they leave the institution and data regarding the effectiveness of outside care will be collected. In the house there is also a milk kitchen and a stable for milk cows is connected with it so that it is possible to control the production and preparation of the milk and thus assume the entire responsibility for the nutrition of the child. This nutriment will be provided not merely for the children lodged in the house, but also given out in the outside work on the condition that the children are brought to the station in the house. In special rooms an exhibition will be installed which will contain everything to illustrate the hygiene of the child, the nursery, and the lying-in room, both with respect to the family and institutions.

Nursing in the institute is in the hands of sisters who will have assistance from the mothers of the children and also from nurses and midwives who reside in the house for the purpose of training. For the care of 70 children, 10 sisters, 12 "lady nurses," 6 nurses and 6 midwives are provided. The training school has the task of supplying the truly felt want in Germany of nurses capable of caring for children in private houses. Two classes of these nurses are provided for. Women who are to receive training as "lady nurses" must have a mastery of a second modern language in addition to German, and must pay $288 for their education, while the ordinary nurses are required only to make a deposit which is returned to them at the end of their course. The "lady nurse" and nurse take the place of the mother in supervising the bringing up of the child, and hence it is desired when possible that they shall spring from the same social class as the child itself. This is the reason for the distinction in the requirements as to education and the expense of training. In the training itself, which lasts one year, no difference is made between the two classes of nurses. The midwives serving in the institution come directly after passing their examination, for six months to receive a special training in the care of nurslings and their feeding. In this way an intelligent view of the feeding of children will be promulgated by the aid of the midwives. The mothers received into the institute with their children are regularly employed. They are instructed in laundry work and in the making of plain children's clothing and in the care and feeding of the children. In this way the mothers are prepared to spread intelligent views regarding the feeding of children in their own circles after their discharge. The children discharged from the house are permanently kept under observation. As may be seen, the institute has laid out an extraordinarily extensive program, and there is reason to expect that under proper management it will give valuable service.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, June 9, 1909.

Breach of Professional Secrecy

A remarkable case of breach of professional secrecy has recently been brought into court and the result is most interesting to both laymen and physicians. The facts, briefly stated, were the following: A married woman, occupied in a country postoffice, contracted syphilis extragenitally. The physician whom she consulted did not at once recognize the nature of the disease, but, on arriving at the diagnosis, he cautioned the patient, giving her instructions to prevent the transmission of the disease to others. But as she neglected his cautions, the physician notified the postmaster-general of the patient's disease. Rumors soon spread in the village; the woman was dismissed from her post and later on was shunned by society. In the proceedings resulting from the action of the wronged patient, the physician was acquitted with the comment that "the accused doctor had undoubtedly acted in public defence, for by his action the danger threatening the community from the neglectful behavior of the patient was averted." It is the first instance in which voluntary breach of professional secrecy has not been punished in this country.

Lately several similar occurrences have taken place, but with the significant difference that the physician was asked by legal authority, and thus had to disclose his patient's disease. In an instance much spoken of lately, Prof. von Zeissl was treating a railway man for syphilis, who by neglect, in spite of a caution by the doctor, infected his two children, who went to school. As there was imminent danger of the playmates and fellow pupils of these two also falling victims to infection, von Zeissl brought it about by prudent medication, that the managing board of the school put an official question to him, backed by a forensic command; to this he replied that the children were suffering from an infectious contagious disease; these children were then refused admission to school until they brought a certificate of health from him. Much comment has been raised by the publication of these cases, and it must be stated that the majority of the profession still holds the opinion that the physician must stand by his patient whatever public interests are concerned. It is really a question of moral feeling. The proposed, but not yet accepted, new *Aerzte-Ordnung* (medical regulation) recommends the course of action adopted by the two physicians mentioned above.

Legislation Against Alcoholism

The congresses repeatedly held against alcohol and other factors have resulted in a bill to regulate the drink habit by reducing the number of places were alcohol is sold and bringing the number of public houses and the number of inhabitants into relation. The business hours of the retail dealers will be reduced to ten per day. No automatic appliances for the sale of alcoholic beverages are to be allowed. An important feature is the provision that debts contracted for alcohol drinking shall not be valid (the majority of drunkards drink on credit). Serious crimes committed by drunken persons have increased lately. Therefore the bill provides for the punishment of an intoxicated criminal, not for the crime, but for the intoxication. Repeated intoxication within one year in public is punishable by imprisonment of one to thirty days, or by a fine of 10 to 500 crowns ($2 to $100). The sale of alcoholic beverages to persons already under influence of alcohol is also punishable.

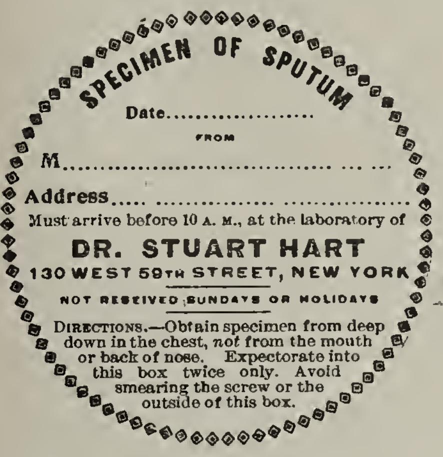
A Sanitarium for Physicians in Marienbad

A local medical club in Marienbad and Franzenblad has been formed to enable the profession to erect in these important health resorts a sanitarium for diseased practitioners. Physicians from Austria and Germany will be accommodated free of charge; others will have to pay a small sum for lodging and food, while baths and other therapeutic procedures will be free to them. Gout, rheumatism, obesity and cardiac disease are the chief indications for these health resorts, and it is known that doctors often suffer from them.

Correspondence

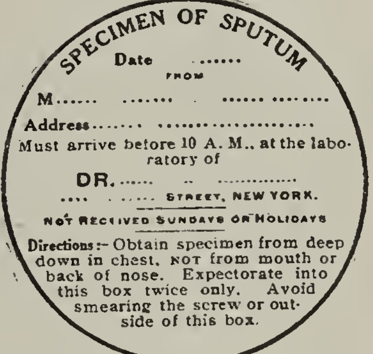
Sputum Boxes—A Protest

To the Editor:—I wish to call attention to a method by which a manufacturer endeavors to turn to his own exclusive advantage a device that originally was freely and without reserve placed at the disposal of physicians and the community at large. In the *Medical Record*, New York, Aug. 20, 1898, p. 287, I described a wooden container for the collection of sputum for laboratory examination which has since that time been in general use by health boards, sanatoria, laboratory workers and physicians and has been actually distributed to the number of several hundred thousands. I have never had any pecuniary interest in the manufacture, sale or distribution of these boxes, and my only desire in regard to them has been that they should be well made and available at a reasonable price to all to whom they might be of service. It is needless to say that I have never attempted to secure a patent on the box, and its use has been placed without restriction at the disposal of the community at large.



SPECIMEN OF SPUTUM
Date.....................
FROM
M.......................................
Address..... ....
Must arrive before 10 A. M., at the laboratory of
DR. STUART HART
130 WEST 59TH STREET, NEW YORK
NOT RECEIVED SUNDAYS OR HOLIDAYS
DIRECTIONS.—Obtain specimen from deep down in the chest, *not* from the mouth or back of nose. Expectorate into this box twice only. Avoid smearing the screw or the outside of this box.

1. Form of label used for eight years on Hart's sputum boxes.



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Directions:– Obtain specimen from deep down in chest, NOT from mouth or back of nose. Expectorate into this box twice only. Avoid smearing the screw or outside of this box.

2. Form of label proposed in Gibson's recent circular.

At this point enters one Richard Gibson, who appears in the field as a manufacturer of sputum boxes. A recent circular put out by this gentleman, while not actually asserting originality, allows it to be implied not only by lack of mention of the fact that the sputum box as designed by me has been in use generally for ten years, but also by announcing in large type that he has applied for a patent. The very trivial alteration which he has made in the form of the original box will certainly not secure a patent for him, but by the use of the phrase, "patent applied for," he doubtless hopes to secure for his personal advantage a device which has long since been made the property of the public.

The unblushing effrontery of the implication of originality is attested not only by the similarity of the shape and construction of the boxes, but also by a comparison of the wording, spacing and style of type selected for the labels and of which I present samples.

There is no reason why Mr. Gibson or any one else should not manufacture, sell or use these boxes, but the attempt to secure a patent on the ideas of another which have been public property for many years, and the use of a motto, "patent applied for," in order to scare off others from the free production of these boxes is to my mind, and I believe the medical profession at large will agree with me, an encroachment of commercialism which should not pass unheeded.

T. Stuart Hart, New York City.

130 West 59th Street.

Mental Treatment by Physicians

To the Editor:—It is time for the medical profession and the ministry thoroughly to awake to the fact that Eddyism has spread because it in some measure satisfies a want. There is beneath its superstructure of falsity a fundamental truth, the power of faith, which draws people to it with the promise of cure. Some appreciative representatives of the Episcopal Church invented the Emmanuel movement as a cure for the evil of so-called "Christian Science," but the cure, to be successful, is too much like the disease. Its method of application, also, is too complex. The economic principle of the division of labor, whereby an individual's body is treated by a physician and his mind by a minister is not in this case conducive to thoroughness and effectiveness. It is, furthermore, suppositious and false to think that the clergy are by nature and calling better able to treat the mind than are other men. Although ministers as a body have studied mental science, only comparatively few of them are qualified to treat mental conditions. The number of medical men thus qualified is not great.

The idea is rather prevalent that all forms of mental treatment are fakes. Of course, many of them are. But in our own individual mental spheres do we all resign ourselves unreservedly to the theories of determinism, even of fatalism? Do we not practice mental treatment on ourselves by controlling, to greater or lesser degree, our mental content and our actions? Do we not unquestionably influence, also, the mental condition of others? And do we not voluntarily allow our mental condition to be influenced in varying degrees by others?

The fake cure cults, especially "Christian Science," are filled with people who are mentally sick. Any doctor who attends one of their experience meetings will be appalled by the chimerical and delusional character of their stories. They find relief in the suggestion that belief in the non-existence of their trouble makes it non-existent, be the complaint in the spiritual or material sphere. The idea works, of course, within a much smaller scope than they claim.

Now, there can be no question that the mind acts on the body, that the body reacts on the mind, and, as now especially concerns us, that the mind acts on the mind. Is it not illogical, therefore, that the treatment of the mental and of the physical aspects of life should be carried out by two different professions? Every physician should realize that his duty is to examine and to treat the whole being, mind as well as body. Most cases that require mental treatment require at the same time some form of medical treatment and supervision, and should, therefore, be under the care of one who is capable of attending the whole being. The practice of medicine should extend into the mental life of ailing humanity. Not only so-called physical pain, but also mental discomfort and deviation should bring the patient to the doctor. The intimate relation thus established would increase the influence and dignity of our profession, and enhance the well-being of humanity. Then would be restored to the profession the attribute of sanctity which was in earlier days regarded as inherent to it, and this sanctity would rest on a firm scientific basis. To these ends the medical colleges should require their students to be familiar with psychology, ethics, logic, the principles of philosophy, and psychiatry.

But how shall the need of people for religious exercise be supplied if they are to receive mental treatment from physicians? "Christian Science" and, to a great extent, the Emmanuel movement combine religion with mental treatment and, in fact, their treatment may be said to consist largely of the practice of religion, thus opening the mind to new influence. If in attempting to remove the existing evils, we are, as we should be, scientific, let us be so consistently scientific as to be religious and to advise patients to practice religion. Religion is an instinct, the exercise of which yields mental benefits. For example, the first product of a sincere, devout prayer made with concentrated thought is a frame of mind that will prepare one for the thing expected. Every person, be he savage or civilized, has the instinct of religion. And every mind, normal or pathologic, should modify itself with the benign influence of some rational, honest, sincere religion, for it is often the sheet-anchor of personality.

George Edward Barnes, M.D., Herkimer, N. Y.

The Combined Course for the Degrees of A.B. or B.S. and M.D.

To the Editor:—The ideas advanced by Dr. J. M. Dodson in The Journal, May 22, on a combined course leading to the degree of B.A. or B.S., with M.D., are in the right direction. The four years of college work after the high school should include medical subjects for the student intending to study medicine; this preparation should be credited toward his B.A. or B.S. degree. The student should be allowed to take a final examination on his medical studies before the state boards when he has finished the college course, and should receive credit for them.

The universities and colleges, when properly equipped, can give the first two years of the medical course as well as the average medical college or better. The course should comprise the study of anatomy with the dissection of the human body, chemistry, physiology, pathology, embryology and bacteriology. The instruction, always as practical as possible, should continue throughout the entire year with short intermissions every three or four months. I would divide the profession into physicians, surgeons, oculists and dentists; I would arrange courses of study to meet the needs of each division and would graduate the student into one or another of these four divisions. Dentists are graduated as specialists now; oculists might be; but in both cases the arrangement of studies can not be entirely satisfactory, as students are required to spend, on studies useless to them, time which might be better spent in practical work. The work of surgeons and physicians is more closely related, but still presents great differences.

The suggested arrangement of studies would not prevent a student from graduating in more than one class of the profession, but would encourage a more thorough preparation in the special line chosen. The practice of permitting the recent graduate in general medicine to treat the severe cases of the eye or ear or to perform difficult operations in surgery without more special preparation has tended to discredit the profession and to harm the patient. We are trying to teach too much for thoroughness, and to force all students to one standard without regard to natural ability; we attain only a smattering in much and perfection in nothing. The fields of surgery and pathology have increased greatly in recent years and bacteriology is a new study. Our present system of education, formerly sufficient to the demands of the times, is based on conditions now antiquated or obsolete. Medicine now is too large a field for any one to be proficient in all its departments.

John Binnie, Poynette, Wis.

Reorganization of State Charities in Illinois

To the Editor:—In the report of the Committee on Medical Legislation of the American Medical Association at the Atlantic City session, I notice the following from Illinois: "A most excellent bill reorganizing the state charitable, eleemosynary and corrective institutions and placing them all in the hands of a state board of administration, was introduced, but failed to become a law." The measure above referred to, after having been previously passed by the House, passed the Senate during the last night of the session, and has since been signed by the governor. The board created by this act is to be non-partisan and to consist of five members, but will not have control over corrective institutions.

L. C. Taylor, Springfield, Ill.
Chairman Committee on Medical Legislation, Illinois Medical Society.

A Misquotation from Bishop Fallows Acknowledged

To the Editor:—In an article entitled, "The General Practitioner and the Functional Nervous Diseases," published in The Journal (Jan. 9, 1909, lii, 87) I quoted some sentences from "Health and Happiness" by Samuel Fallows, D.D. These sentences were taken from the New York *Evening Sun*, in which they appeared in quotation marks. Bishop Fallows has written to me to say that the sentences making up the quotation are taken from various portions of his book; that is, they are taken out of the proper context. I regret that I did not verify the quotation before the article was published.

Joseph Collins, New York.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

DISPOSAL OF GARBAGE AND FILTRATION OF WATER-SUPPLY

To the Editor:—Please tell me where I can obtain any information, applicable to a city of 30,000 inhabitants, in regard (1) to modern methods of garbage disposal, and (2) to city filtration of water-supply.

Albert N. Mueller,
City Health Commissioner, Rock Island, Ill.

Answer.—1. Modern methods of garbage disposal are clearly described in two papers in the *Transactions of the American Public Health Association* for 1901 (Vol. xxvii). These are "Refuse Disposal in Boston," by H. W. Hill, p. 186, and "Refuse Disposal in the District of Columbia," by W. C. Woodward, p. 194. An especially valuable summary also appears in the same publication for 1903 (Vol. xxix), entitled "Some Statistics of Garbage Disposal for the Larger American Cities in 1902," by C-E. A. Winslow and P. Hansen. The last named paper gives valuable data regarding cost in this country and abroad, a bibliography of 27 titles, and a classified list of cities using different processes (further information could doubtless be obtained from the municipal authorities if desired). The facts stated in the papers cited seem to justify the conclusion, "that separation of waste materials is neither economical nor desirable, that the cremation of mixed refuse appears to be the most generally satisfactory process and that this cremation may be best accomplished in furnaces of the English type."

2. Three of the best books in English on water filtration are "The Filtration of Water-Supplies," by Allen Hazen, "Clear Water and How to Get It," by the same author, and "Water and Its Purification," by Samuel Rideal. The two first-named are published by John Wiley and Sons, the last by J. B. Lippincott; all are procurable through your local booksellers.

STEREOSCOPY WITHOUT A STEREOSCOPE

To the Editor:—It occurred to me that stereoscopic illustrations of steps in operative procedures, tumors, etc., could be more generally used than they are now. I have noticed that, with only a little practice, one can get the stereoscopic effect from a stereoscopic illustration, without the use of a stereoscope. Hold the stereogram before the eyes at a distance of 12 to 26 inches; look at the white perpendicular line up the middle; gazing not too fixedly at this line, endeavor to lose your accommodation, when, if you persist, a dissolving effect takes place and the single object stands out clear in perspective. The use of such illustrations in our journals and surgical works has many obvious advantages and will appeal to every scientific and sound-eyed physician. This is merely a practical application of an old physiologic fact.

Ivan I. Yoder, M.D., Cleveland, Ohio.

THE CAMMIDGE REACTION

To the Editor:—Please give information in regard to the pancreatic reaction of Cammidge. R. H. Miner, Windsor, Vt.

Answer.—The pancreatic reaction of Cammidge was described in The Journal, Aug. 22, 1908, li, 691. Opinions are still divided as to its clinical value, although the bulk of evidence is in favor of the view that, while it is not pathognomonic, it is a valuable diagnostic aid.

The Public Service

Army Changes

Memorandum of changes of stations and duties of medical officers, for the week ended June 26, 1909.

Schmitter, Ferdinand, 1st lieut., ordered to St. Louis, Mo., for temporary duty in charge of the Medical Supply Depot.

Truby, Albert E., major, ordered to take charge of chief surgeon's office, San Francisco, Cal., during the absence of Major James M. Kennedy on inspection tour.

Dale, Frederick A., capt., granted leave of absence for 14 days.

Foster, Charles L., capt., ordered from San Francisco, Cal., to Washington, D. C., in charge of an escort to insane patients.

Perley, Harry O., col., announced as chief surgeon, Department of the Colorado; ordered to inspect posts in that department.

Kiersted, Henry S., capt., granted leave of absence for 1 month.

Chamberlain, Weston P., major, detailed a member of the board of medical officers for studying tropical diseases in Philippine Islands.

Foster, Charles L., capt., granted leave of absence to July 6.

O'Day, Sylvester F., 1st lieut., M.R.C., honorably discharged from the service of the United States, his services being no longer required.

Buchsbaum, Maurice, 1st lieut., M.R.C., ordered to duty with troops marching from Fort D. A. Russell, Wyo., to Fort Robinson, Neb., instead of 1st Lieut. Joseph E. Bastion, M.R.C.

Tyler, George T., 1st lieut., M.R.C., relieved from duty at Plattsburg Barracks, N. Y.; will proceed to Seattle, Wash., in time to sail August 5th for the Philippine Islands.

Kierluff, H. Newton, 1st lieut., M.R.C., ordered to Fort Snelling, Minn., July 2, for temporary duty.

McMillan, Clemons W., 1st lieut., M.R.C., granted leave of absence for 2 months, August 20.

Fisk, Owen C., 1st lieut., M.R.C., ordered to Fort Michie, N. Y., for temporary duty during the week beginning July 12.

McCown, Thomas B., 1st lieut., M.R.C., ordered to Fort Duchesne, Utah, for temporary duty during the week beginning July 12.

Pomeroy, William H., contract surgeon, granted leave of absence for 21 days.

Graig, Emmett J., dent.-surg., ordered to Fort Des Moines, Iowa, for 1 month, and thence to Fort Riley, Kan. for 3 months.

Ryan, Edward P. R., dent.-surg., ordered to Fort Mackenzie, Wyo. for 20 days, and thence to Fort D. A. Russell, Wyo. for 2 months.

Boak, S. Davis, dent.-surg., ordered from Vancouver Barracks, Wash., to Fort Lawton, Wash., for duty.

Voorhies, Hugh G., dent.-surg., relieved from duty at Fort Snelling, Minn., and ordered to Jefferson Barracks, Mo., for duty.

Ames, John R., dent.-surg., relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Snelling, Minn., for duty.

Whinnery, Jean C., dent.-surg., arrived at Fort Egbert, Alaska, for duty.

Navy Changes

Changes in Medical Corps, U. S. Navy, for the week ended June 26, 1909:

Williams, R. B., surgeon, commissioned surgeon from Dec. 11, 1908.

Kennedy, R. M., surgeon, ordered to command the naval hospital, San Juan, P. R., sailing from New York, N. Y., about July 24.

Johnson, M. K., surgeon, detached from the Naval Training Station, Narragansett Bay, R. I., July 10 and ordered to the *South Dakota*.

Von Wedekind, L. L., surgeon, detached from the *South Dakota* and ordered home to await orders.

Grove, W. B., surgeon, detached from the *Minnesota* and ordered to the Naval Training Station, Narragansett Bay, R. I.

Alfred, A. R., surgeon, detached from the *Wolverine* and ordered to the *Minnesota*.

Dunn, H. A., P. A. surgeon, detached from the *Independence*, ordered home and granted leave for 2 months.

Webb, U. R., P. A. surgeon, detached from the Naval Hospital, San Juan, P. R., and ordered home to wait orders.

Munger, C. B., asst.-surgeon, ordered to the Naval Training Station, San Francisco.

Robnett, A. H., asst.-surgeon, ordered to duty at Naval Hospital, Boston.

Steadman, W. G., asst.-surgeon, detached from the *Louisiana* and ordered to continue treatment at the Naval Hospital, Norfolk, Va.

Reed, A. U., asst.-surgeon, ordered to Naval Recruiting Station, Chattanooga, Tenn.

Cohn, I. F., asst.-surgeon, ordered to duty at the Naval Hospital, Philadelphia.

Woods, E. L., asst.-surgeon, ordered to duty at the Naval Hospital, Annapolis, Md.

Olson, G. M., asst.-surgeon, ordered to the Naval Recruiting Station, Minneapolis.

Shippen, L. P., asst.-surgeon, detached from the Naval Recruiting Station, Minneapolis, and ordered to the Navy Yard, Mare Island, Cal.

Giltner, H. A., asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to the *Glacier*.

Eytinge, E. O. J., asst.-surgeon, ordered to the *Wolverine*.

Riker, C. A., asst.-surgeon, detached from the *Franklin* and ordered to the *Louisiana*.

Thomas, G. E., acting asst.-surgeon, detached from duty at the Naval Hospital, Norfolk, Va., and ordered to the *Franklin*.

Wheeler, L. H., P. A. surgeon, detached from the *Hancock* and ordered to the *Marietta*, sailing from New York, N. Y., about June 24.

Brister, J. M., P. A. surgeon, detached from the *Milwaukee* and ordered to the *Independence*.

Jenness, B. F., P. A. surgeon, detached from the *Glacier* and ordered to the Milwaukee and to additional duty at the Naval Hospital, Puget Sound, Wash.

Du Bose, W. R., medical inspector, detached from command of Naval Hospital, Yokohama, Japan, and ordered to Bureau Medicine and Surgery, Navy Department.

Pryor, J. C., surgeon, ordered to command the Naval Hospital, Yokohama, Japan.

Morris, L., surgeon, detached from the Naval Station, Cavite, P. I., and granted leave until September 1.

White, E. C., P. A. surgeon, detached from the Naval Recruiting Station, Cleveland, Ohio, and ordered to temporary duty at the Naval Torpedo Station, Narragansett Bay, R. I.

Gill, J. E., P. A. surgeon, ordered to Naval Recruiting Station, Cleveland, Ohio.

French, G. R. W., acting asst.-surgeon, appointed acting asst.-surgeon from June 18, 1909.

Wilson, H. D., surgeon, detached from the *Illinois* and ordered to continue other duties.

Irvine, W. L., acting asst.-surgeon, ordered to duty at the Naval Hospital, Boston.

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended June 23, 1909:

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from June 22, 1909, on account of sickness.

Carrington, P. M., surgeon, directed to proceed to Los Angeles, Cal., on special temporary duty, June 17, 1909. Granted 15 days' leave of absence in July, 1909.

Magruder, G. M., surgeon, granted 23 days' leave of absence from July 9, 1909.

Geddings, H. D., surgeon, on completion of duties enjoined by Bureau order of June 8, 1909, detailed to represent the Service at the International Conference on Tuberculosis to be held in Stockholm, Sweden, July 8-10, 1909. Assigned for duty in the office of the American Consul at Naples, Italy. Directed to proceed to Hamburg and Berlin, Germany, on special temporary duty.

Wertenbaker, C. P., surgeon, detailed to inspect the Bacterio-Therapeutic Laboratory, Asheville, N. C.

Anderson, John F., P. A. surgeon, directed to proceed to Albany and Peckskill, N. Y., on special temporary duty.

Ramus, Carl, P. A. surgeon, granted 1 day's leave of absence June 13, 1909, on account of sickness.

McClintic, T. B., P. A. surgeon, on expiration of present leave of absence directed to report to Director of Hygienic Laboratory for temporary duty.

Currie, Donald H., P. A. surgeon, detailed to represent the Service at the Second International Congress against Leprosy to be held in Bergen, Norway, August 16-19, 1909.

Holt, John M., passed assistant surgeon, detailed to represent the service at the joint annual meeting of the medical associations of the states of Washington, Oregon and Idaho, to be held in Seattle, Wash., July 20-23, 1909.

Gwyn, M. K., P. A. surgeon, granted 15 days' leave of absence from June 21, 1909.

Collins, G. L., P. A. surgeon, granted 1 day's leave of absence, June 18, 1909, Paragraph 189, Service Regulations.

Friedman, Henry M., acting assistant surgeon, granted 28 days' leave of absence from July 4, 1909.

Gibson, L. P., acting asst.-surgeon, granted 8 days' leave of absence from June 14, 1909.

Houghton, M. W., acting asst.-surgeon, granted 9 days' leave of absence from July 17, 1909.

Mason, Wm. C., acting asst.-surgeon, granted 6 days' leave of absence from June 28, 1909.

Rea, Robert H., acting asst.-surgeon, granted 1 day's leave of absence, June 18, 1909.

Stevenson, J. W., acting asst.-surgeon, granted 4 days, leave of absence from June 22, 1909.

BOARDS CONVENED

Board of medical officers convened to meet at the U. S. Immigration Office, Vancouver, B. C., June 12, 1909, for the purpose of examining alien Chee Yu. Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Acting Assistant Surgeon H. R. Storrs; Acting Assistant Surgeon Stuart A. Ross, recorder.

Board of medical officers convened to meet at the Bureau June 19, 1909, to determine the fitness of Pharmacist E. B. Scott for promotion to the grade of Pharmacist of Class 1. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Passed Assistant Surgeon J. W. Trask, recorder.

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June, 25, 1909:

SMALLPOX—UNITED STATES

California: Stockton, Jan. 1-Feb. 28, 20 cases.

Georgia: Columbus, June 5-12, 1 death; Macon, June 6-13, 5 cases.

Illinois: Danville, June 6-13, 5 cases; Moline, 1 case.

Indiana: Evansville, June 5-12, 1 case; Indianapolis, June 6-13, 1 case; La Fayette, June 7-14, 1 case; South Bend, June 5-12, 15 cases.

Iowa: Council Bluffs, June 7-14, 1 case; Davenport, June 6-13, 2 cases; Sioux City, June 5-12, 1 case.

Kansas: Kansas City, June 5-12, 1 case; Wichita, May 22-29, 5 cases, June 5-12, 2 cases.

Kentucky: Covington, June 5-12, 2 cases; Henderson, May 1-31, 2 cases; Lexington, June 5-12, 2 cases.

Louisiana: New Orleans, June 5-12, 8 cases.

Michigan: Saginaw, May 22-29, 2 cases.

Montana: Butte, June 3-10, 9 cases.

Nebraska: South Omaha, May 15-22, 2 cases.

New York: New York, June 5-12, 1 case.

Ohio: Cincinnati, June 4-11, 3 cases; Cleveland, 1 case; Eaton, to June 15, 1 case; Salineville, April 5-11, 46 cases.

Tennessee: Knoxville, June 5-12, 5 cases.

Texas: El Paso, June 8-15, 1 case; Fort Worth, May 1-31, 21 cases, 2 deaths; Galveston, June 4-11, 1 case; San Antonio, June 5-12, 3 cases.

Utah: Salt Lake City, May 1-31, 56 cases.

Washington: Spokane, May 22-June 5, 6 cases; Tacoma, May 30-June 6, 1 case.

Wisconsin: Marinette, June 5-12, 1 case; Milwaukee, June 7-14, 7 cases.

SMALLPOX—INSULAR

Philippine Islands: Manila, April 24-May 1, 8 cases, 1 death.

SMALLPOX—FOREIGN

Brazil: Bahia, April 30-May 7, 5 cases, 3 deaths; Rio de Janeiro, April 25-May 6, 32 cases, 11 deaths; Sao Paulo, April 12-May 2, 8 deaths.

Canada: Halifax, May 30-June 5, 1 case; Vancouver, May 1-31, 6 cases.

China: Hongkong, April 3-May 1, 5 cases, 1 death; Tientsin, May 1-3, 1 case.

Ceylon: Colombo, April 24-May 8, 5 cases.

Egypt: Alexandria, April 1-30, 5 cases, 1 death; Cairo, May 6-13, 4 cases, 2 deaths; Suez, Mar. 25-May 20, 56 cases, 3 deaths.

Great Britain: Bristol, May 22-29, 1 case.

India: Bombay, May 11-18, 11 deaths; Calcutta, May 1-8, 25 deaths; Madras, May 8-14, 2 deaths; Rangoon, May 1-8, 7 deaths.

India-China: Saigon, May 1-8, 6 cases, 2 deaths.

Italy: Genoa, May 1-15, 2 cases; Naples, May 23-30, 17 cases.

Japan: Formosa, May 1-8, 3 cases.

Mexico: Chichupahua, May 31-June 6, 2 cases, 3 deaths; Monterey, April 29-May 6, 3 deaths.

Portugal: Lisbon, April 26-May 2, 3 cases; May 9-16, 6 cases.

Russia: Odessa, May 8-29, 8 cases, 2 deaths; Warsaw, April 3-24, 6 deaths.

Spain: Barcelona, May 24-31, 4 deaths; Valencia, May 15-22, 8 cases; Vigo, May 22-29, 2 deaths.

Turkey: Constantinople, May 16-23, 4 deaths.

YELLOW FEVER

Barbados: Parish, St. Joseph, June 5-12, 3 cases.

Brazil: Bahia, April 30-May 7, 8 cases, 3 deaths; Manaos, May 15-22, 2 deaths.

Cuba: Habana, June 21, 1 case on *S. S. Fürst Bismarck* from Veracruz.

Ecuador: Quayaquil, May 1-22, 21 deaths.

Trinidad: Mar. 27-April 3, 1 case, 1 death.

CHOLERA—INSULAR

Philippine Islands: Provinces, April 24-May 1, 16 cases, 11 deaths.

CHOLERA—FOREIGN

China: Amoy, June 19; Swatow, May 1, present.

India: Bombay, May 11-18, 2 deaths; Calcutta, May 1-8, 68 deaths; Rangoon, 1 death.

Russia: St. Petersburg, May 25-June 1, 5 cases, 4 deaths.

Straits Settlements: Singapore, April 24-May 1, 1 death.

PLAGUE

Brazil: Rio de Janeiro, May 2-9, 1 case.

China: Hongkong, April 3-May 1, 12 cases, 8 deaths; Swatow, April 10-May 15, 2,050 deaths in 14 districts in vicinity.

Ecuador: Guayaquil, May 1-22, 29 deaths.

Egypt: May 13-June 2, 51 cases, 26 deaths.

India: April 24-May 8, 10,353 cases, 8,690 deaths; Bombay, May 11-18, 212 deaths; Calcutta, May 1-8, 255 deaths; Rangoon, 18 deaths.

Indo-China: Saigon, May 1-8, 2 cases, 1 death.

Japan: Formosa, May 1-15, 116 cases, 98 deaths; Yokohama, May 15-22, 2 cases.

Venezuela: Caracas, June 9-17, 5 cases.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, July 5-6. Sec., Dr. Ancil Martin.

Arkansas: Homeopathic, Little Rock, July 13. Sec., Dr. P. C. Williams, Texarkana.

Arkansas: Regular, Little Rock, July 13. Sec., Dr. F. T. Murphy, Brinkley.

Colorado: Denver, July 6. Sec., Dr. S. D. VanMeter, 1723 Tremont Place.

Connecticut: Regular, New Haven, July 13-14. Sec., Dr. Charles A. Tuttle, 196 York St.; Homeopathic, New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, New Haven, July 13. Sec., Dr. T. S. Hodge, 17 Main St., Torrington.

District of Columbia: Washington, July 13-16. Sec., Dr. George C. Ober, 210 B St., S. E.

Indiana: 120 State House, Indianapolis, July 13-15. Sec., Dr W. T. Gott.

Kentucky: Louisville, July 6. Sec., Dr. J. N. McCormack, Bowling Green.

Maine: State House, Augusta, July 13-14. Sec., Dr. Frank W. Searle, 806 Congress St., Portland.

Massachusetts: State House, Boston, July 13-15. Sec., Dr. Edwin B. Harvey, Room 159, State House.

New Mexico: Santa Fe, July 12. Sec., Dr. J. A. Massie.

North Dakota: Grand Forks, July 6-8. Sec., Dr. H. M. Wheeler.

Oklahoma: Guthrie, July 13. Sec., Dr. Frank P. Davis, Enid.

Oregon: Portland, July 6. Sec., Dr. R. C. Coffey.

South Dakota: Watertown, July 14-15. Sec., Dr. H. E. McNutt, Aberdeen.

Utah: Salt Lake City, July 5. Sec., Dr. G. F. Harding, 310 Templeton Bldg.

Vermont: Burlington, July 13-15. Sec., Dr. W. Scott Nay, Underhill.

Washington: Seattle, July 6-8. Sec., Dr. Kenneth B. Turner, Walker Bldg.
West Virginia: Charleston, July 13-15. Sec., Dr. H. A. Barbee, Point Pleasant.
Wisconsin: Madison, July 13-15. Sec., Dr. J. V. Stevens, Jefferson.

Washington January Report

Dr. Kenneth Turner, secretary of the Washington State Medical Examining Board, reports the written examination held at Spokane, Jan. 5-7, 1909. The number of subjects examined in was 15; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 94, of whom 72 passed and 22 failed. Two candidates took an incomplete examination. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, San Francisco	(1907)	77.
California Medical College	(1897)	70.5*
Denver and Gross College of Medicine	(1907)	85.
George Washington University....(1907) 82. 84;	(1908)	85.
Rush Medical College.....(1900) 88; (1907) 87;	(1908)	83.
Northwestern University Medical School, (1893) 79; (1896) 80; (1904) 92; (1907) 85; (1908) 84.		
Illinois Medical College	(1906)	78.
College of Physicians and Surgeons, Chicago	(1908)	82.
Hahnemann Medical College and Hospital, Chicago	(1907)	77.
Eclectic Medical College of Indiana	(1908)	79.
Medical College of Indiana	(1905)	85.
University of Iowa, College of Medicine	(1908)	83. 83.
University of Louisville	(1907)	77.
Kentucky University	(1904)	75.
Baltimore University	(1897)	76.
Baltimore Medical College	(1908)	78.
Boston University	(1903)	81.
College of Physicians and Surgeons, Boston	(1907)	75.
Tufts College Medical School	(1907)	86.
Johns Hopkins Medical School	(1907)	85.
University of Michigan	(1901)	83.
University of Minnesota..............(1905) 85;	(1906)	76.
Hamline University, Minneapolis	(1905)	79.
St. Louis College of Physicians and Surgeons	(1902)	79.
Barnes Medical College	(1905)	75.
Washington University, St. Louis	(1908)	86.
St. Louis University	(1908)	78.9, 86.
Creighton Medical College	(1907)	80, 83, 86.
University of Nebraska	(1905)	80.
Bellevue Hospital Medical College	(1896)	76.
Columbia University, College of Phys. and Surg.	(1905)	91.
Pulte Medical College	(1882)	79.
Toledo Mdical College	(1896)	71, 89.
Eclectic Medical Institute, Cincinnati	(1899)	78.
Medical College of Ohio	(1899)	86.
Cincinnati College of Medicine and Surgery	(1898)	83.
University of Oregon..............(1907) 80;	(1908)	89.
Willamette University..(1906) 70.1*; (1907) 87;	(1908)	79, 84.
Jefferson Medical College..........(1905) 90;	(1908)	76, 90.
University of Pennsylvania..........(1889) 85;	(1903)	88.
Medico-Chirurgical College of Philadelphia	(1903)	77.
Vanderbilt University	(1891)	78.
University College of Medicine, Richmond	(1899)	80.
University of Virginia	(1902)	89.
McGill University, Quebec............(1895) 85;	(1903)	91.
Western University, London, Ontario..(1907) 84;	(1908)	77.
Trinity Medical College, Ontario	(1894)	88.
University of Strassburg, Germany	(1900)	79.
University of Paris, France	(1896)	82.
FAILED		
Kentucky School of Medicine	(1908)	73.5
Rush Medical College	(1892)	60.
American College of Medicine and Surgery	(1906)	72.
Hospital College of Medicine, Louisville	(1905)	70.
Baltimore Medical College	(1907)	70.
Tulane University of Louisiana	(1887)	52.
Central College of Phys. and Surg., Indianapolis	(1903)	68.
Tufts College Medical School	(1908)	63.7
Detroit College of Medicine	(1907)	70.
University of Minnesota	(1906)	63.
St. Louis University	(1905)	69.
Ensworth Central Medical College	(1906)	71.
Missouri Medical College	(1894)	64.
University Medical College, Kansas City	(1901)	62.
Kansas City Homeopathic Medical College	(1896)	66.
St. Louis College of Physicians and Surgeons	(1896)	69.1
Creighton Medical College	(1901)	73.6
Tennessee Medical College..........(1893) 48;	(1900)	47.
University of Nashville	(1902)	64.

* Ten or more years of practice entitles a physician to be licensed on a grade of 70 per cent.

State Board Statistics—A Correction

In the State Board Statistics published in The Journal, May 22, 1909, it was reported that two candidates who failed in Massachusetts were graduates of the Chicago College of Medicine and Surgery. Later correspondence with the Massachusetts board, however, states that the candidates were undergraduates and the failures, therefore, should not be charged against the college named.

Association News

PROCEEDINGS OF ATLANTIC CITY SESSION

(*Continued from page 2086, Vol. LII*)

SECTION TRANSACTIONS

Those who desire copies of the 1909 Transactions of any of the Sections, but who are not on the permanent subscription list, should order them at once, as printing will commence soon on several. Only enough are printed to supply the demand, and each year some persons order too late to be supplied. It is to be remembered that one may give a permanent order for Transactions; and those specified are sent, from year to year, until the order is canceled. By this arrangement each book costs the subscriber $1.00, payable at time of delivery. Address orders to the American Medical Association, 103 Dearborn Avenue, Chicago.

MINUTES OF SECTIONS

The minutes of the proceedings of the twelve sections at the sixtieth annual session, held at Atlantic City, June 8 to 11, 1909, are given below. A number of reports of committees, which require too much space for use here, will be published later.

SECTION ON PRACTICE OF MEDICINE

Tuesday, June 8—Afternoon

The Section was called to order by the chairman, Dr. Joseph L. Miller, Chicago, at 2 p. m., at the Savoy Theater.

Dr. N. B. Potter, New York City, read a paper on "Medical Supervision of Boarding Schools, and Athletic Contests Among School Boys." Discussed by Drs. De Lancey Rochester, Buffalo; Richard C. Cabot, Boston; Stanley P. Black, Pasadena, Cal., and Potter.

Dr. Frederick Forchheimer, Cincinnati, read a paper on "Cardiac and Vascular Complications in Pneumonia, with Special Reference to Treatment." Discussed by Drs. De Lancey Rochester, Buffalo; Frank Billings, Chicago; C. F. Hoover, Cleveland; John H. Musser, Philadelphia; Alexander Lambert, New York City; Theodore Potter, Indianapolis, and Forchheimer.

Dr. W. G. MacCallum, Baltimore, read a paper on "An Experimental Study of Gastric Tetany." Discussed by Drs. Allen A. Jones, Buffalo, and Nathaniel B. Potter, New York.

Dr. Frank Billings, Chicago, read a paper on "Chronic Infectious Endocarditis." Discussed by Drs. Alfred Stengel, Philadelphia; De Lancey Rochester, Buffalo; John A. Witherspoon, Nashville; Walter L. Bierring, Iowa City; John M. Anders, Philadelphia; Charles G. Stockton, Buffalo; Richard C. Cabot, Boston, and Billings.

Dr. Allen A. Jones, Buffalo, read a paper on "Diverticulum of the Pylorus." Discussed by Drs. Charles G. Stockton, Buffalo, and Jones.

Dr. Warren Coleman, New York City, read a paper on "Diet in Typhoid Fever." Discussed by Drs. Max Einhorn, New York City; Frank E. Brown, Baltimore; Thomas A. Claytor, Washington; Arthur K. Stone, Boston; A. Jacobi, New York City; John M. Anders, Philadelphia; Walker, Philadelphia; Parker, Detroit; Woods Hutchinson, New York City, and Coleman.

Wednesday, June 9—Morning

Dr. Judson Daland, Philadelphia, read a paper on "Clinical Significance of Indicanuria." Discussed by Drs. Heinrich Stern, New York City; Harry A. Harrower, Chicago; Richard C. Cabot, Boston; Allen A. Jones, Buffalo;; Anthony Bassler, New York City, and Daland.

Dr. Philip King Brown, San Francisco, read a paper on "The Diagnostic Value of Stained Specimens of Stools in Cancer of the Stomach." Discussed by Drs. Herman B. Allyn, Philadelphia; Allen A. Jones, Buffalo; Anthony Bassler, New York City, and Brown.

Dr. Alexander Lambert, New York City, read a paper on "Resorption of Proteids, Carbohydrates and Fats in the Chronic Alcoholic." Discussed by Drs. E. P. Joslin, Boston; John A. Lichty, Pittsburg, and Lambert.

Dr. Charles G. Stockton, Buffalo, read a paper on "The Diagnostic Value and Limitations of Analysis of the Gastric Contents."

Dr. A. W. Crane, Kalamazoo, Mich., read a paper on "X-Ray Evidence in Gastric Cancer."

Dr. Clifford B. Farr, Philadelphia, read a paper on "The Determination of Trypsin in the Stomach Contents After the Oil Test Meal."

These three papers were discussed by Drs. G. E. Pfahler, Philadelphia; Judson Daland, Philadelphia; Allen A. Jones, Buffalo; Richard C. Cabot, Boston; John A. Lichty, Pittsburg; Harry A. Harrower, Chicago; John N. Upshur, Richmond, Va.; C. W. Smith, Baltimore; Frank Smithies, Ann Arbor, Mich.; Alexander Lambert, New York City; Philip King Brown, San Francisco; Stockton and Crane.

Dr. Charles P. Emerson, Clifton Springs, N. Y., read a paper on "The Diagnostic Importance of Examination of the Feces." Discussed by Drs. Henry F. Hewes, Boston; George Dock, New Orleans; Walter L. Bierring, Iowa City, Iowa; David L. Edsall, Philadelphia; Woods Hutchinson, New York City, and Sir James Alexander Grant, Ottawa, Ontario.

Wednesday, June 9—Afternoon

Dr. James B. McElroy, Memphis, read the oration in Medicine: "Tropical Diseases, America's Opportunities and Obligations."

The chairman appointed the following Nominating Committee: Drs. David L. Edsall, Philadelphia; D. Vanderhoof, Richmond, and Philip King Brown, San Francisco.

Dr. Samuel T. Darling, Ancon, Canal Zone, read a paper on "Transmission of Malarial Fever in the Canal Zone by Anopheles Mosquitoes." Discussed by Dr. Richard C. Cabot, Boston; John A. Witherspoon, Nashville; Seale Harris, Mobile, Ala., and Darling.

Dr. Simon Flexner, New York City, read a paper on "The Present Status of the Serum Treatment of Epidemic Cerebrospinal Meningitis." Discussed by Drs. Thomas Morgan Rotch, Boston; Philip King Brown, San Francisco; William Litterer, Nashville, and Flexner.

Dr. Herman N. Adler and Dr. Gerald Blake, Boston, presented a paper on "The Retention of Alkali by the Kidney, with Special Reference to Acidosis." Discussed by Drs. E. P. Joslin, Boston, and Adler.

Dr. Sidney K. Simon, New Orleans, read a paper on "Amebic Dysentery." Discussed by Drs. T. B. Futcher, Baltimore; George Dock, New Orleans; Hobart A. Hare, Philadelphia; Hugo A. Freund, Detroit; James P. Tuttle, New York City; Samuel Goodman Gant, New York City, and Simon.

Thursday, June 10—Morning

Dr. Edward F. Wells, Chicago, secretary of the Committee on Program, stated that the conclusions reached by the committee were that the best interest of the Section on Medicine would be served by asking for a tentative recommendation of last year's report, and it asked that the matter be referred for further consideration to the Executive Committee, which should work out the problems involved. (The report of the Committee on Program appeared in full in Proceedings of the Chicago Session, The Journal, June 20, 1908, page 2080.)

Dr. DeLancey Rochester, Buffalo, moved that the report be received and that the recommendations be adopted. The motion was seconded and carried.

The Nominating Committee made the following report: Chairman, Dr. George Blumer, New Haven; secretary, Dr. Wilder Tileston, Boston; orator, Dr. Richard C. Cabot, Boston; delegate, Dr. Joseph Capps, Chicago; alternate delegate, Dr. Alexander Lambert, New York City.

Dr. Munson moved the adoption of the report; the motion was carried.

Dr. Warfield T. Longcope, Philadelphia, read a paper on "The Association of Aortic Insufficiency with Syphilitic Aortitis." Discussed by Drs. Richard C. Cabot, Boston; Allen A. Jones, Buffalo, and Longcope.

Dr. Henry A. Christian, Boston, read a paper on "Clinical Value of Recent Studies in Experimental Nephritis."

Dr. John H. Musser, Philadelphia, read a paper on "Hypertension in Nephritis; Its Cause and Treatment."

Dr. Victor C. Vaughan, Ann Arbor, being unable to attend, by a vote of the Section his paper on "The Value and Limitations of a Salt-Free Diet and Restriction of Fluids in Nephritis," was read for him by Dr. H. W. Hewlett, Ann Arbor.

Dr. Edward F. Wells, Chicago, read a paper on "The Management of Uremia."

These four papers were discussed by Drs. David L. Edsall, Philadelphia; Albert Robin, Wilmington, Del.; De Lancey Rochester, Buffalo; James Tyson, Philadelphia; John A. Lichty, Pittsburg; John N. Upshur, Richmond, Va..; C. W. Smith, Baltimore; Walter L. Bierring, Iowa City, Iowa; Heinrich Stern, New York City; Boardman Reed, Los Angeles; Hugo A. Freund, Detroit; C. F. Hoover, Cleveland; Christian, Musser and Wells.

Dr. George Dock, New Orleans, read a paper on "The Talma-Morrison Operation in the Treatment of Cirrhosis of Liver." Discussed by Drs. Nathaniel Bowditch Potter, New York City; Albert E. Roussel, Philadelphia; C. F. Hoover, Cleveland; S. E. Munson, Springfield, Ill.; Joseph L. Miller, Chicago, and Dock.

Thursday, June 10—Afternoon

Dr. McCrea read the report of Committee on Revision of Pharmacopeia. Discussed by Drs. M. I. Wilbert, Philadelphia; L. A. Conner, New York City; John F. Anderson, Washington, D. C.; W. Clayton Thrush, Philadelphia.

Dr. H. T. Ricketts, Chicago, read a paper on "Rocky Mountain Spotted Fever." Discussed by Dr. Woods Hutchinson, New York City.

Dr. Thomas D. Coleman, Augusta, Ga., read a paper on "Algid Forms of Malaria, with Report of Cases." Discussed by Drs. John A. Witherspoon, Nashville; James B. McElroy, Memphis, and Coleman.

Dr. Edward H. Goodman, Philadelphia, read a paper on "The Value of Alimentary Levulosuria in the Diagnosis of Hepatic Cirrhosis." Discussed by Drs. De Lancey Rochester, Buffalo; Williams, Rochester, and Goodman.

Dr. S. P. Beebe and Dr. W. Gilman Thompson, New York City, read a paper on "The Nature and Treatment of Anemia." Discussed by Drs. De Lancey Rochester, Buffalo; Theodore Potter, Indianapolis; Louis G. Heyn, Cincinnati; Samuel L. Miller, Chicago; Walter L. Bierring, Iowa City, Iowa, and Beebe.

Dr. Joseph H. Pratt, Boston, read a paper on "The Work of a Cooperative Hydrotherapeutic Establishment." Discussed by Drs. John A. Lichty, Pittsburg; C. W. Smith, Baltimore; Andrew MacFarlane, Albany, N. Y., and Pratt.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN

Tuesday, June 8—Afternoon

The Section met in Casino Hall, Steel Pier, and was called to order by the chairman, Dr. Walter P. Manton of Detroit, at 2:10 p. m. The vice-chairman, Dr. H. G. Wetherill of Denver, took the chair, and the chairman's address, on "Mental Alienation in Women and Abdomino-Pelvic Disease," was delivered by Dr. Manton.

The Chairman announced the following Nominating Committee: Drs. C. S. Bacon, Chicago; J. Wesley Bovée, Washington; W. B. Dorsett, St. Louis; Dr. F. F. Lawrence, Columbus; F. F. Simpson, Pittsburg. The committee to meet at 8:45 a. m. Wednesday, June 9.

Dr. A. E. Benjamin read a paper on "The Operation of Choice for Retrodisplacements of the Uterus." Discussed by Drs. Barrett, Bovée, Boldt, Hall, Marcy, Peterson, Stone, Fry, Cohen of Buffalo, Potter, Shoemaker and Benjamin.

Dr. Fred. H. Albee read a paper on "A Study of the Anatomy and Clinical Importance of the Sacroiliac Joint." Discussed by Drs. Frederick, Peterson, Barret, Myer Solis Cohen of Philadelphia and Wineberg of Scranton.

Drs. William S. Gardner and Emil Novak of Baltimore presented a paper on "The Endometrium and Some of Its Variations," which was read by Dr. Novak. Discussed by Drs. Marcy and Clark.

The paper by Dr. Francis D. Donoghue, Boston, on "Chronic Appendicitis with Chronic Perienteritis and Intestinal Obstruction Due to Infolding of Mucosa," was on motion of Dr. Hall referred to the Committee on Publication, for publication at their discretion, Dr. Donoghue having been present but called home.

Wednesday, June 9—Morning

The Section was called to order at 9:10 a. m. by the chairman.

Dr. J. E. Welch, New York City, read a paper on "The Pathology of Eclampsia and Toxemia of Pregnancy."

Dr. Ross McPherson, New York City, read a paper on "Study of Eclampsia with Results in Two Hundred and Fifty Cases, from the Wards of the Lying-in Hospital of New York City."

These two papers were discussed by Drs. Wetherill, Cohen of Buffalo, Lawrence, Frederick, Bacon, Fry, Frederick, Peterson, Welch and McPherson.

Dr. J. Wesley Bovée, Washington, read a paper on "A Method of Complete Nephroureterectomy." No discussion.

Dr. F. F. Simpson, Pittsburg, read a paper on "Some Factors Which Contribute to Low Mortality in Abdominal Surgery." Discussed by Drs. Reed of Cincinnati, Carstens, Boldt, Bacon, Lawrence, Morris, Wetherill, McGlinn and Simpson.

Dr. John Osborn Polak, Brooklyn, read a paper on "Remote Results of Conservative Surgery of the Ovaries." Discussed by Drs. Clark, Kelly, Goldspohn. Hall, Frederick, Sponsor of Indianapolis, Harris and closed by Dr. Polak.

Wednesday, June 9—Afternoon

The Section was called to order at 2:10 p. m. by the Chairman.

Dr. Henry D. Fry of Washington, D. C., read a paper entitled "An Ovarian Abscess Containing a Lumbricoid Worm Within the Cavity." No discussion.

Dr. Horace G. Wetherill, Denver, read a paper on "The Present Status of Irrigation and Drainage in Obstetric and Gynecologic Operations." Discussed by Drs. Golden, Ill, Jack and Wetherill.

Dr. Ellice McDonald, New York City, read a paper on "Fibromyoma of the Uterus."

Dr. E. E. Montgomery, Philadelphia, read a paper on "Enucleation of Uterine Myomata; Why and When Preferred."

These two papers were discussed by Drs. Boldt, Massey, Kelly, Chase, Tracy, Ill, Frederick, Lawrence, Montgomery and McDonald.

Dr. H. Grad, New York City, read a paper on "Ovariotomy and Myomectomy Early in Pregnancy with Full-Term Delivery." The paper was discussed by Drs. Kelly, Fry, Benjamin, Carstens and closed by Dr. Grad.

On motion and unanimous consent the rule that papers whose authors were not present when announced should be postponed to the close of the program was withdrawn in regard to the paper of Dr. Howard A. Kelly, Baltimore, which was read at this time, entitled "Curettage for Uterine Hemorrhage." Discussed by Drs. Massey, Boldt, Carstens, Fry, Shoemaker, Gardner, Novak, Grad, Boldt and Kelly.

Thursday, June 10—Morning

The Section was called to order at 9:15 a. m. by the Chairman.

The Nominating Committee made the following report for officers for the coming year: Chairman, Dr. John G. Clark, Philadelphia; vice-chairman, Dr. C. C. Frederick, Buffalo; secretary, Dr. C. Jeff Miller, New Orleans; delegate, Dr. Horace G. Wetherill, Denver; alternate, Dr. I. S. Stone, Washington, D. C.

Dr. Boldt moved that the Secretary cast an affirmative ballot for the gentlemen nominated, the motion was carried and the gentlemen declared elected.

Dr. G. Betton Massey, Philadelphia, offered a resolution embodying a petition to the House of Delegates for the creation of a Section on Physical Forces and Allied Agencies in Medicine and Surgery. Dr. Carstens moved the endorsement of the resolution and that it be sent to the House of Delegates. Dr. Hall seconded the motion and it was carried.

Dr. H. J. Boldt, New York City, read a paper on "Cancer of the Uterus Too Far Advanced for Radical Operation."

Dr. Walter B. Chase, Brooklyn, read a paper on "Palliative Treatment of Cancer of the Uterus."

These two papers were discussed by Drs. Massey, Carstens, Frederick, Marcy, McGlinn, Stone, Kelly, Polak, Novak, Wetherill, Bernard Cohen of Buffalo, Boldt and Chase.

Dr. W. B Dorsett, St. Louis, offered the following resolution, which was adopted:

> *Resolved*, That a Committee of Three (of whom the delegate to the House of Delegates of this Section be one) be appointed to confer with the Committee on Public Instruction of the House of Delegates, as well as to formulate plans of campaigning against cancer, and that they report the result of their work at the next meeting of this Section.

Drs. H. G. Wetherill, Chairman; John G. Clark and Henry D. Schwartz were subsequently appointed on this committee by the Chairman.

Dr. Howard A. Kelly offered resolutions on the need of a reduction in the tariff on radium, which were referred to the House of Delegates.

Dr. I. S. Stone, Washington, read a paper on "Some Minor Gynecologic Matters Which are Often Overlooked." Discussed by Drs. Morris of New York City, Dunning of Newburg, and Martine of Utica.

Dr. Reuben Peterson, Ann Arbor, Mich., read a paper on "Tetanus Developing Twelve Days After Shortening of the Ligaments." Discussion by Drs. Dorsett, Waldo, Hutchins, Sullivan, Boldt, Hutchins, Potter, Frederick and Peterson.

Dr. J. H. Carstens, Detroit, read a paper on "The Final Word on the Stem Pessary for Dysmenorrhea, Amenorrhea, Sterility, etc." Discussed by Drs. Kelly, Jack Benjamin and Carstens.

Thursday, June 10—Afternoon

The meeting was called to order at 2:20 p. m. by the Chairman.

Dr. H. S. Crossen, St. Louis, read a paper on "Conditions Simulating Early Tubal Pregnancy."

Dr. L. G. Bowers, Dayton, read a paper on "Extrauterine Pregnancy, with Especial Reference to the Proper Operative Period After Tubal Rupture, with Report of Cases." Discussed by Drs. Barrett, Schuman, McPherson, Polak, Stelwagon, Novak, Benjamin, Schwarz, Waldo, Simpson, Wetherill, Shoemaker, Boyd, Crossen and Bowers.

Dr. George R. White, Savannah, read a paper entiled "Cystocele." Discussed by Drs. Grad, Martindale of Camden, Barret of Chicago, Stone, Goldspohn and White.

A paper by Dr. D. Tod Gilliam on "An Imbricating and Coaptation Suture as a Safeguard Against Hernia" was read by title.

After a vote of thanks to the retiring Chairman, the Section was declared adjourned.

SECTION ON SURGERY

Tuesday, June 8—Afternoon

The Section was called to order at 2 p. m., in Casino, Steel Pier, by the Chairman, Dr. John C. Munro, who delivered an address.

The following five papers were read and discussed jointly:

C. A. Powers, Denver, "Localized Subphrenic Tuberculosis."

Emil G. Beck, Chicago, "Treatment of Tuberculous Pleuritis and Empyema."

Prof. P. L. Friedrich, Marburg, Germany, "Address on Thoracic Surgery."

Dr. Willy Meyer, New York City, "Pneumectomy with the Aid of Differential Pressure; an Experimental Study. The new type of apparatus used."

Drs. Green and Janeway, New York City, "Intrathoracic Physiologic and Technical Studies."

Discussed by Drs. DeForest Willard, Philadelphia; S. J. Meltzer, New York City; Fell, Buffalo; Robinson, Boston; Green, New York; J. B. Murphy, Chicago; Hartford, Boston; A. J. Ochsner, Chicago; Powers, Beck, Friedrich, Meyer and Janeway.

Wednesday, June 9—Morning

Dr. Dudley Tait and Dr. Raymond Russ, San Francisco, read a paper on "Electric Sleep." Discussed by Drs. L. G. Robinovitch and G. E. Brewer, New York City.

The following three papers were read and discussed jointly:

Dr. W. Arbuthnot Lane, London, Eng., "The Operative Treatment of Fractures."

Dr. William Darrach, New York City, "Operative Treatment of Fractures."

Dr. E. D. Martin, New Orleans, "A Plea for the More Careful Diagnosis of Fractures and Their Treatment."

Discussed by Drs. C. L. Scudder, Boston; LeMoyne Wills, Los Angeles; P. L. Friedrich, Germany; A. J. Ochsner, Chicago; L. Freeman, Denver; Walker, New York City; J. B. Murphy, Chicago; C. A. Powers, Denver; W. L. Estes, South Bethlehem, Pa.; R. Matas, New Orleans; De F. Willard, Philadelphia; Thompson, Scranton; R. F. Weir, New York; Hoy, Ohio; J. F. Binnie, Kansas City; Lane and Darrach.

Wednesday, June 9—Afternoon

Dr. Harvey Cushing, Baltimore, delivered the Oration on Surgery, "Hypophysis Cerebri; Clinical Aspects of Hypersecretion and Hyposecretion."

Dr. A. E. Hertzler, Kansas City, Mo., read a paper on "The Pseudoperitoneum."

Dr. J. B. Deaver, Philadelphia, read a paper on "The Early Symptoms of Upper Abdominal Disease."

These two papers were discussed by Drs. W. D. Haggard, Nashville; R. Morris, New York City; A. MacLaren, St. Paul; Hertzler and Deaver.

Dr. A. J. Ochsner, Chicago, read a paper on "Pancreatitis." Discussed by Dr. J. J. Gilbride, Philadelphia.

The following two papers were read and discussed jointly:

Dr. Stanley Stillman, San Francisco, "Hypertrophic Stenosis of the Pylorus in Infants. Report of Cases Occurring on the Pacific Coast."

Dr. J. H. Gibson and Dr. F. T. Stewart, Philadelphia, "Report of Twenty Cases of Perforated Gastric and Duodenal Ulcer."

Discussed by Drs. W. J. Mayo, Rochester, Minn.; J. C. Bloodgood, Baltimore; F. C. Shattuck, Boston, and Skinner, New York City.

Thursday, June 10—Morning

Dr. J. B. Murphy, Chicago, read a paper on "Joint Infections, Etiology and Pathology Demonstrated Experimentally, and Clinical Results Obtained by Treatment Based on These Experiments."

Dr. E. H. Nichols, Boston, read a paper on "Arthritis Deformans."

These two papers were discussed by Drs. A. D. Bevan, Chicago; J. L. Wiggin, East St. Louis; A. Vander Veer, Albany; DeF. Willard, Philadelphia; R. Morris, New York City; J. E. Moore, Minneapolis; J. F. Binnie, Kansas City; E. H. Nichols, Boston, and Murphy.

The report of the Anesthesia Commission was presented by Dr. W. D. Haggard.

Dr. W. B. Coley, New York City, read a paper on "The Conservative Treatment of Sarcoma of the Long Bones." Discussed by Drs. J. C. Bloodgood, Baltimore; A. D. Bevan, Chicago; H. S. Wieder, Philadelphia; J. C. Roberts, Philadelphia, and Coley.

The following three papers were read and discussed jointly:

Dr. E. S. Judd, Rochester, Minn., "The Transperitoneal Operation for the Removal of Bladder Neoplasms."

Dr. Willard Bartlett, St. Louis, "A Radical Operation for Certain Forms of Hydrocele."

Dr. V. C. Pederson, "Dilatation Treatment of Urethral Stricture."

Discussed by Drs. L. Davis, Boston; W. S. Lower, Cleveland; Watts, New York City; Block, Kansas City; J. H. Gibbon, Philadelphia; F. C. Valentine, New York; Judd, Bartlett and Pederson.

Thursday, June 10—Afternoon

The Nominating Committee presented the following names, which on motion, were accepted, and the officers declared elected: Chairman, Charles H. Mayo, Rochester, Minn.; vice-chairman, Thomas Huntington, San Francisco; secretary, W. D. Haggard, Nashville; orator, Robert Abbe, New York City; delegate, Edward H. Ochsner, Chicago; alternate, J. W. D. Maury, New York City.

Dr. W. J. Mayo, Rochester, Minn., contributed a paper on "Some of the Principles Underlying Surgery of the Spleen." Discussed by Dr. A. J. Ochsner, Chicago.

The following three papers were read and discussed jointly:

Dr. Van Buren Knott, Sioux City, Ia., "The Treatment of the Appendix Stump."

Dr. LeGrand Guerry, Columbia, S. C., "Consideration of the Mortality of Appendicitis."

Dr. J. W. D. Maury, New York City, "Causes of Death in Acute Intestinal Obstruction and Kindred Conditions."

Discussed by Drs. W. D. Haggard, Nashville; Stanton, New York City; W. L. Rodman, Philadelphia; R. Morris, New York; Skinner, New York City; E. LaPlace, Philadelphia; F. F. Lawrence, Columbus; W. J. Mayo, Rochester; A. J. Ochsner, Chicago, and Maury.

Friday, June 11—Morning

The Chairman announced that the name of the Section would hereafter be "Section on Surgery," and that three Vice-Chairmen would be elected; also that the following Anesthesia Committee had been appointed, consisting of members of various sections interested in this question Dr. W. D. Haggard, chairman; Dr. J. G. Mumford, Dr. H. Gifford, Dr. A. Lambert and Dr. H. Wood.

Dr. J. E. Summers, Omaha, reported a "Case of Sarcoma of the Tonsil." Discussed by Drs. M. F. Porter, Fort Wayne, Ind.; H. S. Wieder, Philadelphia, and Summers.

The following three papers were read and discussed jointly:

Dr. J. C. Stewart, Minneapolis, "The Radical Treatment of Epithelioma of the Lip."

Dr. W. L. Rodman, Philadelphia, "Method of Procedure in Mammary Neoplasms of Doubtful Nature."

Dr. J. N. Jackson, Kansas City, Mo., "Radical Operation in Mammary Cancer."

Discussed by Drs. H. S. Wieder, Philadelphia; W. H. Welch, Baltimore; W. L. Grant, Denver; E. S. Judd, Rochester, Minn.; M. F. Porter, Ft. Wayne, Ind.; J. F. Binnie, Kansas City; Smith, New York City; LeM. Mills, Los Angeles; J. C. Munro, Boston; M. Hartwig, Buffalo; Stewart, Rodman and Jackson.

SECTION ON OPHTHALMOLOGY

Tuesday, June 8—Afternoon

Dr. Alvin A. Hubbell, Buffalo, chairman, delivered an address on "Ophthalmologic Standards which Should be Required in General and in Special Practice."

Dr. Walter R. Parker, Detroit, read a paper on "The Visual Fields in Hysteria, a Clinical Study of Fifty Cases." Discussed by Drs. E. C. Ellett, Memphis; L. Howe, Buffalo; Casey Wood, Chicago; G. E. de Schweinitz, Philadelphia; C. H. May, New York City, and Parker.

Dr. M. Wiener, St. Louis, read a paper on "Regeneration of the Cornea." Discussed by Drs. John Green, St. Louis; W. Zentmayer, Philadelphia; Robert L. Randolph, Baltimore; A. R. Baker, Cleveland; Miller, St. Louis; G. C. Savage, Nashville, and Wiener.

Dr. Edward Jackson, Denver, read a paper on "Scissors-Magnet Extraction of Iron from Eyeball." Discussed by Drs. W. M. Sweet, Philadelphia; W. Marple, New York City; H. Gifford, Omaha; W. H. Wilder, Chicago; E. E. Holt, Portland; Donovan, Dubuque; Robert L. Randolph, Baltimore, and Jackson.

Dr. H. Gifford, Omaha, read a paper on "Prophylaxis of Interstitial Keratitis." Discussed by Drs. Fox, Philadelphia; S. D. Risley, Philadelphia; F. H. Verhoeff, Boston; W. L. Pyle, Philadelphia; John Green, St. Louis; Miles Standish, Boston; G. H. Price, Nashville; A. R. Baker, Cleveland; A. E. Bulson, Jr., Ft. Wayne, Ind., and Gifford.

Wednesday, June 9—Morning

Dr. George F. Keiper, Lafayette, Ind., described a new instrument for the measurement of astigmatism.

On motion of Dr. Edward Jackson, Denver, amended by Dr. Savage, Memphis, the Chairman appointed a committee consisting of Drs. L. Connor, Detroit, J. Thorington, Philadelphia, A. R. Baker, Cleveland, to consider and report at this meeting on the special suggestions and recommendations of the Chairman's address.

The report of Dr. Casey Wood, Chicago, chairman of the Committee on Proposed Alterations in the U. S. Pharmacopeia, was read and adopted on motion, and by separate motion of Dr. Savage, Memphis, the committee was continued.

Dr. Lee M. Francis, Buffalo, read a paper on "Isolated and Complete Paralysis of the Third Nerve of Traumatic Origin." Discussed by Wendell Reber, Philadelphia.

Dr. David W. Stevenson, Richmond, Ind., read a paper on "Unreliability of Astigmatic Fan or Clock-Dial Test." Discussed by Drs. J. Thorington, Philadelphia; F. H. Verhoeff, Boston; J. W. Park, Harrisburg, Pa.; O. Wilkinson, Washington; L. Connor, Detroit; Edward Jackson, Denver; John Green, St. Louis; W. Reber, Philadelphia; and Stevenson.

Dr. William E. Gamble, Chicago, read a paper on "Simple Fibroma of the Orbit." Discussed by Drs. George F. Keiper, Lafayette, Ind., G. O. Ring, Philadelphia.

Dr. J. A. Tenney, Boston, read a paper on "Dropsy of the Optic Nerve Sheath." Discussed by Drs. L. Webster Fox, Philadelphia; A. R. Baker, Cleveland, and Tenney.

Dr. Samuel Theobald, Baltimore, read a paper on "Reflex Aural Neuroses Caused by Eye-Strain, with Report of Cases." Discussed by Drs. Park Lewis, Buffalo; E. E. Holt, Portland; L. Howe, Buffalo; S. D. Risley, Philadelphia, and Theobald.

L. Webster Fox, Philadelphia, read a paper on "Amethyst Tinted Lenses." Discussed by Drs. Nelson M. Black, Milwaukee; Mortimer Frank, Chicago; W. L. Pyle, Philadelphia; Williams, Boston; Barton Pitts, St. Joseph, Mo.; G. Friebis, Philadelphia, and Fox.

Wednesday, June 9—Afternoon

Dr. H. F. Hansell, Philadelphia, read a paper on "Some Minor Points in the Surgery of Cataract." Discussed by Drs. H. D. Bruns, New Orleans; G. C. Savage, Nashville; W. B. Marple, New York City; L. Howe, Buffalo; Mark Stevenson, Akron, Ohio; G. O. Ring, Philadelphia; O. Tydings, Chicago; A. R. Baker, Cleveland, and A. E. Davis, New York City.

Dr. H. V. Würdemann, Seattle, Wash., read a paper on "The Expression of Cataract in Its Capsule, with Report of 40 Operations."

Dr. D. W. Greene, Dayton, Ohio, read a paper on "Expression of Cataracts in the Capsule by the Smith Method."

These two papers were discussed by Drs. Peter Callan, New York City; Arnold Knapp, New York City; Casey Wood, Chicago; W. R. Parker, Detroit; W. H. Wilder, Chicago; Percy Fridenberg, New York City; L. Webster Fox, Philadelphia; F. Allport, Chicago; M. Wiener, St. Louis; W. B. Marple, New York City; Park, Columbus, Ohio; Cooley; Mark D. Stevenson, Akron, Ohio; Malet, Dayton, Ohio, Würdemann and Greene.

S. Lewis Ziegler, Philadelphia, read a paper on "Galvano-Cautery Puncture in Ectropion and Entropion." Discussed by Drs. S. D. Risley, Philadelphia; W. Zentmayer, Philadelphia; Barton Pitts, St. Joseph, Mo.; E. E. Holt, Portland, Maine; Price and Ziegler.

Dr. R. L. Randolph, Baltimore, read a paper on "Rodent Ulcer of the Cornea." Discussed by Drs. G. E. de Schweinitz, Philadelphia; Barton Pitts, St. Joseph, Mo.; J. A. Donovan, Butte, Mont.; H. Gifford, Omaha, and Randolph.

Dr. Casey A. Wood, Chicago, read a paper on "Epibulbar Leucosarcoma, Exenteration of the Orbit. No Recurrence at the Original Site. Death in Three Months from Metastases." Discussed by Drs. M. Black, Denver; G. F. Keiper, Lafayette, Ind.; Barton Pitts, St. Joseph, Mo.

Dr. Alexander Duane, New York City, read a paper on "The Accommodation and Donder's Curve, and the Need of Revising our Ideas Regarding Them; An Experimental Study." Discussed by Drs. Edward Jackson, Denver, and Duane.

Thursday, June 10—Morning

Dr. George F. Keiper, Lafayette, Ind., exhibited a modification of Brande's instrument for the measurement of astigmatism.

Dr. G. H. Savage, Memphis, exhibited and described his instrument for measuring muscle deviations.

Dr. Alexander Duane, New York City, exhibited and described his disc for testing the accommodation.

Dr. Lucien Howe, Buffalo, exhibited and described an instrument for estimating the strength of the ocular muscles.

Dr. Briggs, Ashland, Pa., exhibited and described an instrument for shortening the ocular muscles without cutting and without the use of sutures.

Dr. Lucien Howe, Buffalo, presented the report of the committee on legislation concerning opticians. On motion it was adopted. The report was as follows:

Report of Committee on Legislation Concerning Opticians

At a meeting of this section two years ago a committee was appointed to consider legislation concerning opticians. That committee made a report last year, but it was referred back for some modifications. Since then new aspects of the question have been presented for consideration. Moreover, one member of this committee has been asked to become the chairman of a committee of the section to study the ocular muscles, and another to become the chairman of a committee to study tuberculosis of the eye, both of these invitations having been accepted. The third member of the committee, Gen. George E. Sternberg, was never a member of this Section, has no special interest in the subject and accepted a place on the committee only after rather urgent solicitation and at considerable personal inconvenience.

In view of the changes required in the report, therefore, and in view of the new duties assigned to the members of this committee, and also considering that we have no right to ask for further service from the third member, the undersigned would simply report progress, and while still in sympathy with the objects to be attained, they respectfully ask that they be relieved from the duty and other members of the section be appointed in their places.

Lucien Howe.
William H. Wilder.

After considerable discussion the committee appointed to report on the recommendations contained in the Chairman's address reported as follows:

Report of Committee on Chairman's Address

Your committee to which was referred the Chairman's address on "The Ophthalmologic Qualifications of the General Practitioner and Ophthalmologist" respectfully begs leave to recommend the following:

1. Every general practitioner should have that training in ophthalmology which will enable him to manage infectious diseases of the eye and its simple refractive defects. To obtain this qualification medical colleges should make such training obligatory and state boards of registration demand it as a condition for license.

2. Every general practitioner who desires to become an ophthalmologist should add to his training a comprehensive training in ophthalmology, experimental work in the laboratory and personal clinical experience in a hospital or private office. To insure these qualifications there should be appointed on each state board of registration at least one ophthalmologist to examine applicants for a license to practice ophthalmology.

3. If these recommendations be approved by the Section it is respectfully urged that a committee of three be appointed by the Chairman to study the subject and report its findings of the detailed measures necessary to secure trained family physicians and ophthalmologists adequate for the needs of all the people when suffering from ocular disabilities.

Leartus Connor,
J. Thorington,
A. R. Baker.

The above report was adopted by the Section and the above named gentlemen were appointed on the committee provided for in the report.

The following officers were elected: Chairman, Dr. W. C. Posey, Philadelphia; vice-chairman, Dr. Hiram Woods, Baltimore; secretary, Dr. A. E. Bulson, Jr., Ft. Wayne, Ind.; delegate, Dr. T. Woodruff, Chicago.

Dr. C. F. Clark, Columbus, offered the following resolution:

Resolved, That a special committee be appointed by the Chairman to investigate and report on the so-called "Smith-Indian" operation, with special reference to the ultimate or remote condition of eyes operated on by this method as compared with other methods; this committee to report progress each year for three years.

On motion the resolution was adopted. The Chairman later appointed on that committee Drs. D. W. Greene, Dayton, chairman; Arnold Knapp, New York City; Edward Jackson, Denver; Casey Wood, Chicago, and W. R. Parker, Ann Arbor.

Dr. Arnold Knapp, New York City, read a paper on "Operative Treatment of Glaucoma by Cyclodialysis." Discussed by Drs. E. V. L. Brown, Chicago; W. H. Wilder, Chicago, and H. Gifford, Omaha.

Dr. Charles S. Bull, New York City, read a paper on "Management of Acute Hemorrhagic Glaucoma in the Presence of Advanced Arteriosclerosis." Discussed by Drs. Myles Standish, Boston; Edward Jackson, Denver; Melville Black, Denver; F. H. Verhoeff, Boston; R. L. Randolph, Baltimore, and D. W. Greene, Dayton.

Dr. Mortimer Frank, Chicago, read a paper on "Primary Hemorrhagic Glaucoma with Probable Sympathetic Inflammation." Discussed by Drs. S. D. Risley, Philadelphia; W. L. Pyle, Philadelphia; H. Gifford, Omaha; E. V. L. Brown, Chicago; G. H. Price, Nashville; F. H. Verhoeff, Boston, and Frank.

Dr. John Green, St. Louis, read a paper on "Nodular Opacity of Cornea; Etiology." Discussed by Drs. A. F. Shumway, Philadelphia; William Zentmayer, Philadelphia, and Oscar Wilkinson, Washington.

Dr. Mark D. Stevenson, Akron, O., read a paper on "Practical Importance of Hyperphoria in Prescribing Lenses for Use at Particular Distances and in Different Directions." With exhibition of instrument for testing hyperphoria. Discussed by Drs. Alexander Duane, New York City; G. H. Savage, Memphis; W. H. Roberts, Pasadena; W. C. Posey, Philadelphia; William Zentmayer, Philadelphia; E. E. Holt, Portland, Me., and Stevenson.

Dr. Lucien Howe, Buffalo, read a paper on "Tenotomy or Advancement." Discussed by Drs. F. C. Todd, Minneapolis; E. E. Holt, Portland, Me.; Alexander Duane, New York City; W. R. Broughton, New York City; G. H. Savage, Memphis, and Francis Valk, New York City.

Thursday, June 10—Afternoon

The Chairman appointed on the committee on legislation concerning opticians, Drs. John C. Bossidy, Boston, chairman; A. R. Baker, Cleveland, and J. Thorington, Philadelphia.

Dr. W. H. Wilder, Chicago, moved that the officers of the Section be requested to prepare some suitable resolutions of appreciation and respect for the work of the late Dr. F. C. Hotz of Chicago, for ophthalmology and for the Section and transmit the same to his family and spread them on the minutes of the Section. The motion was carried.

On motion of Dr. Lucien Howe, Buffalo, the secretary of the Section was directed to thank General George E. Sternberg for his services on the committee on opticians.

Dr. R. L. Randolph, Baltimore, offered the following resolution, which was adopted:

Resolved, That the action of the Chairman of this section in appointing committees for the collective investigation of certain questions be hereby confirmed and authority given for the continuation of such studies as long as those committees engage actively in the work assigned to them.

The report of the Committee on Collective Investigation Concerning the Ocular Muscles was presented as printed in the presession book.

The preliminary report of the Committee for the Study of the Relation of Tuberculosis to Certain Diseases of the Eye was presented.

Dr. George E. de Schweinitz, Philadelphia, read a paper on "Operative Treatment of Papilledema-Dependent on Increased Intracranial Tension." Discussed by Drs. James Bordley, Jr., Baltimore, and Holloway, Philadelphia.

Dr. Charles H. Frazier, Philadelphia, read a paper on "Surgical Aspects of Cerebral Decompression." Discussed by Drs. Sterer, Pittsburg; R. L. Randolph, Baltimore; William H. Spiller, Philadelphia; W. H. Wilder, Chicago; A. E. Bulson, Jr., Ft. Wayne; Randall, Philadelphia; Emerson; Black, Milwaukee; de Schweinitz, Philadelphia, and Frazier.

On the statement of Dr. A. E. Bulson, the secretary, as to the inadequacy of the facilities offered at the meeting place of the Section, the Section adopted a resolution that the Trustees of the American Medical Association should be requested to furnish all proper facilities and appliances for carrying on the work of the Section.

Dr. G. S. Derby, Boston, and Dr. T. H. Ayer, Westboro, Mass., presented a paper on "A Clinical Investigation on the Relationship of Tuberculosis to Certain Diseases of the Eye." Discussed by Drs. W. H. Wilder, Chicago; W. C. Posey, Philadelphia, and Derby.

Dr. F. H. Verhoeff, Boston, read a paper on "Neuropathic Keratitis and Some Allied Conditions, with Special Reference to Treatment." Discussed by Drs. William Zentmayer, Philadelphia, and Verhoeff.

Dr. L. D. Brose, Evansville, Ind., read a paper on "Lachrymal Gland Tumors."

Dr. de Schweinitz moved a vote of thanks to the officers of the Section, and after the introduction of the new officers the meeting adjourned.

SECTION ON LARYNGOLOGY AND OTOLOGY

Tuesday, June 8—Afternoon

The meeting was called to order at 2:30 p. m., the President, Dr. W. Sohier Bryant, New York City, presiding.

In the absence of Dr. Otto T. Freer, Chicago, member of the Executive Committee, the chair appointed Dr. Barnhill, Indianapolis, to serve in his place.

Dr. W. Sohier Bryant, New York, delivered the Presidential address.

Dr. John O. Roe, Rochester, read a paper on "Treatment of Palatopharyngeal Adhesions, New Operation for Their Successful Relief." Discussed by Drs. W. E. Casselberry, Chicago; Willis S. Anderson, Detroit; Cullen F. Welty, San Francisco; Scholtz, St. Louis; Dunbar Roy, Atlanta; Sidney Yankhauer, New York City; W. W. Carter, New York City; George W. Mitchell, Baltimore; and Roe.

Dr. A. H. Miller, Providence, read a paper on "A New and Satisfactory Apparatus for Etherization in Operations About the Face and Upper Air Passages." Discussed by Drs. Joseph A. Stucky, Lexington, Ky.; Kate W. Baldwin, Philadelphia; John O. Roe, Rochester; Cullen F. Welty, San Francisco; Sylvan Rosenheim, Baltimore; Rupert, Philadelphia; Joseph A. White, Richmond; Burt Russell Shurly, Detroit, and Miller.

Dr. Richard H. Johnson, Baltimore, read a paper on "Benign Tumors of the Turbinated Bodies Clinically and Pathologically Considered." Discussed by Drs. Sylvan Rosenheim, Baltimore; George Frederick Keiper, Lafayette, Ind.; James E. Logan, Kansas City; Lobar, New York City; Scholtz, St. Louis; Jacques Holinger, Chicago; Emil Mayer, New York City; Stanley Miner, Detroit; T. W. Corwin, Newark; W. E. Sauer, St. Louis; Lee Cohen, Baltimore; B. Alexander Randall, Philadelphia, and Johnson.

Dr. William W. Carter, New York, read a paper on "Correction of Nasal Deformities." Discussed by Drs. John O. Roe, Rochester; Cullen F. Welty, San Francisco; R. H. Good, Chicago, and Carter.

Dr. W. E. Casselberry, Chicago, exhibited an instrument for tamponing the nasal fossæ and a self-retaining quadrivalvular nasal speculum.

Wednesday, June 9—Morning

The following papers were read and discussed as a "Symposium on Faucial Tonsils:"

Dr. C. M. Robertson, Chicago, "Anatomic and Physiologic Considerations Relating to the Faucial Tonsils."

Dr. Emil Mayer, New York City, "Conditions in the Faucial Tonsils Which Call for Operative Interference."

Dr. Norval H. Pierce, Chicago, "A Discussion of the Methods of Operating on the Faucial Tonsils."

Dr. Francis R. Packard, Philadelphia, "General Anesthesia for Tonsil Adenoid Operations."

Dr. Lee Cohen, Baltimore, "Postoperative Tonsillar Bleeding; Its Surgical Control, with Mention of Cases."

Discussed by Drs. Frank C. Todd, Minneapolis; Chevalier Q. Jackson, Pittsburg; F. Gurney Stubbs, Chicago; W. E. Casselberry, Chicago; Cullen F. Welty, San Francisco; George L. Richards, Fall River, Mass.; John F. Barnhill, Indianapolis; Mark D. Stevenson, Akron, O.; Joseph H. Abraham, New York City; P. Friedenberg, New York City; F. E. V. Shore, Des Moines; Oliver Tydings, Chicago; Oscar Wilkinson, Washington, D. C.; W. W. Carter, New York City; Sidney Yankhauer, New York City; Joseph A. White, Richmond; Dennis J. McDonald, New York City; Norton L. Wilson, Elizabeth, N. Y., and the essayists.

Wednesday, June 9—Afternoon

Dr. Charles R. C. Borden, Boston, read a paper on "Fracture of the Base of the Skull." Discussed by Drs. John F. Barnhill, Indianapolis; Cullen F. Welty, San Francisco; E. A. Crockett, Boston; Jacques Holinger, Chicago; John J. Kyle, Indianapolis; S. MacCuen Smith, Philadelphia; John M. Foster, Denver; George E. Shambaugh, Chicago; B. Alexander Randall, Philadelphia; Glogan, New York City; Davis, New York City; Cullen F. Welty, San Francisco, and Borden.

Dr. C. G. Coakley, New York City, read a paper on "Diseased Conditions Involving the Nasal Accessory Sinuses in Which an External Operation Is Indicated."

Dr. David B. Kyle, Philadelphia, read a paper on "Occurrence of Acute Inflammation of the Nasal Accessory Sinuses, Symptoms and Treatment."

Dr. H. W. Loeb, St. Louis, read a paper on "Suppurative Accessory Sinus Diseases in Which an Intranasal Operation Is Indicated."

These three papers were discussed by Drs. Ross H. Skillern; Philadelphia; Joseph A. Stucky, Lexington, Ky.; R. H. Good, Chicago; Burt Russell Shurly, Detroit; P. Friedenberg, New York City; G. H. Makuen, Philadelphia; W. H. Schultz, St. Louis; Charles M. Robertson, Chicago; E. A. Crockett, Boston; G. M. Case, Elmira, N. Y.; Cullen F. Welty, San Francisco; Coakley, Kyle and Loeb.

Dr. William R. Murray, Minneapolis, read a paper on "Presence of Vincent's Spirillum and *Bacillus Fusiformis* in Pseudomembranous Anginas." Discussed by Drs. Frank C. Todd, Minneapolis; Samuel Iglauer, Cincinnati; E. H. Porter, Tiffin, Ohio; Joseph A. Stucky, Lexington, Ky., and Murray.

Thursday, June 10—Morning

The following officers were elected: Chairman, Chevalier Jackson, Pittsburg; vice-chairman, George F. Cott, Buffalo; secretary, George E. Shambaugh, Chicago; delegate, D. Braden Kyle, Philadelphia; executive committee, W. Sohier Bryant, New York City; S. MacCuen Smith, Philadelphia, and H. W. Loeb, St. Louis.

Dr. George F. Cott, Buffalo, read a paper on "Two Cases of Infectious Labyrinthitis." Discussed by Drs. Jacques Holinger, Chicago; S. MacCuen Smith, Philadelphia; George E. Shambaugh, Chicago; Glogan, New York; J. F. Fairbairn, Buffalo; B. Alexander Randall, Philadelphia, and Drs. Kerrison of New York and Cott of Buffalo.

Dr. Samuel Iglauer, Cincinnati, read a paper on "*X*-Ray Examination of the Mastoid." Discussed by Drs. Sydney Lange, Cincinnati; W. H. Schultz, St. Louis; Jacques Holinger, Chicago; B. Alexander Randall, Philadelphia; Cullen F. Welty, San Francisco; Frank Allport, Chicago; S. MacCuen Smith, Philadelphia, and Iglauer.

Dr. A. B. Duel, New York City, read a paper on "Symptoms of the Intracranial Complications Occurring in Chronic Suppurative Otitis Media."

Dr. B. A. Randall, Philadelphia, read a paper on "Indications for Tympanomastoid Exenteration in Cases of Chronic Suppurative Otitis Media Where There Is Absence of Evidence of an Intracranial Complication."

Dr. Eugene A. Crockett, Boston, read a paper on "Conditions Which Constitute Contraindications to the Tympanomastoid Exenteration in Cases of Chronic Suppurative Otitis Media."

These three papers were discussed by Drs. S. MacCuen Smith, Philadelphia; Joseph A. Stucky, Lexington, Ky.; W. H. Schultz, St. Louis; Cullen F. Welty, San Francisco; E. C. Ellett, Memphis; Amos R. Solenberger, Colorado Springs; George E. Shambaugh, Chicago; Samuel L. Ledbetter, Birmingham; Duel, Randall and Crockett.

Thursday, June 10—Afternoon

Dr. Daniel W. Layman, Indianapolis, exhibited a new tonsil knife with a guard and pillar retractor attachment.

Dr. Henry Hager Martin, Savannah, exhibited a modification of the Kratzmüller snare.

Dr. Hays, New York City, demonstrated his pharyngoscope.

Dr. Chevalier Jackson, Pittsburg, presented a paper on "A Ten-Minute Demonstration of Bronchoscopy," which, in his absence, was read by Dr. Joseph A. Stucky, Lexington, Ky., who also exhibited skiagrams and drawings. Discussed by Drs. Richard Hall Johnson, Baltimore; Thomas, Philadelphia; Burt Russell Shurly, Detroit; W. H. Schutz, St. Louis, and Fletcher, Chicago.

Dr. E. P. Fowler, New York City, read a paper on "The Physiology of the Eustachian Tube." Discussed by Drs. Jacques Holinger, Chicago; George E. Shambaugh, Chicago, and Fowler.

Mr. John D. Wright, New York City, read a paper on "The Deaf Child and the Physician." Discussed by Drs. S. Mac-

Cuen Smith, Philadelphia; Arthur B. Duel, New York; Dennis J. McDonald, New York; Jacques Holinger, Chicago, and Wright.

By motion of Dr. Delevan, a committee of three was appointed, consisting of Drs. John L. Adams, New York City; Dunbar Roy, Atlanta, and R. B. Shurly, Detroit, to draft resolutions that may be helpful in arousing greater interest in the training of the deaf in public schools. The motion as amended was carried.

By motion the Section voted an expression of thanks to Mr. Wright for his presentation of the subject.

The Section then adjourned.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

Tuesday, June 8—Afternoon

The Section was called to order at 2:30 p. m., in the First Baptist Church by the chairman, Dr. J. H. White, New Orleans. In the absence of the secretary, Dr. Marshall Price, Baltimore, was designated secretary *pro tem.*

The Chairman read his address.

Dr. J. N. McCormack, Bowling Green, Ky., delivered his remarks *extempore* on "The Importance of Consolidation of all the National Health Associations Into the Section on Hygiene and Sanitary Science with the Purpose of Making It What It Should Be."

Dr. H. M. Bracken, St. Paul, Minn., read a paper on "The Relation of the Medical Profession to Preventive Medicine."

These two papers were discussed by Drs. George M. Sternberg, Washington; William Porter, St. Louis; Marshall Price, Baltimore; Henry B. Hemenway, Evanston, Ill.; W. A. Evans, Chicago, and Bracken.

Dr. Marshall Price offered the following resolution, which was passed and referred to the House of Delegates:

> *Resolved,* That the Chairman appoint a committee of three to consider means of cooperation with the American Public Health Association and the Conference of State and Provincial Boards of Health, and that in addition to these three members the Chairman be also *ex officio* a member.

Dr. Hemenway offered a resolution relative to the amount of time devoted to sanitary science in medical colleges. This appeared in the minutes of the House of Delegates, The Journal, June 19, 1909, p. 2083.

Dr. Hemenway also offered the following resolution, which was passed and referred to the House of Delegates:

> *Resolved,* That the representative on Hygiene and Sanitary Science in the House of Delegates be instructed to ask that a permanent council on sanitary science be appointed by the American Medical Association and that a special department on sanitary science be regularly maintained in The Journal of the Association under supervision of this council.
>
> *Resolved,* That the Association be requested to appropriate a suitable sum of money for the use of the council on sanitary science.

Dr. S. A. Knopf, New York City, read a paper on "A New Type of Phthisiophobia." The paper was received without discussion.

Wednesday, June 9—Afternoon

Dr. Harry C. Sharp, Indianapolis, read a paper on "Vasectomy as the Means of Preventing Procreation in the Defectives." Discussed by Drs. Liston H. Montgomery, Chicago; Ferd. C. Valentine, New York City; W. Forrest Dutton, Walker's Mills, Pa.; Woods Hutchinson, New York City; C. A. Rosenwasser, Newark, N. J.; George N. Jack, Buffalo; J. N. Hurty, Indianapolis, and Sharp.

Dr. W. A. Evans, Chicago, read a paper on "Lake Michigan Water for Drinking Purposes."

Dr. Harold B. Wood, Philadelphia, read a paper on "The Economic Value of Protecting the Water Supplies."

These two papers were discussed by Drs. W. K. Jaques, Chicago; Liston H. Montgomery, Chicago; W. Forrest Dutton, Walker's Mills, Pa.; Seneca Egbert, Philadelphia; Marshall Langton Price, Baltimore; John S. Fulton, Baltimore; Arnold, U. S. Navy; F. W. Sell, Rahway, N. J.; J. H. White, New Orleans; Evans and Wood.

Thursday, June 10—Morning

The following officers were elected: Chairman, Dr. J. N. Hurty, Indianapolis; vice-chairman, Dr. C. F. Williams, Columbia, S. C.; secretary (three years), Dr. M. Langton Price, Baltimore; delegate, Dr. J. H. White, New Orleans; alternate, Dr. C. L. Wheaton, Chicago; orator, Dr. Seneca Egbert, Philadelphia.

The Chairman, empowered by a motion offered by Dr. Henry B. Hemenway, Evanston, Ill., appointed Drs. H. M. Bracken, W. A. Evans and Seneca Egbert a committee to cooperate for one year with the Committee on Legislation, through its bureau.

Dr. Francis H. Slack, Boston, was, on the suggestion of Dr. H. M. Bracken, St. Paul, appointed secretary of the Section in the temporary absence of Dr. Price, acting secretary.

Dr. John W. Kerr read a paper conjointly by himself and Dr. J. W. Stimson: "The Prevalence of Rabies in the United States." Discussed by Drs. H. M. Bracken, St. Paul; W. A. Evans, Chicago; W. M. Brumby, Austin, Tex.; whereupon Chairman White, before absenting himself temporarily, vacated the chair in favor of Dr. Bracken. Additional discussants were Drs. John F. Anderson, U. S. P. H. and M.-H. S.; W. Forrest Dutton, Walker's Mills, Pa.; Gates, U. S. Navy; Kerr; W. H. Sanders, Mobile, Ala.; J. N. Hurty, Indiana; Liston H. Montgomery, Chicago, Ill.; Martin Friedrich, Cleveland, Ohio; William Litterer, Nashville, Tenn.; A. C. Abbott, Philadelphia; Guiteras, Havana, Cuba.

Dr. Price, acting secretary, adverting to his election, during his absence, as secretary for three years, gave notice that he could not serve for more than one year, ensuing.

Dr. W. Forrest Dutton, Walker's Mills, Pa., read a paper on "Insect Carriers of Typhoid Fever."

Dr. Willard J. Stone, Toledo, Ohio, read a paper on Typhoid Immunity and Antityphoid Inoculations."

Dr. L. L. Lumsden, U. S. P. H. and M.-H S., read a paper on "Epidemiologic Status of Typhoid Fever."

These three papers were discussed by Drs. George M. Sternberg, Surgeon General, U. S. Army; Henry B. Hemenway, Evanston, Ill.; Guiteras, Havana, Cuba; A. C. Abbott, Philadelphia; Liston H. Montgomery, Chicago; Seneca Egbert, Philadelphia; J. N. Hurty, Indianapolis; Freeman, Virginia; Russell, U. S. Army; J. B. Bullitt, University, Miss.; Gardiner T. Swartz, Providence, R. I.; Martin Friedrich, Cleveland, Ohio; H. M. Bracken, St. Paul; Dutton and Lumsden.

Two resolutions were adopted and referred to the House of Delegates: One offered by Dr. W. M. Brumby, Austin, Tex., seconded by Dr. Gardner T. Swartz, Providence, R. I., providing that all county, district and other local medical societies be requested to hold annually one or more open meetings to which the public shall be invited; the other, offered by Dr. John S. Fulton, Baltimore, seconded by Dr. Price, concerning the collection of vital statistics. [Action by the House of Delegates on these matters is recorded on page 2083 of The Journal, June 19.]

Thursday, June 10—Afternoon

Dr. Seale Harris, Mobile, Ala., read a paper on "The Prevention of Malaria." Discussed by Drs. Marshall Langton Price, Baltimore; Henry B. Hemenway, Evanston, Ill.; W. Forrest Dutton, Walker's Mills, Pa.; Guiteras, Havana, Cuba; J. N. Hurty, Indianapolis; Seneca Egbert, Philadelphia; J. R. Kean, Havana, Cuba; Liston H. Montgomery, Chicago; J. H. White, New Orleans; Neale, Chicago; C. F. Williams, Columbia, S. C., and Harris.

Dr. Myer Solis Cohen, Philadelphia, read a paper on "The Notification to the Local Health Authorities of Cases of Abortion and Miscarriage." Discussed by Drs. W. Forrest Dutton, Walker's Mills, Pa.; Marshall Langton Price, Baltimore; J. N. Hurty, Indianapolis; Seneca Egbert, Philadelphia; W. M. Brumby, Austin, Tex.; C. H. Jones, Baltimore; Henry B. Hemenway, Evanston, Ill., and Cohen.

A resolution of regret was adopted concerning the unavoidable absence of Dr. Lewis, ex-chairman of the Section, with a request to the secretary that he communicate the resolution of regret to Dr. Lewis and the wish for his speedy recovery.

The written resignation, through illness of Dr. S. T. Armstrong as secretary for 1910 and 1911, the unexpired years of his term, was read and on motion accepted.

On motion of Dr. W. Forrest Dutton, Walker's Mills, Pa., the Section passed a vote of thanks to Dr. Armstrong for his services, with instructions that same be forwarded to him.

Dr. Francis Dowling, Cincinnati, read a paper on "The French Tobacco Factory at Issy, near Paris: Hygienic Notes." Discussed by Drs. W. Forrest Dutton and Dowling.

Dr. J. H. White, chairman, appointed Drs. Henry M. Bracken of Minnesota and Marshall Langton Price of Maryland as the two members of this Section to act in conjunction with the chairmen of three of the standing committees of the association in arranging for permanent legislation in the matter of having a council.

On motion of Dr. Liston H. Montgomery, Chicago, the Section passed a vote of thanks to the retiring chairman, Dr. J. H. White, for his courtesy and painstaking care and efficiency in the discharge of his functions; whereupon the Section adjourned, *sine die.*

SECTION ON NERVOUS AND MENTAL DISEASES

Tuesday, June 8—Afternoon

The meeting was called to order by the chairman, M. Allen Starr, New York City, who then read his address.

Sir James Grant of Ottawa, Can., addressed the Section on the subject of the Chairman's address on the nervous system.

Dr. D'Orsay Hecht, Chicago, read a paper on "Tumors of the Hypophysis." Discussed by Drs. Harvey Cushing, Baltimore; Maximilian Herzog, Chicago; George A. Moleen, Denver; William G. Spiller, Philadelphia; Sir James Grant, Ottawa, Can.; Hugh T. Patrick, Chicago; Julius Grinker, Chicago, and Hecht.

Dr. Theodore Diller and Dr. O. Gaub, Pittsburg, read a paper on "Successful Removal of a Cerebellar Tumor." Discussed by Drs. B. Sachs, New York City; Max Mailhouse, New Haven; George B. Moleen, Denver; B. R. Tucker, Richmond, Va.; T. U. McKennon, Pittsburg, and Diller.

Dr. William G. Spiller, Philadelphia, read a paper on "Brain Tumors."

Dr. T. H. Weisenburg, Philadelphia, read a paper on "Symptomatology of Tumors of the Posterior Portion of the Pons."

These two papers were discussed by Dr. Max Nonne, Hamburg, Germany; B. Sachs, New York City; Julius Grinker, Chicago; Theodore Diller, Pittsburg; Frank Woodbury, Philadelphia; James J. Putnam, Boston; Hugh T. Patrick, Chicago; D'Orsay Hecht, Chicago; Philip Zenner, Cincinnati; M. Allen Starr, New York City; Spiller and Weisenburg.

Wednesday, June 9—Morning

In the absence of Dr. Prince, Dr. Wolfstein was appointed member of the Executive Committee, the committee now consisting of Dr. Sinkler, Dr. Weisenburg and Dr. Wolfstein.

Dr. B. Sachs, New York City, read a paper on "The Wassermann Reaction, in Its Relation to Diseases of the Central Nervous System."

Dr. Max Nonne, Hamburg, Germany, read a paper on "The Practical Value of Lymphocytosis and the Globulin Reaction and the Complement Finding Reaction for Neurology."

Dr. Hideyo Noguchi, New York City, read a paper on "Serodiagnosis of Syphilis."

Dr. E. Castelli, New York City, read a paper on "The Wassermann Reaction."

These four papers were discussed by Drs. William J. Butler, Chicago; Frank E. Fox, Fulton, N. Y.; Jackson S. Wolf, St. Louis; Maximilian Herzog, Chicago, and Sachs.

Wednesday, June 9—Afternoon

The Chairman appointed Drs. Tomlinson, Sinkler and Wolfstein as a committee on nomination of officers.

Motion carried referring application for membership of Dr. W. A. White, of Washington, D. C., to Executive Committee.

Motion carried that Drs. B. Sachs, J. H. McBride and Morton Prince be appointed a committee to investigate the relation of public schools to health, committee to report at the meeting in 1910.

Dr. Hugh T. Patrick, Chicago, read a paper on "Facial Neuralgia Treated by Deep Injections of Alcohol; Seventy-five Cases." Discussed by Drs. D'Orsay Hecht, Chicago; B. R. Tucker, Richmond, Va.; C. L. Dana, New York, and Patrick.

Dr. James D. Putnam, Boston, read a paper on "A Side Light on the Syphilitic Etiology of Tabes." Discussed by Drs. C. L. Dana, New York City; F. W. Langdon, Cincinnati; C. C. C. Hersman, Pittsburg; E. D. Fisher, New York City; Julius Grinker, Chicago; A. C. Brush, Brooklyn; M. Allen Starr, New York City, and Putnam.

Dr. Charles L. Dana, New York City, read a paper on "The syndrome of Thalamus Hemorrhage." Discussed by Drs. Hugh T. Patrick, Chicago; H. A. Tomlinson, St. Peter, Minn.; Julius Grinker, Chicago, and Dana.

Dr. William A. Jones, Minneapolis, read a paper on "Report of Two Cases of Probable Spinal Cord Lesion Following Pasteur Treatment." Discussed by Drs. James J. Putnam, Boston, and Arthur S. Hamilton, Minneapolis.

Dr. E. D. Fisher, New York City, read a paper on "Optic Atrophy in Tabes; a Diagnostic Symptom in the Differential Diagnosis from General Paresis." Discussed by Drs. Charles K. Mills, Philadelphia; C. B. Burr, Flint, Mich.; George A. Moleen, Denver, and Fisher.

Dr. Charles W. Burr, Philadelphia, read a paper on "Muscular Effort in the Non-paralyzed Extremity on Attempting to Move the Paralyzed Extremity in Hemiplegia." Discussed by Drs. Julius Grinker, Chicago; Howell T. Pershing, Denver; C. F. Hoover, Cleveland, and Burr.

Dr. J. Ramsey Hunt, New York City, read a paper on "The Paralytic Complications of Herpes Zoster." Discussed by Drs. James A. Patterson, Colorado Springs, Colo.; Howell T. Pershing, Denver, and Hunt.

Dr. J. Madison Taylor, Philadelphia, read a paper on "Treatment of Occupation Neurosis and Neuritis in the Arms."

Thursday, June 10—Morning

The following officers of the Section were elected for the ensuing year: Chairman, Dr. Theodore Diller, Pittsburg; secretary, William A. Jones, Minneapolis; delegate, M. Allen Starr, New York City, with power to appoint alternate.

A motion carried recommending Dr. William A. White of Washington, D. C., to the House of Delegates for associate membership in this Section.

Dr. A. S. Hamilton, Minneapolis, read a paper on "The Effect of Intercurrent Disorders on Pre-existing Epilepsy." Discussed by Drs. Augustus A. Eshner, Philadelphia; M. L. Perry, Parsons, Kans., and Hamilton.

Dr. Charles K. Mills, Philadelphia, read a paper on "Simulated Insanity." Discussed by Drs. Alfred Gordon, Philadelphia; T. Diller, Pittsburg; L. L. Uhls, Ossawotomie, Kans.; Pearce Bailey, New York City; F. W. Langdon, Cincinnati; George A. Moleen, Denver; Carlos F. MacDonald, New York City, and Mills.

Dr. Pearce Bailey, New York City, read a paper on "The Practical Value of the Association Experiment." Discussed by Drs. A. C. Brush, Brooklyn; Max Mailhouse, New Haven; M. Allen Starr, New York City, and Bailey.

Dr. H. A. Tomlinson, St. Peter, Minn., read a paper on "A Clinical Study of a Series of Cases of Insanity." Discussed by Drs. T. Diller, Pittsburg, and Tomlinson.

Dr. Julius Grinker, Chicago, read a paper on "Diagnosis of Spinal Cord Tumors, with Report of a Case Operated on." Discussed by Drs. Pearce Bailey, New York City; Max Mailhouse, New Haven; Charles W. Hitchcock, Detroit; M. Allen Starr, New York City, and Grinker.

Dr. Alfred Gordon, Philadelphia, read a paper on "Medical *vs.* Legal Responsibility." Discussed by Drs. Charles W. Hitchcock, Detroit; A. C. Brush, Brooklyn, and Howell T. Pershing, Denver.

Thursday, June 10—Afternoon

Dr. L. Pierce Clark, New York City, read a paper on "Some Modern Problems in the Care and Treatment of Mental Defectives." Discussed by Drs. M. Allen Starr, New York City; H. A. Tomlinson, St. Peter, Minn.; William A. Jones, Minneapolis; E. E. Gaver, Columbus, Ohio; A. C. Brush, Brooklyn, and Clark.

Dr. A. C. Brush, Brooklyn, read a paper on "A Study of the Traumatic Insanities." Discussed by Drs. M. Allen Starr, New York City, and Brush.

Dr. E. E. Gaver, Columbus, Ohio, read a paper on "Traumatic Neuroses; with Report of Cases." Discussed by Drs. A. C. Brush, Brooklyn; G. T. Harding, Columbus, Ohio, and Gaver.

Dr. W. R. Dunton, Towson, Md., read a paper on "The Responsibility of Physicians in Cases Which Menace Public Safety." No discussion.

Dr. J. E. Goldthwaite, Boston, read a paper on "Some Points of Contact Between Neurology and Orthopedic Surgery." Discussed by Drs. M. Allen Starr, New York City; T. Diller, Pittsburg; Robert L. Pitfield, Germantown, Pa.; William A. Jones, Minneapolis, and Goldthwaite.

SECTION ON STOMATOLOGY

Tuesday, June 8—Afternoon

Address of the President, Dr. Edward C. Briggs, Boston. Discussed by Drs. Brown, Milwaukee, and Jackson, Atlantic City.

Dr. Thomas L. Gilmer, Chicago, read a paper on "Conservative Surgery for Treatment of Tumors of Mandible." Discussed by Drs. Edward C. Briggs, Boston; George V. I. Brown, Milwaukee, and Rhein, New York.

Dr. E. Mather Sill, New York City, read a paper on "A Study of Malnutrition in the School Child." Discussed by Drs. Eugene Talbot, Chicago; W. C. Wendell, Milwaukee; E. A. Bogue, New York City; Rhein, New York City; Zentler, New York City; G. V. I. Brown, Milwaukee; Fisher, New York City, and E. A. Bogue, New York City.

Wednesday, June 9—Morning

Dr. F. L. Stanton, New York City, read a paper on "The Rôle of the Teeth in Respiration." Discussed by Drs. E. A. Bogue, New York City; Eugene Talbot, Chicago; G. V. I. Brown, Milwaukee; Edward C. Briggs, Boston; Rhein, New York City, and Schamberg, New York City.

Dr. Alphonse Irwin, Camden, N. J., read a paper on "Oral Prophylaxis." Discussed by Drs. Zentler, New York City, and E. A. Bogue, New York City.

Dr. G. Hudson-Makuen, Philadelphia, read a paper on "The Tonsils and the Teeth." Discussed by Drs. F. L. Stanton, New York City; Schamberg, New York City; Charles K. Teter, Cleveland; G. V. I. Brown, Milwaukee; E. A. Bogue, New York City, and Eugene Talbot, Chicago.

Moved and seconded that Dr. Gilmer's paper be reread in its regular order on the program, on account of the small audience present when it was read. Carried. Dr. Gilmer refused to reread it, on the ground that it was to be published later, and it was not fair to take up the time of the others on the program.

Wednesday, June 9—Afternoon

Dr. G. Lenox Curtis, New York City, read a paper on "Report of Two Tertiary Cases." No discussion.

Dr. Arthur H. Dray, Philadelphia, read a paper on "General Therapeutics and Surgery in Dentistry." Discussed by Drs. Rhein, New York City; W. E. Fisher, New York City; Powers, Providence, R. I., and Allen, New Zealand.

Dr. W. Wayne Babcock, Philadelphia, read a paper on "The Treatment of Extreme Degrees of Malocclusion of the Teeth by Operation on the Ramus of the Inferior Maxillary Bone." Discussed by Drs. G. V. I. Brown, Milwaukee; McCurdy, Pittsburg; Schamberg, New York City; Nyman, Chicago, and E. A. Bogue, New York City.

Dr. Charles K. Teter, Cleveland, read a paper on "A Summary of 13,000 Nitrous Oxid and Oxygen Anesthetics."

Dr. L. G. Noel, Nashville, Tenn., read a paper on "Anesthetics for Dental Surgery."

These two papers were discussed by Drs. Eugene Talbot, Chicago; Küsel, Philadelphia; S. L. McCurdy, Pittsburg; Nyman, Chicago; Rhein, New York City, and Babcock, Philadelphia.

Thursday, June 10—Morning

The following officers were elected: Chairman, Dr. Thomas Gilmer, Chicago; vice-chairman, Dr. J. G. Sharp, San Francisco; secretary, Dr. Eugene S. Talbot, Chicago; delegate, Dr. George V. I. Brown, Milwaukee; alternate, Dr. Stewart L. McCurdy, Pittsburg.

Dr. Jos. Arkövy, Budapest, Hungary, was unanimously elected as an honorary member.

Dr. Fred. Hussey, Providence, R. I., read a paper on "Trifacial Neuralgia." Discussed by Drs. Eugene Talbot, Chicago; Rhein, New York City; Powers, Providence, R. I.; Schamberg, New York City; W. C. Wendell, Milwaukee, and E. A. Bogue, New York City.

Dr. E. A. Bogue, New York City, read a paper on "A Number of Cases in Which the Nasal Sinuses Have Been Enlarged by Orthodontia in Children." Discussed by Drs. Eugene Talbot, Chicago; Rhein, New York City; G. V. I. Brown, Milwaukee, and Zentler, New York City.

Dr. Robert T. Oliver, West Point, read a paper on "A Method of Treating Mandibular Fractures." Discussed by Drs. Schamberg, New York City; Powers, Providence, R. I.; G. V. I. Brown, Milwaukee; Rhein, New York City; Fisher, New York City, and McCurdy, Pittsburg.

Thursday, June 10—Afternoon

Dr. G. E. Pfahler, Philadelphia, read a paper on "Dental Roentgenology." Discussed by Drs. Schamberg, New York City; Blaine; Dray, Philadelphia; Teter, Cleveland; Zentler, New York City, and McCurdy, Pittsburg.

Dr. H. H. Germain, Boston, read a paper on "Osteomyelitis of the Jaw." Discussed by Drs. G. V. I. Brown, Milwaukee; Eugene Talbot, Chicago; McCurdy, Pittsburg; Schamberg, New York City, and Robert T. Oliver, West Point, N. Y.

Dr. G. V. I. Brown, Milwaukee, read a paper on "The Surgery of Cleft Palate." Discussed by Drs. Oliver, West Point; McCurdy, Pittsburg; Germain, Boston, and Schamberg, New York City.

Dr. R. R. Andrews, Cambridge, Mass., read a paper on "Enamel and Its Vitality." No discussion.

Dr. Brown asked that the Committee on Vital Statistics be continued for another year.

Dr. Schamberg presented a resolution, which was adopted, which requested the House of Delegates to recommend to state and municipal authorities the establishment of free dental clinics for the poor.

Dr. Bogue presented a resolution to inform the Section of Hygiene of the Mouth of the Fifth International Congress, which is to meet in Berlin in August, that this Section has expressed itself in favor of the creation and support by the state and municipalities of free dental clinics. Adopted.

SECTION ON DISEASES OF CHILDREN

Tuesday, June 8—Afternoon

The Section was called to order at 2:30 p. m. by the chairman, Dr. Thomas S. Southworth, New York City.

Dr. Thomas S. Southworth, New York City, read the chairman's address, "The Field for Prophylaxis Among Children."

In the absence of Dr. J. Ross Snyder, Birmingham, Ala., the Chairman appointed Dr. Samuel W. Kelley, of Cleveland, to fill his place on the Executive Committee.

Dr. Walter Lester Carr, New York City, read a paper on "Transitory Urinary Findings, Associated with Some Diseases of Childhood." Discussed by Drs. John Lovett Morse, Boston, and Frank S. Churchill, Chicago, and Carr.

Dr. John Ruhräh, Baltimore, read a paper on "Food Intoxication in Childhood." No discussion.

Dr. I. A. Abt, Chicago, presented a paper on "Infantile Eczema. Some Recent Views Concerning Its Pathology and Etiology." In Dr. Abt's absence his paper was, on motion, read by Dr. W. W. Butterworth. Discussed by Dr. D. E. English, Milburn, N. J.

Dr. W. W. Butterworth, New Orleans, read a paper on "Hair-Ball or Hair Cast of the Stomach and Its Occurrence in Children." Discussed by Dr. John Ruhräh, Baltimore; Dr. R. D. Gilbert, Louisville, Ky., and Butterworth.

Dr. Rowland Godfrey Freeman, New York City, read a paper on "Adenoid Hypertrophy During the First Year of Life and Its Treatment." Discussed by Drs. Richards, Fall River, Mass.; Henry L. Coit, Newark; John Lovett Morse, Boston; Frank S. Churchill, Chicago; D. J. M. Miller, Atlantic City; Samuel W. Kelley, Cleveland; Walter D. Ludlum, Brooklyn; S. McC. Hamill, Philadelphia, and Freeman.

Dr. Samuel W. Kelley called attention to the fact that the Council on Education, working on the curriculum for medical schools, had placed pediatrics under the same chair with medicine and neurology. It seemed time for those interested in diseases of children to use what influence they might possess for a proper recognition of the importance of this branch and have set aside a sufficient number of hours for the teaching of pediatrics. After some discussion on the subject, a committee composed of Dr. S. W. Kelley, Dr. A. C. Cotton and Dr. W. W. Butterworth were appointed to consider this matter and report on Wednesday.

Wednesday, June 9—Morning

The Section was called to order at 9:20 a. m. by the chairman, Dr. Thomas S. Southworth.

The Committee on Teaching of the Diseases of Children recommended that the Section adopt the following resolution:

Resolved, 1. That pediatrics should be represented in the curriculum by a full professorship independent of any other chair. 2. That the study of pediatrics should be compulsory, that is, required for graduation. 3. That the time allowance for the course in pediatrics should not be less than 200 hours. 4. That we further recommend that a committee of this kind should be continued, with power to act at any time during the year, when expedient.

It was moved by Dr. LeGrand Kerr of Brooklyn, seconded and carried, that the report be received and adopted as read.

Dr. Charles Hunter Dunn, Boston, read a paper on "The Treatment with Living Lactic Acid Bacilli of Summer Diarrheas Due to Intestinal Fermentation." Discussed by Drs. J. P. C. Griffith, Philadelphia; Elias Bartley, Brooklyn; T. M. Rotch, Boston; John Lovett Morse, Boston; Frank P. Gengenbach, Denver; Le Grand Kerr, Brooklyn; and Dunn.

Dr. J. P. Crozer Griffith, Philadelphia, read a paper entitled, "Post Hoc Non Ergo Propter Hoc." Discussed by Drs. Theodore J. Elterich, Pittsburg; Theodore Le Boutillier, Philadelphia; Little, Brooklyn, and Griffith.

Dr. Frank Spooner Churchill, Chicago, read a paper on "The Treatment of Epidemic Meningitis with the Flexner Serum." Discussed by Drs. Charles Hunter Dunn, Boston; Alfred Hand, Philadelphia; Frank Allen, Chicago; William M. Welch, Philadelphia; George Scott, New York City, and Churchill.

Dr. John Lovett Morse, Boston, read a paper on "The Treatment of Anemia in Infancy with Citrate of Iron Subcutaneously." No discussion.

Dr. Theodore Le Boutillier, Philadelphia, read a paper on "Sea-Water Treatment, Given by Subcutaneous Injection, with the Results Obtained in Children." Discussed by Drs. George Scott, New York City, and Le Boutillier.

Dr. Alfred F. Hess, New York City, read a paper on "Middle-Milk Mixtures." Discussed by Drs. Frank S. Churchill, Chicago; L. T. Royster, Norfolk; Frank W. Pinneo, Newark; J. J. Thomas, Cleveland, and Hess.

Wednesday, June 9—Afternoon

Dr. Henry Dwight Chapin, New York City, read a paper on "The Relation Between the Science and Art of Infant Feeding." Discussed by Drs. J. W. Van Derslice, Oak Park, Ill., and Chapin.

Dr. L. Emmett Holt, New York City, read a paper on "Infant Mortality. The Factors Which Compose it and How These May Be Influenced." Discussed by Drs. Koplik, New York City; Edwin E. Graham, Philadelphia; E. Lackner, Chicago; H. W. Cook, Minneapolis; C. G. Kerley, New York City; Henry L. Coit, Newark; Frank S. Churchill, Chicago; J. W. Van Derslice, Oak Park, Ill.; Alfred Hess, New York City; C. F. Tanney, Toledo, and Holt.

Dr. E. Lackner, Chicago, read a paper entitled "Heubner's System of Infant Feeding Based on Calories and Low Fat."

Dr. Henry I. Bowditch, Boston, read a paper on "A Convenient Method for Determining Caloric Values of Formulas Based on Percentage Feeding of Infants."

These two papers were discussed by Drs. Koplik, New York City; L. T. Royster, Norfolk; C. Griffith, Philadelphia; F. S. Churchill, Chicago; H. D. Chapin, New York City; C. G. Kerley, New York City; C. Douglas, Detroit; W. D. Ludlum, Brooklyn; D. J. M. Miller, Atlantic City; A. C. Cotton, Chicago; John Lovett Morse, Boston; H. T. Price, Pittsburg; J. W. VanDerslice, Chicago; Lackner and Bowditch.

Dr. Henry L. K. Shaw, Albany, read a paper on "The Transmission of Bovine Tuberculosis to Children." Discussed by Drs. William H. Park, New York; Alfred Hess, New York; S. McC. Hamill, Philadelphia, and Shaw.

Dr. J. M. Miller, Atlantic City, read a paper on "History of Two Cases of Congenital Pyloric Spasm, with Remarks on the Treatment and Etiology of the Condition." Discussed by Drs. A. C. Cotton, Chicago; H. M. McClanahan, Omaha; and Miller.

Thursday, June 10—Morning

The Chairman stated that at the meeting in Chicago, in 1908, a committee on nomenclature had been appointed at the close of the session, the names not having been announced. This committee was composed of Dr. Thomas Morgan Rotch, Boston, chairman, and Dr. Charles Hunter Dunn, Boston.

The Nominating Committee reported as follows: Chairman, Dr. William J. Butler, Chicago; secretary, Dr. G. R. Pisek, New York City; delegate, Dr. C. Douglas, Detroit. It was moved, duly seconded, and carried that the nominations be accepted.

The report of the Committee on the Status of Breast Fed Infants was called for, but none of the members of the committee was present.

The report of the committee composed of Dr. Arthur Fairbanks, Boston; Dr. J. W. Van Derslice, Chicago; and Dr. G. H. Cattermole, Boulder, Colo., appointed to inquire into the Status of the School Child, was called for. The Chairman announced that Dr. A. Fairbanks had sent his report.

It was moved by Dr. W. W. Butterworth, seconded by Dr. C. G. Kerley, and carried, that the report of Dr. A. Fairbanks be referred to the Executive Committee. Dr. J. W. Van Derslice's report as a member of the committee was postponed until after the reading of Dr. W. C. Hollopeter's paper.

Dr. W. C. Hollopeter, Philadelphia, read a paper on "The Child's Breakfast."

Dr. J. W. Van Derslice, Chicago, read a paper on "Conditions of the Public School Child."

These two papers were discussed by Drs. L. T. Royster, Norfolk; C. Douglas, Detroit; Little, Brooklyn; C. G. Kerley, New York City; Helen C. Putnam, Providence, R. I.; Henry I. Bowditch, Boston; E. C. Hackett, Chicago; Hollopeter, and Van Derslice.

Dr. Van Derslice stated it was impossible for the Section to devote enough time to cover the entire subject, he therefore moved that there by appointed a Committee on School Hygiene to bring before the Section from time to time certain phases of the school question.

It was moved by Dr. J. W. Van Derslice, and seconded by Dr. W. C. Hollopeter that the report of the Committee on the Status of the School Child be accepted and the committee be discharged. Motion was carried.

The Chairman appointed a committee composed of Dr. J. W. Van Derslice, Chicago; Dr. W. C. Hollopeter, Philadelphia; and Dr. W. W. Butterworth, New Orleans, to consider the matter of school hygiene.

Dr. Maurice Ostheimer, Philadelphia, read a paper on "Help the Mother Nurse Her Child. A Plea to Physicians Not to Begin Artificial Feeding Without First Trying to Help the Mother Maintain Her Milk Supply." Discussed by Drs. H. M. McClanahan, Omaha; J. P. Sedgwick, Minneapolis; L. D. Bulkley, New York City; A. F. Furrer, Cleveland; J. W. Van Derslice, Chicago; Charles Douglas, Detroit; John Lovett Morse, Boston; Frank P. Gengenbach, Denver; Thomas S. Southworth, New York City; J. H. Lopez, Philadelphia, and Ostheimer.

Dr. Colman W. Cutler, New York City, read a paper on "Opacities of the Cornea. Their Frequency in Children from Preventable Causes and Their Effect on Vision." No discussion.

Dr. L. T. Royster, Norfolk, read a paper on "Syphilitic Pseudoparalysis." No discussion.

Dr. Charles Gilmore Kerley read a paper on "Vaccine and Serum Therapy in Diseases of Children."

Dr. William J. Butler, Chicago, read a paper on "The Antibodies in Tuberculosis. Their Relation to Tuberculin Inoculation and Vaccination."

These two papers were discussed by Drs. H. I. Bowditch, Boston; J. B. Sedgwick, Minneapolis, and Butler.

Thursday, June 10—Afternoon

Dr. M. H. Fussell, Dr. R. S. McCombs and Dr. G. E. de Schweinitz, Philadelphia, gave an "Exhibition of a Patient with Achondroplasia, with Notes on the Disease" (presentation of two living subjects and an achondroplastic skeleton). Discussed by Drs. Pancoast, Philadelphia; R. S. McCombs, Philadelphia; D. J. M. Miller, Atlantic City; Emerson, Baltimore; L. T. Royster, Norfolk; de Schweinitz and Fussell.

Dr. Linnaeus La Fetra, New York City, read a paper on "Suppurative Conditions in Joint Regions in Infants." Discussed by Dr. Charles N. Dowd, New York City.

Dr. Charles N. Dowd, New York City, read a paper on "Persistent Thoracic Sinus Following Empyema." Discussed by Drs. Carl Beck, Chicago; C. G. Kerley, New York City; L. E. La Fetra, New York City, and Dowd.

Dr. Julius Rudisch, New York City, read a paper on "The Treatment of Diabetes Mellitus." Discussed by Drs. A. Jacobi, New York City; C. G. Kerley, New York City, and Rudisch.

A vote of thanks was tendered to the chairman, Dr. Thomas S. Southworth for the success of the meeting.

SECTION ON DERMATOLOGY

Tuesday, June 8—Afternoon

The Section was called to order at 2 p. m., in Olivet Church, by the chairman, Dr. William Allen Pusey, Chicago.

The Chairman said he understood there was a formal motion before the House of Delegates to form a Section on Urology and Syphilis. It seemed to him that a Section on Urology and Syphilis was not a proper subdivision, and he was willing to entertain a motion that would express the sense of the members of this Section on that subject. Dr. J. A. Fordyce, New York, offered the following motion, which was carried and referred to the House of Delegates:

> *Resolved*, That it is the sense of the Section on Cutaneous Medicine and Surgery that in the event a Section on Urology is established, it should not specifically include syphilis. That, while syphilis more nearly belongs to dermatology than to any other specialty, it is a constitutional disease which is an important part of many specialties, and certainly does not belong particularly to urology.

Dr. William Allen Pusey, chairman, delivered an address on "The Teaching of Dermatology; Dermatology and the Pharmacopeia." Discussed by Drs. Louis A. Duhring, Philadelphia, M. B. Hartzell, Philadelphia.

Dr. S. Pollitzer, New York City, read a paper on "Acanthosis Nigricans." Discussed by Drs. W. A. Pusey, Chicago; Alexander S. Wolf, St. Louis; O. H. Foerster, Milwaukee, and Pollitzer.

Dr. M. B. Hartzell, Philadelphia, read a paper on "Morphea-like Epithelioma." Discussed by Drs. J. A. Fordyce, New York City; J. F. Schamberg, Philadelphia; George Pernet, London, England; Louis A. Duhring, Philadelphia; Hazen, Washington; W. A. Pusey, Chicago, and Hartzell.

Dr. O. H. Foerster, Milwaukee, read a paper on "Pemphigus Neonatorum." Discussed by Drs. J. A. Fordyce, New York City; D. W. Montgomery, San Francisco; M. B. Hartzell, Philadelphia; F. C. Knowles, Philadelphia; William A. Pusey, Chicago; George Pernet, London, England, and Foerster.

Dr. W. B. Trimble, New York City, read a paper on "The Chronic Scaly Erythrodermias." Discussed by Dr. W. S. Gottheil, New York City.

Dr. J. A. Fordyce, New York, read a paper on "Report of Some Unusual Forms of Sarcoma of the Skin," with lantern slide illustrations. Discussed by Drs. D. W. Montgomery, San Francisco; J. F. Schamberg, Philadelphia; M. B. Hartzell, Philadelphia; W. S. Gottheil, New York City, and Fordyce.

Dr. M. L. Heidingsfeld, Cincinnati, read a paper on "Keloid: A Comparative Histologic Study," with lantern slide illustrations. Discussed by Drs. William A. Pusey, Chicago, and Maximilian Herzog, Chicago.

The chairman, Dr. Pusey, showed some lantern slide pictures of colored photographs of skin lesions.

Drs. J. F. Schamberg and R. Hirschler, Philadelphia, presented a paper on "Lichen Sclerosus seu Atrophicus." Discussed by Drs. M. B. Hartzell, Philadelphia, and Schamberg.

Drs. Grover W. Wende and Frederick C. Busch, Buffalo, presented a paper on "An Unusual Case of Hyperidrosis."

The following members were appointed to serve as a Nominating Committe: Drs. M. B. Hartzell, Philadelphia; R. R. Campbell, Chicago, and D. W. Montgomery, San Francisco.

Wednesday, June 9—Afternoon

The chairman, Dr. Pusey, announced that this meeting would be devoted to a "Symposium on Syphilis."

Dr. F. G. Harris, Chicago, read a paper on "Parasitology." Discussed by Drs. G. de Santos Saxe, New York City; Howard Fox, New York City; Maximilian Herzog, Chicago; W. S. Gottheil, New York City; D. W. Montgomery, San Francisco; M. L. Heidingsfeld, Cincinnati, and Harris.

Dr. W. J. Butler, Chicago, read a paper on "Complement Deviation and Precipitate Reactions for the Diagnosis of Syphilis and Their Clinical Value." Discussed by Drs. Howard Fox, New York City; Maximilian Herzog, Chicago; H. R. Varney, Detroit; F. G. Harris, Chicago; Alexander S. Wolf, St. Louis; Noguchi, New York City, and Butler.

Dr. George Pernet of London, England, read a paper on "The Intramuscular Treatment of Syphilis with Special Reference to the Insoluble Preparations of Mercury; a Critical Review."

Dr. E. C. Hay, Hot Springs, read a paper on "The Comparative Value of the Internal, Inunction and Injection Method of Administering Mercury in the Treatment of Syphilis." These two papers were discussed by Drs. W. S. Gottheil, New York City; W. B. Trimble, New York City; Alexander S. Wolf, St. Louis; Louis Ernst Schmidt, Chicago; William A. Pusey, Chicago; Pernet and Hay.

Dr. R. R. Campbell, Chicago, the representative of the Section to the House of Delegates, announced that the resolution of the Section respecting the proposed change of name had been acted on favorably by the House of Delegates, and that the future name of the Section would be the Section on Dermatology. Dr. Campbell also announced that the formation of a new section to be known as the Section on Urology and Venereal Diseases had been declined by the House of Delegates, but that the request would be granted on the signed petition of 100 members of the American Medical Association.

Thursday, June 10—Afternoon

The following officers were elected for the ensuing year: Chairman, Grover W. Wende, Buffalo; vice-chairman, M. L. Heidingsfeld, Cincinnati; secretary, H. R. Varney, Detroit; delegate, William Allen Pusey, Chicago; alternate, D. W. Montgomery, San Francisco.

Dr. Grover W. Wende, Buffalo, said that in accordance with the suggestion contained in the Chairman's address, he moved that a committee of three be appointed by the Chairman, the members of which were to work in cooperation with the Council on Pharmacy and Chemistry of the American Medical Association with the object in view of considering drugs and mixtures in the Pharmacopeia and in the National Formulary that were now official, with the view of eliminating those that were useless and suggesting others that were useful in dermatologic practice. This motion was seconded and carried, and the Chairman said he would announce the names of the committee later.

Dr. A. Ravogli, Cincinnati, read a paper on "The Proliferating Forms of the Cutaneous Syphilides." Discussed by Drs. George Pernet, London, England, and Ravogli.

Drs. D. W. Montgomery and H. Alderson, San Francisco, presented a paper on "A Consideration of the Etiology of Lichen Planus as Illustrated by an Acute Case." Discussed by Drs. D. W. Montgomery, San Francisco; J. A. Fordyce, New York City; Louis A. Duhring, Philadelphia; Ernest Dwight Chipman, San Francisco; George Pernet, London; Philip Kilroy, Springfield, Mass., and Alderson.

Dr. H. R. Varney, Detroit, read a paper on "Furunculosis or Staphylococcus Aureus Infection of the Skin, Treated with Polyvalent Stock Vaccine." Discussed by Drs. M. L. Heidingsfeld, Cincinnati; J. A. Fordyce, New York City; A. Ravogli, Cincinnati; Alfred B. Grosse, San Francisco; Alfred Potter, Brooklyn; Henry H. Hazen, Washington, and Varney.

Dr. L. E. Schmidt, Chicago, read a paper on a Series of Tongue Cases." Discussed by Drs. J. B. Kessler, Iowa City; William A. Pusey, Chicago, and Schmidt.

Dr. W. S. Gottheil, New York City, read a paper on "Iododerma Bullosum Hæmorrhagicum." Discussed by Drs. F. C. Knowles, Philadelphia; George Pernet, London; William A. Pusey, Chicago, and Gottheil.

Dr. Alfred Potter, Brooklyn, read a paper on "Brown-Tail Moth Dermatitis; Report of a Case." Discussed by Drs. Clarence M. Casselberry, Boston; William A. Pusey, Chicago, and Potter.

Dr. F. C. Knowles, Philadelphia, read a paper on "Molluscum Contagiosum; Report of an Institutional Epidemic of Fifty-nine Cases." Discussed by Drs. George Pernet, London; Louis A. Duhring, Philadelphia; Marcus Haase, Memphis; W. A. Pusey, Chicago, and Knowles.

The Chairman, in behalf of the officers, expressed his appreciation of the work done at this meeting of the Section. He viewed with pride and gratitude the program that had just been completed. It had contained no "foolish" papers; on the contrary, all had been useful and instructive, and a good discussion had been elicited. With but a single exception, the authors of every one of the papers announced on the program had been present to respond to their names, and for this the officers felt greatly obliged.

The Chairman announced that Dr. Grover W. Wende, the Chairman-elect, had been called home on account of illness in his family.

On motion of Dr. J. A. Fordyce, New York, a unanimous vote of thanks was tendered to the retiring officers for the work they had done in connection with this meeting of the Section.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

Tuesday, June 8—Afternoon

The chairman, Dr. Reid Hunt, of Washington, D. C., called the meeting to order at 2:30 p. m.

Dr. Hunt delivered his address entitled, "Some Problems of Pharmacopeial Revision."

The secretary, Dr. C. S. N. Hallberg, Chicago, presented the credentials of the delegates of the American Pharmaceutical Association.

Mr. George M. Beringer, of Camden, N. J., chairman of the delegates of the American Pharmaceutical Association, presented an address.

Mr. M. I. Wilbert, Washington, D. C., presented a resolution condemning habit drugs, as follows:

> Whereas, Opium and its derivatives, cocain and other potent drugs are essentially necessary in the treatment of disease and,
>
> Whereas, The abuse of many of these potent drugs and the consequent formation of drug habits is an evil so serious as to demand that means should be adopted to check and prevent them, now; therefore, be it,
>
> *Resolved,* That the Section on Pharmacology and Therapeutics of the American Medical Association recommend that the House of Delegates urge Congress to enact measures which will restrict the use of potent habit-forming drugs to legitimate medicinal purposes by controlling the same through the tariff of supply.

Secretary Hallberg made a motion that the Chairman appoint a committee of three to consider the resolutions and report on them at the succeeding session. Carried.

Drs. George B. Wallace and A. I. Ringer, New York City, presented a paper on "The Lowering of Blood Pressure by Nitrites." Discussed by Drs. Oliver T. Osborne, New Haven, Conn.; Reid Hunt, Washington, D. C., and Ringer.

Dr. Alexander G. Brown, Jr., Richmond, Va., read a paper on "The Therapeutic Management of Arteriosclerosis Based on the Present View of its Pathology." Discussed by Drs. George F. Butler, Chicago; Upshur, Richmond, Va., and Brown, Jr.

Dr. H. C. Wood, Jr., Philadelphia, read a paper on "The Determination of the Quality of Ergot." Discussed by Mr. Charles E. Vanderkleed, Philadelphia, and Drs. C. S. N. Hallberg, Chicago, and Wood, Jr.

Dr. Thomas F. Reilly, New York City, read a paper entitled "Clinical Results with *Crætagus oxycanthus*." Discussed by Drs. Reid Hunt, Washington, D. C., and Reilly.

The Chairman, Dr. Hunt, appointed the following on the committee to consider resolutions: Dr. H. C. Wood, Jr., Mr. M. I. Wilbert, Washington, D. C.; Prof. W. A. Puckner, Chicago.

Wednesday, June 9—Morning

Symposium on Dietetics

Dr. Charles G. Stockton, Buffalo, read a paper entitled, "The Use of Ferments in Medicine." Discussed by Drs. George Dock, New Orleans; Abraham Jacobi, New York City; C. S.

N. Hallberg, Chicago; Reid Hunt, Washington, D. C., and Stockton.

Dr. David L. Edsall, Philadelphia, read a paper on "General Principles of Dietetics with Special Reference to the Use of Proprietary Foods."

Dr. John Howland, New York City, read a paper on "Proprietary and Predigested Foods from the Standpoint of the Pediatrist."

These two papers were discussed by Drs. A. Jacobi, New York City; G. C. Smith, Boston; F. E. Stewart, Philadelphia; C. S. N. Hallberg, Chicago; W. H. Park, New York City; George Dock, New Orleans; B. Fantus, Chicago; S. S. Cohen, Philadelphia; William H. Mercur, Pittsburg, and Edsall.

Dr. George Dock, New Orleans, read a paper on "The Advantages of Adhering to the Use of Potassium Iodid." Discussed by Dr. S. Solis Cohen, Philadelphia.

Dr. John J. Gilbride, Philadelphia, read a paper on "Clinical Use of Phenolphthalein."

Dr. L. G. Rowntree, Baltimore, read a paper on "A Pharmacologic and Clinical Study of Some Phthaleins."

These two papers were discussed by Drs. H. C. Wood, Jr., Philadelphia; Reid Hunt, Washington, D. C.; Rowntree and Gilbride.

Dr. S. Solis Cohen, Philadelphia, read a paper on "The Analgesic Effect of Local Applications of Solutions of Magnesium Sulphate and of Other Salts." Discussed by Drs. Reid Hunt, Washington, D. C.; C. S. N. Hallberg, Chicago; Theodore Potter, Indianapolis, and Cohen.

Dr. S. Solis Cohen, Philadelphia, made the following motion, which was carried:

> Whenever an application is received by the officers of the Association for pharmaceutical membership the applicant and proposers shall be notified that no such proposition will be considered by the Section unless the application be endorsed officially by the local county medical society.

A resolution signed by the officers of several sections was read in which the House of Delegates was petitioned to organize a separate section devoted to the special field of physical therapeutics. [The action taken on this is noted in the minutes of Thursday morning.]

Wednesday, June 9—Afternoon

The afternoon session was attended by the Section on Pathology and Physiology.

Symposium on the Present Status of Serum and Vaccine Therapy With Special Reference to the Products on the American Market

Dr. W. H. Park, New York City, read a paper on "Diphtheria Antitoxin."

Dr. J. F. Anderson, Washington, D. C., read a paper on "Tetanus Antitoxin."

These two papers were discussed by Drs. W. H. Hutchings, Detroit; D. E. R. Larned, Detroit; Joseph McFarland, Philadelphia; Park and Anderson.

Dr. M. G. Motter, Washington, D. C., read the paper of Dr. Mark W. Richardson, Boston, on "General Principles of Bacterial Vaccine Therapy." This paper was not discussed.

Dr. G. H. Weaver, Chicago, read a paper prepared by Dr. L. Hektoen and Dr. R. Tunnicliff, Chicago, on "Investigations of Sera and Vaccines for Streptococcus, Staphylococcus and Pneumococcus Infections." Discussed by Drs. D. H. Bergey, W. H. Park, New York City, and Weaver.

Dr. B. A. Thomas, Philadelphia, Pa., read a paper on "(a) Antigonococcus Serum and Gonococcus Vaccine (Bacterin). (b) Uselessness of Therapy by Pyocyaneus Vaccine." Discussed by Drs. S. S. Cohen, Philadelphia; Francis M. Pottenger, Los Angeles; B. Fantus, Chicago; Oscar Birghausen, Cincinnati, and W. H. Hutchings, Detroit.

Dr. Leo Loeb, Philadelphia, read a paper on "The Treatment of Inoperable Sarcoma by Erysipelas and Prodigiosus Toxins." Discussed by Drs. B. A. Thomas, Philadelphia; W. Duffield Robinson, Philadelphia, and O. P. Johnstone, Pittsburg.

Dr. B. A. Thomas, Philadelphia, read a paper on "Results of Three Years' Experience in Bacterial Immunization." Discussed by Dr. S. Solis Cohen, Philadelphia.

Dr. H. Noguchi, New York City, read a paper on "Antivenins." Discussed by Drs. Joseph McFarland, Philadelphia; John A. Van Valzah, Daytona Beach, Fla., and Noguchi.

Dr. E. R. Baldwin, Saranac Lake, N. Y., presented a paper that was read by Dr. Joseph McFarland, Philadelphia, on "General Principles of Tuberculin Diagnosis and Treatment." Discussed by Drs. F. M. Pottenger, Los Angeles; Joseph McFarland, Philadelphia, and Theodore Potter, Indianapolis.

Thursday, June 10—Morning

The following officers were elected: Chairman, David L. Edsall, Philadelphia; vice-chairman, Mr. M. I. Wilbert, Washington; secretary, Dr. Murray Galt Motter, Washington; executive committee, H. C. Wood, Jr., Philadelphia; M. H. Fussell, Philadelphia; Reid Hunt, Washington; delegate, Dr. C. S. N. Hallberg, Chicago; alternate, Prof. W. A. Puckner, Chicago.

In behalf of the Committee on Resolutions, Dr. H. C. Wood, Jr., reported that the committee felt that the subject-matter contained in the resolution in favor of taxing certain habit-forming drugs, was too big a one to be considered at such a short notice, and that the members of the government service and others who are peculiarly interested in this subject should be consulted before the Section on Pharmacology and Therapeutics took action on it, and that therefore the Committee recommended that no action be taken on the matter at the present time, but that the matter be referred to the executive committee to be reported on next year for action.

In regard to the petition for the formation of a new section to cover Physical Therapeutics, the committee does not feel that this calls for actions as a section; it therefore recommends that no formal action be taken as a section.

Dr. Wood said that a peculiar state of affairs obtains in the District of Columbia in that the District of Columbia Medical Society refuses to admit to membership those physicians who are associated with the United States Government Service. Were it not for the fact that the American Medical Association exempts officers from the Army, Navy and the Public Health and Marine-Hospital Service, these would be also debarred. He presented a resolution requesting the House of Delegates to admit all medical employés of the government not engaged in private practice, but in scientific research, on the same terms as are now extended to the Army, Navy and Marine Corps. The report was adopted and was submitted to the House of Delegates, but too late for definite action at this session.

The chairman, Dr. Reid Hunt, Washington, D. C., read the report of the Committee on the United States Pharmacopeia.

The Secretary read a communication from the Medico-Chirurgical Faculty of Maryland, recommending Dr. Charles Caspari, Jr., and several other pharmacists, to membership in the section. On vote, all members of the American Pharmaceutical Association were given the privilege of the floor.

Dr. M. G. Motter, Washington, called the attention of the Section to the fact that the report of the Committee on Pharmacopeia embodied certain resolutions that involved a possible expenditure of funds of the American Medical Association. He therefore moved that these recommendations be forwarded in due course to the Board of Trustees. Carried.

Dr. M. H. Fussell, Philadelphia, read a paper on "Some of the Preparations of the United States Pharmacopeia from the Practitioner's Standpoint."

Dr. C. S. N. Hallberg, Chicago, read a paper on "Additions to and Eliminations from the United States Pharmacopeia from the Viewpoint of Statistics."

Dr. M. Clayton Thrush, Philadelphia, read a paper on "Do We Possess, in the Drugs and Preparations That are Recognized in the United States Pharmacopeia and the National Formulary, a Sufficient Armamentarium for the Medicinal Treatment of Disease?"

These three papers were discussed by Dr. J. P. Remington, Philadelphia; Dr. H. C. Wood, Jr., Philadelphia; Prof. J. W. England, Philadelphia; Mr. W. Boulton Conyngham, Manchester, England; Dr. Henry Beates, Philadelphia; Prof. Charles Caspari, Jr., Baltimore; Dr. John J. Taylor, Philadelphia; Dr. L. F. Kebler, Washington; Mr. M. I. Wilbert, Washington; Prof. H. P. Hynson, Baltimore; Mr. F. M. Apple, Philadelphia; and Drs. C. S. N. Hallberg, Chicago; M. Clayton Thrush, Philadelphia; Reid Hunt, Washington; Bernard Fantus, Chicago, and Charles S. Bacon, Chicago.

Thursday, June 10—Afternoon

Dr. L. F. Kebler, Washington, read a paper on "Nature of Preparations Used in the Treatment of Drug Addictions;" also a paper on "Nomenclature of the U. S. P. and N. F. Mixtures."

Prof. H. P. Hynson, Baltimore, read a paper on "The National Formulary: What It Is and the Purpose It Serves."

These two papers were discussed by Dr. F. E. Stewart, Philadelphia; Dr. A. Jacobi, New York City; Dr. C. S. N. Hallberg, Chicago; Prof. J. P. Remington, Philadelphia; Dr. Henry Beates, Philadelphia; Dr. C. Caspari, Jr., Baltimore; Dr. M. G. Motter, Washington; Dr. Kebler and Professor Hynson.

Prof. H. P. Hynson, Baltimore, Md., made a motion that a committee of five be appointed by the new chairman, members of the Section on Pharmacology and Therapeutics, especially physicians, to cooperate with the Committee on National Formulary of the American Pharmaceutical Association. This motion was discussed by Dr. A. B. Hirsh, Philadelphia, Prof. J. P. Remington, Philadelphia; Prof. H. P. Hynson, Baltimore. No action was taken on the motion.

Dr. Henry Leffmann, Philadelphia, presented a paper on "What Can Physicians Do to Improve the Pharmacopeia?" which was read by Dr. A. B. Hirsh, Philadelphia. Discussed by Prof. J. P. Remington, Philadelphia; Drs. Henry Beates, Philadelphia; M. G. Motter, Washington; Reid Hunt, Washington; L. F. Kebler, Washington, and Charles Caspari, Jr., Baltimore.

Dr. Henry Beates, Philadelphia, made a motion that an expression of thanks be tenderd by the Section for the admirable and useful program that the Chairman had provided. Carried.

Prof. Joseph Remington, Philadelphia, made a motion that the thanks of the Section be tendered the Chairman for the able and efficient manner in which he performed his duty. Carried.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Tuesday, June 8—Afternoon

Dr. Joseph McFarland and Dr. Paul G. Weston, Philadelphia, presented a paper on "The Hemolytic Action of Crotalus Venom on Human Erythrocytes." Discussed by Drs. D. H. Bergey, Philadelphia; E. C. L. Miller, Detroit, and McFarland.

Dr. Evarts A. Graham, Chicago, read a paper on "The Relation of Ether to Immunity." Discussed by Drs. H. Gideon Wells, Chicago; G. W. Drake, Hollins Institute; Frank Smithies, Ann Arbor, Mich., and Graham.

Dr. Alwin M. Pappenheimer, New York City, read a paper on "The Diagnosis of Thymus Cells, and the Normal and Pathologic Histology of the Thymus." No discussion.

Dr. Frank Smithies, Ann Arbor, Mich., read a paper on "Cardiac Thrombosis; The Clinical and Pathologic Findings in Four Cases." No discussion.

Wednesday, June 9—Morning

Dr. Yandell Henderson, New Haven, Conn., read a paper on "The Relation of Venous Pressure to the Efficiency of the Heart." Discussed by Drs. A. W. Hewlett, Ann Arbor, Mich.; G. B. Wood, Philadelphia; H. F. Wolf, New York City, and Henderson.

Dr. A. W. Hewlett and Dr. J. G. Van Zwaluwenburg, Ann Arbor, Mich., presented a paper on "The Rate of Blood Flow in the Arm." Discussed by Drs. Yandell Henderson, New Haven; H. F. Wolf, New York City; S. J. Meltzer, New York City, and Hewlett.

Dr. C. C. Fowler and Dr. P. B. Hawk, Urbana, Ill., presented a paper on "The Metabolic Influence of Copious Water Drinking with Meals." Discussed by Drs. G. W. Drake, Hollins Institute; Henry S. Wieder, Philadelphia; Andrew McFarland, Albany; S. J. Meltzer, New York City; M. J. Rosenau, Washington, and Hawk.

Dr. Harlan Shoemaker, Philadelphia, read a paper on "Experimental Analysis of the Altered Function of the Kidney in Diabetes Mellitus." No discussion.

Dr. Walter B. Cannon, Boston, read a paper on "The Relation of Tonus to Peristalsis." Discussed by Drs. Henry S. Wieder, Philadelphia; S. J. Meltzer, New York City; Hugo Freund, Detroit, and Cannon.

Wednesday, June 9—Afternoon

The Section attended the session of the Section on Pharmacology and Therapeutics.

Thursday, June 10—Morning

The following officers were elected: President, Dr. H. Gideon Wells, Chicago; secretary, Dr. Yandell Henderson, New Haven; delegate, Dr. W. B. Cannon, Boston.

The Section then adjourned until the afternoon.

Thursday, June 10—Afternoon

Dr. Leo Loeb, Philadelphia, read a paper on "The Experimental Production of Maternal Placenta." Discussed by Drs. Maximilian Herzog, Chicago; H. G. Wells, Chicago; M. J. Rosenau, Washington, and Loeb.

Dr. Joseph C. Bloodgood, Baltimore, read a paper on "Cysts of the Female Breast, and Their Relation to Carcinoma." Discussed by Drs. William C. MacCarty, Rochester, Minn., and H. S. Wieder, Philadelphia, and Bloodgood.

Dr. William Carpenter MacCarty, Rochester, Minn., read a paper on "Pathology of Gastric Ulcer." Discussed by Drs. J. C. Bloodgood, Baltimore; C. Graham, Rochester, Minn.; Leo Loeb, Philadelphia, and MacCarty.

Dr. Oscar Berghausen, Cincinnati, read a paper on "The Significance of Ehrlich's Aldehyd Reaction in the Urine." No discussion.

Dr. O. P. Johnstone and Dr. C. H. Canning, Pittsburg, presented a paper on "Hemolysis in the Diagnosis of Malignant Neoplasms." Discussed by Drs. W. J. Butler, Chicago; Frank Smithies, Ann Arbor, Mich.; H. Noguchi, New York City, and Johnstone.

Dr. Hideyo Noguchi, New York City, read a paper on "A Rational and Practical Complement Fixation Test and Butyric Acid Test for Syphilis Diagnosis."

Dr. Henry S. Wieder and Dr. Edward M. L'Engle, Philadelphia, presented a paper on "Some Studies of the Precipitin Tests for Syphilis."

Dr. William Litterer, Nashville, Tenn., read a paper on "Serodiagnosis of Syphilis."

These three papers were discussed by Drs. Maximilian Herzog, Chicago; Frank Smithies, Ann Arbor, Mich.; W. J. Butler, Chicago; J. J. Kinyoun, Washington, Noguchi, Wieder and Literer.

THE ATLANTIC CITY REGISTRATION

List of Members Who Registered at the Atlantic City Session, June, 1909

The total registration at the Atlantic City session was over 3,200. At Chicago, in 1908, the registration was over 6,400, the largest in the history of the Association. In 1907, over 3,700 registered at Atlantic City, and in 1906 there were over 4,700 registrations at Boston.

In addition to the names below, of members and guests, a number registered whose names are not given. Some of these have not forwarded credentials for membership and some failed to sign the application blank.

Below are given two summaries, one by sections and one by states.

REGISTRATION BY SECTIONS

Practice of Medicine	850
Obstetrics and Diseases of Women	265
Surgery	859
Preventive Medicine and Public Health	88
Diseases of Children	161
Ophthalmology	317
Stomatology	51
Nervous and Mental Diseases	133
Dermatology	88
Laryngology and Otology	197
Pharmacology and Therapeutics	63
Pathology and Physiology	57
Registered without specifying any one section	87

REGISTRATION BY STATES

Alabama	17	Nebraska	14
Arizona	2	New Hampshire	13
Arkansas	13	New Jersey	243
California	56	New Mexico	2
Colorado	35	New York	475
Connecticut	68	North Carolina	25
Delaware	19	North Dakota	7
Dist. of Columbia	66	Ohio	175
Florida	6	Oklahoma	4
Georgia	11	Oregon	7
Idaho	1	Pennsylvania	893
Illinois	164	Rhode Island	30
Indiana	68	South Carolina	14
Iowa	36	South Dakota	5
Kansas	13	Tennessee	32
Kentucky	29	Texas	12
Louisiana	22	Utah	5
Maine	11	Vermont	16
Maryland	128	Virginia	52
Massachusetts	141	Washington	5
Michigan	87	West Virginia	29
Minnesota	40	Wisconsin	44
Mississippi	4	Wyoming	2
Missouri	66	Foreign	5
Montana	8		

Practice of Medicine

Abrahams. Robert, New York City.
Abbott, Walter H., Hillsboro, New Hampshire.
Adler, Harry, Baltimore, Md.
Alexander, Jas. F., Blocton, Ala.
Alkier, S. J., Brooklyn, N. Y.
Alleman, Frank, Lancaster, Pa.
Allen, L. M., Philadelphia, Pa.
Allyn, Herman B., Philadelphia.
Amerland, J. H., St. Louis, Mo.
Ames, R. P. M., Springfield, Mass.
Anders, J. M., Philadelphia.
Anders, J. Wesley, Philadelphia, Pa.
Anderson, Guy R., Barnesboro, Pa.
Anderson, Wm. E., Farmville, Va.
Andreas, George R., Wilkes-Barre, Pa.
Arbuthnot, Thomas S., Pittsburg, Pa.
Arneill. James R., Denver, Colo.
Arnold. Horace D., Boston, Mass.
Ashcraft, Samuel F., Mullica Hill, N. J.
Atkins. Joseph C., Red Lion, Pa.
Atkinson, A. D , Baltimore, Md.

Babcock, Myron L., Julesburg, Colo.
Bachman, Charles W., Reading, Pa.
Backenstoe, M. J., Emaus, Pa.
Bacon, John, Philadelphia, Pa.
Bahn, G. W., Spring Forge, Pa.
Baker, F. Kline, Philadelphia.
Baldwin, S. O., So. Framingham, Mass.
Baner, William L., New York City.
Banes, S. Thompson, Philadelphia.
Banker, D. F., Canton, Ohio.
Banks, Wm. H., San Francisco, Cal.
Barbash, Samuel, Atlantic City, N. J.
Barker, E. O., Guthrie, Okla.
Barker, James F., Albany, N. Y.
Barker, Lewellys F., Baltimore, Md.
Barney, Delbert, Wilkes-Barre, Pa.
Barnum, Merritt Wright, Ossining, N. Y.
Bartlett, Clara K., Atlantic City, N. J.
Baruch, Emanuel, New York City.
Basch, Seymour, New York City.
Bassett, Henry L., Yardley, Pa.
Bassett, M. Imogene, Cooperstown, N. Y.
Bassler, Anthony, New York City.
Bastedo, W. A., New York City.
Bates, John F., Setauket, N. Y.
Bauer, L. Demme, Philadelphia, Pa.
Bear, Lowney H., Vevay, Ind.
Beatty, H. M., Trenton, N. J.
Beck, Harvey G., Baltimore, Md.
Beck, J. S., Dayton, Ohio.
Beebe, W. L., St. Cloud, Minn.
Beecher, C. H., Burlington, Vt.
Bell, John M., St. Joseph, Mo.
Bellow, George A., Waterloo, N. Y.
Bennett, John K., Gloucester, N. J.
Bennett, L. F., Beloit, Wis.
Benson, Gideon, Richland Center, Wis.
Berghausen, Oscar, Cincinnati, Ohio.
Berry, R. D., Springfield, Ill.
Bessey, J. M., Toledo, Ohio.
Bettmann, H. W., Cincinnati, Ohio.
Berkler, W. B., Auburn, Maine.
Bierring, Walter L., Iowa City, Iowa.
Bierwirth, J. C., Brooklyn, N. Y.
Billings, Frank, Chicago, Ill.
Bishop, Aaron L., Philadelphia.
Black, John J., New Castle, Del.
Black, Stanley P., Pasadena, Cal.
Blackburn, Albert E., Philadelphia.
Blake, Gerald, Boston.
Blankenhorn, H., Orrville, Ohio.
Boardman, Albertus K., New Haven, Conn.
Bode, Mildred J., Cincinnati, Ohio.
Bold, Valentine J., Philadelphia.
Bolin, Jesse A., Philadelphia.
Bolling, Louis A., Attica, Ind.
Bolton, L. C., Cedaredge, Colo.
Boon, William Thomas, Manayunk, Pa.
Borzell, F. F., Cressman, Pa.
Bosher, Robert S., Jr., Richmond, Va.
Bosworth, B. D. Knoxville, Tenn.
Bowen, C. R., Almond, N. Y.
Bower, George B. M., Ft. Wayne, Ind.
Bowman, Henry C., Mahanoy City, Pa.
Boyer, J. S., Decatur, Ind.
Boysen, Theodore H., Egg Harbor, City, N. J.
Bradeen, Fred B., Essex, Conn.
Bradford, Stella S., Montclair, N. J.
Bradshaw, L. L., New York City.
Brallin, S. A. E., Conemaugh, Pa.
Branson, Thomas F., Rosemont, Pa.
Brockway, F., Oshkosh, Wis.
Brody, Myer, Cleveland, Ohio.
Brookshire, H. G., Asheville, N. C.
Brooks, Nelson O., Oneida, N. Y.
Broome, Joseph R., New York City.
Brown, C. H., Waterbury, Conn.
Brown, Frank E., Baltimore, Md.
Brown, Frederick W., Franklin, Pa.
Brown, H. MacVeagh, Philadelphia.
Brown, Louis Emmitt, Frederick, Md.
Brown, Philip King, San Francisco.
Brunner, H. Philemon, Reading, Pa.
Brush, Frederic, New York City.
Bryant, H. A., Schenectady, N. Y.
Buck, E. M., Montrose, Iowa.
Buck, Jefferies, Baltimore, Md.
Burdick, Frank E., Providence, R. I.
Burnett, Hayes J., Montclair, N. J.
Burroughs, H. S., Pittsburg, Pa.
Burtt, A. S. Momence, Ill.
Buswell, C. A., Chicago.
Cabot, Richard C., Boston.
Cadwallader, J. C., Norwood, Ohio.
Cairnes, George H., Baltimore, Md.
Caldwell, Charles P., Chicago.
Cameron, George A., Philadelphia.
Campbell, Elizabeth, Cincinnati, Ohio.
Campbell, O. Clayman, Philadelphia.
Campbell, W. L., New Castle, Pa.
Capps, Joseph A., Chicago.
Carpenter, G. S., Waverly, N. Y.
Carpenter, William H., Salem, N. J.
Carrell, John B., Hatboro, Pa.
Carrigan, E. S., Point Pleasant, N. J.
Carter, Joseph J., Weston, Mo.
Caspari, William, Baltimore, Md.
Castleman, Howell L., Sylacauga, Ala.
Cathell, D. W., Baltimore, Md.
Cawley, James I., Springtown, Pa.
Chamberlin, Edwin C., New York City.
Champlin, John, Westerly, R. I.
Chatard, J. A., Baltimore, Md.
Chew, E. C., Atlantic City, N. J.
Chittick, W. R., Detroit, Mich.
Clapp, George H., Philadelphia.
Clark, C. R., Youngstown, Ohio.
Clark, William A., Trenton, N. J.
Clarke, Ida, Youngstown, Ohio.
Clarke, J. Fred, Fairfield, Iowa.
Claytor, Thomas A., Washington, D. C.
Cleaver, Israel, Reading, Pa.
Cleland, James, Jr., Detroit, Mich.
Clemensen, Peter C., Chicago.
Clour, Charles F., Schenectady, N. J.
Cobey, James C., Frostburg, Md.
Codman, Charles A. E., Philadelphia.
Cohen, Myer Solis-, Philadelphia.
Cole, Lewis Gregory, New York City.
Coleman, Nathaniel R., Columbus, O.
Coleman, Thomas D., Augusta, Ga.
Coleman, Warren, New York City.
Comstock, Ira M., New York Mills, N. Y.
Conklin, Gustavus, Orwell, Pa.
Connell, A. J., Scranton, Pa.
Conner, Lewis A., New York City.
Cook, G. Wythe, Washington, D. C.
Cook, Henry Wireman, Minneapolis, Minn.
Cooley, Abbott L., Chicopee, Mass.
Coons, J. J., Columbus, Ohio.
Copeland, E. V., Round Hill, Va.
Cordell, Eugene F., Baltimore, Md.
Cornick, Boyd, San Angelo, Texas.
Cotham, E. R., Monticello, Ark.
Coumbe, A. G., Vienna, Va.
Craighill, James M., Baltimore, Md.
Crane, A. W., Kalamazoo, Mich.
Crane, S. Ellis, Syracuse, N. Y.
Crawford, James Rea, Philadelphia.
Croft, J. W., Waynesboro, Pa.
Cronin, Michael J., Boston, Mass.
Crump, G. A., New York City.
Culloway, A. W., Asheville, N. C.
Cunningham, J. N., Stanley, Wis.
Cunningham, Thomas E., Cambridge, Mass.
Currie, Thomas R., Philadelphia, Pa.
Curtin, Roland G., Philadelphia.
Cuskaden, A. D., Atlantic City, N. J.
Custer, D. D., Philadelphia.
Daland, Judson, Philadelphia.
Daugherty, M. M., Mechanicsburg, Pa.
Davis, Homer W., Alton, Ill.
Davis, James E., Detroit, Mich.
Davis, Thomas D., Pittsburg, Pa.
Day, S. Thomas, Port Norris, N. J.
Da Costa, John C., Jr., Philadelphia.
De Grofft, E. E., Woodstown, N. J.
Delaney, Willaim E., Slate Run, Pa.
Denison, Ellery, New York City.
Devitt, B. F., Philadelphia.
Dickes, John T., Portland, Ind.
Dillard, Henry K., Jr., Philadelphia.
Dock, George, New Orleans, La.
Dockstader, Charles H., New York City.
Dodin, Henry H., New York City.
Dodson, Boyd, Wilkes-Barre, Pa.
Donaldson, John B., Canonsburg, Pa.
Donaldson, John S., Bellevue, Pa.
Doty, E. A., Oxford, Iowa.
Dowden, C. W., West Baden, Ind.
Downey, Charles J., Springfield, Mass.
Driesbach, F. R., Dansville, N. Y.
Dripps, John H., Philadelphia.
Driscoll, Daniel, Portland, Maine.
Drummond, Winslow, Philadelphia.
Dubbs, J. H., Philadelphia.
Dunlap, Thomas G., Atlantic City, N. J.
Dunning, Z. F., Philmont, N. Y.
Durand, Jay I., Atlantic City, N. J.
Dwyer, P. J., Waterbury, Conn.
Dyar, B. A., DeSmet, S. Dak.
Earley, Thomas B., Philadelphia.
Eastman, Theodore J., Boston.
Eastman, W. H., Fredericktown, O.
Eccles, R. M., Blissfield, Mich.
Edgerton, H. K., Lebanon, Tenn.
Eghert, Joseph C., Wayne, Pa.
Egolf, H. M., Liberty, Ind.
Einhorn, Max, New York City.
Eisenhower, C. W., Jacobus, Pa.
Ellenberger, J. Wesley, Harrisburg, Pa.
Ellinger, T. J., Philadelphia.
Ellis, Charles M., Elkton, Md.
Ellis, J. W., Masonville, Ky.
Elsner, Henry L., Syracuse, N. Y.
Elwell, Alfred M., Camden, N. J.
Ely, William L., Rochester, N. Y.
Emerson, Charles P., Clifton Springs, N. Y.
Erdman, William B., Macungie, Pa.
Evans, D. Webster, Scranton, Pa.
Evans, Joseph S., Jr., Philadelphia, Pa.
Ewing, William B., West Grove, Pa.
Fackler, L. H., York, Pa.
Fair, Fred F., Chicago.
Fair, John F., Cambridge, Mass.
Falkowsky, Charles, Jr., Scranton, Pa.
Faries, Clarence T., Narbeth, Pa.
Farr, Clifford, B., Philadelphia, Pa.
Fassett, Charles Wood, St. Joseph, Mo.
Faught, Francis Ashley, Philadelphia.
Felch, Theodore A., Ishpeming, Mich.
Firebaugh, T. C., Harrisonburg, Va.
Fish, Clyde M., Pleasantville, N. J.
Fisher, C. R. P., Bound Brook, N. J.
Fisher, John C., Elmira, N. Y.
Fisler, C. F., Clayton, N. J.
Fithian, G. W., Perth Amboy, N. J.
Fleckenstein, Horace, Newportville, Pa.
Flynn, James H., New Haven, Conn.
Foote, Charles J., New Haven, Conn.
Forchheimer, F., Cincinnati, Ohio.
Foster, William S., Pittsburg, Pa.
Fox, Galen A., Cheyenne, Wyo.
Foxworthy, Frank W., Indianapolis, Ind.
Frank, G. S., Millheim, Pa.
Frankel, J. J., Philadelphia, Pa.
Fraser, Roderick, New York City.
Freeman, E. B., Baltimore, Md.
Freile, William, Jersey City, N. J.
Fretz, Alfred E., Sellersville, Pa.
Freund, Hugo A., Detroit, Mich.
Freund, H. H., Philadelphia.
Frey, Lewis, Scranton, Pa.
Friedenwald, Julius, Baltimore, Md.
Fronfield, T. H., Media, Pa.
Fuller, F. B., Pawtucket, R. I.
Fulton, Dudley, Los Angeles, Cal.
Funke, John, Philadelphia.
Futcher, Thomas B., Baltimore, Md.
Gardner, Edward R., Montrose, Pa.
Gaston, Ida E., Philadelphia, Pa.
Geisler, Howard D., Philadelphia, Pa.
Gerhard, Samuel P., Philadelphia, Pa.
Gichner, Joseph E., Baltimore, Md.
Gifford, John H., Fall River, Mass.
Gildersleeve, George H., Philadelphia.
Gillette, H. F., Cuba, N. Y.
Githens, Thomas S., Philadelphia.
Gleeson, J. K. P., Washington, D. C.
Godfrey, Andrew, Ambler, Pa.
Godfrey, E. L. B., Camden, N. J.
Goepp, R. Max, Philadelphia.
Gompertz, Louis M., New Haven, Conn.
Good, Albert Parke, Philadelphia.
Good, J. F., New Cumberland, Pa.
Goodman, Edward H., Philadelphia.
Goodwin, Ralph S., Thomaston, Conn.
Gordon, A. L., Burlington, N. J.
Gordon, John K., Chambersburg, Pa.
Graham, Christopher, Rochester, Minn.
Granger, William R. R., Newark, N. J.
Graves, Frederick C., Bridgeport, Conn.
Grant, W. Ed, Louisville, Ky.
Green, G. M., Ottsville, Pa.
Greene, Clarke W., Binghamton, N. Y.
Griffin, C. E., Fair Haven, Vt.
Griffith, J. H., Phillipsburg, N. J.
Griggs, John B., Hartford, Conn.
Grover, John B., Peckville, Pa.
Groves, John E., Uhrichsville, Ohio.
Guthrie, D. Clinton, Philadelphia.
Haase, Charles Elmira, N. Y.
Haass, E. W., Detroit, Mich.
Hall, E. N., Bowling Green, Ky.
Hall, J. N., Denver, Colo.
Halsey, B. F., Roper, N. C.
Halsey, Luther M., Williamstown, N. J.
Halton, Joseph, Sarasota, Fla.
Hamilton, J. H., Union, S. C.
Hammon, Glenn M., Chicago.
Hampsey, A. R., Pittsburg, Pa.
Hance, Irwin H., Lakewood, N. J.
Hannum, J. W., Ludlow, Mass.
Hannum, William, Hatboro, Pa.
Hare, H. A., Philadelphia.
Harman, W. J., Trenton, N. J.
Harris, A. E., Little Rock, Ark.
Harris, E. E., New York City.
Harrower, Henry R., Chicago.
Hartman, Irvin H., Reading, Pa.
Hartman, W. F., Swoope, Va.
Hartman, W. L., Pittston, Pa.
Hartzell, W. H., Allentown, Pa.
Harvey, Edwin H., Atlantic City, N. J.
Hasencamp, Oscar, Toledo, Ohio.
Hatchett, John A., El Reno, Okla.
Hauswirth, Louis, New York City.
Heard, James D., Pittsburg, Pa.
Hedrick, J. S., Dunkirk, Ohio.
Heisler, John C., Philadelphia.
Heller, C. E., Williamsport, Pa.
Heller, Frederick S., Oak Harbor, O.
Heller, Joseph M., Washington, D. C.
Henry, Frank C., Perth Amboy, N. J.
Henry, Frederick P., Philadelphia.
Heritage, Charles S., Glassboro, N. J.
Hershey, George Bair, Gap, Pa.
Hertz, J. L., Lititz, Pa.
Hewes, Henry F., Boston.
Hewlett, A. W., Ann Arbor, Mich.
Heydecker, Henry R., New York City.
Heyn, Louis G., Cincinnati, Ohio.
Hickman, Walter Atlee, Atlantic City, N. J.
Hill, Harold P., San Francisco.
Hill, James Charlesworth, Newton, Iowa.
Hirschfelder, J. O., San Francisco.
Hoagland, Henry, W., Colorado Springs, Colo.
Hocker, Elizabeth M., Cincinnati, O.
Hodges, J. W., Washington, D. C.
Hodgson, H. W., Cumberland, Md.
Hoge, William D., Rayland, Ohio.
Holden, T. N., New York City.
Holder, R. E., Columbus, Ind.
Holland, Arthur B., Wellsville, Ohio.
Hollingshead, E., Pemberton, N. J.
Hollingshead, Frances, Cincinnati, O.
Hollingshead, I. W., Philadelphia.
Holtzapple, G. E., York, Pa.
Hood, T. M., Clarksburg, W. Va.
Hoover, Benjamin A., Wrightsville, Pa.
Hoover, C. F., Cleveland, Ohio.
Hoover, P. D., Waynesboro, Pa.
Horn, C. T., Lehighton, Pa.
Hosick, W. R., Newcomerstown, O.
Hostetter, J. E., Gap, Pa.
Hough, Frank P., Binghamton, N. Y.
Huber, G. W., Scranton, Pa.
Hughes, G. W., Armstrong, Ill.
Hughes, W. E., Philadelphia.
Humphrey, G. E., Cambridge Springs, Pa.
Hunter, James W., Jr., Norfolk, Va.
Hunter, John W., Philadelphia.
Hurd, Edward F., New York City.
Huselton, W. S., Pittsburg, Pa.
Hutchinson, Woods, New York City.
Ikemire, J. A., Palestine, Ill.
Illman, G. Morton, Philadelphia.
Jaches, Leopold, New York City.
Jack, William G., Liberty Grove, Md.
James, H. C., Mays Landing, N. J.
James, William H., Pennsville, N. J.
Jarrett, Henry S., Towson, Md.
Jackson, H. P., Charleston, S. C.
Jenkins, J. Clement, Lititz, Pa.
Jennings, W. B., Haddonfield, N. J.
Johnston, James I., Pittsburg, Pa.
Jonah, W. E., Atlantic City, N. J.
Jones, Allen A., Buffalo, N. J.
Jones, Clement R., Pittsburg, Pa.
Jones, J. J., Wilmington, Del.
Jones, Frank A., Memphis, Tenn.
Joslin, E. P., Boston.
Joy, J. Addison, Atlantic City, N. J.
Joy, L. Fowler, Fulton, N. Y.
Jump, Henry D., Philadelphia.
Kahlo, George D., French Lick Springs, Ind.
Kain, William W., Camden, N. J.
Kauffman, John W., Reading, Pa.
Kast, L. W., New York City.
Katzenbach, W. H., New York City.
Keafe, Daniel E., Springfield, Mass.
Keegon, Charles A., Arlington, Mass.
Kegel, Ernest T., Walcott, Iowa.
Keller, David H., Russell, Pa.
Kelly, J. V., Philadelphia.
Kelsey, Ernest W., Philadelphia.
Kennedy, A. B., Bonham, Texas.
Kerns, Samuel P., Philadelphia.
Kerr, William E., Steubenville, Ohio.
Kilburn, Frank, Presque Isle, Maine.
Kimberlin, A. C., Indianapolis, Ind.
Kimbrough, John S., St. Louis, Mo.
King, Charles Lee, Pasadena, Cal.
King, Emil, Fulda, Minn.
King, James W., Stottville, N. Y.
King, John T., Baltimore, Md.
Kinyoun, J. J., Washington, D. C.
Kip, Henry, Paterson, N. J.
Kirk, Grant E., Camden, N. J.
Klentgen, A. C., Chicago.
Klopp Peter P., Philadelphia.
Knight, Arthur L., Cincinnati, Ohio.
Krum, A. G., Erie, Pa.
Kuder, W. S., U. S. Navy, Philadelphia.
Laker, S. B., Eureka, Utah.
Lambert, A., New York City.
Lamley, George H., Blissfield, Mich.
Lamson, William J., Summit, N. J.
Lange, Sidney, Cincinnati, Ohio.
Lantz, Percival, Alaska, W. Va.
Lathrop, M. C., Dover, N. H.
Laughlin, Mary A., Hagerstown, Md.
Laughlin, Rebecca P., Waynesboro, Pa.
Lavenson, R. S., Philadelphia.
Lawrence, R. G., Hammondsport, N. Y.
Laws, George C., Paulsboro, N. J.
Leahy, Maurice, Tiffin, Ohio.
Leaman, Walter J., Leaman Place, Pa.

Le Beuf, Louis G., New Orleans, La.
Le Compte, William C., Bristol, Pa.
Leen, Thomas Francis, Boston.
Leitzell, P. W., Portland Mills, Pa.
Leonard, I. E., Atlantic City, N. J.
Le Roy, Irving D., Pleasant Valley, N. Y.
Levy, I. Harris, Syracuse, N. Y.
Lewis, Charles H., New York City.
Lewis, Dorsey W., Middletown, Del.
Lewis, Thomas Stone, Lexington, Ky.
Libbert, Edward J., Aurora, Ind.
Lichty, John A., Pittsburg, Pa.
Lippincott, Jesse D., Newark, N. J.
Little, F. H., Muscatine, Iowa.
Long, A. A., York, Pa.
Long, Isaac S., Freehold, N. J.
Longcope, Warfield T., Philadelphia.
Loose, D. N., Maquoketa, Iowa.
Love, Frank W., Buffalo, N. Y.
Lowman, J. H., Cleveland, Ohio.
Luce, Charles R., Washington, D. C.
Lund, John L., Perth Amboy, N. J.
Lytle, Frank P., Birdsboro, Pa.
Mahen, B. W., Kingston, N. Y.
MacFarland, Andrew, Albany, N. Y.
MacLeod, Norman M., Beverly, Mass.
Macqueen, Donald K., Laurium, Mich.
Mandell, A. H., New Bedford, Mass.
Manning, Thomas, New Rochelle, N. Y.
Marchand, J. F., Canton, Ohio.
Marcy, Alex, Riverton, N. J.
Marey, Fred W., Camden, N. J.
Martelle, Henry A., Hartford, Conn.
Martin, Harry C., Springfield, Mass.
Martin, William, Bristol, Pa.
Marvel, Philip, Atlantic City, N. J.
Marvin, J. B., Louisville, Ky.
Mason, W. M., Sr., Hazel, Ky.
Mathews, George S., Providence, R. I.
Matthews, H. E., Orange, N. J.
Matthews, M. F., Athens, Ga.
Maxwell, J. R., Parkesbury, Pa.
May, A., Crothersville, Ind.
May, James C., Manchester, Pa.
Mayberry, F. E., Dorchester, Mass.
Maynard, O. T., Elyria, Ohio.
Maynard, S. S., Frederick, Md.
McAlister, John B., Harrisburg, Pa.
McAninch, D. L., Lamartine, Pa.
McCafferty, J. A., New York City.
McClymonds, Julian T., Lexington, Ky.
McCollam, James A., Uhrichsville, O.
McCollin, S. Mason, Philadelphia.
McComh, C. F., Duluth, Minn.
McConnell, H. E., Chester, S. C.
McCormick, Horace G., Williamsport, Pa.
McCrae, Thomas, Baltimore, Md.
McCreight, W. S., Pittsburg, Pa.
McCullough, A. H., Mansfield, Ohio.
McElroy, James B., Memphis, Tenn.
McGavran, Charles N., Columbus, O.
McGavran, S. B., Cadiz, Ohio.
McGowan, H., Harrisburg, Pa.
McGuire, James J., Trenton, N. J.
McIlhaney, William H., Easton, Pa.
McKeage, William, Philadelphia.
McKean, George E., Detroit, Mich.
McKenzie, R. Tait, Philadelphia.
McKilvy, James P., Pittsburg, Pa.
McKinney, J. W., Bluffton, Ind.
McLarney, T. J., Waterbury, Conn.
McLaughlin, J. J., Philadelphia.
McLean, Frank, Chewango Forks, N. Y.
McLean, John D., Philadelphia.
McPharthon, Peter, Schenectady, N.Y.
Meigh, Josiah, Bernardsville, N. J.
Mentzer, S. E., Monroeville, Ind.
Mercur, William H., Pittsburg.
Merrill, B. E., Dent's Run, Pa.
Mervine, Graydon, Bitumin, Pa.
Mervine, R. B., Hillsgrove, Pa.
Merzbach, Joseph, Brooklyn, N. Y.
Michener, Evan W., Philadelphia.
Middleton, William J., Steelton, Pa.
Miller, A. J., Brattleboro, Vt.
Miller, DeWitt Clinton R., Mason & Dixon, Pa.
Miller, John Harvey, Harrisburg, Pa.
Miller, Joseph S., Chicago.
Miller, N. C., Stroudsburg, Pa.
Millikin, T. N., Waynesburg, Pa.
Miner, Charles H., Wilkes-Barre, Pa.
Minish, L. T., Frankfort, Ky.
Minnick, A. G., Lock Springs, Mo.
Moak, Charles H., New York City.
Moomaw, Ben C., Roanoke, Va.
Moore, Edwin W., Franklin, Pa.
Moran, George W., Detroit, Mich.
Morgan, Arthur C., Philadelphia.
Morgan, James Dudley, Washington, D. C.
Morgan, J. Howard, Westerly, R. I.
Morrow, E. O., Canton, Ohio.
Morrow, H. Wilson, Swissvale, Pa.
Morton, Rosalie Slaughter, New York City.
Moshy, C. V., St. Louis, Mo.
Mowery, J. L., Lancaster, Pa.
Mowry, Jesse E., Providence, R. I.
Mudgett, John H., Philadelphia.
Mulligan, Wesley T., Rochester, N.Y.
Munson, S. E., Springfield, Ill.
Murphy, Anna F., Worcester, Mass.
Murphy, Franklin E., Kansas City, Mo.
Murphy, Timothy J., Boston.
Murray, John H., Reynoldsville, Pa.
Murray, Peter, New York City.
Musser, John H., Philadelphia.
Myers, Isaac N., Maples, Ind.
Nagle, Thomas S., Allentown, Pa.
Neary, Philip M., Cortland, N. Y.
Neel, H. A. P., Philadelphia.
Neff, John, Baltimore, Md.
Nettleton, Irving L., Bridgeport, Conn.
Neufeld, Maurice A., Chester, Pa.
Neuman, Leo H., Albany, N. Y.
Newell, H. A., Louisburg, N. C.
Newlin, Le Roy, Robinson, Ill.
Nickerson, L. H. A., Quincy, Ill.
Nisbet, James Douglas, New York City.
Nisbet, Walter O., Charlotte, N. C.
Norris, George W., Philadelphia.
Norris, M. D., Eldersburg, Md.
North, James, Atlantic City, N. J.
North, Lucian G., Tecumseh, Mich.
Northrup, A. H., Markle, Ind.
Noyes, Robert F., Providence, R. I.
O'Brien, D. D., Oswego, N. Y.
O'Connell, John A., Philadelphia.
O'Connor, John H., Hyde Park, Mass.
Oettiker, James, Platteville, Wis.
O'Meara, John G., Providence, R. I.
Oppenheimer, B. S., New York City.
Osborn, Samuel, Lansing, Mich.
Osmond, Anna R., Philadelphia.
Oswald, B. Frank, Cleveland, Ohio.
Otis, Elmer F., Lake George, N. Y.
Ovler, W. H., New York City.
Page, A. C., Des Moines, Iowa.
Page, Henry F., Philadelphia.
Palfrey, Francis W., Boston.
Palmer, Albert H., Marlborough, N. Y.
Park, William E., New Milford, Pa.
Parke, B. R., Wellsville, Ohio.
Parker, Delos L., Detroit, Mich.
Parry, Eleanor, New York City.
Patek, Arthur J., Milwaukee, Wis.
Paul, Thomas M., St. Joseph, Mo.
Pearson, Donnell M., Louisiana, Mo.
Pease, Herbert, Slater, Iowa.
Peck, C. W., Brandon, Vt.
Pepper, Wilbur L., Philadelphia.
Perkins, Jay, Providence, R. I.
Peterman, A. L., Parker, S. D.
Peterman, J. H., Cherry Tree, Pa.
Pettit, J. W., Ottawa, Ill.
Pfaff, Otto, Oneida, N. Y.
Pfahler, G. E., Philadelphia.
Pfaltzgraff, S. K., York, Pa.
Pfromm, George W., Philadelphia.
Phelps, A. W., East Aurora, N. Y.
Phelps, John S., Boston.
Pierce, William R., Amsterdam, N.Y.
Pigman, Samuel C., Concordia, Kan.
Podolski, L. A., Philadelphia.
Pollock, W. F., Pittsburg.
Porath, W. C., Varina, Iowa.
Porch, G. B., Johnstown, Pa.
Porter, David R., Kansas City, Mo.
Porter, W. A., Chicago.
Pottenger, F. M., Monrovia, Cal.
Potter, Nathaniel Bowditch, New York City.
Potter, Will H., Niagara Falls, N.Y.
Potter, Theodore, Indianapolis, Ind.
Pratt, John H., Manchester, N. Y.
Pratt, Joseph H., Boston.
Price, C. E., Robinson, Ill.
Prickitt, Elmer D., Mount Holly, N. J.
Pursell, Howard, Bristol, Pa.
Quick, T. C., Falls Church, Va.
Rahter, C. A., Harrisburg, Pa.
Ramsdell, John L., Albion, Mich.
Raymond, F. S., Memphis, Tenn.
Reading, George Evans, Woodbury, N. J.
Redus, W. D., Port Gibson, Miss.
Reed, Boardman, Alhambra, Cal.
Reichard, N. W., Bangor, Pa.
Reid, David W., Jacksonville, Ill.
Reid, H. L., Charleston, Mo.
Reiley, Edward A., Atlantic City, N. J.
Reinle, George G., Oakland, Cal.
Rememund, C. A., Junction City, Kan.
Rentschler, Harry F., Reading, Pa.
Reynolds, James C., Lake Geneva, Wis.
Reynolds, Walter, Atlantic City, N. J.
Richard, Florence Harvey, Philadelphia.
Richards, Raymond G., St. David, Ill.
Richards, S. S., Frankfort, N. Y.
Richter, Arthur J., Chicago.
Riddle, Julia, Oshkosh, Wis.
Ridgway, William F., Atlantic City, N. J.
Riegel, H. H., Catasauqua, Pa.
Riese, B. L., Chicago.
Riesman, David, Philadelphia.
Rigg, J. E., Wilkinsburg, Pa.
Ringland, Joseph B., Oswego, N. Y.
Robbins, G. E., Chillicothe, Ohio.
Roberts, Dudley D., Brooklyn, N. Y.
Robertson, William Egbert, Philadelphia.
Robin, Albert, Wilmington, Del.
Robson, John A., Hall's Corners, N. Y.
Rochester, De Lancey, Buffalo, N. Y.
Roebuck, J. Paul, Lititz, Pa.
Rothwell, W. P., Pawtucket, R. I.
Roussel, Albert E., Philadelphia, Pa.
Rowley, Robert L., Hartford, Conn.
Roy, Philip S., Washington, D. C.
Ruch, Charles F., Summit Hill, Pa.
Ruff, William F., Philadelphia, Pa.
Rulison, L. B., Watervliet, N. Y.
Russell, S. J., Springfield, Mass.
Rutherford, J. E., Ridgway, Pa.
Sailer, Joseph, Philadelphia.
Salor, William S., Trenton, N. J.
Salinger, Julius L., Philadelphia.
Samson, H. M., Lancaster, Ohio.
Sanhorn, George P., Boston.
Sawyer, John P., Cleveland, Ohio.
Sauer, J. George, New York City.
Saul, Charles H., Steelton, Pa.
Schauffler, William Gray, Lakewood, N. J.
Scheehle, J. Evans, Philadelphia.
Schleiter, H. G., Pittsburg, Pa.
Schock, Harvey E., Philadelphia.
Schoonmaker, Irving R., Philadelphia.
Schulz, F. M., Wauwatosa, Wis.
Schweer, T. J., Beardstown, Ill.
de Schweinitz, George Lord, Philadelphia, Pa.
Scott, George, Atlantic City, N. J.
Scott, John Mc.P., Hagerstown, Md.
Scott, S. H., Coatesville, Pa.
Scribner, Charles H., Paterson, N. J.
Seabrook, Alice M., Philadelphia.
Seibert, W. H., Steelton, Pa.
Settle, George M., Baltimore, Md.
Sharpe, E. S., Atlantic City, N. J.
Sharpe, Frank M., Brooklyn, N. Y.
Sharpless, William T., West Chester, Pa.
Shattuck, F. C., Boston.
Shattuck, George Cheever, Boston.
Shaut, Frank C., Addison, N. Y.
Shaw, L. M., Osceola, Neb.
Shearer, James Y., Sinking Spring, Pa.
Sheldon, Charles S., Madison, Wis.
Shellenberger, J. R., Philadelphia.
Shelley, A. A., Galena, Kan.
Shepherd, I. M., Trenton, N. J.
Shipps, William H., Bordentown, N. J.
Shoemaker, Albert M., White Haven, Pa.
Shulz, P. David, New York City.
Shuman, Ambrose, Catawissa, Pa.
Simmons, Horace M., Baltimore, Md.
Simon, Sidney K., New Orleans, La.
Simonton, Thomas Grier, Pittsburg, Pa.
Sisco, P. S. Bourdeau-, Washington,
Smiley, T. B., Mt. Vernon, S. D.
Smith, A. B., Wyoming, Pa.
Smith, C. Urban, Baltimore, Md.
Smith, George Carroll, Boston.
Smith, Charles B., Washington, N.J.
Smith, Charles B., Newtown, Pa.
Smith, E. Franklin, New York City.
Smith, Edmund L., Schellburg, Pa.
Smith, Frederick B., Watertown, N. Y.
Smith, G. H., Knightstown, Md.
Smith, Myrtle, Worcester, Mass.
Smith, Webster S., Dayton, Ohio.
Snider, S. J., Courtland, Kan.
Snyder, Francis J., York, Pa.
Souder, L. R., Ventnor, N. J.
Späch, A. B., Chicago, Ill.
Springer, Willard, Wilmington, Del.
Squier, A. O., Springfield, Mass.
Staebler, David M., Brooklyn, N. Y.
Starbuck, J. Clinton, Media, Pa.
Starke, G., New York City.
Starkweather, C. L., Occoquam, Va.
Steen, W. D., New York City.
Stella, Antonio, New York City.
Stengel, Alfred, Philadelphia.
Stern, Heinrich, New York City.
Stevens, Andrew J., Malden, Mass.
Stevens, J. W., Brooklyn, N. Y.
Stevenson, Alexander F., Chicago.
Stewart, Charles E., Battle Creek, Mich.
Stewart, W. Blair, Atlantic City, N. J.
Stickney, V. H., Dickinson, N. D.
Stockdale, T. H., Rural Valley, Pa.
Stockton, Charles G., Buffalo, N. Y.
Stoddard, C. H., Milwaukee, Wis.
Stone, Arthur K., Boston.
Stout, Henry R., Wenonah, N. J.
Strickler, A. W., Scottdale, Pa.
Strother, F. P., Madisonville, Ky.
Strouse, Solomon, Baltimore, Md.
Sullivan, John F., New Haven, Conn.
Summerill, J. M., Penn Grove, N. J.
Swan, John M., Philadelphia.
Swan, W. S., Harrisburg, Ill.
Swayne, Eugene, Philadelphia.
Talley, James E., Philadelphia, Pa.
Taylor, Frederic W., Cambridge, Mass.
Taylor, J. Gurney, Philadelphia.
Taylor, L. C., Springfield, Ill.
Thomas, Arthur R., West Eaton, N. Y.
Thompson, G. W., Winamac, Ind.
Thornton, William H., Buffalo, N.Y.
Tice, Frederick, Chicago.
Tileston, Wilder, Boston.
Thomas, Anne H., Philadelphia.
Thomas, Frank W., Philadelphia.
Tolman, Julia, Arlington, Mass.
Tomlinson, O. R., Tate Springs, Tenn.
Tomlinson, Peter W., Wilmington, Del.
Tompkins, McCaw, Richmond, Va.
Traver, S. N., Steelton, Pa.
Trexler, J. A., Brodheadsville, Pa.
Troutman, John, Kansas City, Kan.
Tukey, Frank M., Bridgeport, Conn.
Tuttle, Charles A., New Haven, Conn.
Tuttle, Lucius, Philadelphia.
Tyson, James, Philadelphia.
Underwood, S. L., Pittston, Pa.
Upham, J. H. J., Columbus, Ohio.
Vander Hoof, Douglas, Richmond, Va.
Van Dervoort, C. A., Philadelphia.
Van Etten, Nathan B., New York City.
Van Gaskin, Frances C., Philadelphia.
Variell, Arthur D., Waterbury, Conn.
Waddington, B. A., Salem, N. J.
Wade, John W., Millville, N. J.
Wagner, Otto, Elizabeth, N. J.
Waite, J. E., Lodi, Ohio.
Walker, James B., Philadelphia.
Wallace, William C., Pittsburg, Pa.
Wallace, N. C., Dover, Pa.
Wallin, Matilda K., New York City.
Wallis, J. Edw., Philadelphia.
Walsh, Thomas J., Buffalo, N. Y.
Walsh, Thomas N., Hawkeye, Iowa.
Ward, E. Tillson, Philadelphia.
Ward, John P., Vevay, Ind.
Ware, F. V., Millville, N. J.
Warner, Robert A., Baltimore, Md.
Way, Eugene, Dennisville, N. J.
Weaver, Joseph K., Norristown, Pa.
Weeks, Dana O., Marion, Ohio.
Welch, William C., New Haven, Conn.
Welker, Franklin, New York City.
Wells, Edward F., Chicago.
Wenner, E. Bruce, Philadelphia.
Wentz, B. F., Philadelphia.
West, Edward G., Boston.
West, S. Leslie, Philadelphia.
Wertman, A. A., Tannersville, Pa.
Wheeler, Frank D., Detroit, Mich.
Whitcomb, Harry H., Norristown, Pa.
White, Edward C., U. S. Navy.
White, Franklin W., Boston.
Wiegand, William E., Baltimore, Md.
Wilkinson, H. B., Montgomery, Ala.
Willetts, Ernest W., Pittsburg, Pa.
Williams, J. R., Rochester, N. Y.
Williams, Pearl, Providence, R. I.
Williams, W. T., Mt. Carmel, Pa.
Wilson, A. S., Bristol, Pa.
Wilson, James H., Fowlerburg, Md.
Wilson, L. D., Wheeling, W. Va.
Wilson, Robert, Jr., Charleston, S. C.
Wilson, Ward O., Clearfield, Pa.
Witherspoon, J. A., Nashville, Tenn.
Witter, Orin R., Hartford, Conn.
Woehnert, Albert E., Buffalo, N. Y.
Wolfe, Samuel, Philadelphia.
Wolford, Martin L., Harrisburg, Pa.
Wood, L. C., Poughkeepsie, N. Y.
Woodhead, H. Irvin, Forksville, Pa.
Woodruff, J. B., Johnstown, Pa.
Woods, J. H., Brookline, Mass.
Woods, William W., Rixford, Pa.
Woodward, H. L., Cincinnati, Ohio.
Woodward, Louis K., Westminster, Md.
Woodyard, S. W., Greeneville, Tenn.
Woofter, A. J., Weston, W. Va.
Wynn, Frank B., Indianapolis, Ind.
Yaeger, Christian G., Philadelphia.
Yates, Frederick, Washington, D. C.
Yates, H. Wellington, Detroit, Mich.
Yeager, George C., Philadelphia.
Zimlick, Arthur J., Philadelphia.
Ziminger, George F., Canton, Ohio.

Obstetrics and Diseases of Women

Abbott, B. T., Ocean City, N. J.
Abbe, Truman, Washington, D. C.
Abrams, Edward T., Dollar Bay, Mich.
Adams, Charles T., Philadelphia.
Alexander, A. F., Paterson, N. J.
Allen, M. May, Rochester, N. Y.
Anderson, H. G., Waterbury, Conn.
Anspach, Brooke M., Philadelphia.
Arnold, J. O., Philadelphia.
Astley, G. Mason, Philadelphia.
Ayer, Silas Hibbard, Boston, Mass.
Bacon, Charles S., Chicago.
Baer, J. S., Camden, N. J.
Bainbridge, William Seaman, New York City.
Barnes, Charles S., Philadelphia.
Barnes, Samuel S. P., Massillon, O.
Barrett, Channing, W., Chicago.
Baptistella, Leo Joanna, New York City.
Beck, C. E., Portland, Pa.
Becker, John N., Reading, Pa.
Benjamin, Arthur E., Minneapolis, Minn.
Blanchard, Francis R., Lakeview, Mich.
Bland, Curtis, Greensburg, Ind.
Bland, P. B., Philadelphia.
Boldt, H. J., New York City.
Bovée, J. W., Washington, D. C.
Bowers, L. G., Dayton, Ohio.
Boyd, G. M., Philadelphia.
Brandt, A. M., Bismarck, N. D.
Briggs, A. B., Ashaway, R. I.
Briggs, Henry W., Wilmington, Del.
Broadrup, G. L., Cumberland, Md.
Bronk, Edmund F., Amsterdam, N.Y.
Bryan, W., New York City.
Buell, Mary Catherine, Cumberland, Md.
Bull, Maud L., Marion, Ohio.
Bullard, Rose T., Los Angeles, Cal.
Bunn, Ralph A., Dayton, Ohio.
Bunting, P. Du Bois, Elizabeth, N. J.
Burch, L. E., Nashville, Tenn.
Burt, F. C., Hammonton, N. J.
Carstens, J. H., Detroit, Mich.
Carter, Helen L., Newark, N. J.
Chandler, Swithin, Philadelphia, Pa.
Chard, Marie L., New York City.
Chase, Walter B., Brooklyn, N. Y.
Clark, John E., Philadelphia, Pa.
Clark, S. M. D., New Orleans, La.
Cleland, F. A., New York City.
Cohen, Bernard, Buffalo, N. Y.
Coles, Stricker, Philadelphia.
Conaway, Walt P., Atlantic City, N. J.
Cotter, E. J., Boston.
Cowle, Fannie W., Hot Springs, Ark.
Craighead, Claude C., Athens, La.
Cregar, Peter B., Plainfield, N. J.
Crosby, William Smith, Philadelphia.
Cressen, H. S., St. Louis, Mo.
Da Costa, John C., Philadelphia.
Darnall, William Edgar, Atlantic City, N. J.
Davis, Daniel W., Wellston, Ohio.
Davis, Ella M., Holyoke, Mass.
Davis, E. W., Seymour, Conn.
Davis, Fannie, Oil City, Pa.
Davis, James C., Rochester, N. Y.
Day, Mary Gage, Kingston-on-Hudson, N. Y.
Deal, John Colton, Philadelphia.
Dolley, Gilman C., Philadelphia.
Donoghue, Frances V., Boston.
Dorland, W. A. Newman, Philadelphia.
Dorsett, Walter B., St. Louis, Mo.
Druskin, Samuel J., New York City.
Dubell, J. Eldridge, Columbus, N. J.
Duncan, H. A., Philadelphia.
Fisher, John M., Philadelphia.
Fithian, Joel W., Camden, N. J.
Fluemer, Oswald C., Mt. Clemens, Mich.
Fort, R. E., Nashville, Tenn.
Foster, Frank P., New York City.
Foye, A. Frances, Washington, D. C.
Frederick, Carlton C., Buffalo, N. Y.
Fry, Henry D., Washington, D. C.
Furniss, H. D., New York City.
Gallager, Harry Glenolden Dells, Pa.
Gallant, A. Ernest, New York City.
Gardner, William S., Baltimore, Md.
Garrabrant, C., Atlantic City, N. J.
Girvin, John H., Philadelphia.
Golden, William W., Elkins, W. Va.
Goodrich, William A., Waterbury, Conn.
Grad, H., New York City.
Greene, Mary T., Castile, N. Y.
Greene, Thomas F., Boston.
Hackett, Emma C., Chicago.
Hall, Rufus B., Cincinnati, Ohio.
Hamilton, S. S., Punxsutawney, Pa.
Hammond, Frank C., Philadelphia.
Harris, Philander A., Paterson, N. J.
Harvey, E. Marshall, Media, Pa.
Haskins, Mary G., Detroit, Mich.
Hazlett, Edgar M., Washington, Pa.
Heineberg, Alfred, Philadelphia.
Heinecke, George B., Washington, D. C.
Higgins, Charles W., Providence, R. I.
Hill, I. L., New York City.
Hill, W. B., Milwaukee, Wis.
Hodgins, Arthur G., Honolulu, Hawaii.
Howell, W. H., Altoona, Pa.
Hunner, Guy L., Baltimore, Md.
Ill, Edward J., Newark, N. J.
Jack, Harvey P., Canisteo, N. Y.
Jacob, Louis H., Philadelphia.
Jewett, Charles, Brooklyn, N. Y.
Johnson, Burt C., Buffalo, N. Y.
Johnson, H. L. E., Washington, D.C.
Jones, Thomas, Philadelphia.
Keim, William Franklin, Newark, N. J.
Keller, Franklin J., Paterson, N. J.
Kelly, Howard A., Baltimore, Md.
Keyes, J. J., Brooklyn, N. Y.
Kight, Rufus S., Norfolk, Va.
Koons, Philip Rankins, Mechanicsburg, Pa.
Kosmak, George W., New York City.
Krusen, Wilmer, Philadelphia.
Leavitt, John F., Camden, N. J.
Leof, M. V., Philadelphia.
Lessig, J. A., Schuylkill Haven, Pa.
Liell, Edward N., Jacksonville, Fla.
Lockrey, Sarah H., Philadelphia.
Longenecker, C. B., Philadelphia.
Lothrop, Earl P., Buffalo, N. Y.
Luburg, L. F., Philadelphia.
Macfarlane, Catharine, Philadelphia.
Maertz, Charles, Cincinnati, Ohio.
Mallett, G. H., New York City.
Manton, Walter P., Detroit, Mich.
Marche, E. J., Canton, Ohio.
Marcy, Henry O., Boston.
Marshall, R. J., East Liverpool, O.
Martindale, J. W., Camden, N. J.
Martin, Elizabeth L., Pittsburg, Pa.
Martine, Angeline, Utica, N. Y.
Massey, G. Betton, Philadelphia.
Mathews, William J., Hoboken, N. J.
McCune, Virginia, Martinsburg, W. Va.
McDonald, Ellice, New York City.
McDougald, John Q., Philadelphia.
McGlinn, John A., Philadelphia.
McKenney, D. C., Buffalo, N. Y.
McMenamin, F. J., Highland Falls, N. Y.
McNutt, Sarah J., New York City.
McParlan, John P., New York City.
McPherson Ross, New York City.
McVeigh, James A., Detroit, Mich.
Miles, Clarence C., Greenport, N. Y.
Miller, C. Jeff, New Orleans, La.
Miller, G. Brown, Washington, D. C.
Miller, Harold A., Pittsburg, Pa.
Miller, S. M., Knoxville, Tenn.
Mills, Henry M., Brooklyn, N. Y.
Mitchell, Robert L., Baltimore, Md.
Monagan, Charles, A., Waterbury, Conn.
Mondhank, R. W., Lancaster, Ohio.
Montgomery, E. E., Philadelphia.
Morris, C. A., San Francisco, Cal.
Morrison, Robert, Pittsburg, Pa.
Mosher, Eliza M., Brooklyn, N. Y.
Mosher, George Clark, Kansas City, Mo.
Nelson, Ida M., Shively-Oklahoma City, Okla.
Norris, Richard C., Philadelphia.
Novak, Emil, Baltimore, Md.
Offutt, Lemuel, Greensburg, Pa.
Osborne, Henry Manning, Youngstown, Ohio.
Pantzer, H. O., Indianapolis, Ind.
Parke, William E., Philadelphia, Pa.
Peterson, Reuben, Ann Arbor, Mich.
Pitts, Herman C., Providence; R. I.
Polak, John Osborne, Brooklyn, N.Y.
Potter, Irving W., Buffalo, N. Y.
Potter, Marion Craig, Rochester, N.Y.
Potter, William Warren, Buffalo, N. Y.
Powell, Cuthbert, Denver, Colo.
Purnell, Caroline M., Philadelphia.
Putt, Maurice O., Oberlin, Pa.
Quayle, John H., Cleveland, Ohio.
Reed, Charles A. L., Cincinnati, O.
Ressler, G. W., Ashland, Pa.
Reynolds, Charles B., Philadelphia.
Richards, J. N., Fallsington, Pa.
Richardson, Emma M., Camden, N.J.
Risk, Winthrop A., Providence, R. I.
Rosenthal, Max, New York City.
Ross, D. C., Fort Worth, Texas.
Russell, William Wood, Baltimore, Md.
Sanes, Kay I., Pittsburg, Pa.
Sawye, Charles J., Windsor, N. C.
Scarnecchia, Joseph, Youngstown, O.
Schenck, Benjamin R., Detroit, Mich.
Schmeling, A. F., Columbus, Wis.
Schweikart, Frederick J., Elmhurst, N. Y.
Schroeter, Ludwig, Buffalo, N. Y.
Schumann, Edward A., Philadelphia, Pa.
Schwarz, Henry, St. Louis, Mo.
Scull, William B., Philadelphia.
Seegar, J. K. B. E., Baltimore, Md.
Seiss, F. H., Taneytown, Md.
Shimer, Sterling D., Easton, Pa.
Shoemaker, George Erety, Philadelphia.
Shoop, Frederic J., Brooklyn, N. Y.
Simpson, F. F., Pittsburg, Pa.
Sledge, W. H., Mobile, Ala.
Small, W. B., Philadelphia.
Smith, Clarence D., Philadelphia.
Smith, Cassas, Olean, N. Y.
Smith, Richard R., Grand Rapids, Mich.
Spiller, William H., New York City.
Spurney, A. F., Cleveland, Ohio.
Stahl, Alfred, Newark, N. J.
Steedly, B. B., Spartanburg, S. C.
Stein, Arthur, New York City.
Stein, Newton H., Middleport, Pa.
Stein, George W., Norristown, Pa.
Stewart, Otto K., Canisteo, N. Y.
Stewart, Zeller White, Grand Forks, N. D.
Stillwagen, Charles A., Pittsburg, Pa.
Stone, Isaac Scott, Washington, D. C.
Strasser, August Adrian, Arlington, N. J.
Strobell, C. W., Rutland, Vt.
Strong, C. M., Charlotte, N. C.
Strouss, U. S., Beaver, Pa.
Stuekle, W. P., Clyde, Mo.
Swahlen, Percy H., St. Louis, Mo.
Taggart, David, Frackville, Pa.
Taneyhill, G. Lane, Baltimore, Md.
Thompson, Charles O., Boston, Massachusetts.
Timmerman, Charles F., Amsterdam, N. Y.
Todd, Frank L., Pittsburg, Pa.
Townsend, Mary E., Atlantic City, N. J.
Tracy, S. E., Philadelphia.
Trevaskis, A. L., Turtle Creek, Pa.
Trumbower, M. R., Monett, Mo.
Ulrich, Katharine, Chester, Pa.
Underwood, E. S., Akron, Ohio.
Vandervoort, Louie E., Battle Creek, Mich.
Vernier, Jean A., Detroit, Mich.
Von Tobel, Frederic, Lebanon, N. H.
Waldo, Ralph, New York City.
Walker, Edwin, Evansville, Ind.
Walton, L. S., Jenkintown, Pa.
Ward, George Gray, Jr., New York City.
Weber, George T., Olney, Ill.
Weiss, Edward A., Pittsburg, Pa.
Welch, H. E., Youngstown, Ohio.
Welch, John E., New York City.
Wetherill, Horace G., Denver, Colo.
White, Benjamin W., Bridgeport, Conn.
White, George R., Savannah, Ga.
Whiteaker, Hall, Mound City, Ill.
Wilson, Jefferson H., Beaver, Pa.
Wilson, W. Reynolds, Philadelphia.
Winebrake, Albert J., Scranton, Pa.
Wintersteen, J. Boone, Moorestown, N. J.
Wobus, R. E., St. Louis, Mo.
Woodruff, W. Stuart, Mt. Vernon, N. Y.

Surgery

Adams, C. M., Williamsport Pa.
Adler, Lewis N., Jr., Philadelphia, Pa.
Albee, Fred H., New York City.
Alderson, S. P., Russellville, Ky.
Allaben, J. E., Rockford, Ill.
Allen, Carroll W., New Orleans, La.
Allen, H. R., Indianapolis, Ind.
Allen, John Thomas, Brownsville, Tenn.
Allenburger, C. A., Columbus, Neb.
Anderson, J. Howard, Marytown, W. Va.
Armstrong, Alex, White Haven, Pa.
Ashley, Dexter D., New York City.
Atlee, John L., Lancaster, Pa.
Ayres, Douglas, Fort Plain, N. Y.
Babcock, W. Wayne, Philadelphia.
Bacon, H. Augustus, Philadelphia.
Bacon, Wm. F., York, Pa.
Bagley, Charles, Jr., Baltimore, Md.
Baird, Ben D., Galesburg, Ill.
Baker, Arch E., Charleston, S. C.
Baldwin, James H., Philadelphia, Pa.
Ball, Francis P., Lock Haven, Pa.
Ballin, Max, Detroit, Mich.
Bandy, Elizabeth R., Philadelphia.
Barker, F. Dale, Dayton, Ohio.
Barnett, Charles E., Ft. Wayne, Ind.
Barkley, A. H., Lexington, Ky.
Barney, J. Dellinger, Boston, Mass.
Barrell, Daniel A., Auburn, Maine.
Barsumian, H. G., Lancaster, Pa.
Bartlett, C. W., Bennington, Vt.
Bartlett, Willard, St. Louis, Mo.
Bastian, J. W., Wilmington, Del.
Batchelor, W. A., Milwaukee, Wis.
Baugh, A. W., Paoli, Pa.
Baxter, Stephen H., Minneapolis, Minn.
Bay, Robert P., Baltimore, Md.
Beach, William M., Pittsburg, Pa.
Beck, Carl, Chicago, Ill.
Beck, Emil G., Chicago, Ill.
Beckett, W. W., Los Angeles, Cal.
Behle, Augustus C., Salt Lake City, Utah.
Behrend, Moses, Philadelphia.
Beilby, George E., Albany, N. Y.
Bell, G. Franklin, Williamsport, Pa.
Bell, Lloyd J., Millen, Ga.
Benepe, John L., San Jose, Cal.
Bentley, Edwin, Little Rock, Ark.
Berlin, H., Chattanooga, Tenn.
Bevan, Arthur Dean, Chicago, Ill.
Bishop, William Thomas, Harrisburg, Pa.
Bittinger, J. H., Hanover, Pa.
Black, William, Memphis, Tenn.
Blake, Charles F., Baltimore, Md.
Blake, John Bapst, Boston.
Blake, John D., Baltimore, Md.
Blasucci, Erneste, New York.
Block, J., Kansas City, Mo.
Bloodgood, Joseph Colt, Baltimore, Md.
Boerstler, George W., Lancaster, O.
Bosher, Lewis C., Richmond, Va.
Bottomley, John Taylor, Boston.
Boucher, J. B., Hanford Conn.
Bowden, David T., Paterson, N. J.
Bowen, A. B., Maquoketa, Iowa.
Boyce, D. W., Allegheny, Pa.
Braasch, W. F., Rochester, Minn.
Brant, Austin C., Canton, Ohio.
Brav, Herman A., Philadelphia, Pa.
Brennan, James H., New Rochelle, N. Y.
Brick, J. Coles, Philadelphia.
Brickner, W. M., New York City.
Briggs, C. E., Cleveland, Ohio.
Bristow, Algernon Thomas, New York City.
Bristow, G. M., Princeton, Mo.
Britt, W. Warren, Tonawanda, N. Y.
Brockman, D. C., Ottumwa, Iowa.
Brotherlin, H. H., Hollidaysburg, Pa.
Brown, H. R., Chillicothe, Ohio.
Brown, David Chester, Danbury, Conn.
Brown, Israel, Norfolk, Va.
Brown, J. S., Montclair, N. J.
Brown, Rexwald, Santa Barbara, Cal.
Bruin, M. R., Strasburg, Va.
Bryant, Joseph D., New York City.
Buchanan, J. J., Pittsburg, Pa.
Buehler, William E., Chicago.
Buechner, W. H., Youngstown, Ohio.
Binnie, John F., Kansas City, Mo.
Brill, H. R., Grand Junction, Colo.
Brinkman, Leon, Philadelphia.
Burkholder, John L., New Castle, Pa.
Burnham, J. Forrest, Lawrence, Mass.
Butler, Joel D., Springfield, Mass.
Buxton, Joseph T., Newport News, Va.
Cale, Geo. W., Jr., St. Louis, Mo.
Calkins, Irving R., Springfield, Mass.
Campbell, A. J., Syracuse, N. Y.
Campbell, William Francis, Brooklyn, N. Y.
Campbell, Alexander Mackenzie, Grand Rapids, Mich.
Canedy, Charles F., Greenfield, Mass.
Cannaday, John E., Charleston, W. Va.
Cannon, T. Harris, Baltimore, Md.
Cantrell, C. E., Greenville, Texas.
Carman, R. D., St. Louis, Mo.
Carmany, Harry S., Philadelphia.
Carnett, J. B., Philadelphia.
Carroll, Albert Hynson, Baltimore, Md.
Carson, George T., Chatsworth, Ill.
Cassady, J. B., Burlington, N. J.
Cathcart, Robert S., Charleston, S. C.
Cavanaugh, Thomas Edward, Milwaukee, Wis.
Chandler, William J., South Orange, N. J.
Cheyne, Walter, Sumter, S. C.
Chilton, J. C., Hannibal, Mo.
Christensen, Christian, La Crosse, Wis.

Chute, Arthur L., Boston.
Clagett, L. S., Blairsville, Pa.
Clark, W. A., San Leandro, Cal.
Clarkson, J. A., Lewiston, Pa.
Claybrook, E. B., Cumberland, Md.
Clemons, E. Jay, Aberdeen, S. D.
Clifton, Harry C., Hartford, Conn.
Coats, Albert James, Lincoln, Neb.
Cochems, Frank N., Salida, Colo.
Coe, Ben F., Dixonville, Pa.
Cohen, Haskell M., Denver, Colo.
Colcord, A. W., Clairton, Pa.
Cole, Thomas P., Greensburg, Pa.
Collins, Clifford U., Peoria, Ill.
Collins, James, Bristol, Pa.
Collins, J. H., Schenectady, N. Y.
Collins, T. K., Philadelphia.
Combs, George W., Indianapolis, Ind.
Connell, F. Gregory, Oshkosh, Wis.
Connelly, Daniel, Kingston, N. Y.
Conner, Milton C., Middletown, N. Y.
Cook, Charles P., New Albany, Ind.
Cook, George, Concord, N. H.
Cook, H. F., Newark, N. J.
Cooke, A. B., Nashville, Tenn.
Cornish, P. G., Albuquerque, N. M.
Cory, Horace C., Newark, N. J.
Coulthard, G. H., Idaho Falls, Idaho.
Covert, O. F., Moundsville, W. Va.
Cox, Allen E., Helena, Ark.
Craig, Joseph D., Albany, N. Y.
Crain, M. Richards, Rutland, Vt.
Crane, A. A., Waterbury, Conn.
Crawford, G. E., Cedar Rapids, Iowa.
Creveling, J. P., Auburn, N. Y.
Crisler, Julius, Jackson, Miss.
Crook, Jere L., Jackson, Tenn.
Crosby, William D., Washington, D. C.
Crowe, Willis H., New Haven, Conn.
Crowell, A. J., Charlotte, N. C.
Crueger, Edward A., Philadelphia.
Crumb, J. Mott, South Ostelic, N. Y.
Culbertson, N. W., Massillon, Ohio.
Cummins, T. J., Plattsburg, N. Y.
Cunningham, John G., Spokane, Wash.
Cunningham, W. M., Corona, Ala.
Curran, G. R., Mankato, Minn.
Cushing, Harvey, Baltimore, Md.
Cutts, William B., Providence, R. I.
Da Costa, J. Chalmers, Philadelphia.
Dacey, C. J., Brockton, Mass.
Darrach, William, New York City.
Daugherty, Charles A., South Bend, Ind.
David, V. C., Chicago.
Davidson, Arthur J., Philadelphia.
Davis, George G., Chicago.
Davis, Gwilym G., Philadelphia.
Davis, Lincoln, Boston.
Davis, S. Griffith, Baltimore, Md.
Davison, Charles, Chicago.
Deaver, H. C., Philadelphia.
Deaver, John B., Philadelphia.
Decker, C. J., Washington, D. C.
De Garmo, William B., New York City.
Deibel, H. W., Wilkes-Barre, Pa.
Despard, Duncan L., Philadelphia.
Dick, Andrew J., Watertown, N. Y.
Dixon, Taylor B., Washington, D. C.
Doern, W. G., Milwaukee, Wis.
Dolan, T. E., Elizabeth, N. J.
Dolphin, Benjamin E., New York City.
Donaldson, Walter F., Pittsburg, Pa.
Donkle, L. B., Chicago.
Dougherty, A. F., Ashley, Pa.
Dowd, Charles N., New York City.
Drake, H. H., Norristown, Pa.
Draper, James A., Wilmington, Del.
Du Bose, F. G., Selma, Ala.
Duffield, E. Mortimer, Glassboro, N. J.
Duncan, James A., Toledo, Ohio.
Dunham, Frank, Robinson, Ill.
Dye, Willoughby G., Deer Lodge, Mont.
Earle, Samuel T., Jr., Baltimore, Md.
Earle, Curran B., Greenville, S. C.
Eberhard, Le Roy C., Akron, Ohio.
Echard, Thomas B., Connellsville, Pa.
Echols, Chester M., Milwaukee, Wis.
Egan, Gregory J., La Crosse, Wis.
Eisenberg, John Lawrence, Norristown, Pa.
Elder, Frank H., Philadelphia.
Ellis, J. B., Sherman, Texas.
Elsberg, Charles A., New York City.
English, R. M., Danbury, Conn.
Erdmann, A. F., Brooklyn, N. Y.
Eschbach, H. C., Albia, Iowa.
Estes, W. L., S. Bethlehem, Pa.
Evans, G. B., Dayton, Ohio.
Evans, Edward, La Crosse, Wis.
Evans, W. Knowles, Chester, Pa.
Eve, Duncan, Jr., Nashville, Tenn.
Ewens, Arthur E., Atlantic City, N. J.
Fairchild, D. T., Clinton, Iowa.
Farquhar, George W., Pottsville, Pa.
Faris, C. M., Sacramento, Cal.
Farrar, J. D., Philadelphia, Pa.
Faust, William P., Schenectady, N.Y.
Fell, Alex G., Wilkes-Barre, Pa.
Fell, George Edward, Buffalo, N. Y.
Felty, J. W., Hartford, Conn.
Ferguson, Robert Henry, Boston.
Finn, Fred A., Jersey City, N. J.
Finney, J. M. T., Baltimore, Md.
Fisher, V. L., Mt. Vernon, Ohio.
Fleming, J. C., Elkhart, Ind.
Fletcher, Fred, Columbus, Ohio.
Fletcher, M. H., Asheville, N. C.
Formad, Marie K., Philadelphia.
Forwood, J. L., Chester, Pa.
Foster, W. Ross, Crafton Sta., Pittsburg, Pa.
Fowler, Harry A., Washington, D. C.
Fox, Frank E., Fulton, N. Y.
Frauenthal, Henry W., New York City.
Franklin, Melvin M., Philadelphia.
Frazer, Charles H., Philadelphia.
Freeman, Leonard, Denver, Colo.
Freligh, C. N., Plum City, Wis.
French, Samuel, Meeker, Colo.
Fuller, Eugene, New York City.
Fulton, Z. M. K., Philadelphia.
Fulton, William S., Wheeling, W. Va.
Gable, Isaac C., York, Pa.
Gaines, John A., Nashville, Tenn.
Galehouse, F. C., San Rafael, Cal.
Gant, S. G., New York City.
Gardner, H. D., Scranton, Pa.
Garwood, Harold G., Gorham, Colo.
Gastram, A. H., Remsen, Iowa.
Gaub, Otto C., Pittsburg, Pa.
Gaughan, M. C., Pittston, Pa.
Gay, George W., Boston.
Gay, Samuel G., Selma, Ala.
Gensburg, Nate, Philadelphia.
Geraghty, John T., Baltimore, Md.
Germain, Harry Homer, Boston.
Gerrish, M. F., Seymour, Ind.
Giannini, B. E., Coalmont, Ky.
Gibbon, John H., Philadelphia.
Gibby, Herbert B., Wilkes-Barre, Pa.
Gilbride, John J., Philadelphia.
Gillette, William J., Toledo, Ohio.
Gleason, John H., Manchester, N. H.
Glendon, W. P., Cedarville, N. J.
Glidden, Stephen C., Danville, Ill.
Goldspohn, Albert, Chicago.
Goldstein, David D., New York City.
Goldthwait, Joel E., Boston.
Goodhue, George, Dayton, Ohio.
Goodman, Sylvester J., Columbus, Ohio.
Goodwin, E. M., Cleveland, Ohio.
Goodwin, J. J., Clinton, Mass.
Goodwin, William M., Newark, N. J.
Gorman, T. C., Anamosa, Iowa.
Graham, Alois B., Indianapolis, Ind.
Graham, D. W., Chicago.
Graham, Evarts A., Chicago.
Grant, W. W., Denver, Colo.
Graves, Schuyler Colfax, Grand Rapids, Mich.
Graves, William B., East Orange, N. J.
Gray, A. L., Richmond, Va.
Green, Edward E., Brooklyn, N. Y.
Green, Frederick R., Chicago.
Green, H. L., Toledo, Ohio.
Green, G. W., Chicago.
Green, James S., Elizabeth, N. J.
Green, N. W.. New York City.
Griffith, Jefferson D., Kansas City, Mo.
Gromann, John, Utica, N. Y.
Grove, Austin M., York, Pa.
Grube, John E., Punxsutawney, Pa.
Gurvey, Major Samuel C., Manila, P. I.
Guthrie, George W., Wilkes-Barre, Pa.
Guthrie, William A., Franklin, Ky.
Guthrie, William E., Bloomington, Ill.
Gwathmey, James T., New York City.
Gwathmey, Lomax, Norfolk, Va.
Haecker, Lewis E., Hampton, Iowa.
Haggard, William D., Nashville, Tenn.
Hagner, Francis R., Washington, D.C.
Hahn, L. A., Guthrie, Okla.
Haines, F. G., Warren, Pa.
Haines, W. D., Cincinnati, Ohio.
Hammer, A. Wiese, Philadelphia.
Hammond, L. J., Philadelphia.
Harvey, T. W., Orange, N. J.
Harpole, Charles B., Evansville. Ind.
Harrington, W. M., Springfield, Mass.
Harris, C. E., Bloomington, Ind.
Harris, M. L., Chicago.
Harrison, A. C., Baltimore, Md.
Harshberger, Alexander S., Lewistown, Pa.
Hartford, P. C., E. Palestine, Ohio.
Hartwell, John A., New York City.
Hartwell, Harry F., Boston.
Hartwig, Marcell, Buffalo, N. Y.
Hatch, Leonard F., Vineland, N. J.
Hauser, Charles D., Youngstown, Ohio.
Haussling, Francis R., Newark, N. J.
Hawkins, A. H., Cumberland, Md.
Hawkins, John A., Pittsburg, Pa.
Hawley, D. C., Burlington, Vt.
Hawley, George W., Bridgeport, Conn.
Haworth, E. B., Pittsburg, Pa.
Hoyer, G. C., Milwaukee, Wis.
Heath, Horace, Denver, Colo.
Heazlit, Ledra, Auburn, N. Y.
Hecker, William H., Watseka, Ill.
Hector, William S., Chicago.
Heffner, Oliver C., Pottstown, Pa.
Hendee, Laurence, Buffalo, N. Y.
Hendrick, John A., Shreveport, La.
Hendershot, B. C., New Philadelphia, Ohio.
Henderson, William T., Mobile, Ala.
Henritzy, O. E., Slatington, Pa. ,
Henson, James W., Richmond, Va.
Herbst, Robert H., Chicago, Ill.
Herrington, W. J., Bad Axe, Mich.
Hertzler, Arthur E., Kansas City, Mo.
Hess, L. T., U. S. Army, Fort Porter, N. Y.
Hetrick, David Jos., Harrisburg, Pa.
Hewson, Addinell, Philadelphia.
Hicks, Horace M., Amsterdam, N. Y.
Higbee, Wm. S., Philadelphia.
Highsmith, J. F., Fayetteville, N. C.
Hill, T. C., Boston.
Hiller, Hiram M., Chester, Pa.
Hirschman, Louis J., Detroit, Mich.
Holden, W. B., Portland, Ore.
Hotchkiss, Norton Royce, New Haven, Conn.
Horsley, J. Shelton, Richmond, Va.
Horwitz, Orville, Philadelphia.
Hough, Garry de N., New Bedford, Mass.
House, Augustus F. Cleveland, Ohio.
Howe, William, Shingle House, Pa.
Howells, James O., Bridgeport, Ohio.
Hoye, Henry J., Providence, R. I.
Hubbell, William B., Elyria, Ohio.
Hume, Arthur M., Owasso, Mich.
Hunt, William J., Glens Falls, N. Y.
Hunter, John W., Lewistown, Pa.
Hutchings, W. H., Detroit, Mich.
Iglehart, V. E. B., Baltimore, Md.
Inman, Thomas G., San Francisco.
Irvine, William Lorne, Newport, R.I.
Jackson, Jabez N., Kansas City, Mo.
Jackson, Ralph W., Fall River, Mass.
Jacobson, J. H., Toledo, Ohio.
James, T. A., Ashley, Pa.
Janeway, Henry H., New York City.
Daniel of St. Thomas Jenifer, Atlantic City, N. J.
Jennings, Charles G. R., Elmira, N. Y.
Jerome, M. A., Toledo, Ohio.
John, J. S., Bloomsburg, Pa.
Johnson, C. Radcliffe, Sagada, P. I.
Johnson, M. M., Hartford, Conn.
Johnson, T. B., Frederick, Md.
Johnson, Wm. D., Batavia, N. Y.
Jonas, A. F., Omaha, Neb.
Jones, George E., St. Augustine, Fla.
Jones, W. D., Devil's Lake, N. D.
Judd, Edward Starr, Rochester, Minn.
Kahler, J. Frank, Canton, Ohio.
Kane, Charles J., Paterson, N. J.
Kassabian, Mihran K., Philadelphia.
Kean, M. E., Manchester, N. H.
Keefe, John W., Providence, R. I.
Keeler, J. Clarence, Philadelphia.
Kehl, George W., Reading, Pa.
Kelly, W. Webber, Green Bay, Wis.
Kelly, James A., Philadelphia.
Kennedy, James C., Brooklyn, N. Y.
Kennedy, T. C., Shelbyville, Ind.
Kenneth, A. J., Portland, Ore.
Kern, Albert G., Knoxville, Tenn.
Kickland, W. A., Fort Collins, Colo.
Kilbourn, C. L., New Haven, Conn.
Kimball, Rush W., Norwich, Conn.
King, R. Morrison, Concord, N. C.
King, Parks M., Charlotte, N. C.
Kipps, D. M., Front Royal, Va.
Kirby, Halder C., New Bedford, Mass.
Kirby, Frank J., Baltimore, Md.
Kivilin, C. F., Troy, N. Y.
Kline, Luther B., Catawissa, Pa.
Klump, John A., Williamsport, Pa.
Knapp, H. B., Wiconisco, Pa.
Kneer, Ferdinand G., New York City.
Knickerbocker, H. J., Geneva, N. Y.
Knott, Van Buren, Sioux City, Iowa.
Korssell, C. F. P., Chicago.
Kovetsky, J. W., S. Omaha, Neb.
Kreinder, George N., Springfield, Ill.
Krouse, Louis J., Cincinnati, Ohio.
Lachner, B. J., Rock Island, Ill.
Lamade, Albert C., Williamsport, Pa.
Landry, Lucian H., New Orleans, La.
Lane, C. E., Poughkeepsie, N. Y.
Langeway, A. F., Great Falls, Mont.
Laplace, Ernest, Philadelphia, Pa.
Larimore, F. C., Mt. Vernon, Ohio.
Lasher, George W., Los Angeles, Cal.
Lathrop, Walter, Hazleton, Pa.
Latta, Samuel W., Philadelphia.
Laws, George M., Philadelphia.
Laws, William V., Hot Springs, Ark.
Leary, William C., Springfield, Mass.
Lee, B. R., Atlantic City, N. J.
Lehr, Louis C., Washington, D. C.
Lemen, L. E., Denver, Colo.
Leonard, Chas. Lester, Philadelphia.
Lervin, S., Chicago.
Lewis, Bransford, St. Louis, Mo.
Lewis, Charles F., Austin, Minn.
Lewisohn, Richard, New York City.
Leytze, Frank C., Sioux City, Iowa.
Lilley, W. M., Brownsville, Pa.
Linthicum, G. Milton, Baltimore, Md.
Linton, William B., Minneapolis, Minn.
Lippincott, A. Haines, Camden, N.J.
Littig, Lawrence W., Iowa City, Iowa.
Livingston, Theodore P., Plattsmouth, Neb.
Lloyd, R. J., Olyphant, Pa.
Locke, Melvin, Bellefonte, Pa.
Loeb, Victor A., Philadelphia.
Long, John Wesley, Greensboro, N.C.
Longaker, Daniel, Readng, Pa.
Longwell, B. E., Johnstown, Pa.
Loper, J. C., Bridgeton, N. J.
Lo Pinto, John, New York City.
Lord, John P., Omaha, Neb .
Loughlen, T. B., Olean, N. Y.
Loux, H. R., Philadelphia.
Lower, William E., Cleveland, Ohio
Luce, Thomas W., Portsmouth, N. H.
Lucid, M. M., Cortland, N. Y.
Luther, John W., Palmerton, Pa.
Lydston, G. Frank, Chicago.
Lynch, Charles F., Springfield, Mass.
Lynch, J. M., New York City.
Lyon, Hartwell N., St. Louis, Mo.
MacGowan, Granville, Los Angeles, Cal.
MacKenzie, T. H., Trenton, N. J.
Mackinney, William H., Philadelphia.
McLaren, Archibald, St. Paul, Minn.
MacMillan, J. A., Detroit, Mich.
MacMonagle, Beverly, San Francisco.
Maclay, A. I., Delavan, Ill.
Magee, M. D'Arcy, Washington, D.C.
Magie, W. H., Duluth, Minn.
Maguire, Francis J. W., Detroit, Mich.
Mahon, John B., Pittston, Pa.
Mahoney, Edward J., Holyoke, Mass.
Mahoney, Stephen A., Holyoke, Mass.
Mallett, E. Pierre, Kansas City, Mo.
Maloney, John B., Key West, Fla.
Manasses, Jacob L., Philadelphia.
Mankin, J. W., Thurmond, W. Va.
Mann, Charles H., Bridgeport, Pa.
Mann, James P., Philadelphia.
Marsh, F. L., Mt. Pleasant, Pa.
Marsh, John Henry, Fayetteville, N. C.
Marsh, V. N., Flushing, Ohio.
Marshall, J. C., Atlantic City, N. J.
Marshall, V. A., Moriah, N. Y.
Martin, Collier F., Philadelphia.
Martin, E. Denegre, New Orleans, La.
Martin, Edward, Philadelphia.
Martin, Frank, Baltimore, Md.
Martin, R. S., Stuart, Va.
Martin, William C., Detroit, Mich.
Mason, S. M., Clarksburg, W. Va.
Mason, Will, Jr., Murray, Ky.
Matas, Rudolph, New Orleans, La.
Matheny, A. R., Pittsburg, Pa.
Mattison, Fitch C. E., Pasadena, Cal.
Mattison, James A., Marion, Ind.
Mattox, Ernest L., Terre Haute, Ind.
Maury, J. W. D., New York City.
Mayne, Earl H., Brooklyn, N. Y.
Mayo, C. H., Rochester, Minn.
Mayo, W. J., Rochester, Minn.
McAndrew, P. H., U. S. Army, Manila, P. I.
McAniff, Hugh P., Philadelphia.
McArthur, Lewis L., Chicago.
McCall, H. B., Kansas City, Mo.
McChord, Robert C., Lebanon, Ky.
McClellan, B. R., Xenia, Ohio.
McCuistion, L. P., Paris, Texas.
McDonald, J. W., Fairmont, W. Va.
McGill, Earl P., Wray, Colo.
McGuire, M. F., Montpelier, Vt.
McGuire, Stuart, Richmond, Va.
McGraw, Theodore A., Detroit, Mich.
McHenry, R. F., Heilwood, Pa.
McKee, T. H., Buffalo, N. Y.
McKenna, John A., Lansdowne, Pa.
McKnight, Everett J., Hartford, Conn.
McLean, Angus, Detroit, Mich.
McLoughlin, T. J., Jersey City, N. J.
McMillan, Wm. A., Charleston, W. Va.
McMullen, Charles G., Schenectady, N. Y.
McNaught, F. H., Denver, Colo.
McOscar, Edward J., Ft. Wayne, Ind.
McRae, Floyd W., Atlanta, Ga.
McVety, Albert F., Toledo, Ohio.
McWilliams, C. A., New York City.
Means, W. J., Columbus, Ohio.
Mecray, Paul, Camden, N. J.

Melsheimer, J. A., Hanover, Pa.
Mengel, S. P., Parsons, Pa.
Meyer, Willy, New York City.
Michler, Henry D., Easton, Pa.
Miles, P. G., New Castle, Pa.
Miller, A. L., Dixon, Ill.
Miller, Morris Booth, Philadelphia.
Miller, S. M., Peoria, Ill.
Miller, S. R., Knoxville, Tenn.
Mills, W. P., Missoula, Mont.
Misenheimer, Charles A., Charlotte, N. C.
Mitchell, Augustus J., Newark, N. J.
Mitchell, Charles F., Philadelphia.
Mitchell, James F., Washington, D.C.
Moc, Anton J., Huron Lake, Minn.
Monahan, J. J., Encampment, Wyo.
Moore, James E., Minneapolis, Minn.
Moore, S. B., Alexandra, Va.
Moriarta, D. C., Saratoga, N. Y.
Morris, Robert Tuttle, New York City.
Morrison, Ephraim, Newton, N. J.
Morrison, J. Bennett, Newark, N. J.
Morrissey, Michael J., Unionville, Conn.
Morton, A. W., San Francisco, Cal.
Mosher, Charles B., Johnstown, N.Y.
Muller, George P., Philadelphia.
Munro, John C., Boston, Mass.
Murphy, Fred T., Boston.
Murphy, John B., Chicago, Ill.
Murray, Dwight H., Syracuse, N. Y.
Murray, T. J., Butte, Mont.
Murray, Ransom H., Flint, Mich.
Nancrede, C. B. G., Ann Arbor, Mich.
Nash, George A., Maryville, Mo.
Neale, Richard A., Chicago.
Newman, Samuel E., St. Louis, Mo.
Nichols, Edward H., Boston.
Nicholson, Joseph, Brainerd, Minn.
Nicholson, Joseph L., Camden, N. J.
Nicholson, W. G., Green Bay, Wis.
Nihiser, W. M., Keedyville, Md.
Noome, A. J., Wheeling, W. Va.
Norwood, E. E., Kingston, N. Y.
Nutt, George D., Williamsport, Pa.
Oates, T. K., Martinsburg, W. Va.
O'Brien, Daniel P., New Bedford, Mass.
Ochsner, A. J., Chicago.
O'Dea, Charles A., Erie, Pa.
Ogden, Chester R., Clarksburg, W. Va.
Ogilvy, Charles, New York City.
Ohlman, I. L., Pittsburg, Pa.
Oliver, John C., Cincinnati, Ohio.
O'Neill, Owen, Willimantic, Conn.
O'Neil, Richard F., Boston.
O'Meara, Mark, Kingston, N. Y.
O'Reilly, Charles A., Philadelphia.
O'Reilly, James Archer, St. Louis.
Orr, Walter, Flint, Mich.
Ort, W. A., Springfield, Ohio.
Owens, W. W., Savannah, Ga.
Page, K. B., New York City.
Palmer, John., Jr., Wilmington, Dela.
Palmer, W. L., Albert Lea, Minn.
Palmer, W. R., Johnsonburg, Pa.
Parker, George H., Trenton, N. J.
Parkes, William R., Evanston, Ill.
Parkhill, C. S., Hornell, N. Y.
Parrish, J. C., Vandalia, Mo.
Paschal, Frank, San Antonio, Texas.
Payne, Marshall J., Staunton, Va.
Pease, Clifford A., Burlington, Vt.
Peck, G. S., Youngstown, Ohio.
Peck, Charles H., New York City.
Peck, George Augustus, New Rochelle, N. Y.
Pedersen, Victor C. New York City.
Penning, O. P., Baltimore, Md.
Pennington, J. R., Chicago, Ill.
Percy, J. F., Galesburg, Ill.
Perry, S. W., New Castle, Pa.
Peterkin, G. S., Seattle, Wash.
Peterson, Edward W., New York City.
Pettit, Joseph A., Portland, Ore.
Pfeifer, J. P., Chicago.
Pierce, A. M., West Elizabeth, Pa.
Pierpont, J. Harris, Pensacola, Fla.
Plimpton, Warren O., New York City.
Plummer, Harry E., New York City.
Pomerene, H. P., Canton, Ohio.
Popp, J. M., New Castle, Pa.
Pope, M. Y., Monticello, Ark.
Porter, Miles F., Ft. Wayne, Ind.
Potter, G. E., Detroit, Mich.
Potter, T. E., St. Joseph, Mo.
Powers, Charles A., Denver, Colo.
Preshrey, Silas Dean, Taunton, Mass.
Prevost, C. W., Pittston, Pa.
Quinby, William C., Boston.
Quinn, Stephen T., Elizabeth, N. J.
Ragan, O. H. W., Hagerstown, Md.
Rambo, C. M., Zanesville, Ohio.
Ramsay, William E., Perth Amboy, N. J.
Rand, Howard F., St. Helena, Cal.
Randall, H. E., Flint, Mich.
Rasely, E. R., Uniontown, Pa.
Rassieur, Louis, St. Louis, Mo.
Reddan, M. W., Trenton, N. J.
Redfield, Charles I., Middletown, N. Y.
Reed, Robert J., Wheeling, W. Va.
Reeder, J. Dawson, Baltimore, Md.
Reid, William B., Rome, N. Y.
Reilly, John P., Elizabeth, N. J.
Reinoehl, D. V., Erie, Pa.
Rendleman, James W., East St. Louis, Ill.
Reoch, William S., Phenix, R. I.
Richards, C. A., Rhinelander, Wis.
Richards, C. H., Dunkirk, N. Y.
Richardson, W. E., Slayton, Minn.
Richman, Edward M., Newark, N. J.
Rietz, Paul C., Evansville, Ind.
Robbins, Frederick W., Detroit, Mich.
Roberts, John B., Philadelphia.
Robertson, William M., Warren, Pa.
Robinovitch, Louise G., New York City.
Robinson, Fred W., Sturgis, Mich.
Robinson, Samuel, Boston.
Rockey, A. P., Assumption, Ill.
Rochford, W. E., Minneapolis, Minn.
Rodman, William L., Philadelphia.
Roe, William J., Philadelphia.
Rogers, Mack, Birmingham, Ala.
Roos, Elias G., Scranton, Pa.
Root, Emerson F., Salt Lake, Utah.
Rooth, H. C., Buffalo, N. Y.
Ress, Clyde F., West Point, Pa.
Ross, David, Indianapolis, Ind.
Roth, Henry, New York City.
Roxby, John Byers, Philadelphia.
Royster, H. A., Raleigh, N. C.
Rugh, J. Torrance, Philadelphia.
Russ, Raymond, San Francisco
Rutledge, A. T., Blairsville, Pa.
Ryall, George W., Wooster, Ohio.
Ryan, Lawrence, Chicago.
Sadlier, J. E., Poughkeepsie, N. Y.
Sagerson, John L., Johnstown, Pa.
Sala, E. M., Rock Island, Ill.
Sarles, Wilbur T., Sparta, Wis.
Sawyer, Alfred D., Fort Fairfield, Me.
Saxe, G. A. De Santos, New York City.
Sayle, R. G., Milwaukee, Wis.
Sayre, Reginald H., New York City.
Scattergood, Joseph, West Chester, Pa.
Schachner, August, Louisville, Ky.
Schaubel, Charles W., Philadelphia.
Schapira, S. William, New York City.
Scheel, J. Thompson, Philadelphia.
Schellenger, E. A. Y., Camden, N. J.
Schlueter, Robert E., St. Louis, Mo.
Schoening, Gustav A., Trenton, N. J.
Schoolfield, G. C., Charleston, W. Va.
Scott, A. C., Temple, Texas.
Scudder, Charles L., Boston.
Senn, E. J., Chicago.
Senseman, Theodore, Atlantic City, N. J.
Sexton, Roy, Streator, Ill.
Shaffer, J. W., Youngstown, Ohio.
Shaugle, Milton A., Elizabeth, N. J.
Sharp, Harry C., Indianapolis, Ind.
Shaw, Joseph B., Trenton, N. J.
Sheehan, William J., New Haven, Conn.
Shepherd, Irvin J., Wilmington, Del.
Sherbondy, J. A., Youngstown, Ohio.
Sherk, Henry Howard, Pasadena, Cal.
Sherrer, F. A., Easton, Pa.
Shifferstein, E. E., Tamaqua, Pa.
Shillito, G. M., Pittsburg, Pa.
Shope, E. L., Harrisburg, Pa.
Shumaker, D. W., Canal Dover, Ohio.
Siggins, J. B., Oil City, Pa.
Silbaugh, John J., Lancaster, Ohio.
Silver, Harry, Hamilton, Ohio.
Silver, Henry Mann, New York City.
Simpson, T. P., Beaver Falls, Pa.
Singley, John D., Pittsburg, Pa.
Skinner, William W., Geneva, N. Y.
Smith, Andrew C., Portland, Ore.
Smith, Charles N., Toledo, Ohio.
Smith, E. R., Los Angeles, Cal.
Smith, E. O., Cincinnati, Ohio.
Smith, Franklin Buchanan, Frederick City, Md.
Smith, Harvey F., Harrisburg, Pa.
Smith, Joseph F., Wausau, Wis.
Smith, Oliver C., Hartford, Conn.
Smith, B. R., Jeannette, Pa.
Smith, William T., Hanover, N. H.
Smyth, John, New Orleans, La.
Snyder, Frederick, Rosendale, N. Y.
Sommer, George N. J., Trenton, N. J.
Spencer, G. W., Philadelphia.
Speese, John, Philadelphia.
Spicher, C. C., Lovejoy, Pa.
Spragg, S. L. S., Wheeling, W. Va.
Springer, Harold L., Wilmington, Del.
Staller, Max, Philadelphia.
Stanton, E. MacD., Schenectady, N. Y.
Steiner, Edwin, Newark, N. J.
Stern, Alexander A., Kingston, N. Y.
Stewart, J. Clark, Minneapolis, Minn.
Stickney, Henry Ladd, Manchester, N. H.
Still, D. V., Johnstown, N. Y.
Stillman, Stanley, San Francisco.
Stockwell, William M., Suffield, Conn.
Stokes, A. C., Omaha, Neb.
Strader, H. W., Sacramento, Cal.
Stratton, Robert T., Oakland, Cal.
Stremmel, S. C., Macomb, Ill.
Strickler, Abraham H., Waynesboro, Pa.
Strong, S. Meredith, Brooklyn, N. Y.
Sullivan, Daniel F., Hartford, Conn.
Sullivan, Thomas J., Chicago.
Summers, A. T., Mattoon, Ill.
Summers, John E., Omaha, Neb.
Sutton, H. T., Zanesville, Ohio.
Sutphen, Carl E., Newark, N. J.
Sutliff, Van Duyne A., Philadelphia.
Swenson, Carl G., Chicago, Ill.
Swetnam, C. R. K., Poland, Ariz.
Swope, L. W., Pittsburg, Pa.
Syms, Parker, New York City.
Taggart, T. D., Atlantic City, N. J.
Tait, F. Dudley, San Francisco, Cal.
Taylor, Fred W., Provo City, Utah.
Taylor, William Henry, Irwin, Pa.
Teagarden, W. D., Washington, Pa.
Teller, William H., Philadelphia.
Terrell, E. H., Richmond, Va.
Terry, Herbert, Providence, R. I.
Terry, Wallace I., San Francisco, Cal.
Thomas, B. A., Philadelphia.
Thompson, Frederick H., Fitchburg, Mass.
Thompson, Benj., Tama, Iowa.
Thompson, J. Ford, Washington, D.C.
Thomson, Charles E., Scranton, Pa.
Titus, W. S., Mora, Minn.
Townsend, Wisner R., New York City.
Truesdale, Philemon Edwards, Fall River, Mass.
Tucker, Henry, Philadelphia.
Tuckerman, J. E., Cleveland, Ohio.
Tull, G. A., Clay Center, Kan.
Tupper, W. L., Bay City, Mich.
Tuttle, James P., New York City.
Tweedy, G. J., Winona, Minn.
Umstad, J. R., Norristown, Pa.
Vander Veer, Albert, Albany, N. Y.
Van Meter, S. D., Denver, Colo.
Ver Nooy, C. D., Cortland, N. Y.
Viehe, Carl G. Evansville, Ind.
Van Vrauken, Gilbert, Passaic, N. J.
Waechter, Adolph, New York City.
Wagoner, G. W., Johnstown, Pa.
Wainwright, J. M., Scranton, Pa.
White, Frederick C., Cleveland, Ohio.
Wakefield, S. R., West Salem, Wis.
Walker, Alonzo B., Canton, Ohio.
Walker, Frank B., Detroit, Mich.
Walker, Henry O., Detroit, Mich.
Walker, John B., New York City.
Walscheid, Arthur J., Union Hill, N. J.
Walsh, F. A., Erie, Pa.
Warbasse, J. P., New York City.
Ward, Wm. J., Newark, N. J.
Ware, Martin W., New York City.
Wareham, Edward A., Hagerstown, Md.
Waring, T. P., Savannah, Ga.
Warren, J. N., Sioux City, Iowa.
Waterworth, S. J., Clearfield, Pa.
Watson, William N., Philadelphia.
Watts, Stephen H., University, Va.
Weir, Robert S., New York City.
Weis, Edmund W., Ottawa, Ill.
Weiser, Walter A., Springfield, Mass.
Wellington, J. R., Washington, D. C.
Wells, Ernest A., Hartford, Conn.
Wells, Joseph M., Trenton, N. J.
Welty, E. M., Philadelphia.
Wenzel, Mary, Philadelphia.
West, W. K., Painesdale, Mich.
Wharton, Henry R., Philadelphia.
Whiting, Albert D., Philadelphia, Pa.
Whitacre, Horace J., Cincinnati, O.
White, Charles S., Washington, D. C.
Whiteside, George S., Portland, Ore.
Whitley, Ralph L., Osage, Iowa.
Wieder, Henry S., Philadelphia.
Wiggins, J. L., E. St. Louis, Ill.
Wiggins, S. L., McKeesport, Pa.
Wight, Otis B., Portland, Ore.
Wilbur, Hubert G., Fall River, Mass.
Willard, De Forest, Philadelphia, Pa.
Williams, T. M., Stanford University, California.
Willis, James C., Shreveport, La.
Wilson, M. J., Warsaw, N. Y.
Wilson Charles W., Vineland, N. J.
Wilson, H. Augustus, Philadelphia.
Winslow, Randolph, Baltimore, Md.
Wise, B. T., Jr., Plains, Ga.
Wishard, William N., Indianapolis, Ind.
Witherspoon, James, Pittsburg, Pa.
Wolfe, S. M., Wilkes-Barre, Pa.
Wood, Alfred C., Philadelphia, Pa.
Wood, F. C., Westfield, Wis.
Woolford, J. S. B., Chattanooga, Tenn.
Woods, Edmund F., Janesville, Wis.
Woolsey, R. A., St. Louis, Mo.
Wray, William S., Philadelphia, Pa.
Wright, A. L., Carroll, Iowa.
Wright, T., Sayre, Pa.
Wunderlich, Frederick W., Brooklyn, N. Y.
Wyeth, John A., New York City.
Yarbrough, L. A., Covington, Tenn.
Yates, J. L., Milwaukee, Wis.
Yocum, M. G., Mentone, Ind.
Young, Hugh H., Baltimore, Md.
Young, James K., Philadelphia.
Zapffe, Fred C., Chicago.
Zobel, Alfred J., San Franeisco, Cal.

Ophthalmology

Adams, C. F., Trenton, N. J.
Allen, L. P., Oshkosh, Wis.
Alling, Arthur N., New Haven, Conn.
Andrews, Herman D., Buffalo, N. Y.
Arnold, Francis J., Burlington, Vt.
Aronson, Moses, New York City.
Atherton, Andrew L., Atlantic City, N. J.
Ayer, Thomas H., Westboro, Mass.
Babcock, Lewis C., Bethlehem, Pa.
Bailey, Fred D., Brooklyn, N. Y.
Baker, A. R., Cleveland, Ohio.
Ball, M. V., Warren, Pa.
Barney, B. A., Hornell, N. Y.
Bastian, Charles B., Williamsport, Pa.
Bedell, Arthur I., Albany, N. Y.
Beetham, A. C., Bellaire, Ohio.
Berens, Bernard, Philadelphia.
Berry, John C., Worcester, Mass.
Black, J. C., Milford, Mich.
Black, Melville, Denver, Colo.
Black, Nelson M., Milwaukee, Wis.
Blair, Alexander C., Pittsburg, Pa.
Blair, William W., Pittsburg, Pa.
Bordley, James, Jr., Baltimore, Md.
Bossidy, John C., Boston.
Bowen, Josiah S., Mt. Washington, Md.
Bowers, John W., Portland, Me.
Boyle, James C., Butler, Pa.
Brantley, H., Spring Hope, N. C.
Brawley, R. V., Salisbury, N. C.
Briggs, H. H., Asheville, N. C.
Brobst, Charles H., Peoria, Ill.
Brophy, John A., Philadelphia.
Broughton, Wm. R., New York City.
Brown, E. V. L., Chicago.
Brown, Samuel Horton, Philadelphia.
Bruner, Wm. Evans, Cleveland, Ohio.
Bruns, H. Dickson, New Orleans, La.
Brunson, Randolph, Hot Springs, Ark.
Buchanan, Mary, Philadelphia.
Buckman, Ralph W., Bryant Pond, Me.
Bull, Charles Stedman, New York
Bullett, James B., University, Miss.
Bulson, Albert E., Jr., Ft. Wayne, Ind.
Burnham, R. D., Piqua, Ohio.
Burroughs, Geo. M., Danielson, Conn.
Butler, W. K., Washington, D. C.
Butt, Miriam M., Philadelphia.
Buvinger, Charles W., East Orange, N. J.
Callan, Peter A., New York City.
Cannaday, A. A., Roanoke, Va.
Carrier, Frederic, Philadelphia.
Carroll, James J., Baltimore, Md.
Cary, E. H., Dallas, Tex.
Case, George M., Elmira, N. Y.
Chambers, T. R., Jersey City, N. J.
Chattin, J. Franklin, Trenton, N. J.
Clapp, C. A., Baltimore, Md.
Churchman, V. T., Charleston, W. Va.
Clark, C. F., Columbus, Ohio.
Clifford, Edward M., Greensburg, Pa.
Cocklin, Charles C., Harrisburg, Pa.
Conklin, Herbert R., Tecumseh, Mich.
Connor, Leartus, Detroit, Mich.
Connor, Ray, Detroit, Mich.
Coover, D. H., Denver, Colo.
Corser, John B., Scranton, Pa.
Corson, G. R. S., Pottsville, Pa.
Craig, William G., Springfield, Mass.
Cramer, Alfred, Jr., Camden, N. J.
Crane, C. A., Canton, Ohio.
Craythorn, C. J., Trenton, N. J.
Creighton, William James, Philadelphia.
Crockett, R. L., Oneida, N. Y.
Croskey, John Welsh, Philadelphia.
Cutler, Colman W., New York City.
Dana, L. W., Kane, Pa.
Davidson, John P., Richmond, Va.
Davis, A. E., New York City.
Dean, Lee Wallace, Iowa City, Iowa.

Deems, O. M., Springfield, Mass.
Deely, George E., Brooklyn, N. Y.
Derby, George S., Boston.
Dixon, George S., New York City.
Donovan, John A., Butte, Mont.
Dowling, Oscar, Shreveport, La.
Duane, Alexander, New York City.
Dunlop, Harley M., Battle Creek, Mich.
Dwyer, William M., Amsterdam, N. Y.
Ellegood, J. A., Wilmington, Del.
Ellett, Edward C., Memphis, Tenn.
Ellis, H. Bert, Los Angeles, Cal.
Embery, Frank, Philadelphia.
Emerson, Linn, Orange, N. J.
Feingold, Marcus, New Orleans, La.
Fleming, George A., Baltimore, Md.
Forst, John R., Philadelphia.
Fox, G. T., Bath, Pa.
Fox, L. Webster, Philadelphia.
Francis, Lee M., Buffalo, N. Y.
Frank, Mortimer, Chicago.
Frankhauser, Fremont W., Reading, Pa.
Franklin, Clarence Payne, Philadelphia.
Freeman, Edward D., Osgood, Ind.
Frey, C. L., Scranton, Pa.
Friebis, George, Philadelphia.
Fridenberg, Percy, New York City.
Frohwein, Ida L. Haverstick-, St. Elizabeth, N. J.
Gates, Aden Clarence, Kingston, N. Y.
Gamble, William E., Chicago.
Getty, Mary, Philadelphia.
Gibson, Robert Dixon, Youngstown, Ohio.
Gifford, H., Omaha, Neb.
Gillman, Robert W., Detroit, Mich.
Goldherg, Harold G., Philadelphia.
Green, John, Jr., St. Louis, Mo.
Greene, D. W., Dayton, Ohio.
Griffith, Monte, Washington, D. C.
Grove, Benjamin H., Buffalo, N. Y.
Hammond, Charles B., Nashua, N. H.
Hancock, James Cole, Brooklyn, N. Y.
Hansell, Howard F., Philadelphia.
Harlan, Herbert, Baltimore, Md.
Harrison, W. G., Birmingham, Ala.
Haskin, H. P., Williamsport, Pa.
Herbert, J. Frederick, Philadelphia.
Hill, G. Alvin, Philadelphia.
Hogue, Delos W., Springfield, Ohio.
Holden, Ward A., New York City.
Holloway, T. B., Philadelphia.
Holt, E. E., Portland, Me.
Howe, Lucien, Buffalo, N. Y.
Hubbell, Alvin A., Buffalo, N. Y.
Hulen, Vard H., San Francisco.
Hussey, Edw. J., Holyoke, Mass.
Ingalls, James W., Brooklyn, N. Y.
Jackson, Edward, Denver, Colo.
Jacobson, F. C., Newark, N. J.
Jarvis, C. C., Clarksburg, W. Va.
Jean, G. William, Danville, Ky.
Jervey, J. W., Greenville, S. C.
Jones, Charles J., Philadelphia.
Jones, Emmett L., Cumberland, Md.
Jones, Edward W., Layton, N. J.
Jones, Ralph, R., Toms River, N. J.
Kalish, Richard, New York City.
Kaucher, Clifford L., Reading, Pa.
Keely, Robert N., Browns Mills, N. J.
Keiper, George F., Lafayette, Ind.
Kelly, M. B., Wheeling, W. Va.
Kennon, B. R., Norfolk, Va.
King, George Lincoln, Alliance, Ohio.
Kipp, Charles J., Newark, N. J.
Kirkendall, John S., Ithaca, N. Y.
Klinedinst, J. Ferd., York, Pa.
Knapp, Arnold, New York City.
Krauss, Frederick, Philadelphia.
Kress, Palmer J., Allentown, Pa.
Kunkle, Wesley F., Williamsport, Pa.
Lacy, J. W., Lisbon, Md.
Lambert, Walter Eyre, New York City.
Lane, Laura A., Rochester, Minn.
Langford, Theron S., Jackson, Mich.
Leach, W. J., New Albany, Ind.
Ledbetter, S. L., Birmingham, Ala.
Leech, James W., Providence, R. I.
Leonard, P. I., St. Joseph, Mo.
Leopold, Isaac, Philadelphia.
Lewis, F. Park, Buffalo, N. Y.
Libby, Arthur A., Los Angeles, Cal.
Little, Albin H., Portland, Maine.
Lord, Morris S., Schenectady, N. Y.
Louchery, D. C., Clarksburg, W. Va.
Love, J. King, Easton, Pa.
Love, Louis F., Philadelphia.
Maine, C. L., Helvetia, Pa.
Maisch, Aug. C., Hagerstown, Md.
Marple, Wilbur B., New York City.
Marlow, Frank Wm., Syracuse, N. Y.
Marsden, C. S., Grand Forks, N. Dak.
Marsden, Henry I., Somerset, Pa.
Marsh, W. A., Mt. Pleasant, Pa.
Martin, E. E., Millville, Cal.
Martin, H. H., Savannah, Ga.
Maser, G. W., Parsons, Kan.
May, Charles H., New York City.
May, James W., Kansas City, Kan.
McCabe, Edw. M., New Haven, Conn.
McClenathan, J. C., Connellsville, Pa.
McConachie, Alex. D., Baltimore, Md.
McDavitt, Thos., St. Paul, Minn.
McIntire, Charles, Easton, Pa.
McKinley, Archie T., Philadelphia.
McNaul, W. J., Philadelphia.
Meanor, Wm. C., Beaver, Pa.
Mcvay, James C., Atlantic City, N. J.
Miles, H. S., Bridgeport, Conn.
Miller, Chas. E., Muncie, Ind.
Miller, M. E., Washington, D. C.
Miller, R. F., St. Louis, Mo.
Millette, John W., Dayton, Ohio.
Milnor, Robert H., Warrensville, Pa.
Moore, C. C., Philadelphia.
Moore, G. H., Schuylkill Haven, Pa.
Moore, J. H., Bridgeton, N. J.
Morrison, Frank A., Indianapolis, Ind.
Muncaster, S. B., Washington, D. C.
Murray, G. D., Scranton, Pa.
Nutter, C. F., Nashua, N. H.
O'Brien, John J., Schenectady, N. Y.
Ohly, John H., Brooklyn, N. Y.
O'Malley, Austin, Philadelphia.
Pancoast, J. W., Philadelphia.
Park, J. Walter, Harrisburg, Pa.
Parker, Frank Judson, New York City.
Parker, Walter R., Detroit, Mich.
Payne, S. M., New York City.
Pearson, Wm. W., Des Moines, Iowa.
Pennell, W. J., Auburn, Maine.
Peter, Luther C., Philadelphia.
Peterman, H. E., Baltimore, Md.
Pitts, Barton, St. Joseph, Mo.
Pitts, E. P., Atchison, Kan.
Polkinhorn, H. A., Washington, D. C.
Pollard, W. M., Atlantic City, N. J.
Pontius, Paul J., Philadelphia.
Pooley, T. R., New York City.
Porter, Edwards H., Tiffin, Ohio.
Posey, Wm. Campbell, Philadelphia.
Price, Geo. H., Nashville, Tenn.
Price, Henry R., Brooklyn, N. Y.
Pusey, Brown, Chicago.
Pyle, Walter L., Philadelphia.
Radcliffe, McCluney, Philadelphia.
Reber, Wendell, Philadelphia.
Rebuck, Chas. S., Harrisburg, Pa.
Reynolds, W. G., Brooklyn, N. Y.
Ring, G. Oram, Philadelphia.
Risley, J. Norman, Philadelphia.
Risley, Samuel D., Philadelphia.
Roberts, W. H., Pasadena, Cal.
Robinson, J. M., Duluth, Minn.
Rodman, C. S., Waterbury, Conn.
Rogers, T. A., Plattsburgh, N. Y.
Rogers, T. T., Providence, R. I.
Rothrock, H. A., West Chester, Pa.
Russell, E. Reid, Charlotte, N. C.
Sartain, Paul J., Philadelphia.
Sautter, Albert C., Philadelphia.
Savage, Giles C., Nashville, Tenn.
Saylor, E. S., Philadelphia.
Scales, J. W., Pine Bluff, Ark.
Schaefer, Otto, Baltimore, Md.
Schlichter, Chas. H., Elizabeth, N. J.
Schlindwein, G. Wm., Erie, Pa.
Schneideman, Florence Mayo, Philadelphia.
Schneideman, T. B., Philadelphia.
Schweinitz, G. E. de, Philadelphia.
Seaman. Gilbert E., Milwaukee, Wis.
Sears, Wm. H., Huntingdon, Pa.
Shannon, John R., New York City.
Sherman, E. S., Newark, N. J.
Shoemaker, W. A., St. Louis, Mo.
Shoemaker, Wm. T., Philadelphia.
Shope, Samuel Z., Harrisburg, Pa.
Shore, F. E. V., Des Moines, Iowa.
Shumway, Edward A., Philadelphia.
Smith, Dorland, Bridgeport, Conn.
Smith, E. Terry, Hartford, Conn.
Smyth, P. Somers, Boston.
Snyder, Walter H., Toledo, Ohio.
Standish, Myles, Boston.
Stevens, Cyrus Lee, Athens, Pa.
Stevenson, David W., Richmond, Ind.
Stevenson, Mark D., Akron, Ohio.
Stieren, Edward, Pittsburg, Pa.
Stiles, Chas. M., Philadelphia.
Strain, Earle, Great Falls, Mont.
Swan, Tyrus E., Easton, Pa.
Sweet, William M., Philadelphia.
Taylor, Lewis H., Wilkes-Barre, Pa.
Taylor, T. M., New York City.
Tenney, John A., Boston.
Theobald, Samuel, Baltimore, Md.
Thorington, James, Philadelphia.
Thorne, James P., Janesville, Wis.
Todd, Frank C., Minneapolis, Minn.
Turner, John B., Philadelphia.
Tyhout, R. Raymond, Wilmington, Del.
Tyson, Henry H., New York City.
Upham. Helen F., Asbury Park, N. J.
Valk, Francis, New York City.
Van Horn, Alfred F., Plainfield, N. J.
Verhoeff, F. H., Boston.
Vinton, Charles H., Wernersville, Pa.
Voorhees, Sherman, Elmira, N. Y.
Walter, Will, Chicago.
Weisser, Edward A., Pittsburg, Pa.
Wells, David W., Boston.
Wescott, C. D., Chicago.
White, Joseph A., Richmond, Va.
White, Amy E., Chester, Pa.
Whitney, E. M., New Bedford, Mass.
Wible, E. E., Homestead, Pa.
Wiener, Meyer, St. Louis, Mo.
Wilder, Wm. H., Chicago.
Wilkinson, Oscar, Washington, D. C.
Willetts, Joseph E., Pittsburg, Pa.
Williams, Charles H., Boston.
Willis, F. D., Newport News, Va.
Wood, Casey A., Chicago.
Woodruff, Thomas A., Chicago.
Woods, Hiram, Baltimore, Md.
Wurdemann, H. V., Seattle, Wash.
Wylie, E. R., Boston.
Zentmayer, William, Philadelphia.
Ziegler, S. Lewis, Philadelphia.

Laryngology and Otology

Abraham, Joseph H., New York City.
Adams, John L., New York City.
Allport, Frank, Chicago.
Alway, R. D., Aberdeen, S. Dak.
Anderson, Willis S., Detroit, Mich.
Andrews, Lemar M., Warsaw, N. Y.
Babbitt, James A., Philadelphia.
Baldwin, Kate W., Philadelphia.
Barber, Vincent, Brooklyn, N. Y.
Barnhill, John F., Indianapolis, Ind.
Biedert, Charles C., Philadelphia.
Borden, Charles R. C., Boston.
Brown, Clayton M., Buffalo, N. Y.
Bryant, W. Sohier, New York City.
Burns, Louis J., Philadelphia.
Burton, Frank Albert, Denver, Colo.
Butler, Margaret F., Philadelphia.
Butler, Ralph, Philadelphia.
Byrne, Thomas J., Philadelphia.
Cadwell, C. T., Poughkeepsie, N. Y.
Carter, William W., New York City.
Casselberry, W. E., Chicago.
Charlesworth, I. E., Bridgeton, N. J.
Cline, L. C., Indianapolis, Ind.
Coakley, C. G., New York City.
Coates, George M., Philadelphia.
Cohen, Lee, Baltimore, Md.
Colwell, N. P., Chicago.
Corwin, Theo. W., Newark, N. J.
Cott, Geo. F., Buffalo, N. Y.
Craig, Alex. R., Philadelphia.
Crouch, J. Frank, Baltimore, Md.
Davis, Geo. E., New York City.
Davis, J. Leslie, Philadelphia.
Day, E. W., Pittsburg, Pa.
Delavan, D. Bryson, New York City.
Denison, Charles E., New York City.
De Vilbiss, Allen, Toledo, Ohio.
Dickinson, B. M., Pittsburg, Pa.
Doriss, H. Stokes, Atlantic City, N. J.
Duel, Arthur B., New York City.
Dufour, C. R., Washington, D. C.
Dunning, Guy M., Lansing, Mich.
Dye, Hobart S., Washington, D. C.
Eaton, Albert M., Philadelphia.
Fairbairn, John F., Buffalo, N. Y.
Felt, Carle Lee, Philadelphia.
Fischelis, Philipp, Philadelphia.
Fletcher, J. R., Chicago.
Forsyth, E. A., Buffalo.
Foster, J. M., Denver, Colo.
Fowler, E. P., New York City.
Fretz, O. H., Quakertown, Pa.
Garraghan, Edward F., Chicago.
Geyer, H. R., Zanesville, Ohio.
Gibb, Joseph S., Philadelphia.
Gilbert, Frank Y., Portland, Maine.
Gile, Ben C., Philadelphia.
Gleason, E. B., Philadelphia.
Glogau, Otto, New York City.
Good, R. H., Chicago.
Griffin, Walter A., Sharon, Mass.
Gustlaw, Israel, New York City.
Guntzer, J. H., New York City.
Hartman, J. H., Baltimore, Md.
Hartz, Henry J., Detroit, Mich.
Hirst, Levi B., Camden, N. J.
Hitschler, William A., Philadelphia, Pa.
Holinger, J., Chicago.
Hornbeck, J. L., Catasauqua, Pa.
Hutton, F. C., Philadelphia.
Iglauer, Samuel, Cincinnati, Ohio.
Ingersoll, J. M., Cleveland, Ohio.
Jackson, Chevalier, Pittsburg, Pa.
Johnston, R. H., Baltimore, Md.
Jones, W. S., Camden, N. J.
Kelchner, W. I., Camden, N. J.
Keller, L. H., Hagerstown, Md.
Kepke, John, Brooklyn, N. Y.
Kirkpatrick, A. B., Philadelphia.
Kittredge, Frank E., Nashua, N. H.
Klopp, E. L., Philadelphia.
Kyle, John J., Indianapolis, Ind.
Layman, D. W., Indianapolis, Ind.
Le Brun, Louis, Albany, N. Y.
Le Gro, L. B., Haverhill, Mass.
Levy, Robert, Denver, Colo.
Lewis, E. R., Dubuque, Iowa.
Loeb, Hanau W., St. Louis, Mo.
Logan, James E., Kansas City, Mo.
Ludlow, David H., Easton, Pa.
Lutz, Stephen H., Brooklyn, N. Y.
MacCracken, George Y., Philadelphia.
MacGregor, Charles, Dayton, Ohio.
MacLachlan, A. A., Pittsburg, Pa.
Makuen, G. Hudson, Philadelphia.
Malcolm, P. E. D., New York City.
Marshall, G. M., Philadelphia.
Martindale, J. H., Los Angeles, Cal.
Masland, H. C., Philadelphia.
Mason, W. M., Atlantic City, N. J.
Mayer, Emil, New York City.
McClelland, L. A., Brooklyn, N. Y.
McDonald, D. J., New York City.
McKimmie, O. A. M., Washington, D. C.
Mercer, Richard E., Detroit, Mich.
Michaelis, Alfred, New York City.
Miller, Albert H., Providence, R. I.
Miller, Clifton M., Richmond, Va.
Miner, Stanley G., Detroit, Mich.
Mitchell, G. W., Baltimore, Md.
Mortimer, W. Golden, New York City.
Murdock, F. W., Brockton, Mass.
Murray, W. R., Minneapolis, Minn.
Musson, Emma E., Philadelphia.
Newhart, Horace, Minneapolis, Minn.
Packard, F. R., Philadelphia.
Palmer, E. M., Wichita, Kan.
Parish, Benjamin D., Philadelphia.
Parrish, Henry, Philadelphia.
Pfingst, Adolph O., Louisville, Ky.
Pierce, Norval H., Chicago.
Pohl, H. C., Nazareth, Pa.
Potts, Barton H., Philadelphia.
Procter, Percy C., Boston.
Pyfer, Howard F., Norristown, Pa.
Randall, William F., Dushore, Pa.
Rearden, Timothy J., Boston.
Reddie, Jacobina S., Philadelphia.
Reik, Henry O., Baltimore, Md.
Reik, J. N., Baltimore, Md.
Reynolds, J. F., Mt. Sterling, Ky.
Richards, George L., Fall River, Mass.
Robertson, Charles M., Chicago.
Roe, John O., Rochester, N. Y.
Romine, G. L., Lambertville, N. J.
Rosenheim, Sylvan, Baltimore, Md.
Rowand, A. H. C., Philadelphia.
Roy, Dunbar, Atlanta, Ga.
Rupert, Mary P. S., Philadelphia.
Sandels, C. C., Pittsburg, Pa.
Sanger, F. D., Baltimore, Md.
Sauer, William E., St. Louis, Mo.
Scarlett, Rufus B., Philadelphia.
Schaeffer, George C., Columbus, Ohio.
Scholz, Roy Philip, St. Louis, Mo.
Seifert, F. Robert, Philadelphia.
Seiss, Ralph W., Philadelphia.
Shallcross, W. G., Pittsburg, Pa.
Shambaugh, G. E., Chicago.
Sheedy, Bryan D., New York City.
Shipman, Elliott W., New York City.
Shirk, G. W., Cornwall-on-Hudson, N. Y.
Shurly, Burt R., Detroit, Mich.
Shurly, Ernest L., Detroit, Mich.
Simcox, Lawrence, Philadelphia.
Skillern, Ross Hall, Philadelphia.
Sluder, Greenfield, St. Louis, Mo.
Smith, S. MacCuen, Philadelphia.
Smyth, Herbert E., Bridgeport, Conn.
Solenberger, Amos R., Colorado Springs. Colo.
Somers, Lewis S., Philadelphia.
Stapler, Maury M., Macon, Ga.
Stauffer, Nathan P., Philadelphia.
Steel, G. E., New York City.
Stimson, G. W., Atlantic City, N. J.
Stout, George C., Philadelphia.
Stout, P. Samuel, Philadelphia.
Strouse, Frederic M., Philadelphia.
Stubbs, F. Gurney, Chicago.
Stucky, J. A., Lexington, Ky.
Sullivan, John T., Boston.
Sutton, Howard A., Philadelphia.
Taylor, Philip, Richmond, Va.
Thigpen, F. M., Montgomery, Ala.
Thomson, John J., New York City.
Thrasher, A. B., Cincinnati, Ohio.
Tomlin, W. S., Indianapolis, Ind.
Toms, S. W. S., Nyack, N. Y.
Turnbull, Thomas, Jr., Allegheny, Pa.
Vansant, E. L., Philadelphia.
Ward, Nathan G., Philadelphia.
Warlow, Margaret A., Philadelphia.
Warren, Wadsworth, Detroit, Mich.
Weintraub, S. Louise, Philadelphia.
Wells, Walter A., Washington, D. C.
Welty, Cullen F., San Francisco.
Wiedner, Calvin, Manchester, Conn.
Wiener, Alfred, New York City.
Wilson, Norton L., Elizabeth, N. J.
Wilson, Samuel M., Philadelphia.
Winslow, John R., Baltimore, Md.
Woollen, G. V., Indianapolis, Ind.
Worthington, T. C., Baltimore, Md.
Yankauer, Grace Greenwood Prior, New York City.
Yankauer, Sidney, New York City.

Nervous and Mental Diseases

Arlitz, William J., Hoboken, N. J.
Ayres, Samuel, Pittsburg, Pa.
Bailey, Pearce, New York City.
Beebe, Brooks F., Cincinnati, Ohio.
Benton, G. H., Chester, W. Va.
Bishop, T. W., Pasadena, Cal.
Bond, G. F. M., Yonkers, N. Y.
Booth, David S., St. Louis, Mo.
Boyer, H. P., Philadelphia.
Brush, A. C., Brooklyn, N. Y.
Buckley, Albert C., Philadelphia.
Burley, Benjamin T., Worcester, Mass.
Burr, C. B., Flint, Mich.
Burr, Charles W., Philadelphia.
Burrow, N. Trigant, Baltimore, Md.
Camp, Carl D., Ann Arbor, Mich.
Carpenter, S. A., Phoenixville, Pa.
Chase, R. H., Philadelphia.
Clark, L. Pierce, New York City.
Coit, Paul D., Trenton, N. J.
Congdon, Charles E., Buffalo, N. Y.
Cook, R. Harvey, Oxford, Ohio.
Cotton, Henry A., Trenton, N. J.
Craig, J. M., Lakewood, N. J.
Crothers, T. D., Hartford, Conn.
Dana, Charles L., New York City.
Darling, U. G., Chicago.
Davis, Asa B., New York City.
Davis, W. P., Jr., Atlantic City, N. J.
Dercum, F. X., Philadelphia.
Diller, Theodore, Pittsburg, Pa.
Drewry, W. F., Petersburg, Va.
Dunham, S. A., Buffalo, N. Y.
Dunton, W. R., Jr., Govans, Md.
Eshner, A. A., Philadelphia.
Felty, John C., Trenton, N. J.
Fisher, Edward D., New York City.
Fisher, W. E., Middletown, Conn.
Fitzgerald, C. P., Worcester, Mass.
Foley, M. F., Hoboken, N. J.
Free, G. B. M., Danville, Pa.
Gaver, Earl E., Columbus, Ohio.
Goddard, C. C., Leavenworth, Kan.
Gordon, Alfred, Philadelphia.
Gorton, Eliot, Summit, N. J.
Granger, Frank B., Boston.
Grinker, Julius, Chicago.
Gundry, A. T., Catonsville, Md.
Gundry, L. H., Relay, Md.
Haines, J. C., Vincentown, N. J.
Hamilton, A. S., Minneapolis, Minn.
Harding, G. T., Jr., Columbus, Ohio.
Harris, F. R., Henderson, N. C.
Hancker, W. H., Farnhurst, Del.
Hecht, D'Orsay, Chicago.
Hersman, C. C., Pittsburg, Pa.
Hill, S. S., Wernersville, Pa.
Hinsdale, Guy, Hot Springs, Va.
Hitchcock, C. W., Detroit, Mich.
Hodges, J. A., Richmond, Va.
Hodskins, Morgan B., Palmer, Mass.
Hoffman, G. E., Logansport, Ind.
Hughes, Charles H., St. Louis, Mo.
Hummel, E. M., New Orleans, La.
Huntington, George, Hopewell Jct., N. Y.
Ingham, S. D., Philadelphia.
Jones, W. A., Minneapolis, Minn.
Kindred, J. J., Astoria, L. I., N. Y.
King, G. W., Secaucus, N. J.
Kilbourne, Arthur F., Rochester, Minn.
Langdon, F. W., Cincinnati, Ohio.
Mason, L. D., Brooklyn, N. Y.
Mailhouse, Max, New Haven, Conn.
MacDonald, C. F., New York City.
MacNicholl, T. A., New York City.
McBride, J. H., Pasadena, Cal.
McCarthy, D. J., Philadelphia.
McCaw, W. J., Providence, R. I.
McKennan, T. M. T., Pittsburg, Pa.
McKinniss, C. R., Norristown, Pa.
Miesse, K. DeW., Easton, Pa.
Miller, Louis, Toledo, Ohio.
Mills, C. K., Philadelphia.
Moleen, G. A., Denver, Colo.
Moren, J. J., Louisville, Ky.
Newbold, H. A., Philadelphia.
Orth, H. L., Harrisburg, Pa.
Pantlow, W. D., Tuscaloosa, Ala.
Patrick, H. T., Chicago.
Pershing, H. T., Denver, Colo.
Perry, M. L., Parsons, Kan.
Potts, C. S., Philadelphia.
Pretlow, R. H., Suffolk, Va.
Price, A. D., Harrodsburg, Ky.
Quimby, A. J., Wheeling, W. Va.
Rainear, A. R., Philadelphia.
Regar, H. K., Philadelphia.
Reed, E. L., Atlantic City, N. J.
Robins, W. L., Washington, D. C.
Rosenwasser, C. A., Newark, N. J.
Rutledge, Frances E., Newberry, Mich.
Sachs, Bernard, New York City.
Saunders, C. A., Norfolk, Va.
Scanland, J. M., Warm Springs, Mont.
Scratchley, F. A., New York City.
Shull, John D., Baltimore, Md.
Sinkler, Wharton, Philadelphia.
Smith, Caroline E., Philadelphia.
Smith, J. A., Blackwood, N. J.
Spiller, W. G., Philadelphia.
Spink, Mary A., Indianapolis, Ind.
Stack, S. S., Milwaukee, Wis.
Starr, M. Allen, New York City.
Styll, R. T., Newport News, Va.
Taylor, I. M., Morgantown, N. C.
Taylor, J. M., Philadelphia.
Tomlinson, H. A., St. Peter, Minn.
Town, E. C., Philadelphia.
Tucker, B. R., Richmond, Va.
Uhls, L. L., Osawatomie, Kan.
Walker, W. K., Dixmont, Pa.
Weeks, D. F., Skillman, N. J.
Wenrich, G. G., Wernersville, Pa.
Werber, Gustavus A., Washington, D. C.
Weisenburg, T. H., Philadelphia.
White, E. P. Corson, Norristown, Pa.
Winter, S. Elizabeth, W. Conshohocken, Pa.
Wolfstein, D. I., Cincinnati, Ohio.
Work, H., Pueblo, Colo.
Woodbury, Frank, Philadelphia.
Woods, Matthew, Philadelphia.
Wyman, B. L., Birmingham, Ala.
Zenner, Philip, Cincinnati, Ohio.

Preventive Medicine and Public Health

Abbott, A. C., Philadelphia.
Adelsberger, L., Waterloo, Ill.
Arnold, W. F., Philadelphia.
Bailhache, P. H., New York City (Stapleton P. O.).
Bonbrake, H. X., Chambersburg, Pa.
Bracken, H. M., Minneapolis, Minn.
Brumby, W. M., Austin, Texas.
Carlisle, R. J., New York City.
Clark, G. H., Waterloo, Iowa.
Clark, Margaret V., Waterloo, Iowa.
Clemmer, J. W., Columbus, Ohio.
Crockett, Sidney S., Nashville, Tenn.
Crowder T. R., Chicago.
Dithridge, Louise M., New York City.
Donaldson, W. H., Fairfield, Conn.
Dowling, Francis, Cincinnati, Ohio.
Dunn, Wm. LeRoy, Asheville, N. C.
Dutton, W. F., Pittsburg, Pa.
Egbert, Seneca, Philadelphia.
Evans, W. A., Chicago.
Farquhar, Charles, Olney, Md.
Foltz, J. C., Philadelphia.
Freeman, A. W., Richmond, Va.
Friedrich, Martin, Cleveland, Ohio.
Fulton, J. S., Baltimore, Md.
Furbush, C. L., Philadelphia.
Gates, M. F., U. S. Navy, Philadelphia.
Godfrey, E. S., Jr., Tucson, Ariz.
Gorgas, W. C., Ancon, Panama.
Gottschalk, Leon, Chester, Pa.
Graham, J. C., La Porte City, Iowa.
Grassick, James, Grand Forks, N. D.
Guion, Edward, Atlantic City, N. J.
Hachtel, F. W., Baltimore, Md.
Harbaugh, C. H., Philadelphia.
Harris, Seale, Mobile, Ala.
Hemenway, H. B., Evanston, Ill.
Hohnes, May S., Worcester, Mass.
Holton, Henry D., Brattleboro, Vt.
Hurty, J. N., Indianapolis, Ind.
Ireland, M. W., U. S. Army, Washington, D. C.
Jaques, W. K., Chicago.
Jones, C. H., Baltimore, Md.
Kean, J. R., U. S. Army, Washington, D. C.
Kelley, E. R., Seattle, Wash.
Kellogg, J. H., Battle Creek, Mich.
Kerr, J. W., Washington, D. C.
Knopf, S. A., New York City.
Linder, Anny W., Chicago.
Lumsden, L. L., Washington, D. C.
McCulloch, C. C., Jr., Washington, D. C.
McPherson, D. M., Washington, D. C.
Montgomery, L. H., Chicago.
Morrison, G. H., Whitefield, N. H.
Morrow, Prince A., New York City.
Nagle, J. T., New York City.
North, C. E., New York City.
Overholser, M. P., Harrisonville, Mo.
Patton, G. F., New Orleans, La.
Pedigo, S. E. G., Marshfield, Ohio.
Porter, William, St. Louis, Mo.
Price, M. L., Baltimore, Md.
Rankin, W. S., Wake Forest, N. C.
Rosenberger, R. C., Philadelphia.
Royer, B. F., Harrisburg, Pa.
Ruble, W. A., Washington, D. C.
Russell, F. F., Washington, D. C.
Sanders, W. H., Montgomery, Ala.
Schorer, E. H., Columbia, Mo.
Scofield, W. K., U. S. Navy, Stamford, Conn.
Seaman, L. L., New York City.
Sell, F. W., Rahway, N. J.
Shurtleff, H. C., Philadelphia.
Slack, F. H., Boston.
Stern, C. S., Hartford, Conn.
Sternberg, Gen. G. M., U. S. Army, Washington, D. C.
Stewart, A. H., Philadelphia.
Stewart, M. R., Salt Lake City, Utah.
Stone, W. J., Toledo, Ohio.
Taylor, C. F., Philadelphia.
Valentine, F. C., New York City.
Welch, W. M., Philadelphia.
Wheaton, C. S., Chicago.
White, J. H., New Orleans, La.
Williams, C. F., Columbia, S. C.
Wright, J. W., Erie, Pa.
Wood, Harold B., Philadelphia.
Wyman, Walter, Washington, D. C.

Stomatology

Barsky, Joseph, New York City.
Batten, John Mullin, Downingtown, Pa.
Bogue, Edward A., New York City.
Bogue, Fred L., New York City.
Brennan, John J., Scranton, Pa.
Briggs, Edward Cornelius, Boston.
Brock, R. E., Waynesburg, Pa.
Brown, Ellen E., Chester, Pa.
Brown, George V. I., Milwaukee, Wis.
Bush, Charles B., Orbisonia, Pa.
Casto, Theodore D., Philadelphia.
Crandall, J. B., Sterling, Ill.
Dray, Arthur R., Philadelphia.
Ewen, Warren L., Alloway, N. J.
Filer, B. Boynton, Atlantic City, N. J.
Fisher, William C., New York City.
Gilmer, Thomas L., Chicago.
Gilliland, Caroline J., Sharon, Pa.
Graves, Frederick G., Waterbury, Conn.
Hoff, N. L., Ann Arbor, Mich.
Hussey, Frederic V., Providence, R.I.
Irwin, Alphonso, Camden, N. J.
Jackson, Sarah G., Vineland, N. J.
Johnson, L. W., U. S. Navy, Naval Medical School, Washington, D. C.
Kelley, S. A., Carbondale, Pa.
Kimball, Hannibal H., Minneapolis, Minn.
La Ross, William A., McDonald, Pa.
Maloney, Daniel A., Watertown, Mass.
Metzler, Gottfried, Philadelphia.
McElfresh, C. W., Baltimore, Md.
McNeil, George W., Pittsburg, Pa.
Nyman, John E., Chicago.
Oliver, Robert T., West Point, N. Y.
Power, J. E., Providence, R. I.
Rhein, M. L., New York City.
Rice, Daniel S., Hastings, Pa.
Rice, Charles H., Fitchburg, Mass.
Sands, J. Sheldon, Bristol, Pa.
Schamberg, Morris I., New York City.
Sharp, James G., San Francisco.
Smith, John Fogg, Salem, N. J.
Steinbock, Frederick W., Philadelphia.
Steurer, John A., New York City.
Talbot, Eugene S., Chicago.
Teter, Charles K., Cleveland, Ohio.
Tozier, L. L., Batavia, N. Y.
Trout, N. C., Fairfield, Pa.
Van Buskirk, W. L., Scranton, Pa.
Wendel, W. C., Milwaukee, Wis.
Wilson, James H., Dover, Del.
Zentler, Arthur, New York City.

Dermatology

Abercrombie, John R., Baltimore, Md.
Alderson, M. E., Russellville, Ky.
Alderson, H. E., San Francisco.
Ankrim, L. F., Pittsburg, Pa.
Bathurst, Wm. R., Little Rock, Ark.
Boggs, R. H., Pittsburg, Pa.
Bulkley, L. D., New York City.
Burt, J. C., Pittsburg, Pa.
Campbell, R. R., Chicago.
Casselberry, C. M., Boston.
Chipman, E. D., San Francisco.
Cunningham, J. H., Jr., Boston.
Engman, Martin F., St. Louis, Mo.
Erdman, Bernhard, Indianapolis, Ind.
Farrell, J. T., Providence, R. I.
Finck, E. B., Philadelphia.
Foerster, O. H., Milwaukee, Wis.
Fordyce, J. A., New York City.
Fox, J. F., Bluefield, W. Va.
Fox, G. H., New York City.
Friedrich, L. L., Washington, D. C.
Gaskill, H. K., Philadelphia.
Gnichtel, A. L., New York City.
Grier, G. W., Pittsburg, Pa.
Gold, J. D., Bridgeport, Conn.
Gottheil, W. S., New York City.
Gutshall, F. A., Blain, Pa.
Haase, Marcus, Memphis, Tenn.
Hartzell, M. B., Philadelphia.
Hayes, D. J., Milwaukee, Wis.
Hamlin, O. D., Oakland, Cal.
Handly, J. W., Nashville, Tenn.
Harris, Frederick, G., Chicago.
Hay, E. C., Hot Springs, Ark.
Hazen, H. H., Washington, D. C.
Heidingsfeld, M. L., Cincinnati, Ohio.
Hirsch, C. S., Philadelphia.
Hoffman, H. C., Connellsville, Pa.
Johnston, G. C., Pittsburg, Pa.
Johnston, J. M., Huntingdon, Pa.
Katzenstein, G. P., Philadelphia.
Kellow, W. J., Watertown, N. Y.
Kennedy, D. J., Philadelphia.
Kessler, J. B., Iowa City, Iowa.
Kilroy, Philip, Springfield, Mass.
Knowles, F. C., Philadelphia.
Koehler, H. H., Louisville, Ky.
Langfitt, W. J., Pittsburg, Pa.
Lewis, C. T., Staunton, Va.
Lord, J. W., Baltimore, Md.
Mears, D. W., Scranton, Pa.
Meter, E. G., Reading, Pa.
Montgomery, D. W., San Francisco.
Morrow, Howard, San Francisco.
Murphy, E. S., Dixon, Ill.
Newcomer, M. V. B., Tipton, Ind.
Newman, E. D., Newark, N. J.
Nuzum, T. W., Janesville, Wis.
Ober, G. E., Bridgeport, Conn.
Ochs, B. F., New York City.
Pedersen, James, New York City.
Piffard, H. G., New York City.
Pollitzer, S., New York City.
Potter, Alfred, Brooklyn, N. Y.
Pusey, W. A., Chicago.
Randall, B. A., Philadelphia.
Ravogli, Augustus, Cincinnati, Ohio.
Rostenberg, Adolph, New York City.
Ruggles, E. W., Rochester, N. Y.
Schmidt, L. E., Chicago.
Grosse, Alfred B., San Francisco, Cal.
Stelwagon, H. W., Philadelphia.
Stearns, B. W., Unadilla, N. Y.
Sturgis, F. R., New York City.
Swarts, G. T., Providence, R. I.
Townsend, W. W., Rutland, Vt.
Trimble, W. B., New York City.
Tucker, E. D., Toledo, Ohio.
Uhle, Alexander A., Philadelphia.
VanderVeer, James N., Albany, N. Y.
Varney, Henry R., Detroit, Mich.
Wende, G. W., Buffalo, N. Y.
Wheeler, C. L., Lexington, Ky.
White, Frank, Philadelphia.
Wilson, John G., Perth Amboy, N. J.
Wolbarst, A. L., New York City.
Wolf, Alexander S., St. Louis, Mo.
Wyeth, George A., New York City.

Pathology and Physiology

Aaron, Charles D., Detroit, Mich.
Adler, H. M., Boston.
Anderson, John F., Washington, D.C.
Baldwin, Edward R., Saranac Lake, N. J.
Baldwin, E. C., Rosebank P. O., New York City.
Bergey, David H., Philadelphia.
Cannon, W. B., Cambridge, Mass.
Clark, H. E., Pittsburg, Pa.
Christian, Henry A., Boston.
Caldwell, E. W., New York City.
Colver, B. N., Battle Creek, Mich.
Coplin, W. M. L., Philadelphia.
Councilman, W. T., Boston.
Drake. G. W., Hollins Institute, Virginia.
Dutcher, Adelaide, Syracuse, N. Y.
Elgin, W. F., Glenolden, Pa.
Ellis, Aller G., Philadelphia, Pa.
Gradwohl, R. B. H., St. Louis, Mo.
Haas, S. L., Cleveland, Ohio.
Hamilton, R. A., Washington, D. C.
Henderson, Yandell, New Haven, Conn.
Herzog, Maximilian, Chicago.
Hitchens, A. Parker, Glenolden, Pa.
Hirschfelder, Arthur D., Baltimore, Md.
Hirsh, Jose L., Baltimore, Md.
Hopkinson, Daniel, Milwaukee, Wis.
Jack, George N., Buffalo, N. Y.
Johnstone, O. P., Pittsburg, Pa.
Karsner, Howard T., Philadelphia.

Knabe, Helene, Indianapolis, Ind.
Kotz, A. L., Easton, Pa.
Leary, Timothy, Boston.
Litterer, William, Nashville, Tenn.
MacCallum, William G., Baltimore, Md.
MacCarty, William Carpenter, Rochester, Minn.
McCleary, Standish, Baltimore, Md.
McFarland, Joseph, Philadelphia.
Meader, Isabel M., Watertown, N. Y.
Meltzer, S. J., New York City.
Miller, Edgar Calvin Le Roy, Detroit, Mich.
Newcomet, William S., Philadelphia.
Park, William H., New York City.
Pritchard, William P., Fall River, Mass.
Randolph, R. L., Baltimore, Md.
Ricketts, H. T., Chicago.
Rosenau, M. J., Washington, D. C.
Shoemaker, Harlan, Philadelphia.
Small, J. Hamilton, Philadelphia.
Smithies, Frank, Ann Arbor, Mich.
Tydings, O., Chicago.
Watkins, Robert L., New York City.
Weaver, George H., Chicago.
Welch, William H., Baltimore. Md.
Wells, H. Gideon, Chicago.
White, Courtland Y., Philadelphia.
Wilson, John D., Philadelphia.
Wilson, R. L., Jeannette, Pa.

Pharmacology and Therapeutics

Abbott, W. C., Chicago.
Beates, Henry, Jr., Philadelphia.
Bremerman, L. W., Chicago.
Brown, A. G., Jr., Richmond, Va.
Burdick, Alfred S., Chicago.
Butler, George F., Wilmette, Ill.
Chamberlin, C. S., Cincinnati, Ohio.
Cohen, Solomon Solis-, Philadelphia.
Dunham, H. B., Glen Gardner, N. J.
Edsall, David L., Philadelphia.
England, Joseph W., Philadelphia.
Fantus, Bernard, Chicago.
Frace, P. W., Hoboken, N. J.
French, J. M., Milford, Mass.
Fussell, M. H., Philadelphia.
Goodwin, E. J., St. Louis, Mo.
Gordon, Clark H., Trenton, N. J.
Hallberg, Carl S. N., Chicago.
Hatcher, Robert A., New York City.
Hirsh, A. B., Philadelphia.
Holland, James W., Philadelphia.
Howard, Tasker, Brooklyn, N. Y.
Hunt, Reid, Washington, D. C.
Hyde, E. E., Chicago.
Hynson, Henry P., Baltimore, Md.
Jones, Philip Mills, San Francisco.
Kebler, Lyman F., Washington, D. C.
Larned, E. R., Detroit, Mich.
Lawton, Henry C., Camp Hill, Pa.
LeFevre, Egbert, New York City.
Lewis, H. Edwin, New York City.
McCormack, A. T., Bowling Green, Ky.
McCormack, J. N., Bowling Green, Ky.
Marcus, Herman D., Atlantic City, N. J.
Mason, Robert S., Chester, Pa.
Mays, Thomas J., Philadelphia.
Motter, M. G., Washington, D. C.
Osborne, Oliver T., New Haven, Conn.
Phillips, C. B., Pitman, N. J.
Puckner, W. A., Chicago.
Reilly, Thomas F., New York City.
Remington, Joseph P., Philadelphia.
Robinson, William J., New York City.
Robinson, W. D., Philadelphia.
Rogers, E. B., Collingswood, N. J.
Sajous, C. E. de M., Philadelphia.
Shoemaker, John V., Philadelphia.
Simmons, George H., Chicago.
Slack, Henry R., LaGrange, Ill.
South, Lillian H., Bowling Green, Ky.
Stewart, F. E., Philadelphia.
Stoddard, F. R., Shelburne, Vt.
Taylor, John J., Philadelphia.
Thrush, M. Clayton, Philadelphia.
Upshur, J. N., Richmond, Va.
Van Valzah, J. A., Daytona Beach, Fla.
Wallace, George B., New York City.
Waugh, W. S., Chicago.
Wescott, W. C., Atlantic City, N. J.
Wilbert, M. I., Washington, D. C.
Winner, Jacob L., Baltimore, Md.
Wood, H. C., Jr., Philadelphia.

Diseases of Children

Acker, T. J., Croton-on-Hudson, New York City.
Allin, Frank W., Chicago.
Atkins, George H., Philadelphia.
Bartley, Elias H., Brooklyn, N. Y.
Bauer, Marie L., Philadelphia.
Bennett, William H., Philadelphia.
Black, Robert A., Chicago.
Bowditch, Henry I., Boston.
Boyce, J. Newton, Stanfordville, N. Y.
Bradley, William N., Philadelphia.
Brecker, N. F., Philadelphia.
Brewer, W. C., Columbus, Miss.
Brittingham, James D., Philadelphia.
Brown, Orland J., North Adams, Mass.
Brown, Walter H., Richlandtown, Pa.
Buren, Charles R., Princeton, Mo.
Burhenn, C. G., Jeannette, Pa.
Butler, William J., Chicago.
Butterworth, W. W., New Orleans.
Campbell, Donald, Butte, Mont.
Carr, Walter Lester, New York City.
Cassidy, Paul B., Philadelphia.
Chapin, Henry Dwight, New York City.
Churchill, Frank S., Chicago.
Clark, W. R., East Liverpool, Ohio.
Classon, E. W., Lambertville, N. J.
Coit, Henry L., Newark, N. J.
Connolly, John M., Boston.
Corwin, Arthur I., Rye, N. Y.
Cotton, Alfred Cleveland, Chicago.
Crandall, Floyd M., New York City.
Davis, J. S., Blooming Grove, Texas.
Day, Fessenden L., Bridgeport, Conn.
Dennett, Roger H., New York City.
Dixon, Duncan P., Talladega, Ala.
Dodson, John M., Chicago.
Douglas, Charles, Detroit, Mich.
Dunn, Charles Hunter, Boston.
Dunning, Mary E., Newburgh, N. Y.
Earle, Clarence A., Desplaines, Ill.
Eaton, Percival J., Pittsburg, Pa.
Edwards, J. Gaunt, Williamstown, N. J.
Elliz, G. L., Sherman, Texas.
English, David E., Summit, N. J.
Everhart, James K., Pittsburg, Pa.
Fife, Charles A., Philadelphia, Pa.
Fitzhugh, Henry M., Westminster, Md.
Fraley, Frederick, Philadelphia.
Freeman, Rowland G., New York City.
Furrer, Arnold F., Cleveland, Ohio.
Gengenbach, F. P., Denver, Colo.
Gerstenberger, H. J., Cleveland, O
Gilbert, R. B., Louisville, Ky.
Gochnauer, F., Upperville, Va.
Graham, Edwin E., Philadelphia.
Griffith, J. P. Crozer, Philadelphia.
Hamill, S. McC., Philadelphia.
Hamilton, William T., Philadelphia.
Hand, Alfred, Jr., Philadelphia.
Hanson, D. S., Cleveland, Ohio.
Harral, Walter E., St. Louis, Mo.
Hartman, Lawton M., York, Pa.
Hatton, J. Elizabeth, Brooklyn, N.Y.
Henning, Edward R., Bellefontaine, Ohio.
Hess, Alfred F., New York City.
Hillis, R. J., Altoona, Pa.
Hinkle, Charles G., Batesville, Ark.
Hockman, B. F., Sumner, Ill.
Hollopeter, W. C., Philadelphia.
Holmes, Arthur D., Detroit, Mich.
Howland, John, New York City.
Jacobi, Abraham, New York City.
Jenett, John H., Canandaigua, N.Y.
Johnson, Loren B., Washington, D.C.
Johnstone, Mary M. S., Chicago.
Jones, Arch D., Wichita, Kan.
Keating, W. P. Stuart, Willimantic, Conn.
Kelly, Michael, Fall River, Mass.
Kelley, Samuel W., Cleveland, Ohio.
Kennedy, Lucius C., Scranton, Pa.
Kerley, Charles Gilmore, New York City.
Kerr, Le Grand, Brooklyn, N. Y.
Knipe, Reinoehl, Norristown, Pa.
Koplik, Henry, New York City.
Labbe, Edmond J., Portland, Ore.
Lackner, Ernest, Chicago.
Le Boutillier, Theodore, Philadelphia.
Leech, Frank, Washington, D. C.
Levi, I. Valentine, Philadelphia.
Lewis, Bertha, Malvern, Pa.
Little, George F., Brooklyn, N. Y.
Lopez, Joseph H., Philadelphia.
Loughran, Frederic W., New York
Ludlum, Walter D., Brooklyn, N.Y.
McAlister, Alexander, Camden, N. J.
McClanahan, H. M., Omaha, Neb.

McCorkle, W. P., Pittsburg, Pa.
McEntire, O. W., Howard, Pa.
McEwen, Floy, Newark, N. J.
McKee, James H., Philadelphia, Pa.
McVea, Charles, Baton Rouge, La.
Mercer, A. Clifford, Syracuse, N. Y.
Middleton, M. W., Jr., New York City.
Miller, D. J. M., Atlantic City, N. J.
Miller, John B., Sligo, Pa.
Mills, H. Brooker, Philadelphia.
Morse, J. L., Boston.
Newbecker, Minerva M., Ord, Neb.
Newlin, Arthur, Philadelphia.
Noonan, C. J., Brooklyn, N. Y.
Orr, Winnett H., Lincoln, Neb.
Ostheimer, Maurice, Philadelphia.
Pinneo, Frank W., Newark, N. J.
Pisek, Godfrey R., New York City.
Piskorski, Avdon V., Jersey City, N. J.
Polozker, Isaac Louis, Detroit, Mich.
Porteous, E. J., Atlantic City, N. J.
Potter, Philip S., North Adams, Mass.
Price, Henry T., Pittsburg, Pa.
Putnam, Helen C., Providence R. I.
Radisch, Julius, New York City.
Roberts, Frederick C., Easton, Pa.
Rosenthal, Edwin, Philadelphia.
Rotch, Thomas Morgan, Boston.
Rowland, R. S., Detroit, Mich.
Royster, L. I., Norfolk, Va.
Ruhrah, John, Baltimore, Md.
Ryan, Granville N., Des Moines, Ia.
Schrade, Anna M., Erie, Pa.
Schister, Belle A., Philadelphia.
Scott, Charles R., Belvidere, Ill.
Scott, George Dow, New York City.
Sedgwick, J. P., Minneapolis, Minn.
Shaw, Henry L. K., Albany, N. Y.
Sherk, H. H., Camden, N. J.
Sill, E. Mather, New York City.
Silver, Lewis M., New York City.
Snyder, A. E., New Milford, Pa.
Southworth, Thomas S., New York City.
Sprague, Frances R., San Francisco.
Staunton, Florence I., Utica, N. Y.
Stern, Arthur, Elizabeth, N. J.
Tate, Robert W., Bolivar, Tenn.
Terney, Charles F., Toledo, Ohio.
Thomas, J. J., Cleveland, Ohio.
Todd, Francis H., Paterson, N. J.
Tow, Johanna E., Chicago.
Townsend, H. S., Buffalo, N. Y.
Tracy, George T., Beverly, N. J.
Tuers, George E., Paterson, N. J.
Vanderhoof, F. D., Phelps, N. Y.
Van Derslice, J. W., Oak Park, Ill.
Van Gaasbeek, George H., Kingston, N. Y.
Wahrer, C. F., Ft. Madison, Iowa.
Wallin, Alfred C., New York City.
Weibel, E. G., Erie, Pa.
Welburn, W. C., Bollston, Va
Weston, William, Columbia, S. C.
Whitney, H. B., Denver, Colo.
Wilson, James, Wabash, Ind.
Wister, James W., Philadelphia.

Miscellaneous

The following failed to indicate preference for any section, or marked more than one, on the registration card:

Belville, Frank, Delaware City, Del.
Berner, David, Atlantic City, N. J.
Beyer, W. F., Punxsutawney, Pa.
Blake, Charles H., Newark, Del.
Blanchard, George W., Highland Falls, N. Y.
Blauvelt, G. F., Nyack, N. Y.
Blundell, William, Paterson, N. J.
Bratton, H. O., Columbus, Ohio.
Burgess, L. MacD., Delta, Colo.
Castelli, Enrico, New York City.
Clark, George G., Philadelphia.
Dalsimer, Leon, Philadelphia.
Drinkwater, W. G., Gormania, W. Va.
Diverty, Henry B., Woodbury, N. J.
Dundon, A. H., Plainfield, N. J.
De Loffre, S. M., Columbus Barracks, Ohio.
Earle, J. B., Greenville, S. C.
Eisenberg, P. Y., Norristown, Pa.
Emmerling, C. H., Pittsburg, Pa.
English, David C., New Brunswick, N. J.
Fleming, Thomas J., Philadelphia.
Fowlkes, Frank Vaughan, Burkeville, Va.
Fox, W. H., Waucoma, Iowa.
Glidden, C. H., Little Falls, N. Y.
Green, Herlwyn R., Providence, R. I.
Grube, J. Miles, Punxsutawney, Pa.
Harden, Albert Scott, Newark, N. J.
Hargrove, W. F., Kinston, N. C.
Hebb, Arthur, Baltimore, Md.
Herrman, M. F., Philadelphia.
Hirshberg, Leonard Keene, Baltimore.
Houghton, Charles W., Philadelphia.
Hunsicker, Hannah M., Olney, Philadelphia.
Jamieson, Robert A., Detroit, Mich.
Jenson, Thomas, Spring Grove, Minn.
Karpeles, M. J., Philadelphia.
Kerr, J. P., Pittsburg, Pa.
King, J. E., Richmond, Ind.
Lane, T. B., East Orange, N. J.
Laverty, O. C., Middletown, Pa.
Lawrence, Florus F., Columbus, Ohio.
Lenow, James H., Little Rock, Ark.
Lovett, Henry Langhorn, Pa.
Lownes, John B., Philadelphia.
Lysaght, Ellen, Brooklyn, N. Y.
Mahaffey, J. Lynn, Camden, N. J.
Manges, Willis F., Philadelphia.
Marshall, George W., Milford, Del.
McComb, Samuel F., Tarentum, Pa.
McCurdy, Stewart L., Pittsburg, Pa.
McKeldin, R. A. W., Philadelphia.
Metzler, V. W., Atlantic City, N. J.
Modell, Daniel A., Philadelphia.
Montgomery, R. H., Youngstown, O.
Norton, F. D., Columbus, Ind.
Nute, Marion, Boston.
Pancoast, Henry K., Philadelphia.
Patterson, James A., Colorado Springs, Colo.
Porteus, J. S., Taylor, Pa.
Price, F. F., Carbondale, Pa.
Putnam, James J., Boston.
Purdy, William H., Mt. Vernon, N. Y.
Raymond, Katharine P., Wellesley, Mass.
Schmitt, A. Emil, Riverdale-on-Hudson and New York City.
Scott, B. F., Terra Alta, W. Va.
Scott, W. S., Chillicothe, Ohio.
Seiberling, Fred C., Allentown, Pa.
Shimer, A. Burton, Atlantic City, N. J.
Shimer, Will, Wanamaker, Ind.
Shively, J. D., Boulder, Colo.
Slee, Richard, Namut, N. Y.
Staneff, Demetrius, Chicago.
Steiner, D. W., Lima, Ohio.
St. John, David, Hackensack, N. J.
Taylor, A. Miles, San Francisco, Cal.
Turner, J. P., Greensboro, N. C.
Van Korb, William, Philadelphia.
Wills, William L., Los Angeles, Cal.
Waite, Henry E., New York City.
Wallace, H. R., Chicago.
Warren, John S., New York City.
Wehlau, Alma L., Scranton, Pa.
Welch, E. H., Winsted, Conn.
Wilson, G. de Foix, Spartanburg, S. C.
Wolfort, Benjamin E., Brooklyn, N. Y.
Wymore, W. W., San Francisco, Cal.
Young, G. B., Chicago.

Guests

Partial list of invited guests and others in attendance from outside the United States or outside the medical profession (not including those admitted to dental, pharmaceutical and associate membership). A complete list can not be given as many did not register.

Lane, W., Arbuthnot, London, Eng.
Beebe, S. P., New York City.
Dow, William, Regina, Sask.
Darling, Dr. Samuel T., Ancon Hospital, Canal Zone.
Grant, Sir James, Ottawa, Canada.
Guiteras, Juan, Havana, Cuba.
Harmer, Gerold, London, England.
Lauterman, M., Montreal, Canada.
Nonne, Max, Hamburg, Germany.
Pernet, George, London, England.
Powell, N. A., Toronto, Ontario.
Seymour, W. F., Tengchowfo, China.
Treble, Charles E., Toronto, Ontario.
Weigert, med. Kurt, Freiburg im Breisgau, Germany.
Wright, John D., New York City.

Marriages

Harry S. McGee, M.D., to Miss Gladys E. Tuthill, both of Douglas, Ariz., June 14.

John R. Bosley, M.D., U. S. Army, to Miss Gerda Danielson, at Seattle, May 26.

Oliver F. Mershon, M.D., to Miss Goldie May Small, both of Philadelphia, April 28.

John H. Jopson, M.D., to Miss Susannah B. Michener, both of Philadelphia, June 7.

Theodore Bange, M.D., Cincinnati, to Miss Bess Carnahan of Blanchester, Ohio, June 9.

Sankey Bacon, M.D., U. S. Navy, to Miss Elizabeth Taggart, of Washington, June 16.

Spence Redman, M.D., to Miss Myrtle Higgins, both of Platte City, Mo., April 15.

Albert W. Garren, M.D., to Miss Hattie W. Burnham, both of Philadelphia, June 23.

Hugh McDowell Beebe, M.D., Sidney, Ohio, to Miss Ruth Pearson of Troy, Ohio, recently.

Mathew A. Reasoner, M.D., U. S. A., to Miss Mabel Sparks Milnor of Litchfield, Ill., June 10.

Claud N. Smith, M.D., Clinton, N. C., to Miss Dora H. Tew, at Richmond, Va., June 17.

John R. Burleson, M.D., Hamilton, Ala., to Mrs. Carrie Dodd of Hackleburg, Ala., June 7.

Homer Brandel Smith, M.D., Boston, to Miss Gertrude Day Jerome of New York City, recently.

Arthur Willard Fairbanks, M.D., Boston, to Miss Edythe Clarke of Brookline, Mass., June 19.

James D. Carey, M.D., Timnath, Colo., to Miss Florence Josephine Stover of Chicago, June 9.

Theodore Hough, M.D., Charlottesville, Va., to Miss Ella Guy Whitehead of Richmond, June 12.

Edwin A. Sanborn, M.D., Somerville, Mass., to Miss Blanche A. Smith of Lowell, Mass., June 8.

Leroy D. Howard, M.D., Fairmont, W. Va., to Miss Edna Pearle Sturgis of Smithfield, Pa., June 23.

James Barnard Hastings, M.D., Alton, Ill., to Miss Elizabeth Norris Morgan, at Alton, Ill., June 15.

Robert A. Schlernitzauer, M.D., Cocoa, Fla., to Miss Ruth Hardee of Rock Ledge, Fla., June 16.

Lee Washbon Prescott, M.D., Sloan, Iowa, to Miss Sarah Estella Thompson of Cresco, Iowa, June 9.

Frank Wheeler Hornbrook, M.D., to Miss Anna Maria Kelley, both of Tobyhanna, Pa., June 19.

Walter T. Venn, M.D., to Miss Maude Eagleston, both of Aurora, Ill., at Crown Point, Ind., June 16.

George E. Malsbary, M.D., Cincinnati, Ohio, to Miss Norma Helwig of Clifton, Ohio, at Piqua, Ohio, June 13.

Lewis Almond Harmon, M.D., Marshall, Mich., to Miss Ethel Anna Conley of San Antonio, Texas, June 23.

John C. McLaughlin, M.D., Norwich, Conn., to Miss Rebecca E. Thompson, at Ellicott City, M.D., June 3.

Deaths

Justin Steer, M.D. New York University, New York City, 1876; a member of the American Medical Association; professor of clinical medicine and later professor of internal medicine in Washington University, St. Louis; physician to Mullanphy Hospital and associate attending physician to the St. Louis Skin and Cancer Hospital; was found dead in bed at his home in St. Louis, June 20, from the effects of chloroform and hydrocyanic acid, taken with suicidal intent while mentally deranged from overwork, aged 60. The members of the faculty of Washington University Medical Department acted as honorary pallbearers at the funeral.

Thomas Padon Wilson, M.D. Cleveland University of Medicine and Surgery, 1857; formerly president of the Pulte Medical College, Cincinnati, and professor of therapeutics in the University of Michigan Homeopathic Medical College, Ann Arbor; for many years editor of the *Medical Advance*, Chicago, and later a resident of Detroit, Mich.; died at the home of his daughter in Upper Montclair, N. J., June 23, from paralysis, aged 78.

Lucian Lavassa Leeds, M.D. Rush Medical College, Chicago, 1856; a member of the American Medical Association and Brainerd District Medical Society; for fifty-seven years a practitioner of Illinois; city councilman of Lincoln; for twenty-six years a member of the board of education, and for twelve years its president; died at his home in Lincoln, June 19, aged 78.

George Washington Stoyer, M.D. Western Pennsylvania Medical College, Pittsburg, 1903; a member of the American Medical Association; formerly attending physician to Buhl Hospital, Sharpsville, Pa.; was found dead in his office in Three Forks, Mont., June 18, from the effects of an overdose of morphin, aged 33.

Hugh Ferguson, M.D. New York University, New York City, 1858; a member of the Massachusetts Medical Society; for about thirty years a member of the attending staff of Carney Hospital; one of the oldest practitioners of South Boston; died at his home, June 13, from intestinal disease of long standing, aged 72.

George William Mosier, M.D. Jefferson Medical College, Philadelphia, 1886; of Morristown, N. J.; formerly a police surgeon of Philadelphia; and visiting physician at the German Hospital; died in All Soul's Hospital, Newark, N. J., June 9, after an operation for peritonitis, aged 51.

Neil Donald Gunn, M.D. McGill University, Montreal, 1888; formerly a member of the American Medical Association; of Montreal, Que., and Pasadena, Cal.; died at his home in Pacific Grove, Cal., June 4, from burns received in an explosion of benzine, the day before, aged 46.

Andrew M. McCabe, M.D. Western Pennsylvania Medical College, Pittsburg, 1897; a member of the Medical Society of the State of Pennsylvania and of the staff of St. Francis Hospital, Pittsburg; died at his home in Allegheny, June 13, from acute gastritis, aged 37.

John L. Dismukes, M.D. University of Pennsylvania, Philadelphia, 1856; a member of the Kentucky State Medical Association; surgeon in the Confederate service during the Civil War; died at his home in Mayfield, Ky., June 16, from senile debility, aged 78.

William Pitt Norris (license, Iowa, 1887); a practitioner since 1873; and a member of the Iowa Railway Surgeons' Association and the Tri-State Medical Society; died at his home in Birmingham, Iowa, February 3, from cerebral hemorrhage, aged 57.

Louis Thornton Wilson, M.D. Harvard Medical School, Boston, 1902; of Boston, Mass.; a member of the American Medical Association; assistant visiting surgeon at the Boston City Hospital; died in that institution, June 17, from pneumonia, aged 32.

William Henderson Reynolds, M.D. University of Alabama, Mobile, 1885; of Union Springs; a member of the Medical Association of the State of Alabama; physician of Bullock county; died in St. Margaret's Hospital, Montgomery, June 19, aged 52.

Lenox E. Newman, M.D. Memphis (Tenn.) Hospital Medical College, 1908; of Meadville, Miss.; died June 17, in the Chamberlain Sanitarium, Natchez, Miss., from gunshot wounds received in a feud fight at Meadville, June 14, aged 22.

Joseph Hallanan, M.D. Cincinnati College of Medicine and Surgery, 1870; of Logansport, Ind.; a member of the Indiana State Medical Association; died in the State Hospital, Longcliffe, June 16, from hypertrophy of the heart, aged 58.

Thomas Dabney Hare, M.D. Jefferson Medical College, Philadelphia, 1854; president of the Bowie county, Texas, board of U. S. Pension Examining Surgeons; died at his home in Greenville, June 2, from disease of the liver, aged 59.

Robert R. Murray, M.D. Atlanta (Ga.) Medical College, 1859; a Confederate veteran, and later a member of the state legislature; died suddenly at his home in Powder Springs, Ga., June 18, from cerebral hemorrhage, aged 72.

George Sherwood Means, M.D. University of Buffalo, N. Y., 1897; a member of the Medical Society of the State of New York; assistant surgeon N. G. N. Y.; died at his home in Geneva, June 14, from kidney disease, aged 39.

Samuel K. Harriman, M.D. Eclectic, Philadelphia, 1871; Jefferson Medical College, Philadelphia, 1883; of Providence, R. I.; died in the Rhode Island Hospital in that city, June 20, after an operation for appendicitis, aged 63.

Lorenzo D. Coombs, M.D. Hahnemann Medical College, Chicago, 1875; Chicago Homeopathic Medical College, 1879; a veteran of the Civil War; died at his home in Ypsilanti, Mich., June 20, from heart disease, aged 73.

Joseph O'Grady, M.D. Bellevue Hospital Medical College, New York City, 1883; for many years connected with the Brooklyn health department; died at his home in Brooklyn, June 22, from cerebral hemorhage, aged 56.

Franklin L. Powell, M.D. Cincinnati College of Medicine and Surgery, 1884; of Seattle; a member of the Washington State Medical Association; died in the Providence Hospital in that city, May 28, from diabetes, aged 60.

Joseph S. Eaton (years of practice, Minn.); a veteran of the Civil War; and for more than forty years a practitioner of Benson, Minn.; died at his home, Jan. 18, 1908, from paralysis, due to spinal injury, aged 65.

Harvey Newton Dale, M.D. Eclectic Medical Institute, Cincincinnati, 1856; Bennett Medical College, Chicago, 1876; a pioneer practitioner of Rice county, Minn.; died at his home in Faribault, June 13, aged 79.

Ogden D. Phillips, M.D. Western Reserve University, Cleveland, 1881; for more than fifty years a practitioner of Fremont, Ohio; died at his home in that city, June 12, from disease of the bladder, aged 73.

Nimrod A. Spencer, M.D. (license, Mo., 1883); a member of the Missouri State Medical Association; died at his home in DeWitt, Mo., June 6, from the effect of a self-inflicted gunshot wound of the brain, aged 65.

Martin Caraballo, M.D. University of Havana, Cuba, 1882; of Tampa, Fla.; a member of the American Medical Association; died in the Hospital of the University of Maryland, Baltimore, June 9, aged 50.

Eva McPhee Lewis, M.D. Hahnemann Medical College, Chicago, 1896; of San Diego, Cal.; a member of the Medical Society of the State of California; died at the Agnews Sanitarium, June 9, aged 38.

William H. Jones (license, Tenn., 1899); for many years a member of the board of U. S. Pension Examining Surgeons of Hancock county, Tenn.; died at his home in Sneedville, Tenn., June 14, aged 84.

Horace A. Paxton, M.D. College of Physicians and Surgeons, Baltimore, 1878; of Buffalo Forge, Va.; a Confederate veteran; died at the home of his nephew in Lexington, Va., June 12, aged 66.

Benjamin C. Sympson, M.D. (license, Ky., 1894, thirty-three years' practice); Kentucky School of Medicine, Louisville, 1860; died at his home in Mardis, Ky., June 6, from senile debility, aged 81.

Clarence M. Dodge, M.D. New York University, New York City, 1877; a member of the New Hampshire Medical Society; died at his home in Manchester, June 19, from cerebral hemorrhage, aged 62.

Monroe S. Leech, M.D. Eclectic Medical Institute, Cincinnati, 1871; Rush Medical College, Chicago, 1882; a veteran of the Civil War; died at his home in Chicago, June 24, from nephritis, aged 61.

Legare L. Hargrove, M.D. University of Maryland, Baltimore, 1891; of Deanes, Va.; died in the Sara Seigh Hospital, Norfolk, Va., June 16, after an operation for cholangitis, aged 40.

John Hislop, M.D. Jefferson Medical College, Philadelphia, 1892; a member of the Kansas Medical Society and a pioneer practitioner of Smith county; died at his home in Lebanon, June 10.

George Eaton Adams, M.D. University of Virginia, Charlottesville, 1904; a member of the American Medical Association; died at his home in Fort Worth, Texas, June 16, aged 26.

Isaac Sanford Curtis, M.D. Medical School of Maine, Brunswick, 1872; for several years postmaster of Topsham, Maine; died suddenly at his home in Brunswick, Maine, June 9, aged 70.

Albert Caleb Blanchard, M.D. Rush Medical College, Chicago, 1895; of Linden, Wis.; a member of the American Medical Association; died in Madison, Wis., June 19, aged 36.

John D. Quill, M.D. New York Homeopathic Medical College, New York City, 1876; died at his home in Wallingford, Conn., June 18, from tuberculosis of the brain, aged 62.

Richard C. Hammond, M.D. College of Physicians and Surgeons, Baltimore, 1878; died at his home in Burleigh, Ellicott City, June 13, from cerebral hemorrhage, aged 55.

Hugh White Griffith, M.D. University of Nashville, Tenn., 1874; for eight years physician of Marion county, Tenn.; died at his home in Jasper, May 25, aged 70.

Archibald Monroe Newman (license, Miss.); of Meadville, Miss.; clerk of the chancery court of Franklin county; was shot and killed in a feud at Meadville, June 14.

Holland L. Anderson, M.D. University of Louisville (Ky.) 1894; died suddenly from pulmonary hemorrhage, at his home in San Angelo, Texas, June 13, aged 40.

Robinson J. Peak, M.D. University of Louisville, Ky., 1877; formerly of Owenton, Ky.; died in Mount Pleasant, Mich., May 26, 1909, from nephritis, aged 51.

Thomas Cosgrove, M.D. Detroit (Mich.) Medical College, 1871; formerly of Sylvania, Ohio; died at his home in Toledo, June 11, from nephritis, aged 75.

Richard Edgar Grier, M.D. Howard University, Washington, 1894; a pioneer colored practitioner of Albany, Ga.; died at his home in that city, June 13.

E. M. Davenport, M.D. Louisville (Ky.) Medical College, 1875; died at his home in Midland, Ark., June 9, from cerebral hemorrhage, aged 57.

William Andrew Chatterton, M.D., a homeopathic practitioner of Elgin, Ill.; died in that city, May 26, from angina pectoris, aged 68.

Willis Spencer Snedigar, M.D. Cooper Medical College, San Francisco, 1890; died at his home in Stockton, Cal., June 10, from appendicitis.

Francis Asbury Sproles, M.D. Knoxville; of Big Stone Gap, Va.; died at Benham's, Va., June 30, 1908, from tuberculosis, aged 40.

George Lloyd Mackelcan, M.D. McGill University, Montreal, 1860; died at his home in Hamilton, Ont., June 10, aged 74.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

THE ASSOCIATION OF STATE SECRETARIES AND EDITORS OF STATE JOURNALS

Its Important Functions in Maintaining Effective Organization in State Societies

E. J. GOODWIN, M.D.,
St. Louis

The formation of the Association of State Secretaries and State Journal Editors was accomplished at the meeting of the American Medical Association in Chicago, in 1908, and a definite plan adopted for outlining the objects and purposes of the association. Such an organization has before it the prospect of becoming the most powerful of all the auxiliary bodies of the executive department of the American Medical Association, in furthering the accomplishment of the reforms that the reorganized medical profession has undertaken in behalf of doctor and of the people.

Including in its membership, as it does, the secretaries of the state associations, who are in direct, constant and intimate communication with the county society secretaries; and the editors of the state journals, whose work brings them also into the closest relation with the county society secretaries, it must be apparent that the responsibility of maintaining harmonious, active and effective county societies rests largely on the members of this body; and that without numerous county societies, actively engaged in the work of advancing the objects of organized medicine, the state associations will be correspondingly weak and unprogressive, with the resultant derogatory effect on the American Medical Association, whose power and influence would be thereby weakened and curtailed.

It then becomes the first and most important function of the Association of State Secretaries and Editors to foster the strength of the county medical societies in each of the states represented; for the county society is the foundation on which our whole scheme of organization is built. We must have, therefore, strong, aggressive and progressive county societies, and the time should come, and come soon, when, through the deliberations of this association, all state associations can offer their members certain specific and personal benefits accruing from the membership in the organization. Let us not fix our vision on the distant horizon, where Utopia lies and physical perfection is the unearned heritage of all, forgetting, the while, that physicians now endure many unnecessary hardships because of misapprehension, misconstruction, unbelief, and even ingratitude, on the part of the people. It is our duty to conserve the health of the nation and to prevent disease; but it is not less our duty to protect ourselves and be prepared to assist each other in the time of adversity that comes to most of us at some period in our career.

When the state journal was first established, it was thought that it alone would be a sufficient inducement to cause a rapid access in membership of the state association, since the payment of dues in the county society included subscription to the journal; and there was a high increase in the number of members. But this attraction did not prove alluring enough to very many reputable practitioners, and they remained outside the county society. Later, in some states, it was found feasible and proper to offer, as an additional benefit to be derived by membership, the assistance of the association in defense against civil suits for alleged malpractice. This added benefit has drawn a great many into the local societies who were not willing to acknowledge that simple organization, with its humanitarian objects, was sufficiently beneficial to themselves to require affiliation with the county society.

In all the states that publish journals subscription to the journal has been extended without an extra assessment over the regular annual dues, and of those states which provide for medical defense this privilege is secured without an increase of dues. In other states, however, this privilege is secured only on the payment of an added sum, either by increasing the dues or by special levy. In every case, however, it has strengthened the state association, and, as we grow in numbers and in influence, other benefits can be offered as inducements to join the local societies which this association can advocate and advise to be adopted by the state associations.

Since the state journal is the mouthpiece of the state association and the medium of communication between its members, it should be in all respects a journal of information, primarily devoted to the interests of its own state organization. We have not yet passed the transition stage in our process of organization, and, therefore, the journal should exert all its influence toward strengthening the county society and the state association. In furthering this object, its first duty is to the county society. The editor of the state journal should watch the workings of the county society quite as closely as does the secretary of the state association, and see that full publicity is given to those societies whose proceedings mark them as being good examples of the beneficial results of organization.

There are three highly important objects which the county society should aim to attain, namely, (1) to enhance the quality of the scientific work of its members, as in the preparation of papers, the presentation of specimens and patients, and in the discussion following such proceedings; (2) to increase the political influence of the county society in all legislative matters pertaining to the public health, and (3) to instruct its members in improved methods of medical economics.

All these objects are being accomplished concomitantly with medical organization, but only incidentally and slowly. The Journal of the American Medical Association is constantly emphasizing the importance of these three phases of county society work, but their study has not been seriously undertaken by county societies generally. In the matter of improved scientific work we already see what can be accomplished by the postgraduate course established by Dr. Blackburn. There will be an equally great amount of good come from an increase of the political influence of the county societies, and the establishment of a better system of economics in the management of the business affairs of the doctor. We must not forget, in our enthusiastic and creditable labor in behalf of the people, that the people have been somewhat negligent of the doctor; therefore, while we are teaching them how to protect themselves from sickness, let us also teach them how to respect and appreciate the physician. It should be one of the prime duties of the editors of the state journal to keep before the members of the association the necessity of studying these three phases of county society work.

One of the most important functions of the state journal is the fostering of a spirit of cooperation between the daily press and the medical profession toward the elimination of quackery and charlatanism in medicine. This will be a hard and long battle, no doubt, but we believe that in the end we shall gain our desires. The nauseating, filthy, suggestive advertisements which formerly appeared in all newspapers, are not as prevalent as they were before the reorganization of our profession; but much still remains to be done in order to bring newspaper publishers to a proper understanding of the harm these persons do, and the state journals should be foremost in this work. In fact, the time is fast approaching when newspapers will welcome a system of censorship on all medical advertisements and news matter of a medical nature, and this association can and should assume the duty of hastening this time by formulating some method of supervision which would be acceptable to the owners and editors of the daily papers.

Unaided by a properly trained medical assistant, newspaper men can not discern a scientific discovery of real value as a medicinal measure from the blatant boasting of some far-away quack; hence they publish all medical items without scrutinizing their source or the probable object of their authors. We believe there is a disposition on the part of the editors of the better class of newspapers to adopt such a system, if it can be made plain to them that they are too often purveyors of false and unscientific matter, prepared solely for advertising some humbug disguised as a respectable doctor or institution.

If this matter is undertaken seriously and with the spirit of offering mutual advantages, and the protection of the public from fraudulent imposition, it would lead to another desirable phase of press cooperation, now totally lacking, or assumed usually in a spirit of levity, and hence, inaccurately and inadequately done; I refer to the publicity given to state medical association meetings. As a rule, the local paper, in the town where the meeting is held, gives a half column or so, but no telegraphic reports are sent to other parts of the state. It would be much to the advantage of the profession if its proceedings were given wider publicity and the real results of its deliberations published, although, of course, always under censorship of some competent member of the society.

Society Proceedings

COMING MEETINGS

American Ophthalmological Assn., New London, Conn., July 14-15.
Idaho State Medical Association, Seattle, Wash., July 19.
Oregon State Medical Association, Seattle, Wash., July 19.
Washington State Medical Association, Seattle, July 20.

AMERICAN SURGICAL ASSOCIATION

Annual Meeting held at Philadelphia, June 3-5, 1909

The President, Dr. C. B. G. de Nancrede, Ann Arbor, Mich., in the Chair

Address of the President: Extirpation of Scapula for Malignant Disease

Dr. C. B. G. de Nancrede, Ann Arbor, Mich.: The statistics dealing with extirpation of the scapula are misleading, because cases which are primary in the scapula and secondary in the soft parts, operations which are done in two stages, and those performed for benign growths, for caries, injury and tuberculous disease, are all included in the statistics usually given. Indeed, in one paper, a case in which the scapula was removed after death was included. There is no discrimination in any of the tables between operative recovery and the end-results, investigation showing that a large number of patients who are reported as having recovered have later died of recurrence of the trouble. The three-year rule has been ignored in like manner, for it is well known that this is utterly unreliable for any form of malignant disease. One patient had an inoperable recurrence at the end of five years, yet this was included by the reporter as a recovery. Recurrences are often the source from which generalization takes place. Careless examination of the patient and the expectation of finding marked difference between the physical signs in the two lungs often lead to the opinion that pulmonary metastases have not occurred, the true explanation being that metastases are so numerous and so small and finely distributed that the physical examination is unreliable. The death rate probably is now lower with the new methods of operating, saving blood and preventing shock, and it is possible therefore that some of those who died in the past from shock and hemorrhage might have shown a few permanent cures if they had survived. It is a matter for future investigation to determine whether interscapulo-thoracic amputation would not give more permanent recovery. The usefulness of the upper extremity after the removal of the scapula is usually so good that, of course, hesitation is felt about doing the operation just mentioned in which the whole upper extremity is ablated. The details given in the tables seem to warrant the above conclusions. There is only one case on record in which the details were obtainable sufficiently long to prove that it is really a cure, the patient being entirely well at the end of eight years. A few more were probably cured, although not reported long enough to be past the time that recurrences have been noted. A vast number of those who are said to be cured have been observed from only a few weeks to a few months and then lost sight of. Operation for pure enchondroma and other diseases demanding excision of the scapula present favorable results.

Chronic Intestinal Stasis

MR. W. ARBUTHNOT LANE, London, England, referred to his earlier communications on this subject, with special reference to the removal of the colon for chronic constipation and described the technic of the operation:

In nine cases I have removed the colon, and of this number one patient died from the rupture of a small abscess in the original cavity. In a number of private cases division of the hilum at its junction with the bowel was effected, with no death from the operation *per se*. Removal of the large bowel is a serious operation; but the danger attending its performance varies with the degree of toxemia. I do not, however, recommend or advise such a radical operation until all other measures, medicinal and hygienic, have been tried. The danger of the operation can be reduced very materially by the subcutaneous injection of a large quantity of normal salt solution immediately before operation.

DISCUSSION

DR. J. C. BLOODGOOD, Baltimore: Chronic constipation has in some instances an anatomic basis. I would call attention to the use of the x-ray and injection of bismuth as a method of diagnosis in these cases. I believe this method will be used more frequently in the future in the class of cases under discussion as it is used now in cases of aneurisms, bone lesions, etc. Recently I operated on a patient who for three years had had pain in the lower abdomen. On exposing the right side some of the adhesions referred to by Mr. Lane were found, and on exposing the left side the sigmoid could be lifted out of the abdomen as easily as one could lift out a loop of the small intestine. The anatomic lesion in this case was an enlarged sigmoid from fecal matter. The sigmoid itself was normal. The mesentery was normal. These adhesions were separated with good results. In another case the adhesions were more pronounced. In this case the bowel was not resected, the patient being relieved by medical treatment. There is no difficulty in resecting the intestine and performing lateral anastomosis, but if one can demonstrate early in the cases a band or adhesion or the anatomic condition, and medical treatment will relieve it, more good will be done than by resecting the sigmoid.

DR. THOMAS W. HUNTINGTON, San Francisco: It has seemed to me for many years that many of these cases of enteroptosis, bearing especially on the large bowel, can be avoided by two things: 1. Careful attention in early life to the emptying of the bowel. In a large number of people in the hands of the average general practitioner a more or less permanent accumulation of fecal matter in the large bowel has been overlooked. 2. I believe this accumulation of fecal matter is due to a definite cause. Take, for instance, an appendix which has not given rise to the ordinary symptoms, it has caused sufficient irritation to interrupt the peristaltic wave and to bring about a condition of the bowel which is extremely disastrous in the carrying of residual material. Careful attention in early life to the emptying of the bowel will obviate the possibility of the occurrence of prolapse of the sigmoid, and by loosening up the large bowel and changing its environment or its relation we may avoid early operation for a pathologic condition which exists. Careful study and search for the pathologic condition, as an obscure appendix, will enable us to escape from the latter consequences which the author has portrayed.

DR. ARTHUR DEAN BEVAN, Chicago: As I understand Mr. Lane, he makes a plea for operative intervention in cases of chronic constipation. I should insist on intestinal obstruction before I should undertake such an operation as the removal of a part or the whole of the colon for chronic constipation. The large and small bowels perform their functions admirably sometimes in spite of extensive adhesions. That is evident after many operations. We should discuss this as a sort of borderline subject in which in our cases we should call into consultation the internists. What would internists think of surgeons if they took the position of treating chronic constipation by resection of the large intestine or by anastomosis? Most of these cases can be much better handled by our internists by exercise, hygiene, etc., than by extensive surgical operation. Personally, I protest against advocating an operation so extensive as the removal of the colon for chronic constipation itself, and should insist on reserving the operation for absolute intestinal obstruction.

DR. JOHN F. BINNIE, Kansas City, Mo.: As I understand, Mr. Lane only advocated this operation for chronic intestinal stasis after all other measures of treatment had failed. I have practiced cecostomy in a number of these cases with fair temporary results, but have not observed the patients sufficiently long to determine whether the results will be permanent or not.

DR. JOHN B. ROBERTS, Philadelphia: I must agree partly with what Dr. Bevan has said, because of some recent experience I have had with intermittent obstruction of the bowel due to kinks and various other causes; but I realize that Mr. Lane does not propose to open the abdomen of everybody for the relief of chronic constipation. After the internists have failed to afford relief to these patients by exercise, medical, and dietetic measures, then surgical operations may do good in the class of cases discussed.

DR. MAURICE H. RICHARDSON, Boston: We must approach the surgery of the large intestine in cases of this kind, as Dr. Bevan says, from the symptomatology of chronic intestinal obstruction. We all see cases of complete chronic intestinal obstruction which demand a most thorough radical operation. In one of my cases of complete volvulus of the sigmoid which threatened life the sigmoid filled the whole abdomen, producing an acute obstruction of the bowel which necessitated operation.

DR. W. B. COLEY, New York: Every severe case of acute intestinal obstruction requires operation, and the operation is attended with great danger. Of nine patients operated on, death followed in every case. I reported a case of volvulus of the sigmoid to the New York Surgical Society, which was preceded by attacks of chronic intestinal obstruction, ending with an acute obstruction. I operated on the patient on the ninth day, when he was almost moribund, with great distension of the abdomen, high pulse, elevated temperature, etc. I opened the abdomen under cocain anesthesia (as he could not stand a general anesthetic) over the sigmoid, relieved the obstruction, and the man recovered.

Mr. A. Lane: I wish it to be distinctly understood that this form of operative treatment is suggested only after all other measures have failed.

(*To be continued*)

AMERICAN ACADEMY OF MEDICINE

Thirty-fourth Annual Meeting, Hotel Dennis, Atlantic City, N. J., June 5-7, 1909

(Continued from page 2124, Vol. LII)

Rational Medical Education Will Supply Physicians Adequate for the Entire Field of Practice

Dr. Leartus Connor, Detroit: In studying the products of our educational system, I find: 1. The fresh products are rarely welcomed by the people. 2. These products lack evidence of a training based on a broad study of the entire field of family medical practice, or logical adjustment of indisputable facts. 3. These products exhibit an embarrassment of undigested facts and theories; an inability to utilize the best methods of managing the simplest forms of disease; an initiative crippled by efforts to train them as family physicians and specialists, by the same machinery, at the same time; and individual antagonism instead of mutual cooperation. There is need for system of education able to produce two classes of medical colleges, text-books, and medical literature adapted to training two classes of doctors, viz., the family physician, and the unlimited practitioner. The only rational standard for judging a system of medical education is its fitness to supply those products that most meet the needs of the entire medical field. I suggest that the organized profession determine exactly what the family physician can be trained to do, and how much, in each simple disease and beginnings of the complex, without interfering with like training in any other disease. This, state boards of registration can require of applicants for license; authors make easy of access through text-books; medical societies discuss; medical colleges teach; and medical journals keep before physicians until it become the accepted guide for medical education. A rational system calls for teachers trained in the profession of teaching as well as in that of medicine, and institutions saturated with the pedagogic spirit, method and practice. It is the clear obligation of the organized profession to promote the evolution of such rational system of medical education.

DISCUSSION

Dr. Charles McIntire, Easton, Pa.: Dr. Connor's paper shows how we are failing, and if I mistake not, educators in other fields are conscious of an analogous shortcoming. Prof. A. H. Chamberlain of the Throop Polytechnic Institute writes: In these institutions (technical colleges) men must be prepared, not alone to carry out the will of another; not simply to be exact machines to execute the plans presented to them. The products of these schools must possess initiative, imagination, individuality; they must be experts, leaders, investigators, executives; they must plan and lead, not follow merely; they must create as well as construct. And to secure this end he pleads not for earlier specialization but for broader culture. It would seem that these words afford a clue to the general problem—our training has been toward specialization too exclusively, and to teach it all within the university courses. We are trying to make expert practitioners instead of training men that they may become physicians. Abraham Flexner in his "The American College" writes: "The important thing is to realize that the American college is deficient, and unnecessarily deficient, alike in earnestness and in pedagogical intelligence; in consequence our college students are, and for the most part emerge, flighty, superficial and immature, lacking, as a class, concentration, seriousness and thoroughness. While James P. Munroe, in *World's Work* for May, formulates a severe arraignment against the high school. And there is hardly a diagnostician of the ills of our educational system that does not lay some of the blame for the pathologic condition to a faulty management of the scholar in the "grades."

Dr. A. Ravogli, Cincinnati: I disagree with Dr. Connor on the advisability of having a school for the practitioner and another school for the specialist. The specialist must first be a thorough physician in order to become a specialist. Regarding the question of how much anatomy a man must know when he comes out of the college, I should say he must know anatomy from the bones to the skin, and from the feet up to the brain. The same is true of physiology. The members of the medical examining boards are perfectly right: We have no limitations. We may ask questions in every part of medicine and every candidate must answer these questions. We must put the state examinations on a practical basis and require the applicants to practice medicine to show us that they are able to make diagnoses and to practice medicine in order to relieve human suffering.

Dr. J. P. Scott, Hagerstown, Md.: I think that the projection of two classes of physicians would be destructive to medical education as such. My experience in registration and licensure in Maryland convinces me that there is an attempt to do too much educating and not enough education given. I find that the men of to-day occupying prominent places are men who received their education under the old methods. Dr. Connor received his a number of years ago. Education does not stop at the medical college, but the man receives there the ground work for his training.

Dr. H. A. Tomlinson, St. Peter, Minn.: I have read recently in connection with some excavations in Asyria of the finding of a tablet which contains some criticism of the practice of physicians over six thousand years ago which, in a general way, are very like those we hear to-day. There are two general classes of men; one which is satisfied with the acquisition of facts; another, which is not satisfied, except with the relation of facts to each other. It seems to me that as human nature has never yet been changed, the progress of medical education will continue to be a matter of evolution and of compromise.

Dr. Edward Jackson, Denver: There are forces of disintegration at work with strong tendencies to break up the medical profession into separate bodies. The most familiar instance is that in connection with the "optometrists," as they wish to be called. They will have a separate profession unless the medical profession as a whole becomes more familiar with that field. That is, I think, what Dr. Connor has in mind. It is only possible that the medical profession shall remain a united profession by carefully going over the whole subject of medicine, and deciding what ought to be common knowledge and what ought to be left to specialization.

Dr. L. Connor: Family practice is a lost art. I would do what I could to replace that family practice, to enable a man to meet satisfactorily the medical needs of a family from the cradle to the grave. The proposition I make would do that, with the aid of the specialist to be sought when a case passes beyond his knowledge and technic.

Report of the Committee to Draft a Medical Practice Act

Dr. Charles McIntire, Easton: The essential ideas to be kept in mind in framing a medical practice act are:

1. The law is for the protection of the people.
2. That it should provide but one executive body to supervise the law.
3. It should present an accurate definition of the practice of medicine.
4. It should specify the educational qualifications both general and professional for the applicant.
5. The board should have the power to test the applicant to see if he has made proper use of his educational advantages.
6. Liberal provision should be made for the representatives of all shades of opinion on the board, not of right, but of policy. Mixed boards do not weaken the efficiency of the board.
7. The law should supervise those who have been licensed, revoke the licenses of those who cease to be safe practitioners and should have provisions enabling the board to seek out and to punish those who attempt to practice without legal right.
8. It is desirable that a different test should be provided for those who have been in practice than for those just in practice. A provision should be made whereby a license can be issued after an examination of the record and previous licensure in another state to an applicant without a formal examination of the applicant himself.
9. The members of the board being employed by the state to exercise police duty should be sufficiently remunerated by the state, independently of the license fees. These should be put into the state treasury as part of its income.
10. The principles on which the restrictions of the act are based should be stated with care and exactness but in such a manner as to give the board the greatest liberty in the execution of

them that it may be able to adapt itself to contingencies arising under a rearrangement of conditions.

11. In view of the apparent "political pull" of the osteopath, it may be well to have provisions for a limited license for those desiring to practice only in part..

Report of the Delegate to the Association of American Medical Colleges

Dr. Charles McIntire, Easton: Judging from the part of the meeting that I was able to attend it must have been one of the most successful and profitable of the meetings held under the auspices of the association. The representatives of the various colleges seemed to be sincere and in earnest, and when they differed they differed frankly. With this spirit there is a field for increasing usefulness on the part of the association. It needs the support of some of the stronger institutions, many of whom were formerly affiliated with it, although of more rigid requirements than those of the association. The requirements now are such that there should be the helping cooperation of all worthy medical schools. I hope the academy will accept the invitation already extended to send a delegate to the next meeting, which is to be held in Baltimore in March, 1910.

Report of the Committee to Arrange a Conference with Educators

Dr. Charles McIntire, Easton: Your committee recommends:

1. That the attention of the medical profession be called to the desirability of permitting medical schools to receive properly qualified students into advanced standing for the studies included in the first two years of the medical course, and that they be urged to secure a modification of the law permitting medical colleges to certify to the student's completion of the studies of the first two years independent of the length of time and residence in a medical college and that this recommendation be sent especially to the state societies and the boards of medical examiners.

2. That the Council of Medical Education of the American Medical Association be requested to formulate the preliminary and graduation requirement of the medical course in terms of work done after due consultation with educators and others interested, as suggested by the paper of Dr. Jackson.

3. That the Academy records as its opinion that there is great danger to the college of arts in our country by the prevailing idea that it is not a place for earnest effort on the part of the student. The result of this delusion was shown time and time again in discussion similar to those conducted by your committee. Unless there is a change in the purpose of those pursuing the college course, there is danger of the impairment of the usefulness of the college for all but the idler.

4. That the Academy appoint a committee to formulate the requirements of admission preserving the principles underlying the present wording but adapting them to the educational procedure of the day.

(*To be continued*)

AMERICAN PEDIATRIC SOCIETY

Annual Meeting, held at Lenox, Mass., May 27-28, 1909

(Continued from page 1949, Vol. LII)

Danger to the New-Born from Gas Heaters

Dr. A. W. Saunders, St. Louis, called attention to the danger to the new-born of the ordinary gas heaters used in rooms and reported several cases of illness in children due to this cause.

DISCUSSION

Dr. Samuel S. Adams, Washington, reported a distressing calamity which occurred in Washington during the past winter in which the mother, wife and baby of a government clerk lost their lives from this cause, being suffocated by the carbon monoxid formed by what is known as "backfire." He felt that there was considerable danger in these gas heaters unless certified to by an inspector of meters.

Spasmodic Stenosis of the Esophagus Demonstrated by the *X*-Ray

Dr. L. E. LaFetra, New York, presented this paper, exhibiting *x*-ray photographs which showed perfectly the site of the stricture.

Dr. Thomas Morgan Rotch, Boston, reported one case occurring in the lower part of the esophagus before the day of the Roentgen ray when physicians were afraid to pass a sound. Postmortem examination showed a perforation of the sac.

Influenza—The Part It Plays in Hospital Infections; the Value of Cultures as a Means of Diagnosis; Influenza Carriers

Dr. L. Emmett Holt, New York: Three hundred and twelve cultures were made from one-hundred and ninety-eight persons. The bacilli of influenza persisted in the bronchial secretions and the observations showed an association of the influenza and pneumococcus. In many if not in most cases we have to deal with a mixed infection. It seems certain that there is such a clinical entity as influenza. Otitis media occurred in some cases as a complication and was most frequently due to the staphylococcus. The bronchi seemed to be the habitat of the bacillus.

DISCUSSION

Dr. T. M. Rotch, Boston, hoped that the investigations would lead to further work of this kind, as there was much to be learned about this disease which needed to be dealt with in exactly this way—with careful cultural examinations.

Dr. John Howland, New York, thought that there was no reason for calling the Pfeifer bacillus the influenza bacillus. He believed that it was not the cause of the clinical entity influenza. There was a large group of allied organisms some of which could cause influenza.

Dr. Henry Koplik, New York, some time ago took regular routine cultures from every child for diphtheria bacilli and found that of 300 children who presented normal throats 35 showed the diphtheria bacilli.

Dr. Isaac Abt, Chicago, referred to a hospital epidemic of diphtheria, the origin of which was difficult to trace until cultures had been taken, when one of the nurses was found to have a number of the bacilli in the throat.

Dr. S. McC. Hamill, Philadelphia, thought the relationship between the clinical manifestations and the association of the influenza bacillus could not be questioned.

Dr. T. S. Southworth, New York, thought that however much diversity of opinion might exist as to the exact organism responsible there was no question that there existed a clinical entity called influenza and that the condition was the source of epidemics in hospitals. He also thought there was no doubt about the infectiousness of the cases and advocated prompt isolation.

Dr. Miller, Atlantic City, referred to an epidemic in his hospital in which one of the residents had the bacilli in his throat for six or eight weeks, and later developed the disease.

Dr. L. E. LaFetra, New York, referred to the tendency of the aural surgeon to perform the mastoid operation too frequently in these cases in which fluctuation of the temperature was the only indication.

Dr. C. G. Kerley, New York, emphasized the point brought out by Dr. LaFetra and said he would not have his patients operated on unless there was other evidence of the disease aside from temperature.

Report of a Case of Long-Standing Empyema; Race as a Predisposing Factor in Empyema

Dr. Alfred Hand, Jr., Philadelphia: The case reported was that of a girl 3½ years old, weighing 8 pounds and 14 ounces; from the history it seemed probable that the empyema had existed for about 20 months. A study of the statistics of the children's hospital of Philadelphia for 10 years showed that the number of empyemas in white children is about 10 per cent. of that of the pneumonias; in colored children the empyemas are less than 1 per cent. of the pneumonias; but 3 in these cases unnecessary and that it causes deformity.

DISCUSSION

Dr. R. G. Freeman, New York, thought resection of the rib in these cases unnecessary and that it causes deformity of the chest.

Dr. Samuel S. Adams, Washington, referred to the difficulties of diagnosis in these cases and said that he could not recall a case of a typical empyema in a negro which accorded with Dr. Hand's experience.

Dr. Thomas Morgan Rotch, Boston, said that patients with non-tuberculous empyemas almost invariably recover, and that he still resected the rib in these operations and did not find that it caused much deformity.

Case of Atresia of the Duodenum

Dr. R. G. Freeman, New York, reviewed the literature of the subject of which with a case reported there are 63 cases. On the second day the child voided no urine, vomited and became jaundiced; on the fifth day there was frequent vomiting. On the sixth day, when first seen, there was no peristalsis and no bowel movements. On the ninth day vomiting became worse and on the tenth day the child died. Postmortem showed constriction two-thirds of the distance toward the pylorus. The stenosis of the duodenum was complete.

DISCUSSION

Dr. Thomas Morgan Rotch, Boston, referred to the comparative rarity of these cases, but said that cases of young babies with symptoms of stricture were not so infrequent. He believed in operative measures very strongly once the diagnosis had been made.

A Case of So-Called Congenital Malaria

Dr. Frank S. Meara, New York: The paper deals with a case of so-called congenital malaria and the question is discussed of whether there is such a thing as congenital malaria. The child was born in a locality where there were no mosquitoes. On the tenth day the child became sick and was brought in with a diagnosis of inguinal hernia. The spleen was filling one-half the abdominal cavity and the blood showed a number of parasites. It would seem that the child was infected or inoculated by the maternal blood in the parturition. It is fair to assume the possibility of separation of the placental membranes and inoculation. I thought this case represented such an inoculation.

(To be continued)

NEW HAMPSHIRE MEDICAL ASSOCIATION

Annual Meeting held at Concord, May 12-14, 1909

(Concluded from page 2015, Vol. LII)

Empyema

Dr. E. E. Lake, Hampstead, said that all authors agree on drainage and considers that his treatment will get the patient out quicker that any other method. He cited several cases in which he had made an incision between the seventh and eighth ribs and drawn off the pus, always with good results.

The Hygienic and Physical Exercise Treatment of Cardiac and Neurasthenic Cases

Dr. John W. Bowler, Hanover: I have been successful in cases of fatty heart, arrhythmia and gastric disturbances. Physical or external therapeutic treatment benefits all these patients and permanently cures most of them. Massage is the most generally applicable feature, as it can be given to patients who are too weak to begin with the exercises. We rarely find laborers or those whose occupation keeps them in the open air, necessitating some physical exertion, affected with neurasthenia.

DISCUSSION

Dr. John C. O'Connor, Manchester, does not believe in telling a nervous patient not to worry, as he will only go out and worry the more; the physician should endeavor to have the patient do something that will take his mind from himself.

Responsibility of the General Practitioner and the Specialist in the Prevention of Deafness

Dr. Francis P. Emerson, Boston, in speaking of the prevention of deafness and the progress of otology during the past few years particularly, stated that it had been largely along the line of prevention. It was found that in the progress of catarrhal deafness the relation of the nasopharynx to the middle ear was one of extreme importance. He exhibited a plate showing the condition after an operation for the removal of the middle turbinate. One ear might be impaired without the knowledge of the patient. A person whose hearing was affected was debarred from gaining a livelihood in many ways. It was common observation that a large percentage of deafness in adults dated back to childhood, therefore children should be looked after. The hearing function of adults was also often seriously impaired by the action of certain drugs. Syphilis and tuberculosis were accompanied by marked destruction of the membrana tympani.

DISCUSSION

Dr. L. W. Flanders, Dover, considered it a difficult matter to get the cooperation of the parents in treating these diseases. He believed that the time was coming when parents would be compelled to attend to the ears of their children in the same manner in which they were now obliged to have them vaccinated. There were children in any city schoolroom with running ears accompanied by a disagreeable odor which was an abomination. These children also became confirmed mouth breathers.

Dr. George A. Weaver, Warren, thought that physicians did not follow up acute febrile diseases thoroughly enough and long enough. The patients were not nourished properly with tonics which would indirectly reach these parts; and the same lack of supervision applied to the eliminations from the intestines and kidneys. Dr. Weaver also thought one of the causes of deafness might be from diving and swimming under water during the summer months.

Recent Advances in Neurology

Dr. Albert E. Browrigg, Nashua, emphasized the importance of nervous diseases, previously somewhat neglected, but now making rapid progress and attracting the attention of the profession. Diagnosis had become more exact and treatment more effective. Particularly in regard to insanity, institutions had become hospitals for study and treatment instead of asylums, and about 25 per cent. of the patients were discharged as recovered. Insanity and mental diseases were not interchangeable terms; insanity must be regarded as a legal state and not a definite disease. The various cults professing to cure functional nervous disease were wayward exploitations of the incomplete scientific findings of physicians engaged in mental research. This method was apt to discredit genuine scientific work; but it was attracting the popular mind to psychotherapy and away from the surgical field which had been holding its attention. In this state of the popular pulse it was well to review our knowledge of mental diseases, which was best done by running over a good classification of the psychoses, so as to brighten the mental picture of these diseases. Dr. Browrigg gave a rearranged Kraepelius classification as follows:

PSYCHOSES

1. Toxemias.—Curable psychoses depending on external toxins: Drug Psychoses; Infection; Thyrogenous.
2.—Exhaustion Psychoses.—Neurasthenia, curable by good nutrition even after from five to fifteen years duration.
3. Manic-Depressive.—Frequently hereditary, often curable.
4. Dementing.—Associated with organic disease of nerve centers, usually progressive: Dementia præcox, the patient may recover but is always left somewhat damaged and recurrence is probable; involution psychoses; organic brain lesions; paresis sclerosis; apoplexy, etc.
5. Paranoia.
6. Constitutional Instability.—Hysteria; epilepsy; fears; impulse.
7. Defectives.—Imbeciles; idiots.

DISCUSSION

Dr. T D. Luce, Portsmouth, had always considered the classification of nervous diseases into the general term of visional and organic a rather unfortunate one, a little too broad, and that in so-called visional disease a great many times there really existed some organic cause which was not recognized. He thought that probably physicians did not take the interest they should in this matter unless they specialized along this line. Probably most of the members of the society were capable of diagnosing and curing cases of appendicitis, but very few could intelligently treat and take the interest which they should in nervous diseases.

Tuberculous Hip-Joint Disease

Dr. N. W. McMurphy, Gilmanton: Although hip disease may occur late in life, it is essentially a disease of childhood, usually attacking children between the ages of 2 and 14. The reason for this is the frequency of tuberculosis in childhood, the active growth and immature nature of the joint constituents, the greater liability of children to fall, and the greater activity of youth, which favors the development of disease from slight injury. Tuberculous hip disease is seldom associated with pulmonary tuberculosis; indeed, it has been claimed by many authors that there is a direct antagonism between external and internal tuberculosis. The symptoms in the early stages are more or less obscure. The first stage is usually a slight limp; muscular rigidity occurs in the second stage, and often abscess. The third stage is characterized by shortening or dislocation of the joint. The natural tendency is toward recovery, with more or less deformity. One of the most important things in the treatment is to place the joint in a position of perfect rest. The traction splint is known as the American method; the traction brace is also used. The main obstacle to the cure of an inflamed joint is the friction and pressure of its surfaces. The German method is by means of the plaster bandage without crutches or high shoe. The short spica bandage is used as a routine treatment of hip disease.

Legal Liability of Physicians to Patients

Mr. Marshall D. Cobleigh, Lebanon, said in part: The general demand for a higher degree of preparatory work and training on the part of those who are to have the right to practice medicine than formerly obtained, may partially account for the recent verdicts that have been returned against physicians in this state for alleged errors. The law requires that you use "due care" in the treatment of your patient. Just what acts will come within the definition of "due care" is often difficult of determination. A fairly accurate statement of the rule is laid down by a writer in the following language: "Due care is a degree of care corresponding to the danger involved . . . the term is relative, and its application depends on the situation of the party, and the degree of care and vigilance which the circumstances reasonably impose. Where the danger is great, a high degree of care is necessary and failure to observe it is want of ordinary care." In law "due care," "reasonable care" and "ordinary care" are convertible terms. Negligence is the failure to do what an ordinarily prudent person would have done under the circumstances, or the doing of that which an ordinarily prudent person would not have done, in either case causing unintentional mischief to a third person. To charge a physician or surgeon with damages, on the ground of the unskillful treatment of his patient's case, it is never enough to show that he has not treated his patient in that mode, nor used those measures, which, in the opinion of others, even medical men, the case required; because such evidence tends to prove errors of judgment, for which the defendant is not responsible, as much as the want of reasonable care and skill, for which he may be responsible. Negligence is usually a matter of fact, not of law, yet there may be some cases in which it is a mixed question of law and fact. The law is always a question for the court, while the facts are found by the jury. In the absence of an express contract, a physician does not incur liability for failure to accomplish what the patient desires, unless the failure is due to negligence on the part of the physician. Another question may often arise, as to what extent a physician is justified in going, in performing an operation other and different from the one on which he started out, while the subject is under the influence of an anesthetic. In Pratt v. Davis, 7 L. R. A., 609, the court holds that an express or implied consent is necessary either by the person or by some one legally authorized to act for him. When a person receives a serious injury and the attending physician starts in on an operation with the knowledge and consent of the patient, and he finds that, in order to save life or in an attempt to save it, he must go farther, and that at the time, there are cases in which the courts have held that an implied consent is given to the physician to do what seems to be reasonable and necessary for the patient. If a person has been injured to the extent of rendering him unconscious, and his injuries were of such a nature as to require a prompt surgical operation, a physician called to attend him would be justified in applying such medical or surgical treatment as might reasonably be necessary for the preservation of his life and limb, and consent on the part of the injured one would be implied. The present tendency of the decisions is to extend and grant every reasonable right of latitude to a physician. The practical question that a physician is interested in is how to protect himself from law suits and vexatious litigation. In this connection I would suggest that, in cases of doubt, he have one or more physicians as witnesses while performing an operation, or even administering an anesthetic, if there is any danger of trouble therefrom. The rule for determining damages may be stated generally as follows: A party may recover damages for all actual pecuniary loss, damage or personal injury that may result from the wrongful act or omission of another, and which is the natural and probable result of the act or omission complained of, including a reasonable compensation for mental and physical suffering caused by the act or omission in question, and in some cases in which the act was wilful, then exemplary damages may be awarded, or damages which may be added by way of punishment for the malice displayed by the defendant.

Mr. Cobleigh closed his paper with the simple suggestion: 'Usually your own good judgment, carefully and honestly exercised, coupled with your fidelity to the needs of your patient, will, in the future as in the past, both prove a safe protection and prohibit such professional errors as will be cause for complaint on the part of those whom you may be called on to treat."

DISCUSSION

Dr. E. O. Crossman, Lisbon, said that he had always felt personally that there was little danger from malpractice cases if he did his best and kept away from surety companies. His feeling was that a surety company was a corporation and was pretty sure to invite trouble. He thought that there seemed to be a feverish public mental condition that was hard to understand, a condition of unrest, a battle on all sides for supremacy, regardless of justice and righteousness. Dr. Crossman said that, as there is no great hurry about a broken bone, that the family physician should be called in or some other physician in the neighborhood. It helped to strengthen things if the physician insisted on plenty of counsel before taking any positive step. It was hazardous business taking charge of broken bones, and the more we could divide the responsibility, the better.

Judge James W. Remick, Concord: Just now our courts are abounding in malpractice proceedings against members of your profession, and verdicts are following each other in swift and alarming succession against the most distinguished of your number, and for amounts on account of alleged imperfect repair in excess of the damages awarded for the entire injury against corporations in no more serious cases. Some of the convictions relate to treatment afforded without reward or hope of reward by way of charitable relief in charitable institutions, and in part on the alleged ground that the appliances of the institution were defective. The institution itself because of its charitable character is by the policy of law exempt from liability to its patients, but nevertheless the physician who from the same motives of charity donates his services to the hospital, is called on to pay large damages on account of results. The Supreme Court of this state, in setting aside a verdict in a leading malpractice case against one of your profession on account of treatment of a fracture, said: "The medical practitioner is necessarily surrounded by doubts and uncertainties and unavoidably exposed to errors and mistakes which may well furnish a satisfactory explanation of unfavorable results."

Hydrotherapy

Dr. John B. Macdonald, Concord: The oldest of all remedial measures has been until a late day the most neglected and often the most derided by the medical profession. As a profession, we are too apt to walk rather contentedly in a little lighted circle of prejudices and have to be reminded of what lies without us. Water, properly applied, is a most powerful therapeutic agent, and the results from its judicious usage are often little short of marvelous. In the wards of the New Hampshire State Hospital it has been demonstrated over and over again that a short cold bath with friction lowers the pulse rate markedly, improving its tone and increasing its tension. Cold applications excite and warm applications diminish irritability. No one who has not seen an excited acute maniac sleeping quietly for six or seven hours after a bath of from three to five minutes' duration, administered in the proper manner, can have any conception of the wondrous change effected. Sleep has been produced by this means when large doses of veronal, hyoscin and dormiol have been ineffective. Cold applications to fulfill their function should be of short duration and always accompanied by friction.

DISCUSSION

Dr. C. R. Walker, Concord, spoke of a case of sepsis in which the patient was made comfortable, restlessness diminished and quiet produced, by frequent reconnection with the double injection tube, thus irrigating the lower bowel with gallons of water.

Dr. F. N. Rogers, Manchester, mentioned a case of acute alcoholism which was relieved in one night by the use of hot baths.

Dr. H. W. N. Bennett, Manchester, reported the case of a young boy with a tuberculous leg who was not expected to live. The leg was swollen three times its natural size and there were many places through which the pus exuded. The boy was placed in a bath tub and immersed to the neck, staying there for a day and a night. In about eight days a hip joint amputation was performed and the boy recovered.

Dr. F. L. Gerald spoke of a young man with typhoid, whose spine was packed with ice, and it was three or four years before he recovered. So it seems to him that brains and common sense should back up this treatment with water as well as medicine.

Medicolegal

Burden of Proof and Other Requirements in Abortion Cases

The Supreme Court of Colorado says, in Fitch vs. People, where it affirms a conviction of procuring an abortion, that the law of that state has wisely provided that but one fact can justify the procuring of, or attempting to procure, a miscarriage; that is, that the act is done by or under the advice of a physician or surgeon, with intent to save the life of the woman, or to prevent serious and permanent bodily injury. It is not incumbent on the state to prove beyond a reasonable doubt, or at all, that "the use of the instrument was not necessary to save life," that it was not used "to prevent serious and permanent bodily injury," or "was not done under the advice of a physician or surgeon." The exceptions contained in the statute are matters of defense which must be made to appear by the defendant from the evidence.

The crime is complete when the instrument is used with the intention of procuring a miscarriage. Whether miscarriage does or does not follow is immaterial. An instruction offered in this case appeared to have been drawn on the theory that the woman might have miscarried by reason of her own acts in the taking of drugs or the use of an instrument, and that proof in support of such a theory would warrant the acquittal of the defendants; but such is not the law.

Again, the court says that the defendant offered no justification for having used an instrument with the intention of procuring a miscarriage, and no instruction on that theory should have been given. She denied that she had used any instrument that could have produced a miscarriage. She testified that she used only a speculum, and that that instrument was used only for the purpose of making an examination, and that its use could not have produced a miscarriage. But the only question presented to the jury by her plea of not guilty and all the testimony in the case was, Did she, or did she not, use an instrument with the intention of procuring a miscarriage? and not, Did she, or did she not, use an instrument with the intention of procuring a miscarriage, under the advice of a physician, to save life, or to prevent serious or permanent bodily injury? Therefore, even though the instructions apparently cast on her the burden of proving facts in justification, there was no error, because under the testimony no such question should have been submitted to the jury. The burden of proving the facts necessary to conviction devolves on the state; and if, from all the evidence, a reasonable doubt exists in the minds of the jurors as to the guilt of the accused, he must be acquitted. Yet, in a case where justification is not relied on as a defense, the defendant is not harmed by an instruction which casts on him the burden of proving facts in justification.

Admissible Expert and Other Evidence and Instructions in Malpractice Case Affected by Tubercular Conditions

The Court of Appeals of Maryland says, in Miller vs. Leib, an action brought by the latter-named party to recover for alleged negligence in treating her after she had fallen and fractured a femur while walking across her bedroom, that litigants in an action of law are entitled to the judgment of the jury on all of the facts of the case. Therefore expert testimony on hypothetical questions, which substitutes inferences for facts, ought always to be received with caution. It is of the highest importance in admitting such evidence that care be taken to see that the hypothetical question put to the expert is not only based on facts already in evidence, but that it is so framed as to fairly represent those facts, and not give the situation a false color by the method of their statement. In some jurisdictions such questions are required to cover all undisputed facts material to the subject involved, but it has been held by this court in several cases that it is not always necessary in framing a hypothetical question to be put to a medical expert to refer to all of the evidence on the subject. It has, however, since then been held by this court that it is faulty in framing a hypothetical question for a medical expert to give a wrong coloring to facts by isolating a particular fact and withholding other facts which bear directly on the ones so segregated.

In this case the hypothetical questions, by means of which the plaintiff's counsel elicited the expert testimony of a physician over the defendant's objection, were predicated on the assumption that at the time of the accident the plaintiff was over 61 years old and slight in build, but were silent as to her general health at the time, and especially failed to mention or take into consideration any tubercular trouble on her part. For example one question was: "Suppose a lady, 61 years of age, rather slight, falls and sustains a fracture of the neck of the femur; suppose it were an impacted fracture, what would be the treatment which would be required on the part of a reasonably skillful physician using reasonable care?" Another question was: "How long usually would reasonable care require that the Hamilton and Long (splint) or the plaster cast and the mild extension should remain before the physician took it off to examine the condition of the fracture?" Still another question was: "Suppose a lady 61 years of age fell and sustained an intracapsular fracture of the neck of the femur, and called in her regular physician, how often would reasonable care require that he should see his patient after his first visit?" The court thinks that the defendant's exceptions to these and all similarly defective questions should have been sustained.

Another exception raised the question of the propriety of permitting a witness to testify that the defendant told her over the telephone at 1 o'clock of the day of the accident that he would come out to see the plaintiff, though the witness had testified that she did not recognize the voice speaking over the phone to her as that of the defendant, as she did not then know him. But as the communication put in evidence in this case came over the telephone in response to a request sent to the defendant's office, and purported to be from him, and was not strictly personal or medical in its nature, but consisted merely of an alleged statement on the physician's part that he was unable to respond at once to a request to visit the patient, accompanied with a promise to do so after he had closed his office, the court thinks it was properly permitted to go to the jury to be considered by them in connection with his testimony that he got there as soon as he could after receiving the telephone request to come, which, according to his account, reached him about 6 or 7 o'clock in the evening.

The plaintiff requested that the jury be instructed that if they found that she sustained a fracture of her femur, and that the defendant as a physician and surgeon undertook to treat her and did not exercise reasonable care and skill in ascertaining from what she was suffering, or in his treatment of her case, and that, by reason of such failure on his part, she suffered pain and lost the use of her limb, she was entitled to a verdict in her favor. No reference was made to the evidence in the case tending to show a tuberculous condition of the plaintiff at and after the time of the accident, and the effect of such a condition on the propriety of the treatment of the plaintiff's case adopted by the defendant. The instruction was given in connection with one by which, as modified by the judge, the jury were directed not to allow any damages on account of the treatment given to her by the defendant for tuberculosis, nor for such delay in his treatment of her hip as resulted from his diagnosis of tuberculosis in her. The court finds no reversible error in the granting of the two instructions in connection, thus limiting the first by the proviso contained in the other.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

June 19

1 Problems Connected with Tuberculosis. H. G. Piffard, New York.
2 *Presence of the Tubercle Bacillus in the Circulating Blood. R. C. Rosenberger, Philadelphia.
3 *Indications for Removal of the Faucial Tonsil and Suggestions as to its Technic. G. Hudson-Makuen, Philadelphia.
4 *Human and Bovine Tubercle Bacilli. G. B. Sweeny, Pittsburg, Pa.
5 *Expeditious Method for Submucous Resection of the Triangular Cartilage of the Nose. W. P. Porcher, Charleston, S. C.
6 *Irrigation Treatment of Puerperal Sepsis. H. Weil, New York.
7 Practical Lessons from a Study of 200 Cases of Weakened Feet. J. M. Berry, Troy.
8 Malignant Endocarditis without Fever. E. E. Cornwall, Brooklyn.

2. **Tubercle Bacillus in Blood.**—In 300 cases of tuberculosis, Rosenberger is more than ever convinced that tuberculosis is a bacteriemia, and that the tubercle bacillus can be demonstrated in the blood in every case in which there is an active tuberculous process. He also believes that the bacillus is present in the blood in a certain percentage of apparently healthy individuals at some period and perhaps may be there for years in an attenuated form. When the general resistance is lowered or the resistance in some viscus or anatomic structure is lessened, the bacillus becomes pathogenic, at once lodges at this point, and brings about the disease, tuberculosis. Rosenberger also believes that the bacillus is transmitted from mother to child through the placenta, as the examination of a large number of specimens of blood from umbilical cords show these same acid-fast organisms as obtained from the mother's blood.

3. A similar article by this author appears in THE JOURNAL, June 19, 1909, p. 1988.

4. **Human and Bovine Tubercle Bacilli.**—During the past year one hundred and fifty additional cases successfully treated with antituberculous lymph by Sweeney and other physicians in various parts of the United States have been carefully studied. From the beginning of his work in immunizing cattle, Sweeney has made close observations on the relative merits of human and bovine tubercle bacilli as immunizing agents. To render these observations more reliable he has during the past five years kept the immunized cattle in two district herds; those immunized through the use of bovine tubercle bacilli being cared for on a farm remote from the cattle which had been treated with human tubercle bacilli. The lymph derived from the first herd was designated AT. L. No. 1. that from the second AT. L. No. 2. That there was a marked difference between the action of the two lymphs when administered to tuberculous patients was at once apparent. Even more; in most cases where AT. L. No. 1 improved the patient's condition a change to AT. L. No. 2 would be followed by untoward symptoms. In exceptional cases a change from one lymph to the other, at definite intervals, would be followed by improvement for a time, when it was found advantageous to return to the first. From the evidence which has been collected on the subject, Sweeney believes that we are warranted in reaching the following conclusions:

1. Human and bovine tubercle bacilli are distinctly different in most of their characteristics.
2. The human subject may become the host for either form of tuberculous infection, human or bovine. Likewise the bovine may be inoculated in the same way and under like conditions.
3. Tuberculous infection of the respiratory tract will usually be found to be due to bacilli of the human type, while those of the bones, joints, and lymphatics are likely to be due to bacilli of the bovine type.

From clinical study of patients treated during the past five years Sweeney concludes that an antitoxic vaccine or lymph may be derived from the bovine which has been previously immunized through the administration of attenuated doses of tubercle bacilli. Also that this immunity may be accomplished through the use of either human or bovine tubercle bacilli in the emulsion which is used for immunizing purposes.

5. **Submucous Resection of Triangular Cartilage of Nose.**—Porcher describes his method in connection with a case report, as follows: With a rather long Curtis electric trephine two large cones of cartilage were drilled away, the trephine passing through the mucous membrane in the rear. The projecting ends of the cartilage having been removed the septum resumed its erect position. The mucous membrane was allowed to fall back into position, and a compress of cotton was used to hold it so until union took place, which was by first intention. An excellent feature of this operation is said to be that perforation rarely occurs. Unless the angle of deflection of the septum is extremely acute, it is almost impossible to produce a perforation. In a straight septum the trephine would have to be held at right angles to the partition to penetrate through it, and therefore this accident would only be likely to happen in proportion to the acuteness of the angle or the amount of deflection present.

6. **Irrigation Treatment of Puerperal Sepsis.**—The treatment employed by Weil consists of intrauterine irrigations given with sufficient frequency to keep the uterine cavity empty of all lochia. This would ordinarily involve considerable disturbance and pain to the patient, besides necessitating the almost constant presence of the attending physician. To avoid this he employs a technic by which the irrigations may safely be entrusted to any intelligent attendant; they are painless, and do not disturb the patient any more than is necessary to put her on and off the bed pan. With the patient in the dorsal position on a bed or table, he inserts two soft rubber tubes into the uterus, one well up to the fundus, the other beyond the internal os. The tubes are held in place by a light vaginal pack. Both tubes project a few inches beyond the vulva. To irrigate he attaches a fountain syringe to the longer tube, the other tube merely providing for a return flow. In this manner the irrigations are readily given on a bed pan or Kelly pad, and no particular skill is required. This treatment involves much work both day and night and is not adapted to the milder infections, being essentially an heroic procedure, it finds its use only in serious cases.

Boston Medical and Surgical Journal

June 10

9 *Comparison of the Guaiac and Benzidin Tests for Invisible Hemorrhage in Diseases of the Digestive Organs. F. W. White, Boston.
10 *Relation of the Spleen to Resistance Against Infection. J. C. Hubbard, Boston.
11 Medical Inspection of Schools in Boston: Present Limitations and Future Possibilities. W. P. Coues, Boston.

9. **Comparison of the Guaiac and Benzidin Tests for Invisible Hemorrhage.**—Only those cases are included in White's report in which the the diagnosis was practically certain from long clinical observation, or as the result of operation or autopsy. Two or three were excluded because of reasonable doubt about the use of a meat and fish-free diet. The Weber guaiac test with hydrogen peroxid was used, and the Schlesinger and Holst's benzidin test without shaking the benzidin peroxid mixture after adding the material to be examined. Twenty examinations of feces from healthy persons eating meat or fish with benzidin. Thirty-nine examinations of feces of 15 healthy once or twice a day, gave 4 positive results with guaiac and 20

persons on a diet free from meat, fish or their juices for three days gave an invariably negative result with both benzidin and guaiac tests. Ten feces from two cases of esophageal neurosis, spasm of the cardia, gave only negative results. Three feces from one case of cancer of the esophagus gave only positive results.

The stomach cases are divided into three classes: Those in which examination of the feces showed no bleeding, temporary bleeding or constant bleeding.

No Bleeding.—In this class are 62 cases with invariably negative feces when the proper precautions of the test were observed. These consist of functional diseases of the stomach, such as hyperesthesia, hyperacidity, achylia and other neuroses, chronic gastric catarrh and gastroptosis. Seventy-eight examinations of gastric contents in these cases gave 13 positive results with benzidin and 8 positive with guaiac. These results are undoubtedly due to minute artificial hemorrhage from the use of the stomach tube and show the small value of a positive result in gastric contents in comparison with the same in feces. *Temporary Bleeding.*—In this class are 4 cases of acute gastric ulcer, 6 cases of chronic or recurrent gastric ulcer, and 2 cases of chronic duodenal ulcer. Sixteen examinations of the feces were made in the 4 cases of acute ulcer with 7 positive and 9 negative results with each test. The feces usually become negative for blood in about ten days after hospital treatment was begun in cases of acute gastric ulcer with hematemesis. Twenty-five examinations of feces in 8 cases of chronic or recurrent peptic ulcer gave 15 positive and 10 negative results with benzidin and 12 positive and 13 negative results with guaiac. Here the somewhat greater delicacy of the benzidin test was distinctly useful in diagnosis. In one case in which chronic gastric ulcer was suspected (and proved later at operation) several positive results were obtained in feces and stomach contents with the benzidin test, while only negative results were found with the guaiac. In 5 cases of benign pyloric stenosis, 10 gastric contents were examined, and 3 positive and 7 negative results were obtained with each test. The positive results were due to meat or fish remaining in the stomach from previous meals. *Constant Bleeding.*—In this class there is only cancer to consider among chronic affections. In 6 cases of cancer of the stomach, 14 feces and 13 stomach contents were examined and all found positive with both tests. Two of these cases were fairly advanced with palpable tumor, 4 were doubtful, latent cases in which the constant presence of occult blood was very valuable in diagnosis. Positive results probably are obtained as soon as ulceration occurs, which is usually early in gastrointestinal cancer. In 5 cases consisting of neuroses, chronic catarrh, adhesions, diverticulitis, all feces, 10 in number, were negative with both tests. In 2 cases of ulcerative colitis, 2 stools were positive, and 2 negative with each test. In 1 case of cancer of the jejunum, 20 inches from the pylorus, all 3 stools examined were positive with both tests. Curiously enough, in cancer of the bowel in general, positive results are less constant and frequent than in gastric cancer, and a negative test has less value, therefore, in ruling it out. In 8 cases comprising gallstones, syphilis and cyst, all stools examined were negative with both tests. In 1 case of cirrhosis, 2 stools were positive and 1 negative with both tests. Positive results in cirrhosis have little or no diagnostic value and may be misleading.

10. **Relation of Spleen to Resistance Against Infection.**—Many of the books on pathology and physiology state in a few words that one of the functions of the spleen is to aid in withstanding infection. No proofs, however, of this are cited. Some authors, again, make no mention of this function. To determine, if possible, the truth of this statement, the following experiments were undertaken by Hubbard. The plan of the experiment was as follows: A normal guinea pig was splenectomized under ether. When the animal had recovered from the operation, after an interval of several days it was given an injection of staphylococcus pyogenes aureus. At the same time a control was injected. The attempt was made to regulate the dose so that it would not be large enough to kill a normal pig. A record was kept at first of the weights and temperatures, but as neither of them appeared to vary in any definite manner, it was soon given up. When an animal died (either the experimental animal or a control) it was autopsied, and in addition to the macroscopic appearances, cultures were taken from the liver and heart's blood in such a manner as to avoid outside infection. The other animal of the pair was usually killed at the same time and autopsied in a similar manner. The two splenectomized pigs died of general infection, the controls surviving. One splenectomized pig died of general infection, there being no control. A splenectomized pig died of a local infection, not at the point of inoculation, some time after its control died of a general infection. A control died of a general infection, while the splenectomized pig lived until killed. Both the splenectomized pig and the control lived until killed. From the perusal of these few experiments it appears that there is no marked difference in the ability of splenectomized and normal guinea-pigs to withstand infection artifically produced by the *Staphylococcus pyogenes aureus.*

Medical Record, New York

June 19

12 *Conquest of the Tropics for the White Race. W. C. Gorgas, Ancon, Canal Zone.
13 *Caisson Disease. M. A. Starr, New York.
14 Value of Cystoscopy in Gynecology. A. Stein, New York.
15 *Amount of Pepsin in Various Disorders of the Stomach. M. Einhorn and G. L. La Porte, New York.
16 Calculus in the Lower Segment of the Ureter in the Female. A. E. Isaacs, New York.
17 Etiology of Carcinoma. A. K. Sallom, Kousba, Mt. Lebanon, Syria.

12. Published in The Journal, A. M. A., June 19.

13. **Caisson Disease.**—An analysis by Starr of about 300 cases which have occurred in recent years shows the following list of symptoms occurring in the order of frequency: Myalgia, or severe pain in the muscles, and especially in the muscles of the back, but also in the muscles of the extremities, seems to be a uniform accompaniment of the disease. It occurred in 105 of the 310 cases analyzed. The second most frequent symptom is an affection of the ears, producing symptoms comparable to Ménière's disease; vertigo, vomiting, intense prostration, tinnitus aurium, and deafness. These symptoms occurred in 68 cases.

Pain in the joints, classed together as arthralgias, occurred in 60 cases, in many of them being attended also by myalgia. It seems probable that in these cases there has been a sudden effusion of fluid into the joints, stretching the capsules of the joints without any acute inflammatory condition, and in proof of this the frequency of swelling without heat or redness can be cited. In 26 cases acute paraplegia developed. Monoplegia was observed in 17 cases, cerebral in type rather than spinal, and undoubtedly due to localized areas of softening, or to malnutrition in the cortex produced by bubbles of air in the veins of the brain. Symptoms of intense vertigo of cerebral nature, undoubtedly due to emboli in the cerebellum, were noted in 14 cases. These resembled in many respects the symptoms of Ménière's disease, already mentioned, but were followed by paralysis of some of the cranial nerves, indicating that the origin of the symptoms was not in the ear. The seventh most frequent set of symptoms were classed together as asphyxia, the patients showing all the signs of faintness with irregular heart action; 13 patients suffered from this symptom.

Aphasia has been observed in a number of the cases. Recoveries have also been recorded in many cases in which the symptoms were largely cerebral. Thus in cases presenting the phenomena of acute transitory mania, in other cases presenting symptoms of hemiplegia, in other cases presenting the symptoms of various types of aphasia, temporary deafness, and temporary blindness, as well as in those very numerous cases in which peripheral disturbances of the auditory nerve had been produced by lesions of the inner or middle ear, recoveries have been recorded. It is evident, therefore, that in the cases of apoplexy or of paraplegia occurring in connection with caisson disease, the prognosis is very different from that in cases occurring under other circumstances. It is well known that the important element in the treatment, is to replace the individual as soon as possible after the onset of the symptoms, in a chamber containing compressed air and to keep him under two or three atmospheric pressures for several hours reducing this pressure very gradually. If this can not be done, the most successful treatment appears to be to stimulate the circulation by strychnin and to increase the arterial tension by ergot.

15. **Pepsin in Various Stomach Lesions.**—Einhorn and La Porte examined 110 cases. Among these were 48 cases of hyperchlorhydria, 4 cases of subacidity; 21 cases of absence of free hydrochloric acid, and 37 cases of normal acidity. They found that there is no strict relation between the amount of pepsin and the acidity in the group of hyperchlorhydria and normal acidity. In fifteen cases of achylia the ricin deposit was cleared up entirely only once, and in five cases of cancer of the stomach without free hydrochloric acid it also occurred only once. In one case of achylia the amount of pepsin was fairly considerable, as the precipitate disappeared in seven minutes. Among the cases of hyperacidity only seven showed a correspondingly increased amount of pepsin. In all other cases of hyperacidity the amount of pepsin did not exceed the normal limits.

Lancet-Clinic, Cincinnati

June 12

18 Historical Review of the Development of the Cataract Operation. L. Stricker, Cincinnati.
19 The Smith Operation for Cataract. D. W. Greene, Dayton, O.
20 The Diagnostic Significance of Liver Palpation. H. W. Bettmann, Cincinnati.

Northwestern Lancet, Minneapolis

May 15

21 *Evolution of the Superman. V. C. Vaughan, Ann Arbor, Mich.

21. **Evolution of the Superman.**—Vaughan traces the influence of disease, and particularly of malaria and epidemics, on the various races, and concludes that medical investigation into the nature and causation of disease must be encouraged. Our medical schools must be centers, not only for the dissemination of knowledge, but for its acquisition. Original research along the lines of preventive medicine, bacteriology, and pathology must be enlarged and more generously supported, and the attitude of the medical profession toward the public and that of the public toward the profession must be radically changed. Up to the present the medical student has been trained largely, if not wholly, with reference to the good of the individual patient. This training must be modified, and the coming medical man must be developed largely with a view to his relation to the public. His principal function must be to prevent rather than to cure disease. The physician's duties are to become more and more largely official, in the sense that his services are to be rendered to the community, and not exclusively to the individual. Vaughan imagines that the time will come when people will go to the physician to find out whether they are really well or not, and not wait until they know they are ill. They will go for examination and advice, rather than for treatment. Ultimately, every one will be examined twice or oftener each year, and no two consecutive examinations will be made by the same physician. A record will be kept of each examination, and when the individual ultimately dies, a careful autopsy will be made on every person. At first these things will be vountarily done by intelligent people, and later, others seeing its advantages, will adopt the method. Finally, it will be compulsory with all, and will result in great good to the whole. The value of a custom of this kind in case of many of the infectious diseases, both to the individual and to the public, is evident. Take tuberculosis as an illustration: The physician is now so equipped in the recognition of this disease that he can detect it in its earliest stages when it is amenable to proper treatment, which is of benefit to the patient himself, and before the victim becomes a possible source of danger to others, and this is a service to the public. By means of careful physical examination, supplemented with the ocular and cutaneous reactions, slight tuberculous changes in the body may be detected with certainty, and still most people with this disease wait until cure is impossible. If people were frequently examined we should not be cursed with the venereal diseases as we are. The young man who goes wrong would be sent to the hospital or other place of observation, and detained until he ceased to be a source of contagion. Mental diseases also need this kind of treatment. The man or woman who is addicted to alcoholism would be placed where he or she could not gratify a depraved appetite and continue in the bad way. If such a system should be adopted life would be prolonged, disease would decrease, our insane asylums would not be so crowded, and the race would be far on the way to the development of the superman.

Journal of Ophthalmology and Oto-Laryngology, Chicago

May

22 *Surgical Treatment of Optic Neuritis. W. O. Nance, Chicago.
23 Four Cases of Hysterical Blepharospasm. N. Remmen, Chicago.
24 Two Cases of Nasal Calculus. S. A. Freidberg, Chicago.

22. **Optic Neuritis.**—From a study of the literature, Nance comes to the following conclusions in relation to operative measures for the relief of optic neuritis:

1. Operative procedures for the relief of papilledema in suitable cases offer by far a better prognosis than treatment by drugs.
2. Free opening of the skull and dura, in cases in which the tumor can not be localized, is the operation of choice.
3. The operation to be of benefit must be performed early before secondary and permanent changes occur in the nerve and other ocular structures. The time when vision begins to fail may be tentatively adopted as the time to operate.
4. Operative measures involving the opening of the sku'l and dura in papilledema dependent on anemia, toxemia, albuminuria, sinus disease, etc., are contraindicated; hence the necessity of thorough examination of the blood and urine, and an investigation of neighboring cavities, before advising such radical procedures.
5. In cases of tumors implicating the basal tracts, decompression can not prevent loss of sight.

Detroit Medical Journal

May

25 Treatment of Diabetes Mellitus. L. A. Levison, Toledo, Ohio.
26 *Clinical Experiences in Tuberculosis of the Bladder. W. Karo, Berlin, Germany.

26. Abstracted in The Journal, Oct. 3, 1908, p. 1538, and published in *Viriginia Medical Semi-Monthly*, Oct. 9, 1908, *Old Dominion Jour. Med. and Surgery*, October, 1908, and *Medical Fortnightly*, Oct. 9, 1908.

Annals of Otology, Rhinology and Laryngology, St. Louis

March

27 *Pathology of Acute Tonsillitis. G. B. Wood, Philadelphia.
28 *Cases Illustrating the Results of the so-called Heath Operation. S. M. Smith, Philadelphia.
29 *Anatomy, Pathology and Surgical Treatment of the Faucial Tonsil. J. C. Beck, Chicago.
30 Experiences with the Killian Frontal-Sinus Operation. Dr. von Eicken, Freiburg i. Breisgau, Germany.
31 Experiences in the Endonasal Radical Operation on the Sphenoid Cavity and Posterior Ethmoid Labyrinth. M. Hajek, Vienna.
32 Mastoid Cases which Came under my Observation during the Past Year. F. Allport, Chicago.
33 Vincent's Angina. C. W. Richardson, Washington, D. C.
34 Bronchoscopy and Esophagoscopy—Technic, Utility and Dangers. E. F. Ingals, Chicago.
35 Indications for Radical Mastoid Operation Based on Pathologic Lesions. S. J. Kopetzky, New York.
36 Sinus Disease. C. F. Theisen, Albany, N. Y.
37 Anatomy and Diseases of the Styloid Epiphysis. J. J. Kyle, Indianapolis.
38 Double Mastoiditis Followed by Left Sigmoid Sinus and Jugular Vein Thrombosis. Operation. Recovery. J. F. Barnhill, Indianapolis.
39 Obstructed Nasal Respiration and its Relation to Dental Deformities. J. H. Allen, Portland, Me.
40 The Acoustic Function of the Ear. E. de W. Wales, Indianapolis.
41 Function of the Middle Ear Muscles, resulting in Modification of the Theory of Hearing. E. de W. Wales, Indianapolis.
42 *Experimental Nystagmus and an Application of its Principles to the Diagnosis of Lesions of the Inner Ear and Cerebellum. W. B. Chamberlin, Cleveland, Ohio.
43 *Vaccine Therapy in Otology and Rhinolaryngology. R. Levy, Denver.
44 Operation for Malignant Growths of the Tonsil. K. Vohsen, Frankfort on the Main, Germany.
45 Phonasthenia. T. S. Flatau, Berlin, Germany.

27. **Pathology of Acute Tonsillitis.**—Wood, in an article well illustrated with histologic specimens, says that from a pathologic standpoint we can recognize three types of acute tonsillitis: A proliferative form, with increase in nearly all the cellular elements of the tonsil; a lacunar form, in which the cryptal epithelium shows the most severe lesions; and a suppurative form, in which abscesses develop within the germinating follicles. These different forms are generally associated together in a given case, but any one of them may be the predominating lesion. Certainly in all cases we have a proliferation of the cellular elements, and very early in the process there is associated some diapedesis of multinuclear leucocytes through the cryptal epithelium and possibly some necrosis of the epithelial cells. If necrosis of the cells is great enough to cause a break in the epithelium, the paren-

chyma of the organ is open to attack, and the bacteria gaining access to the tonsillar tissue probably find lodgment in the follicles and there cause intrafollicular abscesses.

28. Published in the *Medical Record*, March 20, 1909.

29. **The Tonsil.**—Beck gives a macroscopic and microscopic study of a radically enucleated tonsil, for chronic lacunar disease. He discusses chronic lacunar inflammation, hyperplastic tonsils, hyperkeratosis of the tonsil, tuberculosis, luetic tonsil, actinomycosis, and the various forms of malignant disease. He advocates and describes in detail the radical enucleation operation. The article is illustrated.

42. **Experimental Nystagmus.**—Chamberlin draws the following conclusions: The semicircular canals and the cerebellum play a joint part in the perception of equilibrium. That other factors participate strongly, is shown by the return to the normal after loss of stimuli from these organs. Disturbances in the function of vestibule and cerebellum cause disturbances of equilibrium and also produce a nystagmus having certain definite characteristics.

43. **Vaccine Therapy in Otology.**—Levy's observation and experiences lead him to advise that in all obstinate cases in which conservative methods, including so-called conservative operations, have been adopted, the patients should receive the benefit of vaccine treatment. This refers to all ear cases, chronic or acute, with or without mastoid involvement, and all accessory sinus cases.

Southern California Practitioner, Los Angeles

May

46 Hospital Operative Care. R. Brown, Santa Barbara, Cal.
47 Lithemia. J. B. Cook, Los Angeles.
48 *The Increased Longevity of Life-Insurance Policy Holders. B. Foster, St. Paul, Minn.

48. Commented on editorially in The Journal, May 1, 1909, p. 1428.

Journal South Carolina Medical Association, Greenville

May

49 *Educational Plans and Methods to Improve Sanitary Conditions. S. C. Baker, Sumter.
50 Ununited Fractures. S. McGuire, Richmond, Va.
51 Peripheral Operation for Tic Douloureux. A. E. Baker, Charleston.
52 *Up-Bringing of American Children a Factor in the Comparative Rarity of Psychasthenia Among Them. T. A. Williams, Washington, D. C.

49. Abstracted in The Journal, June 5, 1909, p. 1870.

52. Published in the *Virginia Medical Semi-Monthly*, April 23, 1909.

University of Pennsylvania Medical Bulletin, Philadelphia

May

53 *Acute Pancreatitis. J. H. Musser, Philadelphia.
54 *Ulcer of the Stomach. J. H. Musser, Philadelphia.
55 *Value of Salomon Test in Diagnosis of Carcinoma of Stomach. E. H. Goodman, Philadelphia.
56 *Aortic Insufficiency Simulating Aneurism and a Review of the Various Opinions on the Cause of the Flint Murmur. G. M. Piersol, Philadelphia.
57 Cutaneous Reaction of Link in Typhoid Fever. E. H. Goodman and C. C. Sutter, Philadelphia.
58 Modern Methods of Diagnosis and Treatment of Diseases of Stomach. J. H. Musser, Philadelphia.
59 Metabolic Studies in a Case of Postoperative Tetany. J. H. Musser and E. H. Goodman, Philadelphia.
60 Carcinoma of Stomach Presenting Some Unusual Features. J. H. Musser and E. H. Goodman, Philadelphia.

53. **Acute Pancreatitis.**—Musser analyzes 9 cases that have come under his observation and which show that acute hemorrhagic pancreatitis may occur in the course of typhoid fever and cause death, and that an unfortunate association of symptoms of renal calculus and pancreatitis may occur, confusing thereby the diagnosis. The diagnosis must be based on (1) previous history; (2) acute symptoms and shock (in 8 cases); (3) inflammation behind stomach, rigidity of left rectus, epigastric pain; vomiting occurred in all cases; (4) epigastric tumor with dull tympanitic note (7 cases); (5) pain in back, especially costoiliac space on deep pressure; (6) diarrhea (7 cases; in 2 cases moderately obstinate constipation); (7) acute anemia of secondary type with leucocytosis (remarkable in 4 instances); (8) marked increase in leucocytes (8 cases), increase of polymorphonuclears where differential count was made; (9) temperature usually normal throughout, except with coincident infection; (10) dyspnea (8 cases) seems a very striking symptom; (11) pulse increases in frequency, but not to extraordinary degree in all instances; (12) no report on stools; (13) Cammidge's test positive in 2 out of 4 trials; (14) in 3 instances very marked, general board-like rigidity of abdominal wall; (15) neither age nor sex were factors in diagnosis. Out of 9 patients 5 recovered, 4 died. In 2 recovery was spontaneous, in 3 with operation.

54. **Ulcer of the Stomach.**—Musser reviews 6 cases of gastric ulcer, recently under his care, for which operation was done. From a fairly large experience he considers the diagnosis of gastric ulcer very difficult to make. The more he sees of surgery, the more he feels that we must go very slowly with regard to advising abdominal section. He feels this particularly true, unless he has the opportunity also of selecting the surgeon. Under certain circumstances the operation is extremely grave. As clinicians we should consider carefully, and while the patient is under observation a fair period of time, before coming to a conclusion as to surgical interference in ulcer of the stomach, Musser still feels that the disease is not a common one, notwithstanding the statistics of English surgeons and some surgeons in this country. There are circumstances quite abundant when medical measures can bring about relief and perhaps cure in a certain proportion of cases —namely acute ones. Finally, he repeats, the picture of gastric ulcer, especially of chronic ulcer, must be that of a non-febrile gastric disorder, attended by remissions, with symptoms of hypochlorhydria or hyperacidity, and of temporary or permanent pyloric obstruction, and of fairly constant findings of blood and of excess of hydrochloric acid.

55. **The Salomon Test in Gastric Carcinoma.**—Goodman draws the following conclusions:

1. Normal cases and cases other than gastric carcinoma are sometimes accompanied by more than 21 mg. nitrogen per 100 c.c. wash water.
2. Not all carcinomatous cases give a positive reaction, due probably to absence of ulceration.
3. The test is not pathognomonic, and can be regarded only as of doubtful assistance in conjunction with other features of the case.
4. The amount of phosphates in the stomach washings from a non-carcinomatous case is below 10 mg. per 100 c.c.
5. The percentage of phosphates in the washings of cases of carcinoma of the stomach usually exceeds 10 mg.

56. **Aortic Insufficiency.**—In the report of two cases of aortic insufficiency simulating aneurism, Piersol reviews the various opinions on the causes of the Flint murmur, which is still in doubt. He cites the opinion of Guiteras, that these murmurs result from what is essentially a mitral obstruction produced by the mitral valves being actively driven against the auricular blood current by the force of the general arterial tension operating through the regurgitant column of blood from the aorta, which condition is most likely to obtain when the posterior aortic leaflet is the chief seat of disease. Guiteras differs with Flint in believing that the leaflets are forcibly driven against the stream, not merely floated upward to vibrate between two opposing currents. Piersol considers that, as emphasized by Thayer, the explanation offered by Guiteras appears on the whole to be the most reasonable and satisfactory one to adopt.

Journal Missouri State Medical Association, St. Louis

May

61 Otitis Media. T. A. Coffelt, Springfield.
62 Pneumonia, Its Causes and Treatment. J. S. Newlon, Butler.
63 Capital Punishment a Trait of Barbarism. T. F. Lockwood, Butler.
64 Malpractice from the Doctor's Standpoint. J. Ashley, Bloomfield.
65 Therapeutics, and its Relation to the Practitioner. G. W. Whiteley, Albany, Mo.
66 Personal Experience in Gunshot Wounds. J. D. Seba, Bland.

Kansas City Medical Index-Lancet

May

67 Incipient Insanity, its Diagnosis and Treatment. J. Punton, Kansas City, Mo.
68 Chronic Suppuration of the Middle Ear. H. H. Look, Kansas City, Mo.

Western Medical Review, Omaha, Neb.

May

69 The Anesthesia of To-day. A. F. Burkard, Omaha.
70 Cystoscopy and Ureteral Catheterization. R. R. Hollister, Omaha.

71 Medical Science Sufficiently Broad to Embrace Psychologic Law is the Basic Principle in the Treatment of Psychic, as well as of Physical, Disease. A. E. Clough, Madison, S. D.
72 Discriminative Therapeutics. J. Burke, Manitowoc, Wis.
73 Disinfection. J. L. Wicks, Evanston, Wyo.

Vermont Medical Monthly, Burlington

May

74 *Early Diagnosis of Malignant Diseases of the Breast and of the Uterus with Treatment, Including Coley Serum. S. E. Maynard, Burlington.
75 Infectious Diseases. S. W. Hammond, Rutland.
76 Dementia Præcox. F. E. Farmer, St. Johnsbury.
77 Postpartum Hemorrhage. L. J. Pons, Roxbury, Conn.

74. **Malignant Diseases of the Breast.**—Maynard emphasizes the important points of his paper as follows: Any tumor in a woman's breast warrants an operation, not next month or next year, but now. Any unusual hemorrhage, discharge, or pelvic pain demands a thorough local examination, every means being used to make a diagnosis, and when the diagnosis has been made of a malignant growth in any portion of the uterus it becomes imperative that an operation should at once be performed. If the case is strongly suspicious, but the diagnosis is not absolute, it is best to err on the side of safety, and not to keep the woman under observation too long, but to operate at an early date.

Ophthalmic Record, Chicago

May

78 Keratitis Probably Due to Metastatic Gonorrhea. W. C. Posey, Philadelphia.
79 The Life and Labors of Dr. Richard Liebreich. J. O. McReynolds, Dallas, Texas.
80 Unilateral Retrobulbar Neuritis Due to Ethmoiditis, with Restoration of Vision. F. Krauss, Philadelphia.
81 The Local Ophthalmological Society. E. Jackson, Denver.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

May

82 Extrauterine Pregnancy. J. B. Deaver, Philadelphia.
83 Importance of Careful Postoperative Treatment in Rectal Operations. H. A. Bray, Philadelphia.
84 Importance of the Joints of the Pelvic Girdle. J. E. Goldthwait, Boston.
85 Tuberculin Therapy. H. B. Weaver, Asheville, N. C.
86 Adrenal Principle as the Main Active Agent in Pituitary, Testicular, Ovarian and Other Animal Extracts. C. E. de M. Sajous, Philadelphia.
87 Acne Indurata. J. V. Shoemaker, Philadelphia.
88 Preventive Medicine. A. J. Burkholder, Mount Sidney, Va.
89 *Erysipelas: Etiology, Symptoms, Complications and New and Successful Method of External Treatment. L. C. Davis, South Milwaukee, Wis.
90 Claims of Psychology and Allied Branches in Modern Medicine. C. B. Hardin, Philadelphia.
91 Acute Retention of Urine from Impaction of a Phosphatic Calculus in the Penile Urethra: Fatal Case of Beriberi. F. T. Woodbury, U. S. Army.

89. **Erysipelas.**—Davis advocates the treatment of erysipelas by the simple treatment employed in any acute infection accompanied by fever, rigors, and pain, viz., the administration of stimulating tonic remedies and bowel asepsis (sic). As the general condition may be gauged by severity of the skin affection, its intensity and area, he directs his energies to controlling the local focus of infection. By these means he has a record of nearly 300 patients treated successfully from the onset. He has tried without success all the ordinary measures of local treatment and falls back on the following:

℞.	Carbolic acid	3 parts
	Spirits of camphor	6 parts
	Alcohol	1 part

The amount of the acid is large, it readily penetrates the entire skin, destroys the infection promptly and leaves no scars, and causes no pain and but little smarting. The camphor prevents the burning effect of the phenol. A larger percentage of alcohol destroys the acid action too greatly. In mild cases one application a day is sufficient, extending fully an inch beyond the edge of infection. In more severe cases two or three applications a day may be made. It can be used often without fear of an untoward result. If the skin is very hot or dry the area may be covered with gauze wrung out of cold sterile salt solution.

Dominion Medical Monthly, Toronto

May

92 Experiences with Intraspinal Analgesia. H. A. Bruce, Toronto.
93 *What shall we Say to our Neurasthenic Patients? G. S. Young, Toronto.
94 Chronic Diffuse Nephritis with Terminal Infection. C. E. C. Cole, Toronto

93. **Neurasthenic Patients.**—Young cites several instances showing the good effect, when tactfully given, of that form of indirect suggestion, which has always been more or less practiced by the physician.

American Medicine, New York

May

95 Value of Milk Free Diet and Enteroclysis in Typhoid Fever. R. C. Kemp, New York.
96 Fees of Physicians and Surgeons. W. H. Peters, Providence, R. I.
97 Practical Points in the Submucous Resection of the Nasal Septum. H. M. Hays, New York.
98 History of the Lazarettos of Guiana. E. S. Goodhue, Holualoa, Hawaii.
99 Practical Value of Cystoscopy in Surgical Diagnosis. F. J. A. Torek, New York.
100 Eggs and their Value as a Food. G. Jones, Toledo, Ohio.
101 Efficiency of the Bacillus Bulgaricus in Treatment of a Case of Unilateral Chronic Suppurative Pansinusitis. O. Glogau, New York.
102 Gumma of the Femur in a Child. M. M. Stark, New York.

The Montreal Medical Journal

May

103 Multiple Neuritis. N. Viner, Montreal.
104 Voluminous Sarcoma of the Bulbo-Palpebral Conjunctiva. J. N. Roy, Montreal.
105 Cerebral and Epidural Abscesses of Otitic Origin. G. T. Ross, Montreal.
106 *Multiple Traumatic Perforation of Small Intestine. J. C. Fyshe, Bangkok, Siam.
107 *Cholecystitis, Vomiting of Gallstones—Recovery. G. Johnson, Cumpas, Mexico.
108 Capsule Forceps in Cataract Extraction. F. Tooke, Montreal.

106. **Multiple Traumatic Perforation of Small Intestine.**—The case reported by Fysche is of sufficient interest to report, showing, as it does, what the peritoneum may do under certain circumstances with no more surgical aid than a mere drainage incision. A boy 14 years of age was shot in the abdomen at close range with a large caliber revolver. He presented an irregularly circular wound about one-half inch across just inside the anterior superior spine on the right side. There had been very little bleeding from the wound; there was no escape of gas or fluid nor any viscus present. The abdomen was generally resistant, both flanks were dull, but the dulness was not movable. Liver dulness appeared normal. The pulse was over 160, respiration rapid and shallow, pupils dilated and expression anxious. The patient did not complain of pain and had passed clear urine since receiving the injury. The bowels had not moved. There was a good deal of shock, neverthless the abdomen was opened immediately in the mid-line, below the umbilicus, by an incision about 3 inches long. Much blood and some fecal material of small gut consistency came away. The small intestine was delivered and almost at once a wound perforating both sides of the gut was found. Near it was a laceration on the anti-mesenteric side of the gut about one and one-half inches long. There was also much bruising of the mesentery between these two. The three wounds were closed in the usual way. Further examination showed seven more traumatic perforations of gut and mesentery within a distance of six feet. All this and the boy's condition made the case seem so hopeless that the abdominal opening was closed with through and through sutures after a large drainage wick had been placed in the lower angle extending freely into the abdomen. He was freely stimulated, given all the milk he could take and repeated large enemas. The drainage wick was removed on the second day and not reinserted. On the third day a small amount of fecal matter was passed by rectum and daily thereafter the quantity coming away naturally increased, and that by the wound decreased. With the first stool by rectum the boy's condition improved and it did so steadily and without further setback. One month after the accident the boy was up and about and it was found that he had been eating rice, bananas, fish and cakes for ten days previously.

107. **Cholecystitis.**—Johnson's patient, a woman aged 60, suffered from flatulent dyspepsia for 30 years. She had numerous attacks of colic, accompanied by vomiting during this same period. These attacks never lasted long, and though severe at the time never laid her up for more than one day. The pain was always worse on the right side and was frequently referred to the right shoulder. She never was jaundiced, or noticed clay-colored stools. In September, 1908, she was laid up with some fever, of what nature she does not know. She was in bed for two weeks, five days of which

she was delirious. She had no pain or cough at this time. In April, 1908, she complained of great pain in the abdomen, and vomiting. The pain had commenced three days previously, in the right upper quadrant of the abdomen, and was also referred to the right shoulder. She had vomited several times and had had no passage by the bowels since the pain began. She had had chills every day; but they did not come regularly. The abdomen was distended, especially in the right upper quadrant, where a bulging was distinctly visible, extending from the costal margin to the level of the umbilicus and from the middle line to the anterior axillary line. This mass was seen to move up and down with respiration. Respiration was very shallow. There was no visible peristalsis. On palpation the abdomen was resistant, especially over the mass. The whole abdomen was tender; but it was extremely so over the mass. This mass had a definite rounded outline, was firm to the touch, and was attached to the liver. It could be felt extending into the loin. Nothing else abnormal was found. A diagnosis of empyema of the gall bladder was made and operation was advised. This was absolutely refused. Hot linseed meal poultices were applied constantly, changing them every half hour. The bowels were moved with an enema. For about ten days she had recurring chills, sometimes two or three in a day. The mass gradually diminished in size, and the pain gradually disappeared. During this time she had no colic; she was delirious at night for seven nights. The temperature and pulse gradually came to normal, by the end of three weeks. She got up at the end of a month, although there was still a mass the size of an orange in the region of the gall bladder; this, however, was no longer tender. She had two mild attacks of pain during the summer, lasting two and three days respectively. She had another severe attack in September, 1908, similar to that in April. She was treated as before with poultices and was able to get up in ten days. The mass still remained about the size of an orange. In October, 1908, she was again seized with pain and vomiting and chills. That night she was delirious all night, and in the morning she looked very ill and complained that the pain was nearer the middle line than usual. The same abdominal conditions were found. She had a sudden very acute pain accompanied by a feeling of faintness, and then the pain in the abdomen seemed less acute. Shortly after this she vomited eight facetted gallstones about the size of a pea, along with some stinking pus. In the afternoon she had a repetition of the pain and she vomited up eight more gallstones. She rapidly improved from this time on and was able to get up in three days.

Wisconsin Medical Journal, Milwaukee

May

109 *Early Diagnosis of Tuberculosis. T. H. Hay, Stevens Point.
110 *Routes of Invasion in Tuberculosis. M. P. Ravenel, Madison.
111 *Rural Tuberculosis. F. Johnson, North Freedom.
112 *Tuberculosis. N. L. Howison, Menomonie.
113 Pathology and Clinical History of Three Cases of Actinomycosis with Apparently Direct Contagion. L. Falge, Manitowoc.
114 Three Important Time-Saving Urinary Tests. H. R. Harrower, Chicago.

109 to 112. Abstracted in The Journal, Aug. 8, 1908, p. 525.

Journal of the Tennessee State Medical Association, Nashville

May

115 *Hippocrates—Past, Present and Future. B. D. Bosworth, Knoxville.

115. Abstracted in The Journal, May 1, 1909, p. 1449.

Yale Medical Journal

May

116 Rational Hydrotherapy vs. Turkish Baths. Robert E. Peck, New Haven, Conn.
117 Matters Concerning the Nutrition of the Young. C. A. Goodrich, Hartford, Conn.
118 *The Feeding of Sick Children. M. W. Williams, Hartford, Conn.

118. **Feeding of Sick Children.**—Williams claims that the chronic gastrointestinal disorders of childhood are brought on by improper feeding and give a train of symptoms which used to be attributed to worms. They are best treated by putting a child on a strict diet of milk—or cream and whey mixture—with scraped beef and fruit juice. An estimate of the caloric value of food given is useful in indicating the amount of food to maintain the child's nutrition. In cases of nephritis or cases in which we fear kidney involvement, the amount of proteid should be limited, because urea, the end-product of the proteid, is difficult for the kidneys to excrete. Meat and eggs should not be given. Cream and milk mixtures or cream and whey mixtures should be our mainstay. They are to be preferred to straight milk because they have a higher caloric value in proportion to the amount of proteid and water which they contain.

Atlanta Journal-Record of Medicine

April

119 Autointoxication. T. J. McArthur, Cordele, Ga.
120 Ocular Symptoms in General Medicine. A. W. Stirling, Atlanta.
121 Whooping Cough. S. A. Visanska, Atlanta.
122 Work of the Home Treatment Dispensary for Tuberculosis. L. M. Gaines, Atlanta.
123 *Thrombosis of the Poplitcal, Anterior and Posterior Tibial Arteries Complicating an Appendiceal Abscess. J. L. Campbell, Atlanta.
124 Uterine Deviations, Significance, Prevention and Treatment. R. R. Kime, Atlanta.
125 Pistol Shot Wound of Abdomen. T. M. McIntosh, Thomasville, Ga.

May

126 Retrobulbar Optic Neuritis. A. W. Stirling, Atlanta.
127 Surgical Mainfestations in Hysteria. W. Taylor, Atlanta.
128 Principal Cause of Typhoid Fever is the Common House Fly. J. W. Palmer, Ailey, Ga.
129 Antirabic Serum with Report of Cases. J. N. Brawner, Atlanta.
130 The Doctor—His Relation to Public Sanitation. J. C. Beauchamp, Williamson, Ga.

123. **Thrombosis of the Leg Arteries Complicating Appendiceal Abscess.**—The points of particular interest in Campbell's case are:

1. The improvement for thirty hours after the opening of the abscess.
2. The delayed shock—red color of face and nails during the shock.
3. Vomiting, which was relieved by opening the colon.
4. Four days' steady improvement after opening the colon.
5. Six days after the abscess was opened the left leg was attacked (a) by numbness and tingling, (b) fifteen hours later there was severe pain, the limb becoming pale and livid with complete loss of function and sensation below the tubercle of the tibia.
6. The areas of discoloration and lines of demarcation with change of color in the foot and lower third of the leg while the upper third remained the same through the whole attack.
7. The artery filled with the clot in which the pneumococcus was found while there had been no heart or lung symptom.
8. The empty veins. The leg was amputated above the knee.

American Journal of Orthopedic Surgery, Philadelphia

May

131 *An Anatomic and Mechanical Study of the Shoulder Joint, Explaining many of the Cases of Painful Shoulder, many of the Recurrent Dislocations, and many of the Cases of Brachial Neuralgias or Neuritis. J. E. Goldthwaite, Boston.
132 Bone Pathology in its Relation to General Pathology. C. M. Cone, Baltimore.
133 *Bone Fragility and Eburnation of Rachitis. W. Blanchard, Chicago.
134 *Myositis Ossificans. C. F. Painter and J. D. Clarke, Boston.
135 *Pathologic Anatomy of Congenital Hip Dislocation. W. G. Turner, Fall River, Mass.
136 *Painful Feet of Raynaud's Disease. H. A. Wilson, and C. H. Muschlitz, Philadelphia.
137 *The Question of Balance. A. G. Cook, Hartford, Conn.
138 New Form of Shoemaker's Last. A. G. Cook, Hartford, Conn.
139 Diffuse Painful Lipoma of the Foot. A. H. Tubby, London, Eng.
140 *Mechanical Lesions of the Sacroiliac Joints. R. R. Fitch, Rochester, N. Y.
141 Description of Apparatus for the Application of Plaster-of-Paris Bandages. N. Allison, St. Louis.
142 *Treatment of Rheumatoid Arthritis. F. E. Peckham, Providence, R. I.
143 Mechanics of Lateral Curvature. P. Ewald, Hamburg, Germany.

131, 136. Abstracted in The Journal, Aug. 8, 1908, pp. 526, 528.

133, 134, 135, 140, 142. Abstracted in The Journal, July 25, 1908, pp. 342, 343, 344.

137. Abstracted in The Journal, Aug. 1, 1908, p. 431.

Woman's Medical Journal, Toledo, O.

May

144 Etiology, Prophylaxis, and Early Treatment of Pelvic Disorders in Girls and Young Women. E. M. Mosher, Brooklyn.
145 Re-Education in Medical Practice. E. Garrigue, New York.
146 Pernicious Anemia. M. L. Massey, Buffalo.
147 Menorrhagia. M. J: Potter, Niagara Falls.
148 Traumatic Neurasthenia. E. D. Justin, Castile, N. Y.
149 Multiple Gangrene Following a Probable Slight Thermal Change in one Extremity. A. C. Spofford, Batavia, N. Y.

St. Louis Medical Review

May

150 Principles of the Modern Treatment of Gonorrhea. J. L. Boehm, St. Louis.
151 Gonorrhea in its Relation to the Eye. M. Wiener, St. Louis.
152 Joint Complications of Gonorrhea. P. Hoffmann, St. Louis.
153 The Cardiac Complications of Gonorrhea. L. H. Behrens, St. Louis.
154 The History of Medicine. J. McClure.

Journal Kansas Medical Society, Lawrence, Kas.

May

155 Tuberculosis. C. C. Goddard, Leavenworth, Kansas.
156 *Technic of Skin Grafting. N. C. Morrow, Altamont, Kansas.
157 Penetrating Abdominal Wounds. R. C. Lowman, Kansas City, Kansas.

156. **Skin Grafting.**—Morrow describes in detail the technic of skin grafting and sums up the various steps as follows:

1. Graft only on a freshly cut aseptic surface, or on healthy granulation tissue, without curetting or otherwise disturbing the surface.
2. Avoid the use of strong antiseptic solutions on the graft or on the denuded area directly before or at the time of grafting.
3. Take grafts from the individual to be grafted.
4. Spread the grafts directly on the denuded area, and see that the entire surface is covered.
5. A plain gauze dressing, if properly applied, meets all requirements, and is the simplest and most satisfactory to use.

Memphis Medical Monthly, Memphis, Tenn.

May

158 Porro Cesarean Section, Occasioned by Large Multilocular Ovarian Cyst Complicating Pregnancy—Recovery of Mother and Child. F. D. Smythe, Memphis.
159 Cystic Tumor of Brain in a Child of Six Years. W. T. Black, Memphis.
160 Rachitis. J. D. Bridger, Memphis.
161 Catarrhal Pneumonia as a Sequel to Influenza. D. A. Walker, Trenton, Tenn.
162 The Treatment of Skin Cancer by the *X*-Ray. W. S. Lawrence, Memphis.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

June 5

1 *Neurotic Element in Disease. G. Rankin.
2 Treatment of Eczematous Patients. E. G. Little.
3 Distribution of Longevity in England and Wales. W. Gordon.
4 Diagnosis and Treatment of Severe Anemia. C. H. Melland.
5 Pernicious Anemia with Pigmentation of the Skin and Buccal Mucous Membrane. J. Aitken.
6 Cardiac Disease. W. B. Jones.
7 *Case of General Paralysis of Insane with Extraordinary Lymphocytosis in the Cerebrospinal Fluid. W. Boyd.
8 Anesthetics in General Practice. H. B. Gardner.
9 Resection of the Trachea for Cicatrical Stenosis. G. G. Turner.
10 *Treatment of Facial Paralysis Due to Division of the Facial Nerve in the Mastoid Operation. F. Marsh.
11 Distribution of Bilharziosis on the Victoria Nyanza. J. H. Cook.
12 Fatal Hemoptysis in an Infant. E. H. Thomas.
13 Facial Paralysis Following Emotional Shock. P. C. Fenwick.

1. **Neurotic Element in Disease.**—Rankin cites a number of instances to prove his contention that the neurotic element in disease is one to reckon with, and that, despite some incredulity on the subject, there is no getting away from the fact that symptoms which are apparently wholly functional dominate the aspect of many illnesses, that they may obscure the true significance of organic manifestations, and that not infrequently they are so much the end-all and be-all of a disordered state of health as to justify the assumption that—at any rate so far as the present state of our knowledge enables us to judge—the neuroses must be taken into account as definite integers in our conception and treatment of disease.

7. **Extraordinary Lymphocytosis in General Paralysis.**—Under normal circumstances the number of lymphocytes in a field of 450 diameters, in a film made after centrifugalizing 5 c.c. of the cerebrospinal fluid for a period of ten minutes, is usually two or three. In tabes and general paralysis of the insane the number is greatly increased. In several cases which Boyd examined during the past six months the number has been from 200 to 250. In one case the enormous number of 3,450 was counted in a single field of 450 diameters; in places where the film was thick this number was greatly exceeded, but, owing to the thickness of the clumps, the exact number could not be estimated. In the non-centrifugalized cerebrospinal fluid the number of leucocytes (almost all lymphocytes) was no less than 285 per c.mm.

10. **Treatment of Facial Paralysis Due to Division of Facial Nerve.**—Marsh reports two cases in which the facial nerve was divided during a mastoid operation. In one case the facial nerve was completely divided, and the proximal end frayed and everted by the gauze packing. The proximal end was teased into its normal position—coming almost in contact with the distal end; two or three strands of fine chromic gut were placed around the nerve, the ends being inserted into the bony canal, and the parts protected for a short time by gutta-percha tissue in the manner described by Sydenham. Gentle galvanism was subsequently employed; slight return of power commenced in six weeks, and complete recovery resulted. In the other case the facial nerve was divided on Jan. 14, 1908, in clearing a cholesteatomatous mastoid which had been operated on twice previously, the relation of the parts being much altered by bone absorption. The division was recognized at the time, and the nerve ends were carefully approximated and protected for a few days with gutta-percha tissue. The operation cavity became rapidly covered with epidermis from the meatal flaps, under hydrogen peroxid and spirit treatment. As no sign of regeneration appeared in a month (February 13), it was decided to reopen the cavity and examine the nerve ends. The ends were readjusted and a strand of fine chromic gut was with difficulty inserted in each of the aqueduct openings. The postaural wound was closed and the cavity rapidly healed with suppuration. Gentle galvanism was continued, but it was not until the end of June—four months later—that signs of power commenced in the mouth muscles; the improvement steadily extended to the other muscles, and the power had by May 7 returned to all except the corrugators of the brow.

Lancet, London

June 5

14 Hypernephroma. W. Trotter.
15 *Results of a Year's Use of Vaccines in General Medicine. W. H. White and J. W. Eyre.
16 *Experimental Evidence of the Infective Origin of Carcinoma. W. F. Robertson.
17 *Recurrence of Vesical Calculi After Removal in Series of 160 Operations. F. A. Southam.
18 Pustule Simulating Anthrax Due to Organisms of the Porteus Group. T. Orr.
19 Sudden Failure of Respiration Restored by Artificial Means. R. Knox and J. Morison.
20 Tropical Form of Adenitis Apparently Due to an Unrecognized Organism. R. L. Ley.
21 Action of Digestive Ferments and Tissue Extracts, Hypodermically Injected, on Malignant Tumors in Mice. J. A. Shaw-Mackenzie.
22 Labor Obstructed by a Fibroid Tumor; Cesarean Section; Supravaginal Hysterectomy. C. E. Purslow.
23 Hernia Through the Foramen of Winslow. W. H. Haw.
24 Acromegaly. E. P. Carmody.

15. **Use of Vaccines in General Practice.**—White and Eyre employed vaccines in 10 cases of genitourinary disease, 4 cases of diseases of the alimentary system, 8 cases of empyema and subdiaphragmatic abscess and 7 miscellaneous cases. They believe that in not one of these 29 cases did the vaccines do any harm, and in the great majority it appeared that distinct benefit followed from them; in some, indeed, they saved the patient's life.

16. **Infective Origin of Carcinoma.**—The material used for the purposes of the experiments conducted by Robertson consisted of about 300 c.c. of fluid from the pleural cavity of a woman suffering from malignant pleurisy, secondary to mammary carcinoma, and of about 500 c.c. of fluid from the peritoneal cavity of a patient with malignant peritonitis. The flasks were incubated at 37 C. and the fluid remained sterile as regards bacteria. The experiments were carried out on mice and have been fully controlled by the observation of a much larger number of animals of the same stock kept under similar conditions. During the past three years this stock has consisted of from 60 to 80 mice, among which there has always been a considerable proportion of aged animals. None of these mice have developed external tumors. Robertson examined over 60 mice that have either died in the course of being subjected to ordinary virulence tests, or have been found dead in their cages, and he has not been able to observe

any internal carcinomatous lesions. Among these animals a sufficient number to form a satisfactory control series were of ages not less than those of the mice on which experiments were made. Seven out of 30 mice developed carcinomatous tumors. As the control animals have not shown any similar tumors, and as the only difference in the treatment of the two series was that the 30 mice were fed with incubated carcinomatous material from the human subject, Robertson infers that the epithelial tumors were determined by some agent contained in this carcinomatous material. As none of the 11 animals injected or fed with the fluid from the case of malignant peritonitis developed carcinomatous growths, it seems probable that this agent was contained in the fluid from the case of malignant pleurisy. On the ground of the experimental results, Robertson contends that the pathogenic agent transferred from the human subject to the mouse was not merely a chemical substance, but must have been a living virus. From one of the mammary tumors occurring in these mice he made several cultures on non-nutrient agar-gelatin. These cultures have been studied in section by means of the ammonio-silver process by Dr. M. C. W. Young, who has been able to demonstrate in them certain morphologically characteristic forms identical with those already observed in malignant tumors from the human subject and more recently in one of the original Jensen mouse tumors. Some of these forms have also been demonstrated in these experimental tumors, as well as in a mammary tumor produced in a previously healthy mouse by inoculation of one of these growths. More recent observations lead to the conclusion that a group of protozoan organisms to be classed among the mycetozoa and including very numerous pathogenic species, is associated with tumor growth, just as very numerous pathogenic species of schizomycetes are associated with inflammation. The main phases in a complicated life cycle have now been demonstrated in sections of tumors, in sections of agar cultures from tumors, and in films of the centrifuge deposit from fluid from cases of malignant pleurisy secondary to carcinoma of the breast. The phases recognized include forms with flagella sporoblasts and their residua, nucleated forms, some of which have been observed in mitosis, and certain other remarkable bodies of characteristic appearance which almost certainly represent gametes.

17. **Recurrence of Vesical Calculi.**—Southam says that a recurrence of calculi after operation is relatively not more common after lithotrity than after lithotomy; and when it does take place it is in both instances probably due to the descent of a fresh calculus from the kidney and its retention in the bladder. The percentage of recurrences after lithotrity was 7.1, and 7.2 after lithotomy.

The Medical Press and Circular, London

May 26

25 The Feeble-Minded and Their Care. G. H. Savage.
26 Suprapubic Prostatectomy. G. P. Newbolt.
27 Treatment of Cholera. L. Rogers.
28 Essentials of Physiologic History. D. F. Harris.

The Clinical Journal, London

May 26

29 Empyema. W. H. White.
30 A Case of Enteric Fever. J. A. Ormerod.
31 The Etiology of Gout, Rheumatism and Rheumatoid Arthritis. C. W. Wirgman.

Journal of Tropical Medicine and Hygiene, London

May 15

32 Etiology on Treatment of Ulcerative Granuloma of the Pudenda. J. B. Cleland, and J. R. Hickinbotham.
33 *Unusual Manifestations of Malaria. E. N. Graham.

33. **Unusual Manifestations of Malaria.**—Graham reports three cases of malaria in which the symptoms were not at all typical. The first patient was feeling "seedy," consulted a doctor, and was given a tonic of quinin and strychnin. No sooner had he taken the last dose in the bottle than toxic spasm started first in the face, then on both sides of the body, arms, legs and back. He became unconscious, breathing was labored, and he foamed at the mouth. The spasms, which came on every three or four minutes and lasted for a minute, were violent, and though morphin was given and the stomach washed, yet it was not till two hours after the onset, and when the patient was under full chloroform anesthesia, that these stopped altogether. The blood was examined, but no parasites were found, yet his temperature was 104 F. at 6 p. m. Quinin, 10 grains, was injected, and the dose repeated twice in the night. Next morning he was still unconscious, his temperature 103 F., and when touched all the muscles of the body would contract; 20 grains of quinin were now injected into the median basilic vein. In the afternoon his temperature was only 100 F.; the intravenous injection was repeated. Next morning he had regained consciousness, and was able to speak and recognize his brother, and from that time he continued to improve, and his temperature never rose above 100 F. But for the next two weeks he had definite delusions —that he was accused of a certain crime for which he was being tried. At times he became maniacal, would refuse his food, and tried to commit suicide. However, with chloral and bromid and the quinin he got well.

The second patient was admitted for "fever." The temperature was 102 F., but there were no parasites in the blood—at least none were found after three examinations, nor was there anything abnormal in the chest or abdomen. Quinin (10 grains) was given three times a day by mouth. On the second day he complained of pain in the right iliac region; the lower part of the abdomen was tender, tympanitic and did not move on respiration; the legs were flexed. Temperature 101.8 F., pulse 112; tongue dirty, but there was no vomiting, and an enema gave good result. An exploratory laparotomy was proposed, but refused. An ice-bag was placed over the appendix region, and the quinin was now injected in the muscles. The following day the temperature was normal. the pain and tenderness had disappeared and four days later the patient left the hospital.

In the third case the patient was admitted with a history of frequent stools, four to five a day, tenesmus and blood. His temperature was 99 F. No parasites could be found in the blood; the stools were pale, bulky, with a little blood, but no mucus. Large doses of ipecacuanha were given, but there was no improvement. The blood was again examined, and subtertian parasites were found. Quinin was now given; 10 grains were injected twice a day. At the end of four days he left the hospital feeling quite well, and all the symptoms had disappeared. These three cases are interesting from the fact that the microscope did not reveal the presence of parasites, and quinin by mouth had no effect. All these patients came from highly malarial districts.

Journal of Hygiene, London

April

34 Antiplague Measures in San Francisco, California. R. Blue.
35 Points Bearing on the Bacteriology of Cerebrospinal Meningitis. W. St. C. Symmers, and W. J. Wilson.
36 Cider and Perry. I. Sulphite Preservatives. H. E. Durham.
37 Relative Efficacy of the Doulton, Berkefeld and Brownlow Filters. A. Wilson.
38 *Transmission of Air and Micro-organisms Through Berkefeld Filters. W. Bulloch and J. A. Craw.
39 Danysz Effect with Reference to the Toxin-Antitoxin Reaction. J. A. Craw.
40 Plague in Further India. J. D. Gimlette.
41 *Anti-serum for Scorpion Venom. C. Todd.
42 Differentiation of Lactose-Fermenting Bacilli, with Special Reference to those of Intestinal Origin. A. MacConkey.
43 Varieties of the Meningococcus with Special Reference to a Comparison of Strains from Epidemic and Sporadic Sources. J. A. Arkwright.
44 *Experimental Lead Poisoning. K. Goadby.

38. **Berkefeld Filters.**—In January, 1908, Bullock, Atkin and Craw reported that the Berkefeld filters rapidly became contaminated so as to transmit bacteria at periods varying from a few minutes to a few hours. As a criticism of their work it was asserted that the Berkefeld filters could not stand the method of sterilization resorted to by Bulloch and Craw, which consisted in heating in an autoclave to 120 C., but must be sterilized by placing in cold water, raising the water to the boiling point and boiling for an hour. Bulloch and Craw have repeated their experiments, using this method of sterilization and find that heating to 120 C. in an autoclave does not make the filtering tubes much more permeable to air, but that the tubes when sterilized as directed still transmit bacteria, yielding an infected filtrate in a short time. Such filters are particularly liable to become pervious at the junction between the metal socket and the Kieselguhr mass.

41. **Anti-Serum for Scorpion Venom.**—Todd reaches the following conclusions from his investigations: 1. The immunization of suitable animals with scorpion venom gives rise to the

production of an antivenom. 2. This anti-venom is capable of neutralizing the venom when mixed with it *in vitro*, and also acts both prophylactically and curatively in animals. 3. The venom is not fixed by the central nervous system, as is the case with tetanus toxin. 4. Calmette's anti-venine could not be shown to have any neutralizing effect on the venom used. 5. Employed curatively in man, the serum appears to have a very marked effect on the intense pain following the sting.

44. **Experimental Lead Poisoning.**—Goadby attempted to imitate the conditions under which lead poisoning occurs in mines, factories for grinding lead, etc. Cats were exposed to the dust of various compounds of lead and showed the symptoms of lead poisoning, while controls did not develop such symptoms. The author's experiments show that poisoning may take place through the lung as well as through the gastrointestinal tract, and that susceptible animals exposed for short periods to air laden with lead dust develop symptoms of lead intoxication in a way analogous to the poisoning which takes place in men engaged in industrial processes and exposed to deleterious effects of lead-dust laden air.

Indian Medical Gazette, Calcutta

April

45 Tuberculosis Among Europeans in Calcutta. H. W. Pilgrim.
46 Incidence of Phthisis in Calcutta. T. F. Pearse.
47 Prevalence of Tuberculosis Among our Community. G. C. Chatterjee.
48 Hazaribagh and Tuberculous Disease. B. H. Deare.
49 Hazaribagh in Relation to Tuberculous Disease and Its Treatment. I. G. F. Hearn.
50 Darjeeling Climate in the Treatment of Phthisis. J. T. Calvert.
51 Notes in Support of Captain Megaw's Article, "Are Seven-Day Fever and Three-Day Fever Forms of Dengue?" H. Fooks.
52 Intestinal Animal Parasites in Monghyr. C. Lane.
53 Epidemiology of Pneumonic Plague. C. A. Gill.

Annales de Medecine et Chirurgie Infantiles, Paris

May 15, XIII, No. 10, pp. 325-360

54 *Electrotherapy in Diagnosis and Treatment of Infantile Paralysis. H. Marquès.
55 Advantages of the Acetic-Mercuric Chlorid Test for Control of Bile-Intestine Functioning. Triboulet, Ribadeau-Dumas and Harvier.

54. **Electrotherapy in Diagnosis and Treatment of Infantile Paralysis.**—Marquès states that the main features of electrotherapy in these cases are continuous galvanization of the paralyzed groups of muscles or limb during the first period. This is followed by a period of rhythmically interrupted galvanic stimulation of the paralyzed muscles with the pole which the electrodiagnosis has shown to be the predominant one. This combats both the causal affection and the consecutive atrophy. The electrotherapy must be kept up for three or four years, he states, with sittings every second day at first, then from three times to once a week. This treatment is unable to create new cells but it ensures a relative cure and prevents further deformity in nearly every case; massage is useful as an adjuvant. Retraction of the antagonist muscles must be carefully supervised and appliances used when necessary to maintain the correct position.

Archives des Maladies du Cœur, Etc., Paris

May, II, No. 5, pp. 257-320

56 *Inherited Syphilis. (Purpura hémorragique et syphilis héréditaire. Histologie des lésions et localisations du spirochète.) J. Sabrazès and R. Dupérié.
57 Anemia from Gallstones. (Anémie avec réaction normoblastique dans un cas d'ictère grave par calcul du cholédoque.) Devic and Rieux.
58 *Case of Cardio-Tuberculous Cirrhosis. L. Babonneix and Paisseau.

56. **Inherited Syphilis.**—Sabrazès and Dupérié report a careful histologic study of a case of hemorrhagic purpura and inherited syphilis, confirming anew the ubiquity of the spirochete and the way in which it affects all the tissues. They exclaim in conclusion: "How much trouble would be avoided by rational treatment of the parents, and how early and energetic should be the specific treatment of the new-born!"

58. **Cardio-tuberculous Cirrhosis.**—The child of 7 in the case reported presented in typical form all the fundamental lesions of this condition: adhesive pericarditis, pleuro-pulmonary tuberculosis, multiple lesions in liver and spleen and in the brain.

Bulletin de l'Académie de Médecine, Paris

May 11, LXXIII, No. 19, pp. 561-579

59 *Chronic Appendicitis and Cancer of Appendix. L. G. Richelot.

59. **Chronic Appendicitis and Cancer of the Appendix.**—Richelot pleads for the removal of the appendix in all cases of chronic appendicitis, reporting several instances in which the appendix was found apparently normal and yet its removal put an end to chronic annoying and debilitating disturbances. Another point which he emphasizes is that the frequency of cancer of the appendix should encourage surgeons to operate. In one of his own cases a young woman with gastrointestinal disturbances from childhood but no constipation or mucomembranous enteritis had the appendix removed after a few attacks of subacute appendicitis. The appendicectomy put an end completely to all disturbances and the microscope revealed an incipient epithelioma in the appendix. A recent Paris thesis summarizes 15 cases of cancer of the appendix reported in France, and nearly 80 have been recorded in international literature to date. The cancer was detected in the early stage before it had spread much beyond the appendix in all but 4 or 5 cases.

Presse Médicale, Paris

May 26, XVII, No. 42. pp. 377-384

60 *Obliteration of the Common and External Iliac Arteries without Gangrene of the Leg. G. Roque and J. Chalier.
61 *Antisepsis of the Skin with Tincture of Iodin. (Antisepsie de la peau par la Teinture d'iode.) Guibé.

May 29, No. 43, pp. 385-400

62 Principal Clinical Characteristics of Cerebrospinal Meningitis. R. Debré.
63 *Antimeningococcus Serotherapy. Grysez.
64 *Local Serotherapy in Ocular Affections. A. Cantonnet.
65 Technic of Lumbar Puncture. (La ponction Lombaire.) P. Desfosses.
66 Identification of the Meningococcus. (Technique essentielle de la recherche et de l'identification du méningocoque de Weichselbaum.) L. Lagane.

60. **Obliteration of Iliac Artery Without Gangrene of Leg.**—If on the alert, the symptoms of obliteration of the common iliac artery will be recognized as they appear. The patient should be kept perfectly still in bed and the limb kept warm with hot water bottles and frequent frictions. The general circulation should be stimulated, the heart action made more energetic, with, possibly, massage to favor the fragmentation of the clot and prevent secondary clot formation. The anatomic conditions are such that obliteration of the common iliac alone does not threaten gangrene on account of the wealth of anastomoses. Surgical interference has given negative results to date and medical measures are still exclusively indicated.

61. **Disinfection of the Skin with Iodin.**—Guibé confirms the importance of tincture of iodin for simple, easy and complete disinfection of the skin. The field of operation is swabbed with the tincture, whose advantages for this purpose were recently summarized in these columns. The tincture must be kept corked to prevent evaporation of the alcohol with undue concentration of the iodin. No untoward by-effects have been observed to date from its use.

63. **Antimeningococcus Serum.**—Grysez advises injection of antimeningococcus serum whenever the cerebrospinal fluid looks turbid in a case presenting symptoms of meningitis, without waiting for the report from the bacteriologic examination. The injection should be repeated the second and third days, supplemented by prolonged warm baths, and under this treatment the disease will have a favorable outcome in the majority of cases.

64. **Local Serotherapy in Ocular Infections.**—Cantonnet concludes from analysis of the cases that have been reported in which general serotherapy was supplemented by four or six daily instillations of the antiserum in question, that the local treatment gives excellent results in the early stages of the infection but is powerless after mixed infection has developed. Subconjunctival injections may be useful in diphtheritic conjunctivitis but under other conditions instillation is sufficient.

Archiv für klinische Chirurgie, Berlin

LXXXIX, No. 2, pp. 281-503. Last indexed May 8, p. 1549

67 Partial Sequestration of Transplanted Bone Tissue. (Vorgang partielle Sequestrirung transplantirten Knochengewebes.) G. Axhausen.
68 Surgery of the Pancreas. F. Rosenbach.

69 Ultimate Outcome of Radical Herniotomies. (Dauerresultate der Radicaloperation bei Hernien.) A. Sertoli.
70 Lateral Retroperitoneal "Ovarian Cyst." (Ueber einen retroperitonealen, höchstwahrscheinlich oophorogenen Tumor.) W. Pullmann.
71 Spinal Anesthesia, especially for Laparotomies. (Erfolge der Medullaranästhesie, speciell bei Laparotomien). Zaradnicky.
72 Umbilical Adenoma. (Nabeladenom.) W. Mintz.
73 Pseudotumors in Region of Appendix. (Periappendiculäre pseudo-neoplastische entzündliche Tumoren.) F. Gangitano.
74 Atypical Laceration of Patella Ligament. (Zerreissung des Kniestreckapparates.) K. Appel.
75 Bronchobiliary Fistula. (Gallengang-Bronchusfistel.) J. Tyrman.
76 Technic of Resection of Intestine in Artificial Anus. (Tecknik der Darmresection bei der Behandlung des Anus praeternaturalis.) M. Mori.
77 *Simple Method of Operative Treatment of Prolapse of Rectum in Children. (Behandlungsmethode des Prolapsus recti bei Kindern.) G. Ekehorn.
78 *New Device for Anastomosis of Intestines, Etc. (Eine neue Methode zur Anlegung von Gastroenterostomien, Darm und anderen Anastomosen.) A. Oschmann.
79 Development of Tibial Tubercle and a Typical Affection in Adolescents. (Entwickelung der Tuberositas tibiæ und ihre typische Erkrankung in der Adolescenz.) W. Bergemann.
80 Retroperitoneal Hernia. (Hernia retroperitonealis Treitzii totalis accreta.) R. Felton.

77. Abstracted in The Journal, June 12, page 1966.

78. **Substitute for Intestinal Button in Anastomosis.**—Oschmann claims a number of advantages for the method of anastomosis described and illustrated in this article. He says that it has all the advantages of the Murphy button with none of its drawbacks. The principle consists in the application of two small plates, one of which has a row of holes and the other has the surface cut into in such a way that a row of thorn-like spikes are cut out of the plate and stand erect, each spike corresponding to one of the holes in its fellow plate. Each plate is cut out in the center so that it fits over a long centerpiece projecting in the blade of a special clamp forceps. The blades of the forceps, each loaded with its plate, are introduced into the organs to be joined, one in each organ. By shutting the blades the two little plates are brought into juxtaposition and the spikes on one enter the holes in the other and are riveted down by the pressure of the forceps blades. The two plates thus cling together in place as the forceps are withdrawn. The ideal is to make the plates of absorbable material, but magnesium proved too fragile for the purpose, and he uses an alloy of magnesium with iron or aluminum. The incisions required for the introduction of the blades of the forceps are very small, the anastomosis is over a wider area than with a button; the long, rounding, narrow plates are readily evacuated, and permit the passage of stools, while the anastomosis is more complete and the junction hermetically closed. He reports experimental tests of the new method and its successful application in one clinical case.

Berliner klinische Wochenschrift

May 17, XLVI, No. 20, pp. 909-956

81 Status of Physiology in the Medical Curriculum. (Stellung der Physiologie im Universitätsunterricht.) M. Rubner.
82 *Natural Healing Processes in Brain Tumors. (Selbstheilungsvorgänge bei Gehirngeschwülsten.) Anton.
83 *Importance of Monkeys for Tests of Antiserums. (Antistreptokokkenserum.) Zangemeister.
84 *Laparotomy under Momburg's Belt Constriction for Uterine and High Rectal Carcinomas. (Laparotomia hypogastrica unter Anwendung des Momburgschen Taillenschlauches bei Uterus und hochsitzendem Rektumcarcinom.) Neuhaus.
85 Tumors in Hypophysis Region with Unusual Disturbances in Vision. (Geschwulst in der Hypophysisgegend mit ungewöhnlichen Sehstörungen.) Crzellitzer.
86 Lime and Phosphorus Metabolism in Rachitis. ii. (Kalk in der Pathologie der Rachitis.) J. A. Schabad.
87 Incapacity for Lactation. (Stillungs-Unfähigkeit.) W. Schultz.
88 Sexual Impressions dating from Childhood in the Psychoanalysis of Neurasthenia. (Zur Frage der infantilen Sexualität.) Marcinowski.

82. Abstracted in The Journal, June 5, 1909, page 1895.

83. **Antistreptococcus Serum Derived from Monkeys.**—Zangemeister has not been able to confirm in the clinic or with monkeys the favorable results obtained with ordinary antiserums on guinea-pigs and rabbits. He thinks that monkeys should be used for the production of curative serums, and has instituted experiments in this line. The serum of highly immunized monkeys confers on mice a passive protection against streptococcus infection, notwithstanding the wide difference in the species. Horse antistreptococcus serum, on the other hand, failed to protect the monkey in his tests.

84. **The Momberg Belt Constriction for Operations on Uterus and Rectum.**—Neuhaus states that the Momberg technic for expelling the blood from the lower part of the body has been applied to date in 17 gynecologic surgical and in 17 obstetric cases, in other clinics, and in 5 cases of cancer of the uterus in Mackenrodt's clinic. Neuhaus gives the details of this last group, states that no injury from the belting was apparent in any instance. The stout rubber tubing is wound from two to four times around the waist and drawn tight until pulsation in the femoral artery is no longer perceptible. The belt was not applied for the laparotomies until after the abdomen had been opened. The aim is to shut off the upper abdomen as completely as possible, leaving nothing in the lower part except the lower segment of the colon and the rectum, the bladder and the internal genital organs. The pelvis has to be raised high and the patient under the influence of the anesthetic to accomplish this; after the belt has been applied the pelvis can be lowered. A few sponges serve to wall off the upper abdomen still more completely, and the viscera are thus protected against chilling, contact with blood, instruments, etc., and the operative shock is much reduced as also the danger of infection, while the surgeon is not hampered in his work by interfering loops of intestine. With very corpulent persons it may be advisable to interpose a pad of gauze over the arteries before drawing the belt tight. When this is done it is not necessary to belt so tightly. In one case the pad was applied directly to the artery, inside the peritoneum; in the others, the pad was fitted over the artery in the groove made by drawing up the belt, the compression acting through the skin. The ends of the tube are clamped together, using a blunt instrument not to cut the rubber. The incision when the belt constriction is applied should be transverse, not along the median line, the vessels and nerves in the muscles being pushed out of the way. The smaller vessels which otherwise annoy by bleeding are plugged with a clot, but after the uterus and adnexa have been removed the belt is loosened to detect any bleeding points. The peritoneum is then drawn down and the field of operation roofed over, leaving a strip of iodoform gauze on each side to drain into the vagina. The pelvis is then lowered and the abdominal incision sutured. It was noticed that the spinal anesthesia in these belted cases lasted twice as long as usual; the smaller amount of blood in the shut-off area presented less absorbing surface.

Correspondenz-Blatt für Schweizer Aerzte, Basle

April 1, XXXIX, No. 7, pp. 217-256

89 *Influence on the Mind of Conditions in the Heart. (Herz und Gemut.) G. Rheiner.
90 *Auditory Hallucinations from Salicylic Medication. (Hörtäuschungen durch Salicylsäure.) J. Seitz.

89. **Relations of the Mind and Heart.**—Rheiner has noticed that acute worry, as over the sudden sickness of some member of the family, is liable to affect the heart action and even induce symptoms of oppression, much more pronounced than in the prolonged grief from some irremediable sorrow. The healthy heart soon accommodates itself to increased demands on it, but if the musculature is weak or diseased serious damage may result from the emotional disturbance. On the other hand, he has encountered a number of cases in which nervous agitation and insomnia were accompanied by a weak systolic murmur suggesting possible arteriosclerosis, the nervousness increasing to an actual psychosis in a few weeks. No sedatives or other drugs gave relief until digitalis was tentatively tried, and it worked like magic. As the pulse improved the insomnia, melancholy and sense of weakness vanished and the patient regained her normal peace of mind. One patient was a woman of 66 and she took a total of 4.5 gm. of digitalis infusion in the course of a week. Rheiner's experience thus emphasizes the importance of bearing in mind a possible connection between the functioning of the heart and psychic affections.

90. **Auditory Hallucinations from Salicylic Medication.**—Seitz reports a number of cases in which patients taking salicylates experienced auditory hallucinations for which the salicylate was evidently responsible. The hallucinations were not new ideas in any instance, but long forgotten memories of certain sounds were aroused, the roar of a certain water

fall, the singing of birds heard in a certain garden, etc. The minute amount of chemical reaching the cells seemed to bridge the gap between unconscious and conscious memories.

Deutsche medizinische Wochenschrift, Berlin

May 20, XXXV, No. 20, pp. 873-912

91 *Diagnosis and Treatment of Tetany. F. Chvostek. Commenced in No. 19.
92 *Bismuth Poisoning and Non-toxic Substitute. (Ueber Wismutvergiftungen und einen ungiftigen Ersatz des Wismut für Röntgenaufnahmen.) W. Alexander.
93 *Behavior of Pancreas with Gastric Achylia and Anacidity. (Verhalten des Pankreas bei Achylie und Anazidität des Magens.) R. Ehrmann and R. Lederer.
94 Deleterious Influence of Meat in Diet according to Ancient and Modern Views. (Einiges über die Beurteilung der Fleischnahrung als Krankheitserreger in alter und neuer Zeit.) G. Schneidemühl.
95 *Paratyphoid Bacilli in Ice in which Fish are Packed. (Paratyphusbazillen im Transporteis der Seefische.) Rommeler.

91. **Tetany.**—Chvostek concludes his long study of this subject by reviewing the treatment, especially of gastric tetany. Profuse rinsing of the stomach, stopping feeding by the mouth, and copious saline infusion are the first indications. After a day or two of this, small doses of alkaline waters can be given and, if conditions improve, nothing further is needed; if not, time is gained for operation. The stomach tube must be introduced very cautiously or the manipulations may aggravate the spasms. Rest in bed, equable warmth, tepid baths and sweating procedures supplement the above with good effect. His experience confirms the benefit from linden-flower tea, according to von Eiselsberg's sweating technic. Morphin may be required; he has never seen any effect from the bromids; chloral by the rectum may also be given a trial. Operative measures have no effect on the concentration of the blood, which some think is the cause of the tetany; neither can the operation repair the total insufficiency of the parathyroids, which we must accept as the cause for the tetany that terminates fatally.

92. **Substitute for Bismuth.**—Alexander gives skiagrams taken with magnetic oxid of iron instead of bismuth, and relates clinical and experimental research with this powder. Larger amounts are required than for the bismuth, but as the oxid is harmless no disturbances need be feared. He gives it in a suspension with a little sugar of milk and pulverized chocolate. About 140 gms. of the oxid are required for a good skiagram of the stomach.

93. **Behavior of the Pancreas with Gastric Achylia and Anacidity.**—Ehrmann and Lederer give the metabolic findings and results of various tests in 98 cases, mostly with subnormal gastric secretion. Among the results of their research is the unexpected discovery that deficient or lacking ferments of the gastric juice and lack of normal acidity do not seem to influence the functioning of the pancreas harmfully. Its functions seem even better than under normal conditions. It is therefore unnecessary to administer hydrochloric acid to stimulate the pancreatic functioning. There is nothing to indicate that hydrochloric acid is the specific stimulant for the pancreas. With hypersecretion the increased production of pancreatic juice is probably a reflex process, to protect the intestine. The more bile in the stomach content, generally the more trypsin. The intestinal juice may be mechanically forced into the stomach during the retching movements caused by introduction of the stomach tube. To date it is impossible to estimate the functioning of the pancreas by the retrograde flow of intestinal juice into the stomach.

95. See Berlin Letter in THE JOURNAL, June 19, page 2007.

Medizinische Klinik, Berlin

May 16, V, No. 20, pp. 723-758

96 *Treatment of Neuroses of Voice and Speech. (Behandlung der Neurosen der Stimme und Sprache.) H. Gutzmann.
97 Chemical Correlations in the Organism. K. Grube.
98 Introduction of Antagonistic Microbes in War against Microbes of Nitrogenous Putrefaction in the Intestine. (Bekämpfung der Mikroben der Stickstofffäulnis im Darm durch Einführung von antagonistischen Mikroben.) Combe. Commenced in No. 19.
99 Experiences with Mechanical Devices for Respiratory Exercises. (Erfahrungen mit neueren Methoden der maschinellen Atmungsgymnastik.) A. Laqueur.
100 Influencing of Growth of Plants by Electricity. (Beeinflussung des Pflanzenwachstums durch Elektrizität.) M. Breslauer.
101 *Puerperal Fever. (Ueber Kindbettfieber.) Zangemeister.

96. **Treatment of Nervous Vocal Disturbances.**—Gutzmann expatiates on the importance of graphic registration of the movements of the vocal organs for analysis of disturbances in the voice or speech. He has devised a special technic for the purpose. In treatment he has found that vibration of the larynx by means of an electrically driven tuning fork, with the number of vibrations corresponding to the pitch of the voice, is effectual. Graphic registration of the movements of the vocal organs has also thrown new light on the mechanism of stuttering, showing abnormal methods of inspiration and expiration which can easily be corrected. Especially useful in this respect are Schreber's methods of deep breathing combined with gymnastic exercises. The apparatus for altering the positive and negative pressure in the lungs has also proved useful, the patient being entirely passive, and the inspiration and vacuum produced by the apparatus simulating the natural and normal type of breathing, which the patient thus learns to reproduce.

101. **Puerperal Fever.**—Zangmeister states anew in the course of this long study of puerperal fever that its frequency still amounts to 0.2 per cent. of all childbirths, but that it is extremely rare in women who have not been examined or the genitalia infected from without or who are free from some extragenital focus of infection. Prophylaxis must aim to keep germs away from the genitalia during the last few weeks of the pregnancy; vaginal douches must be omitted, and the woman must keep away from possible sources of streptococcus or other infection in her own household, etc. A sick servant may serve as the source for infection. Any focus on the woman's body, such as a leg ulcer, must be kept carefully covered not to allow germs to find their way thence to the genital region. The general resisting power should be kept at its highest point, and it should not be forgotten that prolonged anesthesia, severe losses of blood and chilling of the body, such as are possible during an obstetric operation, all tend to reduce the vitality and resistive power. Means to enhance the resistive forces artificially have not yet been worked out to a practical success; even antistreptococcus serum, effectual in animals, has not proved reliable in the clinic. The uterus must be emptied after the delivery and be kept empty. Retention of lochia may be caused by overfilling of the bladder, by backward displacement of the bladder from an abdominal band applied too early, by retroflexion, by a myoma in the cervix, by excessive packing of the vulva, etc., but constipation does not seem to have much effect in inducing retention of lochia. In regard to local measures, he says that the more we learn in regard to Nature's means for preventing and overcoming infection, the more absurd seem our former therapeutic efforts in this line. Nature throws up a wall around the infectious focus to isolate it, and when we scrape away, cauterize or otherwise destroy this protecting barrier, we are liable to transform the local process into a fulminating sepsis. Either the infectious germs are already being walled off in the endometrium—when any outside measures are superfluous—or else they have already invaded the vicinity—in which case we are too late. It is impossible to root out the germs in the depths of the tissues by the most energetic curetting or cauterizing and consequently he warns to abstain from any attempt in this line as liable to open new wounds for the penetration of the virulent germs into the circulation. Prompt removal of the entire uterus may prove useful when we learn to distinguish the cases which will prove fatal without such radical measures. It is especially important, he adds, to refrain from operating on infectious pyosalpinx pockets, as the operation is liable to be followed by fistula persisting for years, or by secondary injuries. Incision and drainage of fresh puerperal peritonitis have not proved effectual to date, as the adhesions between the intestines and drains interfere with the complete escape of the secretions. Cataplasms, iodin, superheated air and similar measures are liable to benefit, but he warns against the ice-bag, and adds that superheated air must not be applied until the inflammatory process has entirely subsided, as otherwise it is liable to flare up again. He also warns against drugs to combat the bacteria, as they act on the cells more destructively than on the germs and do harm rather than good. Even metallic mercury

and colloidal silver have proved useless. The only measures that seem to promise well are a copious supply of fluids and the use of fresh normal human serum. It is safer to err on the side of feeding too little than to give more than the patient can assimilate. Fever should not be combated, but lavage of the stomach may be found useful in the vomiting of peritonitis, and for vasomotor paralysis, subcutaneous injection of adrenalin in the proportion of ten drops to a liter of physiologic salt solution. Another important point to bear in mind is the care of the skin, especially for prevention of decubitus.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

May, XXIX, No. 5, pp. 553-676

102 Hemolytic Streptococci and the Prognosis of Puerperal Fever. O. Bondy.
103 *Prophylactic Treatment of Eclampsia and Results in 330 Cases. W. Stroganoff.
104 Fetal Peritonitis. M. Unger.
105 Cysts Developing in Gartner's Duct. (Durch Laparotomie gewonnene Gartnersche Cysten.) R. Unterberger.

103. **Prophylactic Treatment of Eclampsia.**—Stroganoff states that his method of prophylaxis of eclampsia has been applied in 360 cases at St. Petersburg and the mortality of this disease has been reduced to 6.6 per cent. for the mothers and to 21.6 per cent. for the children. He reiterates that he knows of no disease in which therapeutic measures display more brilliant results than in eclampsia, and he urges the more general adoption of his technic. It aims to prevent the convulsions by reducing the irritability of the nervous system, obtaining tranquil sleep by means of narcotics, and removing everything liable to induce irritation, terminating the pregnancy if necessary, and watching over the regular action of heart, lungs and kidneys, the patient in the most favorable positions, administering oxygen in abundance, and keeping the patient under the influence of morphin and chloral, with chloroform at first until the patient feels the effect of the chloral. His technic was described in The Journal, Sept. 20, 1902, page 733, and time has apparently confirmed his early statements as to its efficiency: In moderately severe cases, first morphin, about 0.015 gm.; in one hour or sooner, 2 gm. chloral; morphin again the third hour; chloral the seventh, and 1.5 gm. chloral again the thirteenth and twenty-first hour. Delivery is hastened as necessary and fluids are supplied by the rectum or mouth, from 150 to 250 c.c. four or five times a day. The aim is to prevent the convulsions, even if as much as 4 or 5 gm. chloral and 0.03 or .04 morphin plus chloroform occasionally are required in the course of five or six hours. If the convulsions keep up obstinately, delivery is hastened. Vaginal Cesarean section is indicated if necessary, but he has never had occasion to resort to operative measures. He is convinced that the mortality of eclampsia can be reduced to 1 or 2 per cent. if this method of treatment is begun early and systematically carried through, in the absence of serious complications. It is applicable to eclampsia before, during or after delivery, and experience has demonstrated that sedatives can be relied on as the mainstay in treatment. He adds in conclusion that in his opinion operative measures in eclampsia: vaginal Cesarean section, decapsulation of the kidneys, nephrotomy, or combinations of these, are carrying surgery to unfounded extremes.

Münchener medizinische Wochenschrift

May 18, LVI, No. 20, pp. 1001-1056

106 *Reaction Obtainable in the Blood of the Insane. (Eine Reaktion im Blute von Geisteskranken.) H. Much and W. Holzmann.
107 What Factors Determine the Size of the Heart? O. Bruns.
108 *Danger for Typhoid Bacilli Carriers from their own Typhoid Bacilli. (Gefährdung des Typhusbazillenträgers durch die eigenen Typhusbazillen.) W. Kamm.
109 *Typhoid Agglutination in Tuberculosis. E. Krencker.
110 Treatment of Abdominal Walls during the Puerperium. (Behandlung der Bauchdecken im Wochenbett und über das Frühaufstehen der Wöchnerinnen.) K. Holzapfel.
111 *Local Treatment of Nose to Relieve the Ménière Syndrome. (Eine neue Behandlungsweise des Menièreschen Symptomenkomplexes.) G. Herzer.
112 *Children of Paralytics. (Paralytiker-Kinder.) Herrmann.
113 Practical Experiences with Scabies. G. Knauer.

106. **Special Reaction in the Blood of the Insane.**—Much has found that the serum of patients with dementia præcox and manic-depressive insanity inhibits the hemolytic action of cobra venom, while other serums do not possess this property. He has examined 400 serums, including nearly 50 persons with these mental affections, and the reaction occurred positively in this group as also in persons whose parents had had these affections, and it occurred in none of the others. Both for diagnosis and from the forensic standpoint this announcement is important and it also throws light on the nature of insanity. He calls the phenomenon the psychoreaction. In one instructive case the Wassermann test was constantly negative and the psychoreaction positive, confirming the clinical diagnosis of tabes and manic-depressive insanity based on three weeks' study of the dubious case; paralytic dementia had been first accepted. The psychoreaction was positive also in persons free from circular insanity but with a history of it in their family. The reaction does not occur with the cerebrospinal fluid.

108. **Danger to Bacillus Carriers from their Own Bacilli.**—Kamm gives the postmortem findings of four typhoid-bacillus carriers and reviews others on record which show the possibility of caries of the ribs and other lesions from the persisting typhoid bacilli. In one of his cases and in Fehr's, a carcinoma developed in the gall bladder for which the presence of the typhoid bacilli was evidently responsible. His findings confirm still further the importance of diligent search for means to rid bacilli carriers of their parasites.

109. **Typhoid Agglutination in Tuberculosis.**—Krencker reports that the agglutination test with typhoid bacilli gave positive results in 8 out of 26 cases of tuberculosis, including the paratyphoid bacilli in 2. In 2 instances the agglutination test was negative at first, but became positive later. He warns against undue reliance on the agglutination test, as positive findings may be obtained in latent or manifest tuberculosis without typhoid antecedents. In the positive cases the patients all had fever.

111. **Vibration Massage for the Ménière Syndrome.**—Herzer has found vibration massage so effectual in migraine, chronic rhinitis and connected conjunctivitis, and in neuralgia of the cranial nerves, that he applied it in a rebellious case of Ménière's disease. The vibration massage was applied to the nasal mucosa and the active hyperemia in the head induced by reflex action had a favorable influence on the inflammatory process and congestion in the semi-circular canals. The case described in detail was that of a man of 40; no benefit had been derived from the usual drug treatment. The massage was applied to the nose every second day at first for twelve days, then three, then two times a week for about ten weeks, and there has been no recurrence during the two years since.

112. **Progressive Paralysis and Offspring.**—Herrmann had opportunity to examine the children of 120 married couples, either husband or wife having progressive paralysis. The number of births was about the same as under other conditions, but the proportion of childless couples is much larger, and more than half of all the children show distinct signs of physical or mental anomalies. Only 66 of the 124 children were robust; 54 suffered from some mental affection.

Wiener klinische Wochenschrift, Vienna

May 13, XXII, No. 19, pp. 661-698

114 *Hemolytic Jaundice and Occurrence of Hemolytic Phenomena in this and in Pernicious Anemia. (Ueber hämolytischen Ikterus.) K. v. Stejskal.
115 Experiments with Irritation and Phototherapy in Pemphigus, Etc. (Reizversuche bei einem Fall von Pemphigus und bei einem blasigen pemphigusähnlichen Exanthem.) S. Reines.
116 Insensibility of Tendons to Pressure in Tabes. (Abadiesches Phänomen.) J. C. Rowly.

114. **Hemolytic Jaundice.**—Stejskal reports two cases, one in a girl of 16, the other in a young clerk. The trouble seems to have begun at puberty and there was considerable lassitude with the jaundice and anemia, pains in the spleen and in the liver. All these symptoms subsided in about two weeks but recurred again at intervals, the anemia becoming constantly more severe.

Zentralblatt für Chirurgie, Leipsic

May 15, XXXVI, No. 20, pp. 705-744

117 Implantation of Ureter in the Intestine. (Zur Technik der Ureterenimplantation in den Darm.) W. W. Ssizemsky.

May 22, No. 21, pp. 745-784

118 Case of Operative Treatment of Embolism of Pulmonary Artery. (Ein nach Trendelenburg operierter Fall von Embolie der Lungenarterie.) Kruger.

Zentralblatt für Gynäkologie, Leipsic

May 8, XXXIII, No. 19, pp. 649-680

119 Non-Toxicity of Human Fetal Organs for Rabbits. (Fötale Organe sind für den Tierkörper ungiftig.) Hikmet.

May 15, No. 20, pp. 681-712

120 *To Shorten the Round Ligaments to Correct Retroversion. (Uterofixatio Ligamenti rotundi.) J. Jerie.
121 Chronic Endometritis. Ellerbroek.
122 *Fatal Hemorrhage from Myoma after Roentgen Exposure. (Fall von tödlicher Myomblutung nach Röntgenbestrahlung.) F. Spaeth.

May 22, No. 21, pp. 713-752

123 *Uterine Cancer at End of Pregnancy. (Zur Kasuistik des Uteruskarzinoms am Ende der Schwangerschaft.) E. Gräfenberg.
124 *Seroreaction in Obstetrics. (Méthode der Deviation du complement, angewendet bei der geburtshilflichen Physiopathol ogie.) D. Viana.

120. **To Shorten the Round Ligaments to Correct Retroversion.**—Jerie writes from Pawlik's clinic at Prague to describe, with an illustration, a method of shortening the round ligaments by taking up a loop and inserting the top of the loop under a bridge cut for it in the anterior wall of the uterus just below the original insertion of the ligament. The loop is fastened here with two or three sutures, and approximately physiologic conditions and direction of traction are restored. This technic is particularly useful when the round ligament is too frail for the Alexander-Adams operation.

122. **Fatal Hemorrhage from a Myoma After Roentgen Exposures.**—Spaeth's patient was a woman of 47 who refused to permit operative removal of a large benign myoma with excessive menstrual hemorrhage. Roentgen treatment was instituted, seven exposures being given, but the menstrual hemorrhage became still more abundant and the patient succumbed to heart failure about six weeks after commencement of Roentgen treatment. This case shows the necessity for working with greater intensity on the ovaries to induce atrophy as rapidly as possible, thus preventing menstrual congestion with consecutive menorrhagia. This is the only way to permit the application of radiotherapy to women whose heart and kidneys have suffered so much from constant losses of blood, from the injury and from the metabolic processes of the myoma, that an operation is too dangerous. He adds that women should not be allowed to become so debilitated from excessive menstrual hemorrhage that they are unable to stand even the most cautious treatment.

123. **Uterine Cancer and Pregnancy.**—In the course of a few weeks chance brought three cases of uterine carcinoma to the Kiel clinic in women in the tenth month of pregnancy and all were delivered of a living child; by the natural route in one case and by section in the others, followed by panhysterectomy. The patients were dismissed in good condition and two are free from recurrence to date, the longest interval four months. The patients were between 30 and 40, the oldest being a xii-para and the youngest an viii-para. Sarwey was able to find only 240 cases of uterine cancer in pregnant women including 6 at term. Among the 287 cases of carcinoma observed at Kiel during the last seven years, 10 per cent. were first discovered a few weeks or months after a childbirth. These with other statistics show that 21 per cent. of all such cases during the genital period correspond with a recently ended pregnancy. Fully 25 per cent. of 60 inoperable cases showed this same connection with a pregnancy. The puerperal conditions in the pelvis favor the total extirpation to a remarkable extent. In his 3 cases there had been nothing to suggest malignant disease except in one case slight hemorrhage for two days during the middle of the pregnancy, and in another slight hemorrhage two weeks before delivery, but in all the vaginal portion of the uterus was transformed into a hard, knobby crater. The Wertheim-Bumm technic proved satisfactory.

124. **Deviation of Complement in Obstetrics.**—Viana has been applying with placenta extract the biologic test as for serodiagnosis of syphilis, but with definite results in only three out of nineteen patients.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 4, XXX, No. 53, pp. 561-568

125 *Yeast in Treatment of Abscesses in the Ear. (Il lievito di birra nella cura dell'otite-circoscritta esterna.) N. Antenore.

May 6, No. 54, pp. 569-576

126 *Diffuse Hypertrophy of Submucous Connective Tissue of the Stomach. (Studio clinico anatomico ed istologico della linite plastica di Brinton.) A. Cova and G. Bono.

May 9, No. 55, pp. 577-592

127 Congenital Myatonia. (Malattia di Oppenheim.) T. Silvestri.

May 11, No. 56, pp. 593-600

128 *Prophylaxis of Recurring Tonsillitis. (Profilassi delle tonsilliti recidivanti colla detersione meccanica della cavita orale a mezzo dello spazzolino e del bicarbonato de soda in polvere.) A. Campani and G. Formiggini.

May 13, No. 57, pp. 601-608

129 Instrumental Dilatation in Eclampsia plus Cicatricial Stenosis of the Cervix. G. Carli.

May 16, No. 58, pp. 609-624

130 *Treatment of Hemorrhagic Diathesis in the Insane. (Terapia delle diatesi emorrhagiche negli alienati.) G. Gatti.
131 *Veratrum Viride in Eclampsia. U. Fabris.

125. **Yeast in the Treatment of Abscess in the Ear.**—Antenore reports six cases in which circumscribed otitis in the outer ear was treated internally with yeast, taken 2, 3 and 4 times a day. The tendency to recurring furuncles in the ear was promptly arrested and there has been no recurrence since. The patients took the yeast for about a week. This yeast treatment was supplemented by local application of medicated gauze. Under the influence of the yeast the pain and the morbid tendency rapidly subsided, although the furunculosis had long persisted unmodified by other measures.

126. **Diffuse Hypertrophy of Gastric Connective Tissue.**—Cova and Bono give the findings in a case in which the patient presented the symptoms of Brinton's plastic linitis. The autopsy findings confirm their assumption that this plastic linitis is merely one variety of cancer distinguished by an unusually slow growth.

128. **Prophylaxis of Recurring Tonsillitis.**—Campani relates that he has been successful in the prophylaxis of recurring tonsillitis in persons formerly extremely subject to it. His method is merely to scrub the teeth, gums and tongue down to the base the last thing at night, with a soft toothbrush dipped in dry sodium bicarbonate. Bacteriologic tests of the scrapings of the tongue and gums in the morning showed that they were comparatively sterile in comparison with the findings when this mechanical-chemical cleansing was not done, as the stagnation of the saliva during sleep favors proliferation of germs in the mouth.

130. **Gelatin in Hemorrhagic Diathesis in the Insane.**—Gatti has found hemorrhagic purpura rather frequent in the Udine asylum, and reports good results from subcutaneous and intravenous injections of gelatin. In a few cases he supplemented the gelatin with intravenous injections of mercuric chlorid.

131. **Veratrum Viride in Eclampsia.**—Fabris has found this drug so useful that he regards it almost as the specific remedy. He relates the details of five cases in which it was used, and reviews seven articles in Italian literature, confirming its value in this disease. The pulse grows slow, the blood pressure and temperature drop, while peristalsis is induced, diuresis favored and albuminuria subsides. The patients all tolerated it without disturbances.

Policlinico, Rome

May 9, XVI, No. 19, pp. 581-612

132 Aphasia. (La questione delle afasie.) A. Marina.

May 30, No. 23, pp. 677-708

133 The Agglutinating Reaction in the Milk of Palermo Goats. (La latto reazione (Zammit-test) nel latte delle capre della citta di Palermo.) G. Chimera.

Riforma Medica, Naples

April 26, XXV, No. 17, pp. 449-476

134 Anatomy and Pathology of Posterior Spinal Roots with Special Regard to the Pathogenesis of Tabes. (Anatomia e patologia delle radici posteriori spinali.) E. Levi.

May 3, No. 18, pp. 477-504

135 Diffusion in Organism of Diphtheria Toxin. A. Connlo.
136 Differential Blood Count in Scorbutus. (La formula emoleucocitaria in 10 casi di scorbuto.) D. De Albertis.

May 10, No. 19, pp. 505-532

137 *Postoperative Spasm of the Intestines. (Sull'enterospasmo postoperatorio.) G. Morone.
138 Hyperemia in Surgical Lesions. (Il metodo di Bier in terapia chirurgica. Ulteriore contributo clinico sperimentale.) C. Laccetti.

137. **Postoperative Intestinal Spasm.**—In Morone's case the convalescence after a gastrectomy for carcinoma of the pylorus was disturbed by the spasm of the bowel coming on a day and a half after the operation. The patient was a woman of 57, and the enterospasm proved fatal twenty-eight days after the gastrectomy. The abdomen was opened again the twentieth day and the bowel was found in a condition of diffuse spastic contraction throughout its entire length. No benefit was derived from the laparotomy but there were no signs of peritonitis at the autopsy ten days later. Food injected into the rectum was vomited from the stomach.

Nordiskt Medicinskt Arkiv, Stockholm

XLI, Surgery, No. 2. Last indexed Jan. 30, p. 428

139 *Buttonhole Suture, a Continuous Series of Knots. (Knopflochnaht, eine fortlaufende Knotennaht.) N. V. Åkerblom.
140 Case of Appendicitis with Transposed Colon. (Fall von Blinddarmentzündung mit Transpositio coli.) Söderbaum.
141 *Early Diagnosis and Operative Treatment of Hydronephrosis. (Öfver hydronefrosen med afseende på tidig operation och tidig diagnos.) G. Ekehorn.
142 Two Cases of Pavement Epithelium Carcinoma of the Breast. (Plattenepithelcarcinom der Brustdrüse.) A. Troell.
143 Large Teratoid Tumor in Infant's Thyroid. (Zur Kenntnis der kongenitalen Geschwülste am Halse.) H. Lavonius.
144 Pathogenesis of Uterine Myoma. A. Faber.
145 *Fifty-two Operations for Ulcers in the Stomach or Duodenum. (Zur Chirurgie des Magen- und Duodenalgeschwürs.) K. Dahlgren.

139. **Buttonhole Suture.**—The illustrations show the details of this form of suture in which a hard knot is made at each of the stitches in the continuous thread as the needle is drawn out at each stitch. Instead of drawing the needle out from within the loop formed by the last segment of thread, as in the ordinary form, it is introduced from without, the last segment of thread being twisted to form one or two loops over the tip of the needle before it is drawn out. The entire suture can be removed all at once, which is another advantage. Traction may be exerted on the threads in various directions, thus obtaining the benefits of different kinds of sutures at will.

141. **Early Diagnosis of Hydronephrosis.**—The ureteral catheter is sometimes the only way to confirm the diagnosis as in 2 of the 4 cases reported by Ekehorn; in others it may be necessary to open up the region. His experience shows the possibility of complete functional restitution if the obstruction to the passage of urine is removed early, before the formation of an encysting membrane and before the kidney tissue has been irretrievably injured by the distention. He advocates an early operation as the most certain way to discover the cause of the obstruction and permit its removal, and the intervention should be restricted to this.

145. **Surgery of Gastric and Duodenal Ulcers.**—Dahlgren reviews 52 cases of operative treatment, giving the details of each and the ultimate outcome. About 38 or 45 minutes before the operation the patients are given a heart tonic, camphorated oil and strychnin, plus a little morphin are injected, and if the patient is much excited large quantities of alcohol with some opium are injected into the rectum, according to Witzel's suggestion. These preliminaries reduce the amount of anesthetic needed. After the operation the patient is returned to a warmed bed, the foot of which is raised while the patient's shoulders rest on high pillows. This bends the body at an angle with the pelvis at the lowest point. Subcutaneous infusion follows as soon as the patient is in bed, unless done during or just preceding the operation, and if the conditions require it, the infusion is made into a vein, with addition of sugar, and heart tonics. As a rule, camphor is injected every third or sixth hour and the intestines are rinsed out every fourth or seventh hour or a bowel tube introduced. Four or six times a day an enema to be retained is injected, with or without addition of sugar, alcohol or other stimulants, after the rinsing enema, or continuous infusion of a fluid into the rectum is arranged for. If there has been perforation, nothing is given by the mouth for a week, but otherwise fluid food is allowed from the first. Paresis of the bowel is combated by the above measures, possibly supplemented by injecting castor oil into the bowel before the tube is removed, urging the patient to retain it as long as possible, supplementing it at need by a subcutaneous injection of physostigmin, 0.001 gm. twice a day, half an hour before the bowel rinsing.

Ugeskrift for Læger, Copenhagen

April 29, LXXI, No. 17, pp. 445-476

146 *"Uveo-Parotid Fever." (Om en Febris uveo-parotidea subchronica, lokaliseret til Glandula Parotis og Øjets Uvea og hyppigt kompliceret med Pareser af cerebrospinale Nerver.) C. F. Heerfordt. Commenced in No. 16.
147 Roentgen Examination after Gastroenterostomy. (Gastroenterostomiens Virkemaade.) A. Pers.

May 6, No. 18, pp. 477-504

148 Indications for Treatment in Norwegian Sanatoriums. (De norske høifjeldssanatorier.) F. Gron.

May 13, No. 19, pp. 505-528

149 Small Typhoid Epidemic from Bacillus Carrier in Dairy. A. E. Nielsen.

146. **Uveo-Parotid Fever.**—Heerfordt reports three cases of a subchronic febrile infection localized in the parotid gland and the uvea of the eye, complicated with paresis of cerebrospinal nerves. He is convinced that this is a special syndrome, distinct from epidemic mumps which it resembles in some respects. The long prodromal period, from fourteen days to three months, the low, long persisting fever, the subchronic localization in the parotid gland and uvea and the frequent complicating paresis—all these differentiate it from mumps, as also its slight contagiousness. The uveitis in some cases developed before the parotitis. The paresis is evidently the work of the toxins as it subsides soon without leaving organic defect. It is possible that the disease is caused by the same microbes as mumps, but no transitional forms have been observed, although there is much to suggest that it is an atypical form of acute parotitis.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Studies on Immunity. By Robert Muir, M.A., M.D., Professor of Pathology, University of Glasgow in Collaboration with Carl H. Browning, M.D., Alexander R. Ferguson, M.D., and William B. M. Martin, M.B., Ch.B. Cloth. Pp. 216. Price, $3.00. New York: Oxford University Press, 1909.

Inborn Errors of Metabolism: The Croonian Lectures Delivered Before the Royal College of Physicians of London, in June, 1908. By Archibald E. Garrod, D.M., M.A., Fellow of the Royal College of Physicians. Cloth. Pp. 168. Price, $1.35. New York: Oxford University Press, 1909.

Suture of Arteries: An Experimental Research. By E. Archibald Smith, M.B., Ch.B., Victoria University F.R.C.S., England. Cloth. Pp. 70, with illustrations. Price, 90 cents. New York: Oxford University Press, 1909.

Medical Inspection of Schools. By. A. H. Hogarth, M.B., B., Ch., D.P.H., County Medical Officer of Health for Buckinghamshire. Cloth. Pp. 360. Price, $2.00. New York: Oxford University Press, 1909.

Graphic Methods in Heart Disease. By John Hay, M.D., M.R.C.P., Assistant Physician, Liverpool Royal Infirmary. With an introduction by James MacKenzie, M.D., M.R.C.P. Cloth. Pp. 184. with illustrations. Price, $3.00. New York: Oxford University Press, 1909.

Common Disorders and Diseases of Childhood. By George Frederick Still, M.A., M.D., F.R.C.P., Professor of Diseases of Children, King's College, London. Cloth. Pp. 731, with illustrations. Price, $5.50. New York: Oxford University Press, 1909.

A Text-Book of the Diseases of the Ear. By. Prof. Dr. Adam Politzer, Imperial-Royal Professor of Aural Therapeutics in University of Vienna. Translated at the Personal Request of the Author, and Edited by Milton J. Ballin, Ph.B., M.D., Assistant Surgeon, New York Ophthalmic and Aural Institute, and Clarence L. Heller, M.D. Edition 5. Cloth. Pp. 892, with 337 original illustrations. Price, $8.00. Philadelphia: Lea & Febiger, 1909.

Report to the Board of Trustees "Commissioners of Waterworks" of Cincinnati, Ohio. By Geo. H. Benzenberg, Chief Engineer. 1909. Cloth. Pp. 267, with illustrations.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. ix., 1909. Paper. Pp. 405, with illustrations.

The Smokeless Combustion of Coal in Boiler Plants, with a Chapter on Central Heating Plants. By. D. T. Randall and H. W. Weeks. Bull. 373 Dept. of Interior, U. S. Geological Survey. Paper. Pp.188. Washington: Government Printing Office, 1909.

Charity Service Reports, Cook County, Ill. 1908. Paper. Pp. 248, with illustrations.

Handbuch der Biochemie des Menschen und der Tiere. Herausgegeben von Prof. Dr. Phil. et Med. Carl Oppenheimer, in Berlin. 16th, 17th and 18th installments. Paper. Price, 5 marks each. Jena: Verlag von Gustav Fischer, 1909.

L'Hypophyse et la Médication Hypophysaire. Par M. le Docteur Arthur Delille, Membre Adjoint de la Société Anatomique. Paper. Pp. 336. Paris: G. Steinheil, 1909.

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Address

PREVENTABLE DEAFNESS

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON LARYNGOLOGY AND OTOLOGY OF THE AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, 1909

W. SOHIER BRYANT, A.M., M.D.
NEW YORK

A survey of otology shows that great advances have been made in the treatment of deafness, but prevention of deafness has, up to this point, only been touched on. The laity are well informed on the necessity of otologic aid in cases of active inflammation or loss of hearing and they are fully aware of the futility of our effort to restore hearing in some chronic cases of deafness. Is it not time that they were enlightened on the subject of the prevention of deafness and should we not instruct them to use this knowledge before deafness has progressed beyond the power of restoration? We should make the laity realize that a little attention in season can prevent serious irremediable loss later on. Especially is this knowledge of importance to persons having deaf ancestors.

Nearly all deafness is preventable. Consequently the study of preventable deafness embraces a consideration of all otology, except that part dealing with the equilibrational apparatus.

Cases of middle-ear diseases are so numerous proportionately that the cases of deafness from other sources may be neglected without much detriment to the economic value of our conclusions. We shall, therefore, omit the consideration of cases of meatal deafness, cases of deafness due to peripheral sensory defect, and cases of senile deterioration of hearing. The cases of meatal deafness are easily remedied; the number of the cases of deafness due to sensory defect is small, and senile deterioration of hearing is physiologic. We will limit ourselves to the consideration of preventable deafness from middle-ear diseases alone.

In order to understand how deafness may be prevented, we must examine into the etiology, pathology, course, treatment, and final results of the affections causing the deafness.

We find that all middle-ear changes appertaining to our subject can be placed in two pathologic groups:

1. Ulcerative, necrotic, hypertrophic, adhesive and cicatricial processes.
2. Atrophic and sclerosing processes.

There are two fundamental etiologic factors which contribute to these pathologic groups: (1) infection and (2) toxic vasomotor paresis usually of infectious origin. The paresis and exhausted vasomotors are probably always combined with infection and are chiefly due to it. This is equivalent to saying that all forms and almost all cases of middle-ear deafness are actually the results of infection. The truth of this statement is obvious in the suppurative cases. In the cases of progressive deafness, the true etiologic cause is less apparent, but the cause may be demonstrated on inspection of the nasopharynx, where inflammatory conditions are always found. The etiology is proved by the good results of treatment of these infections.

To prevent infection, we must avoid infectious organisms. We know that nearly all infectious organisms reach us through the upper air tract, entering with dust. We must, therefore, adhere strictly to the rules of hygiene relative to pure air.

The normal function of the mucous secretion is most important in order to prevent infection. Mucous secretion entangles the micro-organisms which enter with the inspired air. Thus they are rendered innocuous and are wafted to localities where they can do no harm.

Local resistance to infection requires a healthy mucous membrane with normal mucous secretion. This secretion is affected by constitutional conditions and is especially impaired by derangement of the digestive and nervous systems. There is, for instance, a thick mucus produced in constipation and in faulty metabolism, and an absence of mucus with the dry throat accompanying acute mental shock.

Next to the avoidance of infectious organisms, the maintenance of resistance to these organisms is of the utmost importance. Infection may best be resisted when the hygienic conditions are ideal. There must be sufficient sleep and exercise, proper food and drink, and an unlimited supply of fresh air.

A local soil retentive of infection is due to the inability of the individual to cope with the virulence of the infection or to thick mucus and to mechanical interference with the natural ejection of the mucous excretion containing the micro-organism.

Next to keeping the soil resistant to infection, the most important part of prevention is destroying infection. Efforts along these lines would result in preventing the great bulk of deafness, since over 80 per cent. of all deafness is due clearly to some form of local infection.

An infection which has already taken place is arrested by the maintenance of local hygiene, supplemented by antiseptics, by drainage, by surgery of the nasal fossæ, by surgery of adenoids and tonsils and by rigorous general hygiene of surroundings and habits. In acute inflammations, the nasopharynx requires special care in order to further tubal drainage and ventilation.

We find that with few exceptions deafness is the direct result of an infection of the middle ear or the indirect result of nasopharyngeal infection through its toxic influence on the vasomotors controlling the blood vessels of the middle ear. The treatment of these infections can be divided into two chief divisions: (1) combating the infection and (2) maintaining or restoring nutrition.

Mechanical obstructions, as we all know, may be found in any part of the upper air tract, in the pharynx, nasopharynx, but most especially in the nose. These obstructions are lymphoid hypertrophies, turbinal hypertrophies and deformities of bone and cartilaginous framework. A very common functional obstruction to the natural expulsion of organisms is habitual mouth-breathing, and the consequent engorgement of the sniderion membrane.

There are two chief aims to which general hygiene is directed in order to maintain the general and local power of resistance to infection: (1) the maintenance of the mucous membrane of the upper air tract in a resisting condition, and (2) the maintenance of this mucous membrane in a condition so that it shall not be a retentive soil for infection.

Local hygiene requires attention to a great variety of details. In the first place, the nasal irregularities and obstructions demand correction because of their harmful respiratory and reflex nervous effects and also because, through hindrance to drainage, they foster local infections and the retention of toxic and infectious material.

Orthopedics of the facial bones are very important factors in the prevention of deafness. Orthopedics require the removal of obstructing tonsils and adenoids, regulation of irregular teeth, widening the alveolar arches, attention to intranasal structures, and the maintenance of efficient nasal respiration.

Not only does chronic engorgement of the turbinates and erectile tissues of the nose and nasopharynx require correction, but attention must also be given to its causes. The mechanical causes I have just mentioned. A more important class of causes we must not overlook, namely, those coming under the head of vasomotor paresis, which is usually of toxic origin.

The infections of the nasopharynx require special treatment, since in this locality the infections are likely to spread to the ear, or to obstruct the tubes by the swelling which they cause, or when by their local toxic action they may produce local vasomotor paresis. To sum up, the hearing is injured by the extension of infection into the ears, by local paresis of the vasomotors or by the mechanical obstruction of the tubes.

Besides the care of the grosser nasopharyngeal infections, especial care must be taken to detect and correct the concealed nasopharyngeal infections which are without suppuration and which are accompanied by no more than a slight swelling or redness of the mucous membrane. These concealed local infections usually occur on the posterior-superior wall of the nasopharynx. The mucosa is slightly thickened and sometimes covered with pathologic secretions. It is pale and slightly edematous, or red and rough, bleeding on slight contact with the cotton probe.

The second pathologic group of changes causing middle-ear deafness are the atrophic and sclerosing middle-ear processes. The etiologic factors concerned with this group are four: (A) infectious organisms; (B) a retentive soil; (C) an exhausted or inhibited vasomotor system, and (D) a toxic paresis of the sympathetic nerves. Infectious organisms (A) and a retentive soil (B) have already been considered, leaving Groups C and D for our further attention.

Deafness of the atrophic and sclerosing type, besides being due to altered blood supply dependent on cicatricial contraction consequent on infection of Groups A and B, is also due to (C) a functionally, exhausted or inhibited vasomotor system which may result from an abnormal mental state inhibiting the somatic functions and also form menstrual, obstetrical, or neurasthenic disorders.

We must safeguard the vasomotor function of the sympathetic nervous system, which controls the blood supply of the middle ear and consequently controls the nutrition of the sound-conducting apparatus. The efficiency of this system is of great importance in the prevention of deafness.

Our care is directed to the prevention and elimination of the injurious effects on the vasomotor functions caused by mental shock. We must also avoid fatigue carried beyond the point of physiologic recovery and the nervous effects of derangement of the reproductive system and take pains to correct the impaired vasomotor function of the ears left after the exciting cause has passed away.

The alterations of the blood supply of the ear, dependent on a pathologic inhibition or overstimulation of the vasomotor or sympathetic nerves, occur in three stages: active congestion, passive congestion and anemia due to lessened arterial supply. These functional conditions of the blood vessels of the middle ear are usually transient and do no harm. If, however, these conditions persist, trophic changes result, causing the atrophic and sclerosing diseases of the ear. The congestive states, if long continued, finally lead to the anemic state which is more or less permanent.

Sometimes the anemic state is primary, commencing by a spasm of the arteries, which after long duration causes atrophic and sclerosing changes of the middle ear from the impaired nutrition caused by the deficient blood supply.

The primary cause of the middle-ear vasomotor disturbances occasionally depends on inhibition or unstable control of the higher nerve centers brought about by exhaustion and shock.

Most of the vasomotor disturbances of the middle ear and the consequent atrophic and sclerosing conditions we see in the tympanum are due wholly to toxic influences which we group in Class D. These changes of the middle ear are exemplified by the atrophic and sclerosing middle-ear diseases, which sometimes follow typhoid fever or some other exhausting disease. It is, in fact, a toxic paresis of the vasomotors governing the blood supply to the middle ear.

The greater number of these toxic causes as we meet them in practice are due to very insidious results of long-continued absorption of toxins from the nasopharynx. These absorbed toxins affect the sympathetic ganglia in the neighborhood of the pharynx and thus cause changes in the tympanic blood supply and, finally, trophic changes in the sound-conducting mechanism of the middle ear.

One reason why these insidious forms of atrophic and middle-ear sclerosis are allowed to continue for so long a time is that their nasopharyngeal cause is overlooked, since there may be no local symptoms which attract the attention of the patient. The specialist must often search carefully before he discovers the slight abnormalities in Luschka's tonsil indicating the seat of the toxic process. The presence of the infection is often shown only by a slight redness or edema of this region.

The hereditary tendency noted in sclerosing middle-ear disease is obviously not real, but only apparent. The unstable nervous system, the weak digestion, and the unbalanced metabolic functions are inherited, but the exciting cause of the diseased hearing is lacking unless some accidental stress throws these weak functions out of balance. This stress gives the initial stimulus to the condition causing the middle-ear deafness. There is less physiologic disturbance required to start the middle-ear process in those disposed to deafness through heredity than in individuals of robust constitution.

Our success in preventing deafness when middle-ear disease exists is in proportion to the rapidity of cure of the middle-ear diseases. The acute inflammatory conditions require early energetic measures for drainage, with early myringotomy and mastoid evacuation in cases which will not drain.

In work about the mastoid region the preservation of the middle-ear structures assures the restoration of normal hearing following convalescence.

During convalescence from acute inflammation and after operations, inflation should be practiced in order to prevent contractions and adhesions and in order to keep the sound-transmitting structures in their normal positions. In these cases the infection of the nasopharynx, the tubal ventilation and the local and general vasomotor condition need correction.

Syphilitic middle-ear diseases respond readily to antisyphilitic treatment with complete restoration of function in early cases.

Periodical examination of patients is necessary for success in preventing deafness. This is true in all cases of deafness, but is especially true for the prevention of the insidious deafness due to middle-ear atrophy and sclerosis. If the patient waits until he is already deaf before seeking relief, he will bring to the specialist a far-advanced sound-conduction disease very resistant to treatment. From what has gone before, we conclude that all cases of middle-ear deafness can be avoided if rigid hygienic care and medical supervision are employed to safeguard the individual. We also see that the restoration of a defective middle ear is possible if structural changes are not advanced.

CONCLUSIONS

Practically all deafness is due to the results of infection. Causes leading to infection are to be corrected, the soil is to be rendered non-retentive and the existing ear defects are to be treated at once. Avoidance of the infectious organisms, the maintenance of the nasopharynx in a healthy condition, the eradication of any existing infection, and the avoidance of impairment of the sympathetic nervous system through toxic action of fatigue or infection, will insure against deafness. To insure immunity from deafness, it is necessary for the individual to undergo a periodical oto-rhino-pharyngeal examination, perhaps once a year, so that any incipient middle-ear disturbance may be detected and corrected before the condition has become established.

41 East Thirty-third Street.

Recent Work on Aphasia.—All the worthy recent literature on aphasia is gone over by James Collier (*Brain*, 1909, xxxi, 523). About seventy-eight articles and books, most of which have appeared within the last three years, are reviewed and a digest of them is given. Of recent years the localization of centers of expression has been more conclusively worked out. The method of surface examination and serial macroscopic sections has been replaced by the more accurate method of serial microscopic sections throughout the brain as the essential basis of the localization of the lesion in cases of aphasia. Collier's opinion is often apparent in the discussion of the recent controversies on different phases of the subject.

Original Articles

THE VISUAL FIELDS IN HYSTERIA

A CLINICAL STUDY OF FIFTY CASES*

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The majority of systematic writers on hysteria assert that the most common ocular stigma of this neurosis is a concentrically contracted field of vision. From time to time, however, suggestions have been made intimating the possibility of error in this statement. As my experience seems rather to agree with the minority, I determined to tabulate a relatively small number of cases, the records of which were complete, and present conclusions from this series alone. The results here obtained, however, agree with the findings in a much larger number of cases, the records of which are too incomplete for publication.

Whether the lesion in hysteria be central or peripheral, whether due to anesthesia of the retina, or entirely a matter of suggestion, is not to be considered in this paper.

The cases are all from the neurological or ophthalmological clinic in the University of Michigan. Dr. C. D. Camp, clinical professor of neurology, made all the examinations except those of the eyes, which were made in the ophthalmologic department. All cases in which there were errors of refraction or pathologic lesions that could in any way interfere with the fields were eliminated; otherwise the cases were taken consecutively, and in no way are they selected cases. The fields were all taken on the same perimeter and under like conditions.

Von Graefe suggested that the concentric limitation of the visual fields was the most important ocular sign of hysteria, while dyschromatopsia was first clearly described by Galezowski in 1886. Parinaud says, "The essential sign of hysteria is the concentric contraction of the field of vision, to which may be added in certain cases a particular form of dyschromatopsia." He also thought that the contracted fields were associated with amblyopia. Describing dyschromatopsia, he says, "The narrowing of the visual field, which explains the insensibility to white light, constitutes the fundamental fact of hysterical amblyopia. The disorder of vision as regards colors is a superadded fact which is not constant." In speaking of the field Parinaud says, "It represents an insensibility of a portion of the field to white light, and this insensibility develops from the circumference to the center in such a way that a graphic drawing of the contraction would be represented by an almost circular line." Binswanger, in speaking of the views of the French school which holds that the concentric narrowing of the visual field is the most frequent ocular stigma in hysterical subjects, says, "The skepticism with which we regard the statements of Charcot's school, Galezowski, Parinaud, Landolt, Féré, and others, increases in direct proportion to the growth of our experiences on the subject; for these investigators attribute too much importance to the concentric contraction of the visual field in hysteria." In this country de Schweinitz, in speaking of the concentrically contracted fields, says, "The value of this symptom seems

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

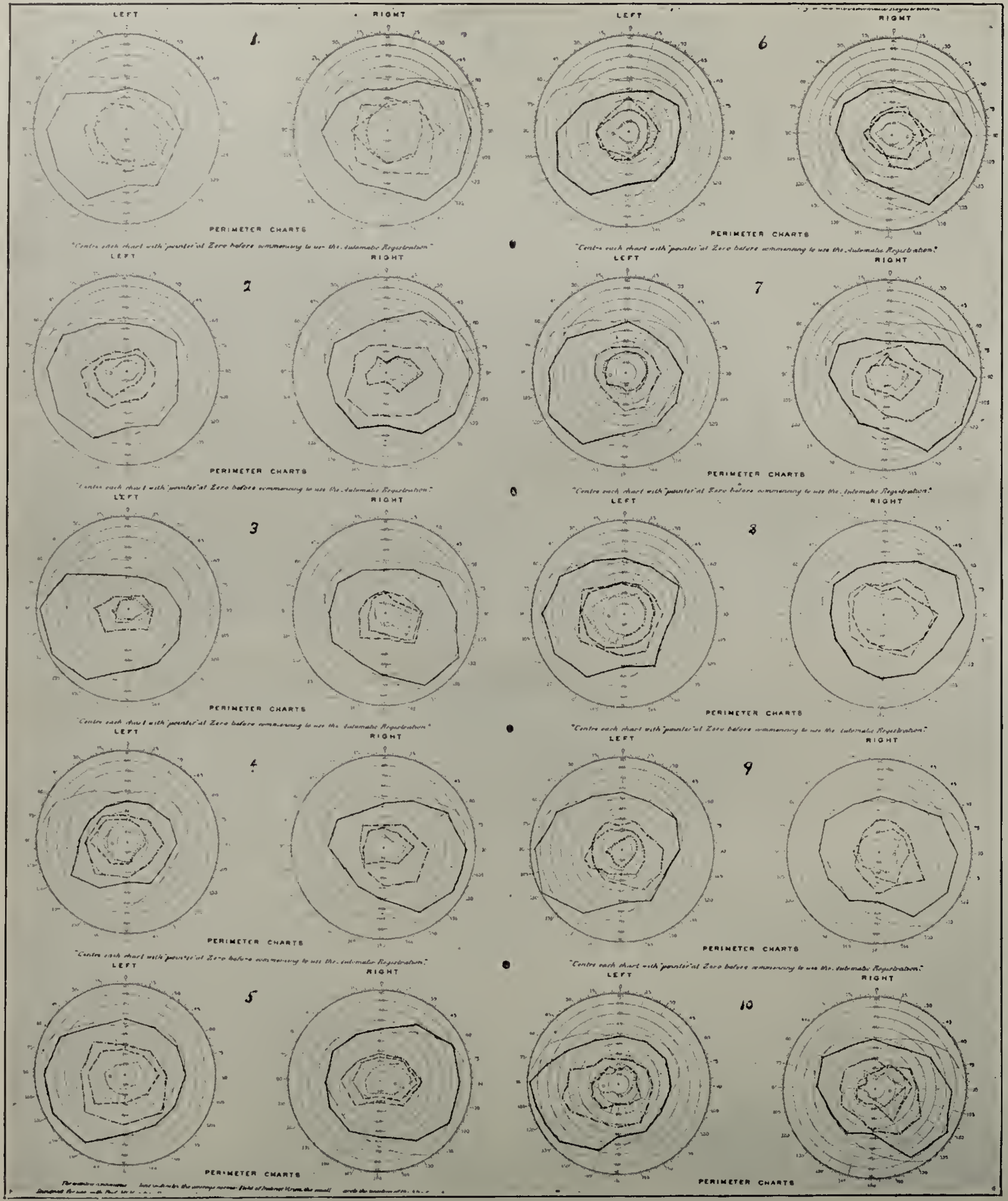


Fig. 1.—Visual fields in Cases 1-10. ...... indicates green field.— — — indicates red field. —.—.—. indicates blue field. ———— indicates form field.

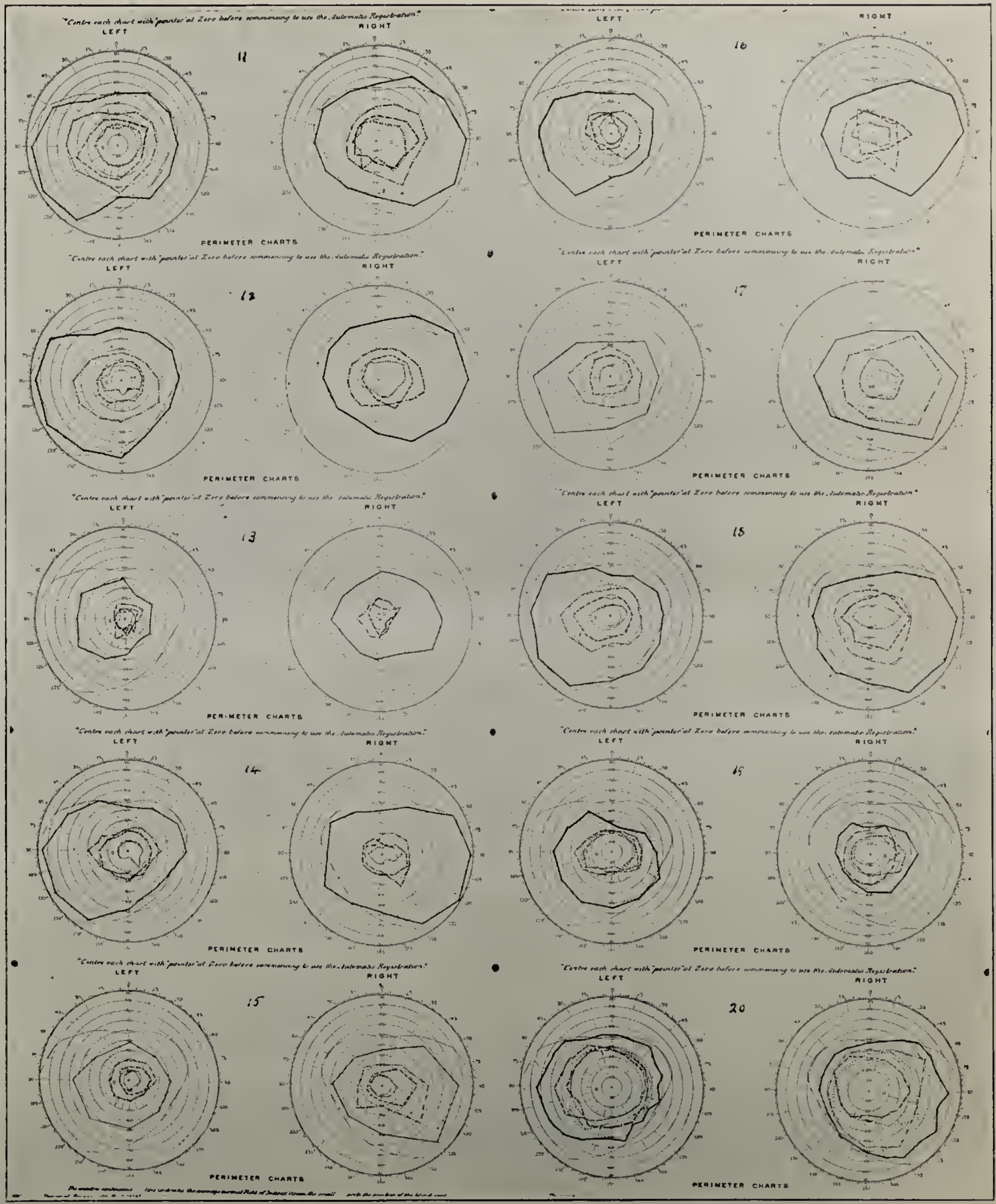
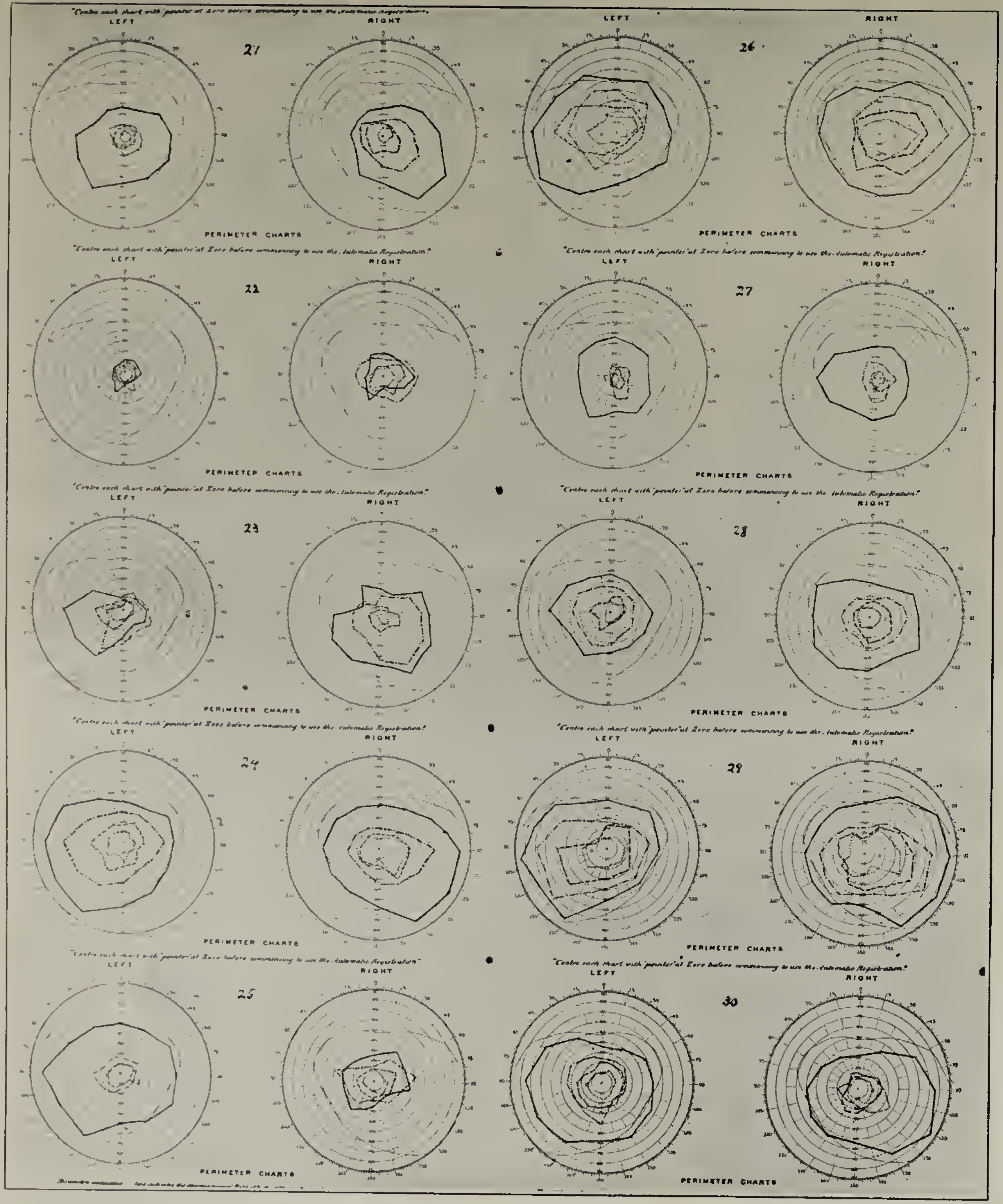
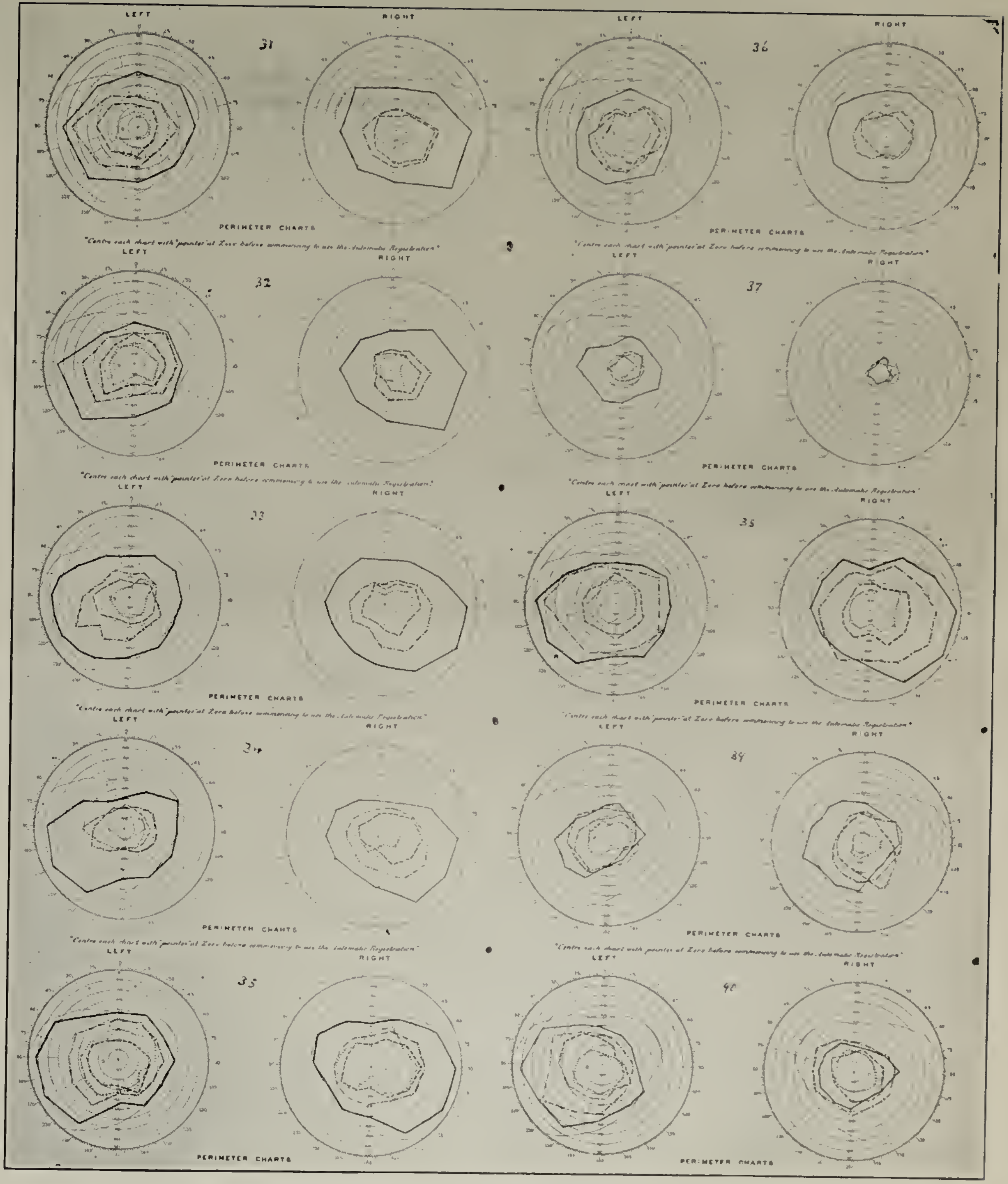


Fig. 2.—Visual fields in Cases 11-20.



"Centre each chart with pointer at Zero before commencing to use the Automatic Registration."
LEFT
RIGHT
PERIMETER CHARTS
21
22
23
24
25
26
27
28
29
30

Fig. 3.—Visual fields in Cases 21-30.



"Centre each chart with pointer at Zero before commencing to use the Automatic Registration."
LEFT
RIGHT
PERIMETER CHARTS
31
32
33
34
35
36
37
38
39
40

Fig. 4.—Visual fields in Cases 31 40.

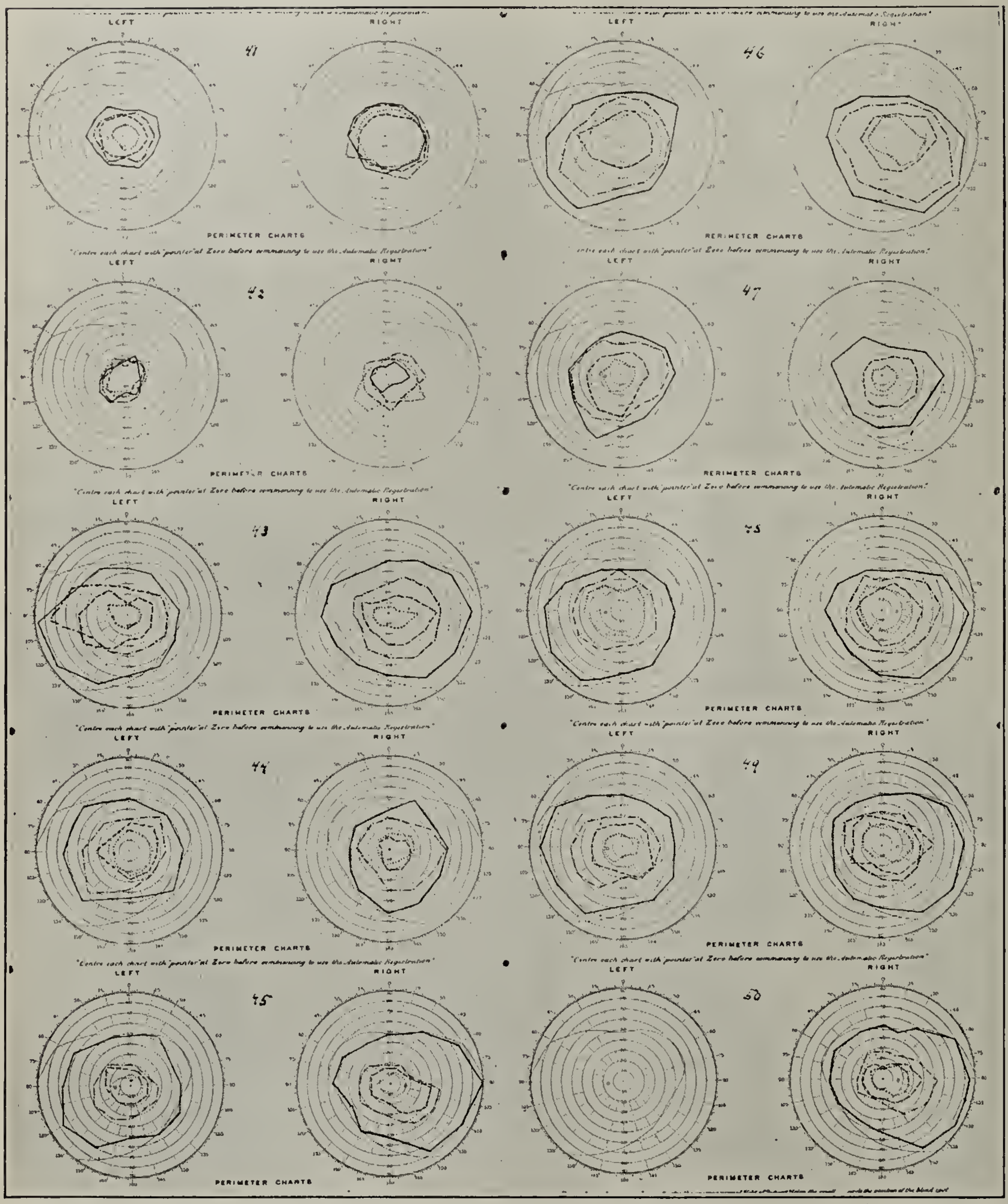


Fig. 5.—Visual fields in Cases 41-50.

exceeding great, although J. K. Mitchell and myself were unable to find it as frequently among hysterics whom we examined as would appear to be the case in the French clinics." Hansell and Sweet, speaking of the fields, say, "The predominant peculiarity of an hysterical contraction of the visual fields is that, while in every other disease where peripheral limitations occur the color field is affected in equal or greater proportion than the field for white, in hysterical amblyopia the field is less affected for colors than is the field for white. The field for red is apt to be less affected than the field for blue. This reversal of the order and extent of the field for white and colors is positive evidence of hysteria; it can not be simulated and it is caused by no other ocular disorder. It is readily determined and possesses a diagnostic value equal to the anesthesia of the glottis and pharynx so frequently referred to as pathognomonic of this neurosis."

Table 2.—Stigmata Found in Fifty Cases of Hysteria

Character of Field.	Stigmata Found. No.	%
1. Dyschromatopsia	36	72
2. Dyschromatopsia with general contraction	17	34
3. Dyschromatopsia with concentric contraction	15	30
4. Contraction of fields without dyschromatopsia	13	26
5. General contraction without dyschromatopsia	9	18
6. Concentric contraction without dyschromatopsia	4	8
7. Concentric contraction, irrespective of dyschromatopsia	20	40
8. General contraction, irrespective of dyschromatopsia	27	54
9. Amblyopia	4	8

The amount of the reduction in the visual fields varies from slight contraction to almost the fixation point. As was suggested by Janet, the amount of contraction has no direct relation to the acuity of vision, all hysterics being able to go about their regular life regardless of the limitation in the fields.

In Table 1 the stigmata at the head of each column are numbered and after each case is placed the numbers representing the stigmata found. A photograph of the field in each case is also attached.

An analysis of the fifty cases under discussion gives the result shown in Table 2.

CONCLUSIONS

1. Dyschromatopsia is more common than concentrically contracted fields in the ratio of 72 to 40.

2. There is no relation between the contraction of the visual fields and amblyopia, the former being present in 96 per cent. of the cases, while the latter was found in 8 per cent.

3. There is no constant relation between the areas of anesthesia and concentrically contracted fields. Of the patients with anesthesia 28.4 per cent. showed concentrically contracted fields, while 75 per cent. showed dyschromatopsia.

Note.—Not a single case of hysterical hemianopsia has been recorded in either the ophthalmologic or neurologic clinics of the University of Michigan.

The suggestibility of the patients was noted in but few of the cases; otherwise the records were complete.

I wish to acknowledge the assistance rendered me by Dr. George M. Waldeck in the compilation of these cases.

ABSTRACT OF DISCUSSION

Dr. E. C. Ellett, Memphis: A difficulty of no small moment is the care that is necessary to secure trustworthy perimetric observations. This becomes of less importance the larger the number of cases observed, unless the taking of the fields has been delegated, as the giving of anesthetics sometimes is, to the most inexperienced assistant. The length of time required, the mental instability of many of these patients, and the difficulty of holding their attention to the matter in

TABLE 1.—TABULAR VIEW OF OCULAR AND OTHER SYMPTOMS IN FIFTY CASES OF HYSTERIA

No.	Sex	Age.	Eye Symptoms. 1. Dyschromatopsia. 2. Contracted field. (a) Concentric. (b) General. 3. Amblyopia. 4. Scotomata. 5. Intermittent field. 6. Monocular diplopia. 7. Tubular vision.	Other Special Sense Symptoms. 1. Hearing: Hys. deafness. 2. Smell: Anosmia. 3. Taste: Partial loss. 4. Speech: Aphonia.	Sensory Symptoms. 1. Anesthesia of conjunctiva. 2. Anesthesias. 3. Graves' sign. 4. Allochiria. 5. Hyperesthesias. 6. Paresthesias. 7. Hypalgesias. 8. Hyperalgesias.	Motor Symptoms. 1. Paralyses. 2. Tremor. 3. Contractures. 4. Incoordination.	Paroxysmal Attacks. 1. Clavus. 2. Globus hystericus. 3. Epileptoid attacks.	Loss of Reflexes. 1. Absence of pharyngeal reflex. 2. Absence of plantar reflex.	Visceral Symptoms. 1. Vomiting. 2. Vascular and vasomotor disturbances. 3. Rapid respiration. 4. Cardiac disturbances. 5. Cough. 6. Yawning. 7. Phantom tumors. 8. Anuria.	Psychic Symptoms. 1. Hysterical amnesia. 2. Suggestibility. 3. Feeling of unreality. 4. Hallucinations 5. Hysterical trance.
1	F	15	1, 2-b, 3	....	2, 3	....	....	....	....	....
2	F	25	2-b	....	2, 5	....	2, 3	1, 2	....	....
3	F	16	1, 2-b	....	1, 2	....	3	1	....	..
4	M	..	2-a	....	1, 5	....	....	....	....	....
5	F	28	2-b	....	1, 2	....	....	2	....	....
6	F	43	1, 2 a	....	1, 2, 5	....	....	....	....	....
7	F	16	1, 2-b	....	1, 2, 3, 5	....	....	1	....	....
8	F	21	2-b	....	2, 3, 5	....	....	....	....	....
9	F	53	1, 2-b	....	1, 2 5	....	....	....	....	....
10	F	40	1, 2-b	....	1	....	....	1	....	....
11	F	29	1	....	1, 2, 3, 5	....	....	1	....	....
12	F	41	1	....	3, 7	....	....	....	....	....
13	F	47	1, 2-a, 3	....	6, 8	....	....	....	....	....
14	F	16	1	....	1	....	....	2	....	....
15	F	37	2-a	....	1, 2, 7, 8	....	....	2	....	....
16	F	35	1, 2-b	3	2, 3, 7, 8	....	....	....	....	....
17	F	17	2-b	....	2, 3, 7, 8	....	....	....	....	....
18	M	19	2-b	....	1, 6	2	3	....	....	....
19	F	51	1, 2-a	....	6, 8	....	....	....	....	....
20	F	16	1, 2-a	....	....	....	....	2	3	....
21	F	32	1, 2-a	....	....	....	....	1	....	....
22	F	17	1, 2-a, 3	....	2, 8	....	....	1, 2	....	....
23	F	14	1, 2 a	....	5, 8	....	....	....	1	....
24	F	..	1, 2-b, 6	4	1, 3, 8	....	1	2	4	1
25	F	48	o. s. 1, 2-b, o. d. 2-a	....	2, 6	....	....	....	4	...
26	F	33	1, 2-b	....	8	....	3	....	1	....
27	F	23	1, 2-a	4	1, 2, 3, 5, 7, 8	....	3	....	....	....
28	F	21	2-a, 7	....	8	....	1, 3	1	....	....
29	F	25	1, 2-b	....	1, 2, 3, 7	....	....	....	....	....
30	F	33	1, 2-b	....	1	....	....	....	....	....
31	F	59	2-b	....	6	....	2	2	4	....
32	F	16	1, 2-b	....	1, 2, 7	....	....	....	3, 4	2
33	F	48	1, 2-b	....	....	1	3	....	....	....
34	F	..	1, 2-b	....	6	2	1	....	....	....
35	F	13	1	....	8	1	3	....	1	....
36	M	29	1, 2-a	....	2, 5	....	....	....	....	....
37	F	53	1, 2-a	....	....	....	1, 3	....	....	1, 4
38	F	..	1, 2-b	....	6, 8	....	3	....	....	....
39	F	53	1, 2-a	....	6, 8	....	1	....	8	....
40	M	54	1, 2-a	....	7, 8	1, 2	....	....	....	1
41	F	35	1, 2-a	....	6, 7, 8	1	....	1, 2	....	....
42	F	39	1, 2-a	....	8	....	1	1	....	....
43	F	38	2-b	....	6, 7, 8	....	1, 3	....	....	....
44	F	10	1, 2-a	....	1	2	....	....	....	....
45	F	46	2-b	....	3, 5, 6, 8	....	....	....	....	....
46	F	..	1. 2-b	....	1, 6	....	....	2	....	...
47	F	30	2 a	....	8	....	1	....	4	. . .
48	M	19	1, 2-b	....	1	....	....	....	....	2, 5

hand are things familiar to us all. In looking over my records it seems that possibly on account of these things one is apt to confine his observations to the form field only, since we are told that contraction of it is one of the most reliable ocular symptoms of hysteria, and such records of course serve one poorly in such a discussion. The majority of my records are of patients seen for hysterical asthenopia, and in such cases the fields showed most often the general contraction referred to by Parinaud and others, and not always the reversal for colors. So that my experience, less in point of number of cases, and much less reliable in the thoroughness with which the observations were made, is not in accord with that of Dr. Parker. Not so much on account of personal experience, as on account of the difficulties of securing accurate results, I should say that we should be slow to accept a new view of this subject, a statement to which I am sure Dr. Parker will subscribe. Since the fact of great contraction of the fields has been questioned, especially by Binswanger, a case of traumatic hysteria might be mentioned where all colors were readily perceived. The fields, as shown, did not exceed 5 degrees in any direction.

Dr. Lucien Howe, Buffalo: I should like to know what perimeter was used, the way of using it, whether the same person was tested several times, and whether these fields were constant. We know that by simply changing the position of the head and not keeping the center of the eye practically in the center of the arc one can obtain almost any field desired.

Dr. Casey Wood, Chicago: Has Dr. Parker noted any relation between the decided fields of contraction for white and the peripheral amblyopia? We all know, when the field for white is very much contracted in organic disease and especially if it occurs in both eyes, the patient is more or less conscious of defective sight; he has decided symptoms of tubular vision. In my experience, no matter how small hysterical fields are, not only is the patient able too get about readily but he is not at all conscious of the defect in the field. In only one case, so far as the record goes, does Dr. Parker speak of tubular vision. I regard the manner and method of measuring hysterical fields of extreme importance, because, in my experience, one may discover almost any sort of field, so far as the contraction goes, in hysteria. The patient easily becomes tired after a little while and if the examiner is not very careful he may reduce the field to different sizes on different days.

Dr. G. E. de Schweinitz, Philadelphia: All manner of alterations in the visual field have been ascribed to hysteria, and the statements of observers have varied from those which maintain that concentric contraction of the visual field and inversion of the color line are diagnostic stigmata, to those of Babinski, for instance, which declare that this concentric contraction never occurs if the examinations are properly conducted. The characters of the true hysterical field are essentially the following: Concentric contraction is the insensibility of the field to white light, developing from the circumference to the center in such a manner that a graphic drawing of the contraction would be represented, to use the words of Parinaud, by an almost circular line, provided the word concentric is not taken in too literal a sense of the term. This contraction exists from the beginning, that is, it is not one which is developed during and by the process of examination; this contraction is usually, under ordinary conditions, an enduring one and does not materially change until recovery takes place; and the field is often a tubular one—in other words, the contraction maintains the same size, no matter at what distance the point of fixation of the examined eye is placed. The color field, also usually contracted, is not infrequently inverted, in the sense that the red circle exceeds in width the other color circles and may be in excess of that of white; very rarely this position is assumed by the green circle. Exceptionally, with or without the usual reduction of the white field, there is a greater extent than normal of the color lines, representing a form of hypersensitiveness to color reactions.

That a field of this character is an important help in the diagnosis of hysteria will be granted by most observers, and that it differs from the field in neurasthenia and other types of disease in which retinal tire is a prominent sypmtom, will probably also be maintained by most of those who have had experience in this line of cases, but because a visual field of this character is developed does not mean that the patient is hysterical. In other words, it is not pathognomonic of this affection. Fields exactly like it, or similar to it, may be found in Friedreich's ataxia; in hemorrhage into the internal capsule; in cases of brain tumor, as was long ago in the Charcot clinic and has since been confirmed by the observations of Bordley and Cushing; in cases of chronic headache, as I pointed out long ago, and in various toxemias, notably those of alcohol, lead, bisulphid of carbon and di-nitrobenzol. In connection with the last named toxemia Nieden's investigations will be remembered. Moreover, similar visual field phenomena have been observed in patients with epithelial xerosis of the conjunctiva and night-blindness. The point to be insisted upon is that the visual field of hysteria, that is to say, of pure hysteria, has distinct characteristics but is not pathognomonic, and it would be desirable if Dr. Parker would point out exactly what he means by amblyopia, and what the character of the concentric contraction of the visual field was in his cases, that is to say, whether it was developed as the result of repeated examinations, or appeared from the outset. I entirely agree with him that hemianopsia as an enduring phenomenon never occurs in hysteria.

Dr. C. H. May, New York: Recently I examined a considerable number of patients in whose fields neurologists and surgeons were interested, at Mount Sinai Hospital, especially following Dr. Cushing's investigations of the inversion of the color fields in patients suffering from cerebral tumor. The examination was interesting, and to a certain extent confirmed Dr. Cushing's views; in some of the cases there was inversion, in others there was none. In connection with these cases I took a great many fields for the purpose of control, with unexpected results; the number of control cases thus examined is not yet sufficiently large to make it worth while publishing—there have been but 50 or 60 of such examinations in which the work was carefully done. I found that in a few patients who appeared to be absolutely normal in every way, in whom hysteria had been excluded and in whom there was no ocular disease, there was inversion of the color fields. I agree with Dr. Howe that unless the perimetric observations are made very carefully, they are of no importance. If others confirm the findings concerning inversion of the color fields in normal individuals, this symptom will lose some of its importance as being indicative of hysteria.

Dr. Walter R. Parker: In regard to Dr. Ellett's experience in the taking of the fields in the cases that have come to him, if I understand him correctly, all of these patients were amblyopic; that is, had temporary loss of central vision, and are limited entirely to that class of cases which would not make a very broad conclusion possible from his experience. We could not fairly determine the nature of the fields in hysteria without taking patients in the general class of hysteriacs; not from amblyopic hysteriacs as Dr. Ellett has done. The McHardy perimeter was used. The element of error is always possible. The patients were instructed that they must keep the eyes directly to the front. The eye was carefully placed as nearly as possible on a level with the center of the perimeter. The field otherwise was taken in the regular way. I could not vouch for the detail of the field as presented here any more than I have stated. The few I saw were taken carefully, and I believe all of them were. Unfortunately, all these patients were not examined for tubular vision. I would answer this question from experience outside of this report of cases. All patients with tubular vision have hysteria and no matter how great the contraction of the visual field they can go about in their usual way. All the patients mentioned in this paper were sent to me as hysterics. The point that Dr. de Schweinitz made, that hysteria can not be diagnosticated from the field alone can not be too forcibly emphasized. I do not think anyone should make a diagnosis of hysteria from the fields alone except in cases showing tubular vision. Tubular vision can not be anything else but hysteria. The term hysterical amblyopia, as I have used it, refers entirely to loss of central vision. It is true in speaking of hysteria, that all organic disease should be eliminated, so also is it true in speaking of dyschromatopsia as a symptom of an organic lesion, that hysteria should be eliminated. The work was, I believe, carefully done, and I submit the results, having nothing to prove or disprove.

PITUITARY TUMOR IN ITS SURGICAL RELATIONS

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The physiology of the pituitary gland still presents many unsolved problems. Jakob Lewin[1] in 1906 summarized the situation as follows:

> For some (Roth, Widersheim, Corning, Strumpell) the hypophysis is merely a rudimentary organ which has no essential function. According to other authors (Schiff, Marinesco, Wolf, Gemelli) the function of the gland is essential to life. Regarding the character of the gland's function there is also divergent opinion. Wolf, for instance, believes that it is hemolytic, while Liegois insists that it is hematopoietic in action, and Oliver again insists that it regulates the blood pressure. The majority hold that the hypophysis is a ductless gland that has an influence over the nervous system, or has something to do with the red blood corpuscles, or finally that it neutralizes some substance harmful to the organism.

Paulesco, from experiments on dogs, also reaches the conclusion that the pituitary gland is essential to life, and his position is supported by Cushing.[2]

In the peculiar condition of acromegaly the changes in the bones and tissues generally are invariably associated with a tumor of the hypophysis or distinct changes in its parenchyma, but many cases have been reported in which there was a tumor of the hypophysis not attended by acromegaly. In the acromegalic cases it is quite evident that there is a material disturbance of the ordinary processes of growth and nutrition giving us gigantism if the condition develops before the ossification of epiphyses with the shafts of the long bones is complete, and the gorilla type when the condition develops subsequent to skeletal completion. It is now also possible to gather a group of cases in which it is evident that disease of the pituitary is associated with lack of general development, often with peculiar fatty conditions, and particularly with disturbance of the growth and function of the genital apparatus. Hudovering and Fuchs,[3] as well as a long list of observers, have noted that in cases of acromegaly impotence marked the men and amenorrhea was invariably among the women. H. Starck, for instance, reports a case of hypophysis tumor with acromegaly in a woman of 39 whose menses had disappeared eleven years earlier. Haushalter and Lucien[4] have pointedly called attention to infantilism in a case of tuberculous tumor of the pituitary. A child of 6½ presented the conditions of a child of 3. Biro[5] and Finckelberg[6] have noted general lack of development and particularly a retention of the infantile character of the genitals.

Fichero[7] reports that in the cases of a number of castrated bulls and cocks examination of the hypophysis detected that it invariably was enlarged in its anterior portion; he believes that there is some sort of compensatory relation between the genitals and the hypophysis. Nazari has also noted rudimentary genitals in a case of hypophysis tumor. E. Levi[8] reports two cases of infantilism in sisters, in both of which instances there probably was a pituitary tumor as shown by the excavation of the sella, apparent in the x-ray picture, but he does not seem to realize the relation between the non-development and the pituitary growth. Von Eiselsberg calls particular attention to the genital peculiarity in his first case of pituitary removal.

A. Frohliches perhaps first insisted on the relation of the hypophysis to general adiposity and genital atrophy, although P. Schuster had already published a list of such cases as being of a cerebral character. Erdheim, on apparently inadequate grounds, thought that the infundibulum was more precisely related to these physical changes. Pituitary changes in the adiposis dolorosa of Dercum are also found.[9] Recently O. Marburg[10] reports several observations tending to show a relation between general adiposity and the pineal gland. He would, however, group the cases of adiposity and genital atrophy associated with hypophysis affections into three classes: (1) simple adiposity; (2) adiposity with genital atrophy; (3) simple genital atrophy. To these, I think, we should add another, namely, general retardation of physical and especially of sexual development (Fuchs, Froelich, Stewart), as well as the clinical type of acromegaly. From every point of view the association of the hypophysis and the genitalia becomes evident and diagnostically significant.

Marburg further suggests that hyperfunction of the pituitary results in acromegaly; hypofunction produces general adiposity and genital dystrophy, while complete pituitary defect produces a severe cachexia, analogous to the cachexia of complete thyroid destruction or ablation. Marie, however, considered acromegaly as the result of reduced hypophysis function, while Massalongo, Benda and Starck feel that it is caused by increased action. On the other hand, Gauthier, Strumpell and Arnold insist that the acromegaly is the result of a metabolic disorder first showing itself in hypophyseal change. The contention of Benda appears to be most in accord with all the facts.

As I shall have occasion to note in the cases I am to report, this apparent dependence of genital growth and function on the pituitary furnishes us an important diagnostic set of symptoms and signs.

Regarding the symptomatology of hypophysis tumor when unattended by acromegaly, which when present is usually so pronounced as to make the diagnosis self-evident, we are confronted with a series of symptoms that may embrace all those of ordinary brain tumor, but commonly, and probably always at first, are restricted to a few. These, however, as I hope to show, are sufficiently definite so that, with the aid of the x-ray, the diagnosis may be made with certainty. Hypophysis tumor, when occurring in children, and not producing acromegaly, stunts the growth and the physical and especially the sexual development. The mental qualities may not be materially affected. Owing to the impingement of the tumor or its neck on the optic chiasm, vision is sooner or later impaired, and optic atrophy sooner or later develops. In the early period the atrophy is definitely limited to the nasal half of the disc and this is attended and even preceded by loss of vision in the corresponding half of the field. Bitemporal hemianopsia practically is always due to involvement of the posterior portion of the chiasm, and its detection leaves almost no doubt that it is secondary to disease of the pituitary gland. The rudimentary condition of the genitals or the loss of genital function in those who have once attained it, impotence in men and amenorrhea in women, have a very definite significance in this connection. To this may be added the occasional development of general adiposity and genital dystrophy, of painful adiposity and of acromegaly.

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[1] Lewin, J.: Inaug. Diss., Berlin, 1906.
[2] Cushing, Harvey: Some Principles of Cerebral Surgery. The Journal A. M. A., Jan. 10, 1909, lii, 184.
[3] Hudovering and Fuchs: Jahrb. f. Psychiat. u. Neurol., xxvi, 230.
[4] Haushalter and Lucien: Rev. Neurol., Jan. 15, 1908.
[5] Biro: Deutsch. Ztschr. f. Nervenh., xxxiv, 227.
[6] Finckelberg: Deutsch. Ztschr. f. Nervenh., xxxiv, 21.
[7] Fichero: Deutsch. Ztschr. f. Nervenh., xxxiv, 44.
[8] Levi, E.: Nouv. iconog. de la Salpêtrière, October, 1908.
[9] Price: Jour. Nerv. and Men. Dis., March, 1909.
[10] Marburg, O.: Deutsch. Ztschr. f. Nervenh., December, 1908.

The *x*-ray is capable of furnishing a picture which clearly outlines the sella turcica (Fig. 1), and any enlargement in this bony depression can be positively correlated with an increase in the size of the pituitary body. This was first clearly stated by Oppenheim in 1899. The *x*-ray pictures which I submit in connection with the records which are to follow, when compared with the picture of the normal sella turcica, show at once the value of this diagnostic procedure.

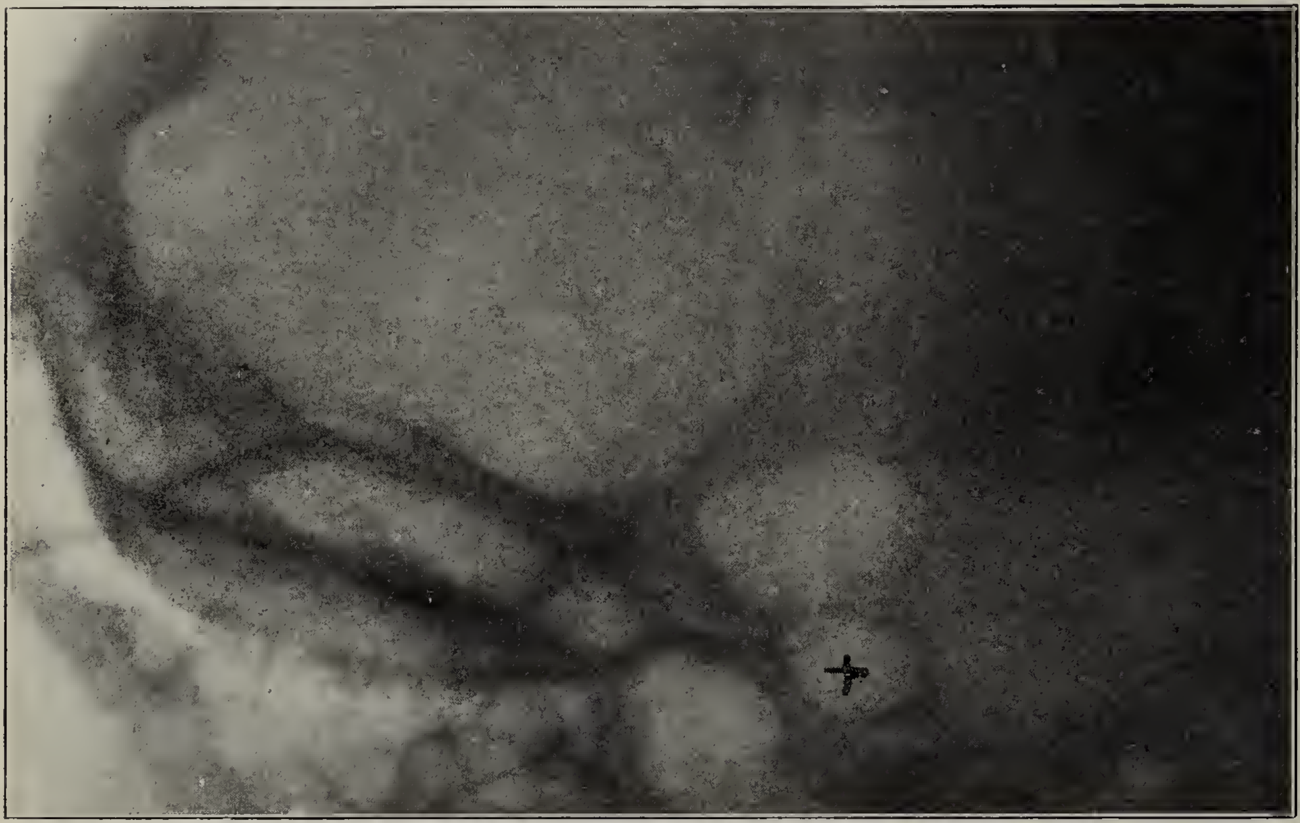

Fig. 1.—Normal head, showing location and size of the sellaturcica, marked by +; full size.

Finally the question arises whether a diagnosis of pituitary tumor having been made, it is justifiable to ask the surgeon to remove the growth. If, as Paulesco and Cushing insisted, life is impossible in dogs without the pituitary, one may hesitate to establish a rapidly fatal condition for one which is less so, but it must be borne in mind that the animal experiments have been made on healthy dogs, and that the entire pituitary in full functional activity has been at once removed. In diseases of the gland the impairment has been of gradual development, and it is not impossible that other analogous glands have assumed its function to some degree, or that the organism has become slowly habituated to its absence. It is also likely that, should it be proved that life is impossible without some pituitary function, this might be supplied by pituitary feeding in the same way that has proved so successful in the analogous relations of the thyroids and parathyroids. Besides, animal experiments are not always absolutely applicable to man. Most convincing of all is the fact that in a number of human cases the pituitary has been removed without any material danger to the life of the patient. Time perhaps as yet is not sufficiently long to justify the conclusion that the pituitary is not a vital necessity or that some substitution must be made for it.

The surgery of the pituitary is a new field that has been explored only to a limited extent. Sir Victor Horsley has operated in a number of cases of pituitary tumor; his plan of procedure is to make a large opening on one side of the head, preferably the right, and approach the pituitary from the side, the steps of the operation being similar to those for the extirpation of the trifacial ganglia. He advises me that he is shortly to publish his cases. The temporosphenoidal lobe is lifted by the use of broad spatula-like retractors, and the tumor is finally seen by its lateral aspect and incised or scraped out as the case may require.

A modification of this operation was done for me by Dr. L. L. McArthur, of this city, by making the incision in the scalp and skull farther forward, so as to approach over the orbital plate and under the frontal lobe as will be indicated in connection with the report of a case. This route also presented very serious difficulties.

A second method of operation has been developed by Schloffer[11] on the plan worked out by Tandler and Muscovitz. It consists in making an incision down the middle of the brow and along the lateral aspect of the nose, which is then reflected to the opposite side, the nasal bones being suitably divided. The septum of the nose is severed, the turbinate bodies removed, and finally the vomer leads directly to the base of the body of the sphenoid bone. On its removal nothing but a thin shell of bone separates the pharynx and the nasal space from the tumor (Fig. 2). Schloffer's patient, operated on in this fashion, lived seventy-five days; the wound healed soundly, but brain infection eventually destroyed the patient.

Von Eiselsberg, of Vienna, has operated in five cases in this manner. He fully describes[12] the technic of the operation, in which he also opens the frontal sinus and thereby facilitates his approach to the tumor. He credits this sinus opening also to Schloffer.

By this method Hochenegg has operated in two cases; the first patient, operated on over a year ago, according to a personal report from him, remains in excellent health. This was a case of acromegaly, and most interesting recessional changes have occurred in the enlarged proportions of the extremities, jaw, etc., thus practically proving the causal relation of the pituitary disease and the value of the operation.

Von Eiselsberg's first patient, operated on June 21, 1907, not only made an excellent recovery from the operation, but the very prominent symptoms of brain tumor subsided and the condition of the eyes even improved, so that at the date of the last report the pupil had regained its activity for light and vision was good enough to enable the patient to travel on the railways. Von Eiselsberg has reported three operations by this method.[13] He has also operated in one or two other cases which have not as yet been reported, including my Case 4, making five in all.

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[11] Schloffer: Beitr. z. klin. Chirurgie, 1906, l, 767; Wien. klin. Wchnschr., 1907, No. 21.

[12] Von Eiselsberg: Arch. f. klin. Chir., lxxxvii.

[13] Von Eiselsberg: Wien. klin. Wchnschr., 1909, No. 8.

In this country Cushing has operated after this method on at least one patient who was shown before the American Surgical Society at its annual meeting in Baltimore this year.

While the choice of operation is pre-eminently a surgical question, my own view is that the nasal route is the best. The pituitary tumor is practically extracranial, being located in its very definite bony receptacle below the level of the cranial floor until by abnormal growth it rises into the cranium. As shown by several of my radiograms the tumor actually descends into the sphenoidal sinus. As it lies so close to the nasal spaces, this route can under proper aseptic measures constitute a less disturbing avenue of approach than through the lateral aspect of the skull which necessitates such violent handling of the brain as seriously to imperil the life of the patient. To operate in two stages by opening the head on the opposite side from which the approach is to be made, as formerly suggested by Cushing, does not seem to me to constitute a material advantage. When the tumor is of comparatively small size, I do not believe it can be reached by the intracranial route.

It is, however, a fact that the nasal operation results in considerable facial deformity, a deep depression being occasioned at the root of the nose, but in a life-saving measure cosmetic considerations are of minor importance. Improved technic may also largely obviate this objection.

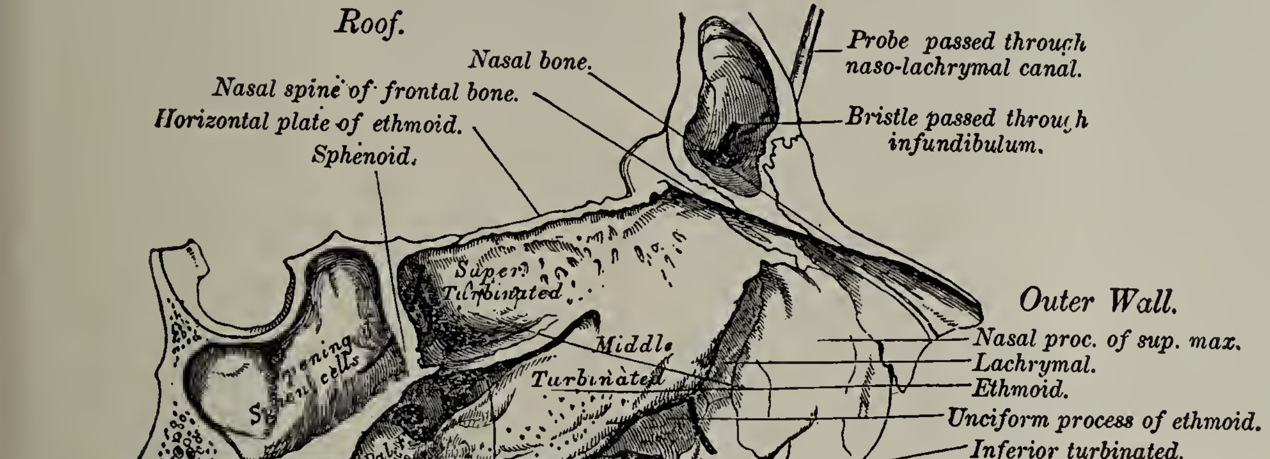

Fig. 2.—Relations of nasal spaces to the pituitary site (Gray).

CASE 1.—*Patient.*—Mrs. W., a woman of apparently good health, 39 years of age, was referred to me by Dr. Casey Wood, Aug. 3, 1907.

History.—The patient never had any pregnancies, and for eight or nine years had not menstruated. This function began at the age of 14 and was regular for a number of years. Her past history was peculiarly free from illnesses of all sorts, with the exception of diphtheria at the age of 18, followed by a paralytic involvement of the pharynx, disturbance of vision for the near point, and some involvement of speech and of muscular power. Since that time she had not considered herself robust, although there had been no distinct illness. About a year before my examination of the patient she noticed some defect of vision when she tried to read, with a sense of strain in the eyes after reading or using them for a few minutes. This was worse by artificial light. Eventually she noticed that she could see better by turning her head to one side or by reading ahead of the place to which she directed her vision. This difficulty had been gradually growing worse in spite of the correction of hypermetropia by suitable glasses.

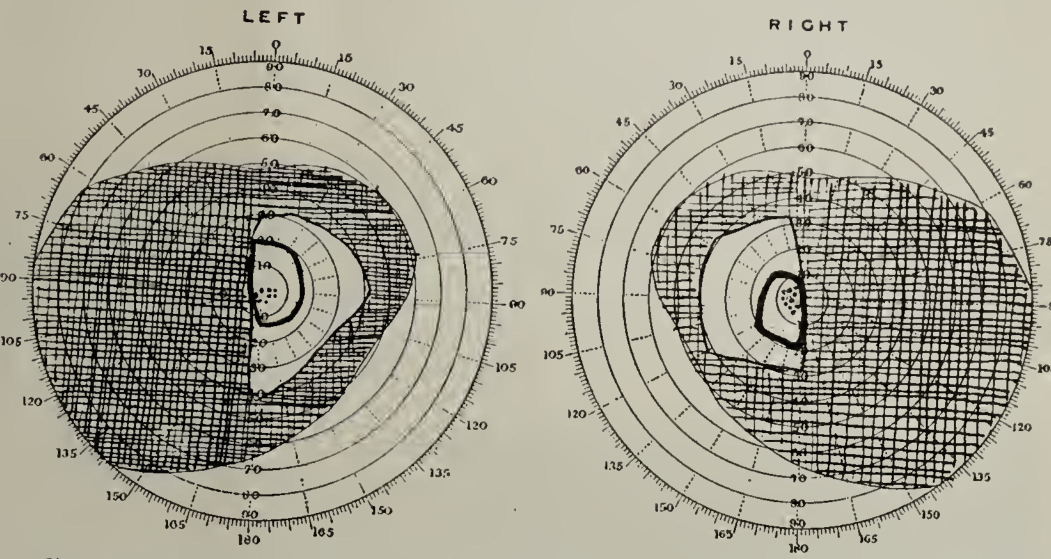

Fig. 3.—Bitemporal hemianopsia in Case 1. (In this and in the following charts the field of vision for red, where shown, is outlined by a heavy black line; that for green by heavy dots; that for white by a light black line.)

Examination.—Dr. Wood reported her vision as 24/100 in the left eye and 22/100 in the right eye, but this vision was eccentric in both eyes. Pupillary reaction and the tension were normal. The fundus showed a diffuse, gray-white discoloration of both nerves. The field of vision for white and colors exhibited a well-marked bitemporal hemianopsia (Fig. 3) with some regular limitation of the periphery of the fields of the preserved sides. Examination of nasal cavities and the throat presented nothing abnormal. General physical examination also showed nothing abnormal. An *x*-ray picture was made by Dr. Max Reichmann, who reported an evident enlargement of the sella turcica, with a faint shadow that indicated to him an enlarged hypophysis. Unfortunately, this plate has been lost. The patient presented no evidences that were in the remotest degree suggestive of myxedema or acromegaly. This patient subsequently visited Dr. Pagenstecher at Wiesbaden, at whose instance another *x*-ray picture was made, from which Figure 4 has been prepared. It shows a distinct enlargement of the sella. At the present time the patient considers herself entirely at a standstill and refuses any suggestion of treatment of operation.

Summary.—The patient's menstrual history, double temporal hemianopsia, optic atrophy, and the *x*-ray picture sufficiently establish the diagnosis of pituitary tumor.

Case 2.—*Patient.*—In April, 1907, I saw in consultation with Dr. J. P. Webster, Master W., a boy of 14, who appeared very small and frail for his years.

History.—On both sides his parents and ancestors were sturdy people. He was born without difficulty after a natural labor. During the first three and a half years of his life he is said to have been a robust and active child. At that time he had a very severe attack of whooping cough, in the paroxysms of which he would frequently have hemorrhages from the nose and mouth. During the course of the whooping cough diabetes supervened, with the urine sometimes amounting to four pints in eight or nine hours, and a corresponding thirst. At one time there was suppression of the urine for sixty hours. As the whooping cough subsided, intense headaches were complained of and were sufficiently severe to apparently stupefy the child. At this time he was submitted to circumcision and nearly lost his life as a result of secondary hemorrhage. As he began to get about, it was noticed that there was some difficulty of sight. The headaches recurred in paroxysms and were attended at times by vomiting. These attacks of headache and vomiting have occurred at intervals of a few weeks or months ever since, frequently terminating in nose bleed with apparent relief. About two years before my first examination in such a severe attack it was noticed that he was partially paralyzed on the right side, especially the right hand. This disappeared in a few days. About that time double optic atrophy was observed, with evidence of what appeared to be former retinal hemorrhages. The deep reflexes were said to have been abolished. Sensory conditions were apparently normal and speech was not affected. There was some transient weakness of the right side of the face. About a year later he had a similar attack, terminating in the same manner, and during the two years before the examination a protracted right sciatica gave him a great deal of suffering and a secondary scoliosis developed. There was also some pain in the sciatic distribution in the left side. His mentality apparently never suffered. Manual dexterity and readiness were extremely good throughout, with the exception of the two attacks in which he lost some control of the right hand. Reflexes were generally very much reduced or abolished. Owing to the defect of vision, his schooling was interrupted and he read with visual difficulty. Repeated examinations of stomach contents and blood have detected nothing abnormal.

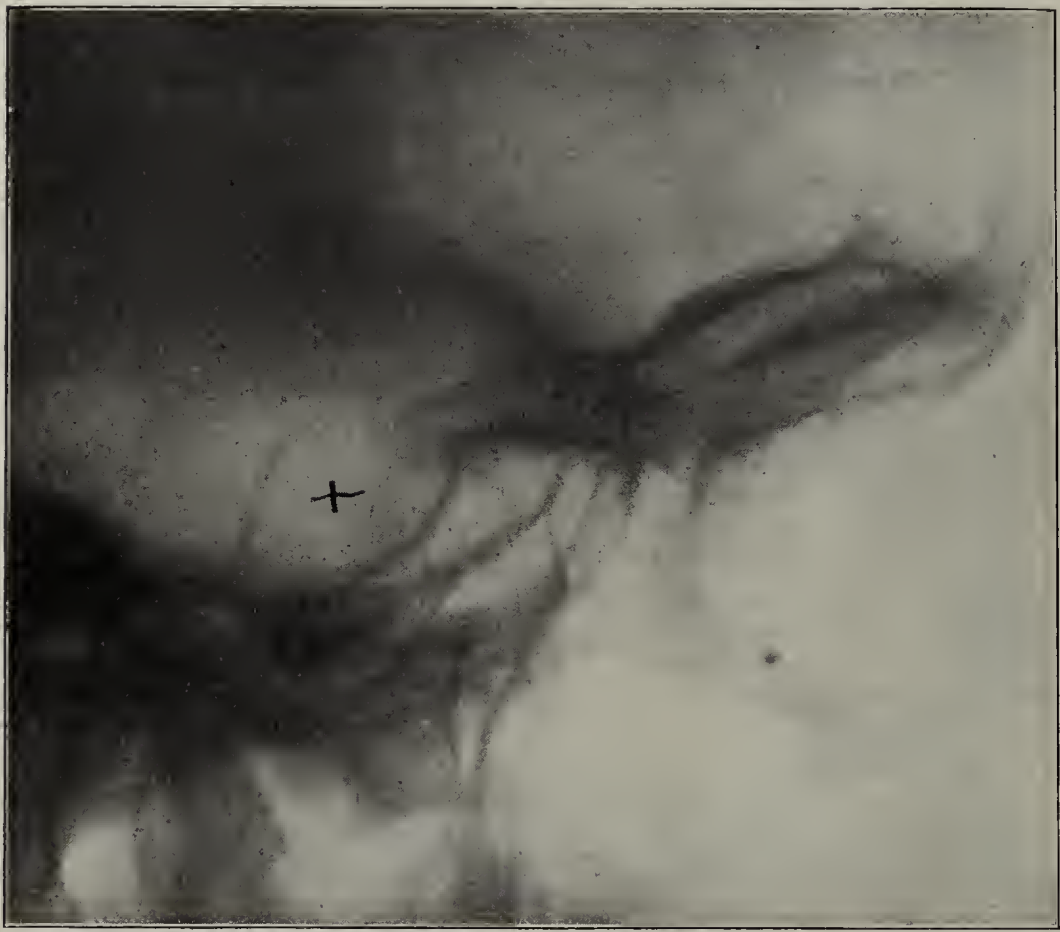

Fig. 4.—From radiogram in Case 1, full size, showing enlarged sella turcica, marked +.

Examination.—At the date first mentioned the knee-jerks were present and slightly exaggerated, the left knee-jerk being more active than the right. The heel-jerk was present on the right side; left one could not be elicited. There was no Babinski. Hearing on the right side was reduced for the watch to one inch. On the left side he heard it at four feet. Commonly the patient presented a subnormal temperature, but during paroxysms of headache and vomiting his temperature sometimes reached 99. There was slight ataxia of all extremities but more particularly of the legs. One time he complained of pain located on the left side, back of the ear, in the occipital region, and there was some local tenderness. A competent oculist reported that the patient's left eye was apparently blind, while the vision in the right was 1/6. Pupillary reaction in the right eye was normal, while the left responded only for accommodation. The right field was reported to be decidedly contracted and irregular, and the greatest contraction of the field was on the temporal side (hemianopsia). There was evidence of neuritis, with exudate in both retinæ, the discs showing white atrophy.

In this patient I suspected cerebellar disease, and as the family were going abroad he was referred to Sir Victor Horsley, who kindly wrote as follows, under date of May 7, 1907, and furnished the skiagram from which Figure 5 was made:

"It appeared to me at first examination that the atrophy (optic) was primary and that the pigmentary conditions of the fundus were congenital and possibly specific; if the last, then in the third generation. The only positive signs besides the right hemiparesis were the temporal hemianopsia and the disc change. At the same time I was struck by the patient's attitude, and before making a lumbar puncture sent him to my colleague, Dr. Worrall, for a radiogram of the skull base and spine.

"To our astonishment the photo (Fig. 5) showed very clearly a pituitary tumor at once and that in its periphery were shadows which I recognized must be calcareous plates in the wall of a cyst, as I had met with this before. The lumbar puncture showed a cystic figure even below the normal and inoculation with it so far negative in guinea-pigs.

"The disc condition, the fields and the history were now fully explained. I therefore, after fully consulting with Dr. Webster, decided to tap the cyst, but not attempt its removal in view of the condition of the boy. On raising the temporal lobe by the method I have elsewhere described the cyst was found. I laid the cyst open by a free incision. It contained about an ounce of brown chocolate-like fluid. The cyst was washed out with sublimate and sponged. Explored with a sharp spoon, the calcareous deposit was felt.

"The brain was definitely hydrocephalic. The descending cornu of the (softened) temporal lobe gave way under the retractor and released the intracranial tension notably.

"The wound has healed well and the boy has to-day gone out for a drive (ten days after operation).

"As regards now his future: Of course, hemorrhagic cysts do not tend to fill again. Therefore, the pressure on the tracts ought to be relieved and the boy's sight saved. At the same time this is the first cyst (non-suppurative) that I have done and it is not possible to dogmatize on such a subject.

"If at any time there was evidence of re-established pressure it would be (now) quite possible to pass an aspirator needle with suitable precautions and very little risk into the cyst."

Postoperative History.—The patient made a satisfactory convalescence from the operation and returned to this country, showing a fluctuating state of health. At the site of the operation wound, a pulsating tumor developed, apparently containing cerebrospinal fluid. When this would become tense the boy would become stuporous with intense headache, sometimes with vomiting, and after a few days this condition would subside and he would resume his ordinary activities. The family refused to have even a spinal puncture made, which was advised in the hopes of relieving the intracranial tension, and eventually the boy died about eighteen months after the operation. No postmortem examination was allowed.

Summary.—In this case without any evidence of acromegaly but with very decided retardation of the features that mark sexual differentiation, an entire absence of pubic hair and infantile genitals, the eventual diagnosis of the condition turned upon the *x*-ray picture. A brilliant operation, under more favorable circumstances, might have resulted in the complete cure of the patient, with, of course, such visual disability as was dependent on the atrophy. The relation of whooping cough with nasal hemorrhage to the pituitary hemorrhagic cyst is apparently plain when the clinical history is reviewed. The diabetes is also of significant interest.

CASE 3. — *Patient.*—Miss T. was referred to me by Dr. John M. Knott of Sioux City, Iowa, Feb. 25, 1908. She was 25 years of age and presented the appearance of excellent health; was of good color and well nourished, and with no appearance that would suggest any glandular or other difficulty.

History. — She presented nothing abnormal in infancy or childhood. Her first menstruation occurred at 11 years and continued regularly until she was nearly 18 years of age, when at boarding school she became anemic and had iron, etc., with full recovery. At 22 she ceased to menstruate and the flow was never reestablished. At the time she ceased flowing her health seemed to be perfect. There were no local conditions that in any way bore on the menstrual function. Two years before the date first mentioned she began to have trouble with her eyes and a specialist in Cincinnati treated her for a year, considering the eye affection to be a nervous derangement attributable to menstrual suppression. In the summer of 1907 vision began to fail again. Dr. Powell of Sioux City then took the eye condition in hand. He wrote, under date of Feb. 26, 1908, as follows:

"Miss T. . . . first consulted me for headaches several years ago. At that time it was decided that she had a moderate amount of regular astigmatism, the correction of which gave her normal vision, and as far as I know the lenses were used off and on, according to the necessities of her work, with considerable, if not complete, relief of all discomfort. But last October she came to me complaining of inability to see well and of diplopia. Examination revealed paralysis of the left external rectus and much deterioration of her sight. It was learned that the muscle became paralyzed in August, 1906, and at that time her vision was normal in both eyes; and later, in February, 1907, it was known that her sight was still normal. This report was made by Dr. Hunt, who examined her eyes in Cincinnati. So between February, 1907, and October of the same year her sight failed very rapidly, more in the right eye, and since that time has been decidedly poorer. The interior of the eye presented no symptoms except vascular changes, the veins being larger than normal. There is considerable change in the fields of vision. We have done everything possible to discover the cause of her trouble and have been unable to do so. Examination of blood, kidneys, etc., is practically negative."

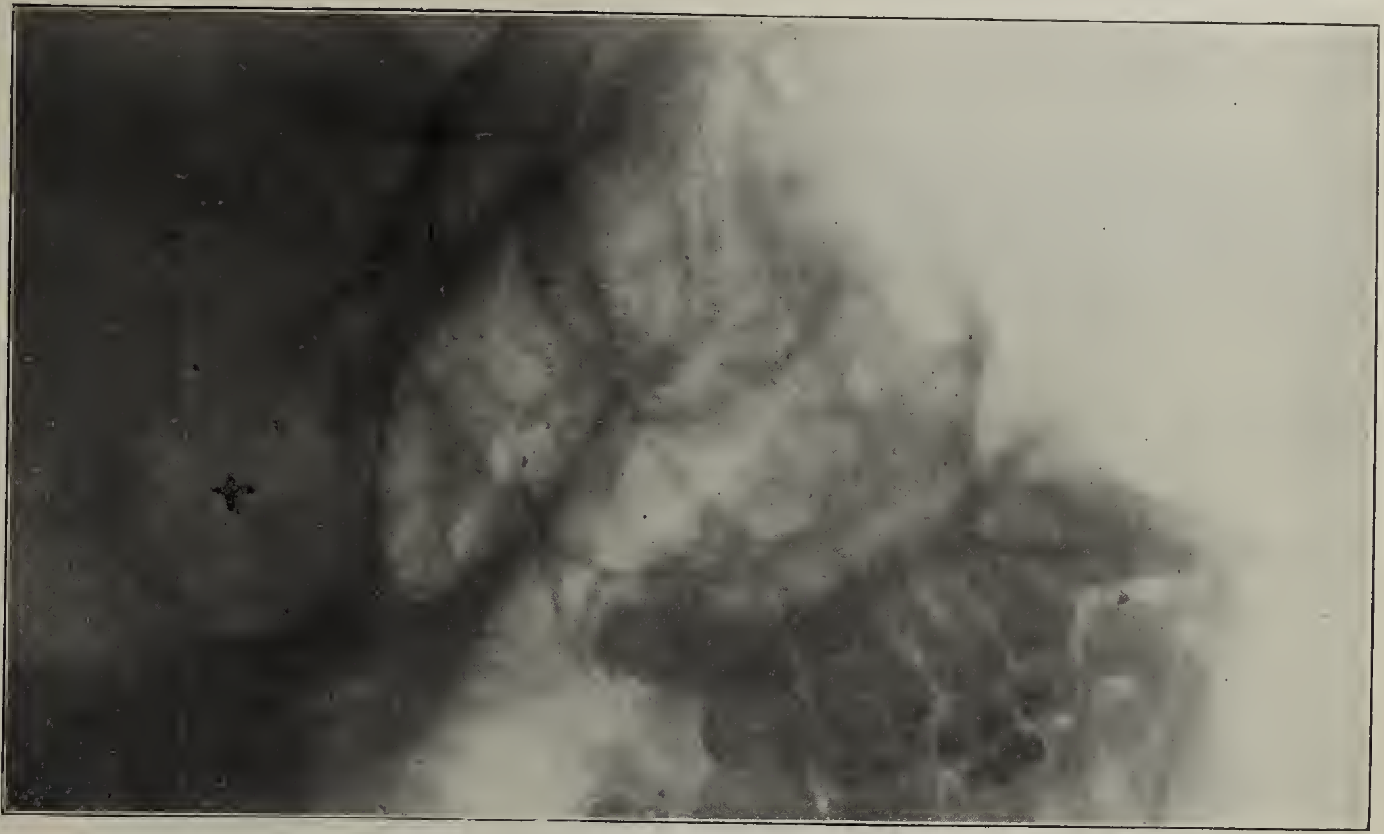

Fig. 5.—From radiogram in Case 2, showing greatly enlarged sella turcica marked + and shadows of a calcareous walled cystic tumor of the pituitary.

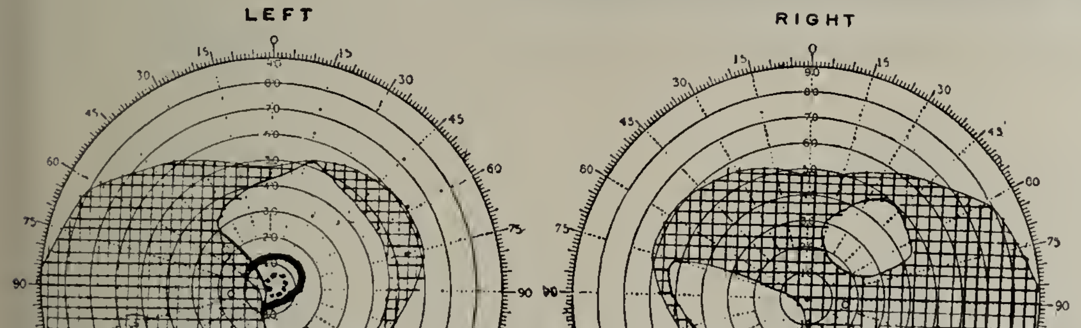

Fig. 6.—Tendency to bitemporal hemianopsia in Case 3.

Under general management by Dr. Knott her blood, which showed a simple anemia, improved and she gained some weight. Potassium iodid was given in large doses, but the vision continued to fail, one eye being much worse than the other. Finally she was submitted for an examination to Dr. Frank Allport of Chicago. This examination resulted in the following report, dated Feb. 29, 1908:

Ocular Examination.—"I find vision in the left eye to be 20/70; vision right eye 2/200. I send you a copy of her field of vision chart (Fig. 6). Please note the peculiar visual islands on the right side, and the substantial contraction of the left side. Notwithstanding these well-marked visual field changes, I would be unable to state that either of her optic nerves presented an abnormal appearance; they are possibly a little whitened and the edges, especially on the right side, are possibly a little hazy, but if I should see these nerves without any knowledge of the case I should call them normal-looking nerve-heads. Dr. Woodruff has examined her with me, and we both feel the same way about it. Dr. Guilford is also of the same opinion. This is a most interesting case and I shall be obliged if you will let me know the outcome. In view of the healthy appearance of her nerve-heads I should have great hopes of restoration of vision, provided the growths which are producing the pressure are removed."

The fields of vision are suggestive of a bitemporal hemianopsia, and an *x*-ray picture was made by Dr. Reichmann which shows (Fig. 7) a tremendous excavation of the sella turcica so that it appears large enough to contain a good-sized English walnut.

Operation.—The patient was referred to Dr. L. L. McArthur for an operation for the removal of a pituitary tumor. This operation was done March 5, 1908. The skull was opened on the right side in order to avoid the left side cortex for speech. The opening was made well forward in the frontal region, the line of incision commencing at the external orbital process and extending upward and backward semicircularly and terminating above the right ear. Considerable intracranial pressure was found, though I have frequently seen much greater evidence of intracranial pressure. When the dura was incised, the brain presented nothing abnormal, but proved to be very friable. Great difficulty was encountered in reaching the tumor. In the attempts to raise the frontal lobe for the purpose of following along the wing of the sphenoid to the sella, considerable laceration resulted to the brain tissue. The operator eventually reached the pituitary tumor, which he found to be bean-shaped in outline, lying transversely in the sella, and feeling to be 1¾ inches in length and 1 inch in thickness. After about two-thirds of this growth was enucleated, it broke down, giving issue to a considerable amount of fluid contents which escaped with the blood and cerebrospinal fluid and could not be preserved. Apparently the tumor was cystic and was suspected to be a cystic adenoma. The patient's condition was unsatisfactory and the operation was terminated.

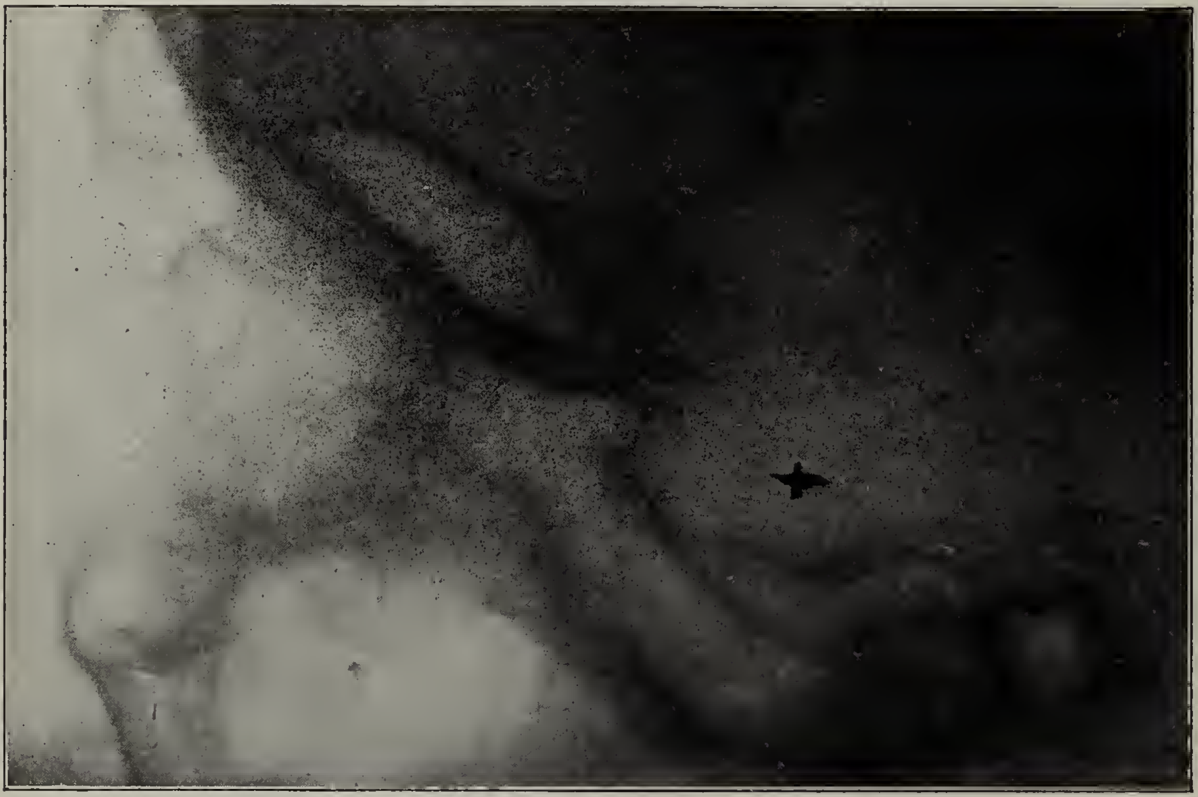

Fig. 7.—From radiogram in Case 3, showing great enlargement of the sella turcica marked +, full size.

She seemed to be rallying nicely from the operation and anesthetic, but at 12 o'clock that night suddenly collapsed and died. No postmortem investigation was permitted.

Summary.—In this case the cessation of menstruation, significant visual fields pointing to bitemporal involvement, and the *x*-ray picture made the diagnosis an easy one. Great excavation of the sella, as shown by the *x*-ray picture, indicated that the tumor could have been easily approached through the nasal spaces and probably could have been evacuated with little difficulty and its wall perhaps scraped out with more or less completeness. Probably this is the first case in which a tumor of the pituitary was diagnosed and operation for its specific removal done in this country.

Case 4.—*Patient.*—A. M., 36 years of age, tinsmith by trade, married, with a number of healthy children, was referred to me Oct. 17, 1908, by Dr. Frank Allport, who made the statement that the "vision of the left eye was entirely lost, vision of the right eye reduced to 24/40, and not benefited by lenses. The left optic disc entirely atrophied, right optic disc white. Vision was considered normal until five months ago, when he noticed that the sight of his left eye was gradually failing, until at the end of three months it was entirely lost. In the beginning he had intense left-sided headaches every day; during the past two months headaches have been less. His field of vision (as shown in Fig. 8) shows a sharply defined temporal hemianopsia of the right eye."

General Examination.—Aside from the conditions in the eyes nothing abnormal was detected. The patient, however, stated that he had been impotent for about a year. An *x*-ray picture (see Fig. 9) clearly demonstrated an enlargement of the sella turcica. Operation was advised and arrangement had been made for it at Michael Reese Hospital, when the patient was dissuaded by one of our local ophthalmologists. The patient's wife having lived in Vienna, he finally reached the clinic of Professor Fuchs, where the condition was recognized. Dr. E. V. L. Brown of this city happened to be present in that clinic at the time and first called my attention to the facts. The diagnosis of pituitary tumor having been confirmed, he was referred to von Eiselsberg for an operation.

Operation.—This was done Jan. 16, 1909, and, as reported by von Eiselsberg[13] in the *Wiener klinische Wochenschrift,* and confirmed to me by personal communication, was the most difficult of the five that he had operated by the nasal route up to that time. A true hypophysis tumor was lacking. He says: "Finally, however, the hypophysis was uncovered and found to be changed into a large tumorous mass which was practically all removed. The pathologic examination showed it to be a malignant epithelial neoplasm. The postoperative course was not disturbed during the first days except by a moderate increase in temperature, and the outer wound healed by first intention. The patient, however, caused great anxiety by a pronounced stupor; the development of brain abscess was feared. This, however, subsided, and the patient recovered."

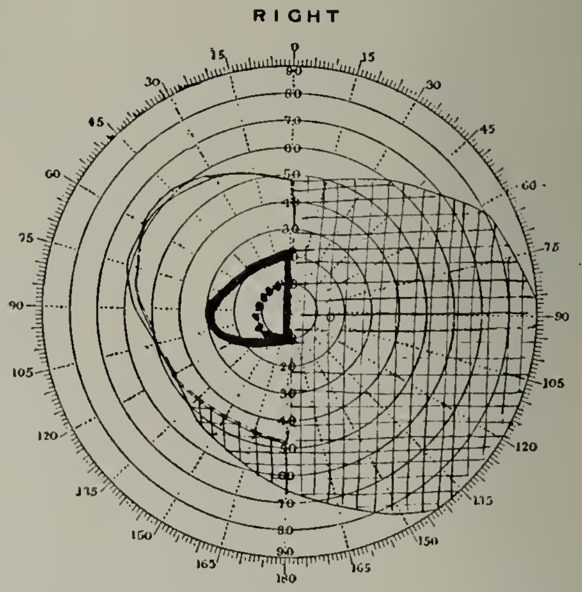

Fig. 8.—Temporal hemianopsia in Case 4.

At the time of the last report he appeared brighter and considered himself normal. Headaches had ceased and he thought his vision was better, but this could not be proved objectively.

Case 5.—*Patient.*—L. B., schoolboy, aged 14, was referred to me Feb. 26, 1900, by Dr. H. B. Favill.

History.—His family history presented nothing notable. This boy was one of five healthy children. He had presented no serious illness, but had trouble with bed-wetting and pavor nocturnus in his younger years. Two years before, Dr. M. R. Brown had removed a nasal septal spur and some large polyps which occluded the nasopharyngeal passages. At the present time the nasopharynx is practically negative. For a year the patient has noticed difficulty in seeing; could not clearly see the clock-face across the room or follow the flight of the golf-ball. In October last he complained of foggy vision and consulted Dr. William H. Wilder, who gave me the following report:

Ocular Examination.—"Aug. 4, 1900, he was seen by Dr. Allport, who made an examination of the eyes and corrected the refractive error that exists, represented by the lenses he is now wearing. I have Dr. Allport's history of the case; he states that when he first saw the patient last August the vision of each eye was 20/20. Oct. 22, 1900, he again visited Dr. Allport, complaining of temporal headaches and of impairment of his sight. He again examined the vision and found, with the correcting lenses, that it was 20/20, although the boy tells me that at the time the vision was foggy. I first saw him Dec. 15, 1900, and my notes show that R. V. equal 20/80; with the lens similar to the one he is now wearing, it was improved to 20/40. His L. V. was 2/200; with the lens similar to the one he is now wearing it was not improved at all. L. stated to me at his first visit that the sight of the left eye became rather suddenly dim about two months before, or October 15. You will observe that I took a charted field of the right eye, December 18 (Fig. 10) and at that time there was no hemianopsia, but later this condition developed, as shown in the field taken Jan. 14, 1901 (Fig. 11), and it continues up to the present time. The retina of the right eye becomes easily fatigued. The vision of the right eye fell rather suddenly, and on December 18 it was reduced to 20/60. On January 26 it was reduced to 20/100. On February 6 to 20/200. On February 20 I found the vision slightly improving, being represented by 20/80, while to-day it is 20/100. This, of course, means with appropriate correction. It has never been possible to take a satisfactory field of the left eye. When I first saw him there was only one small sector upward and inward where he could perceive even hand movements, and yet he was able to see about 2/200. At no time has he had any evidence of optic neuritis; nor do I call the very slight pallor of the left optic disc abnormal. It seems to me to be due more to the physiologic excavation which there exists. At no time have I been able to demonstrate local anesthesia of the cornea or the lids, monocular diplopia or micropsia. The boy's physical condition is excellent, and for the last ten days he has had no headache with the exception of one. He has had at times dull headaches through the temples. The tests for simulation or malingering with the Snellin colored letters have been constantly negative."

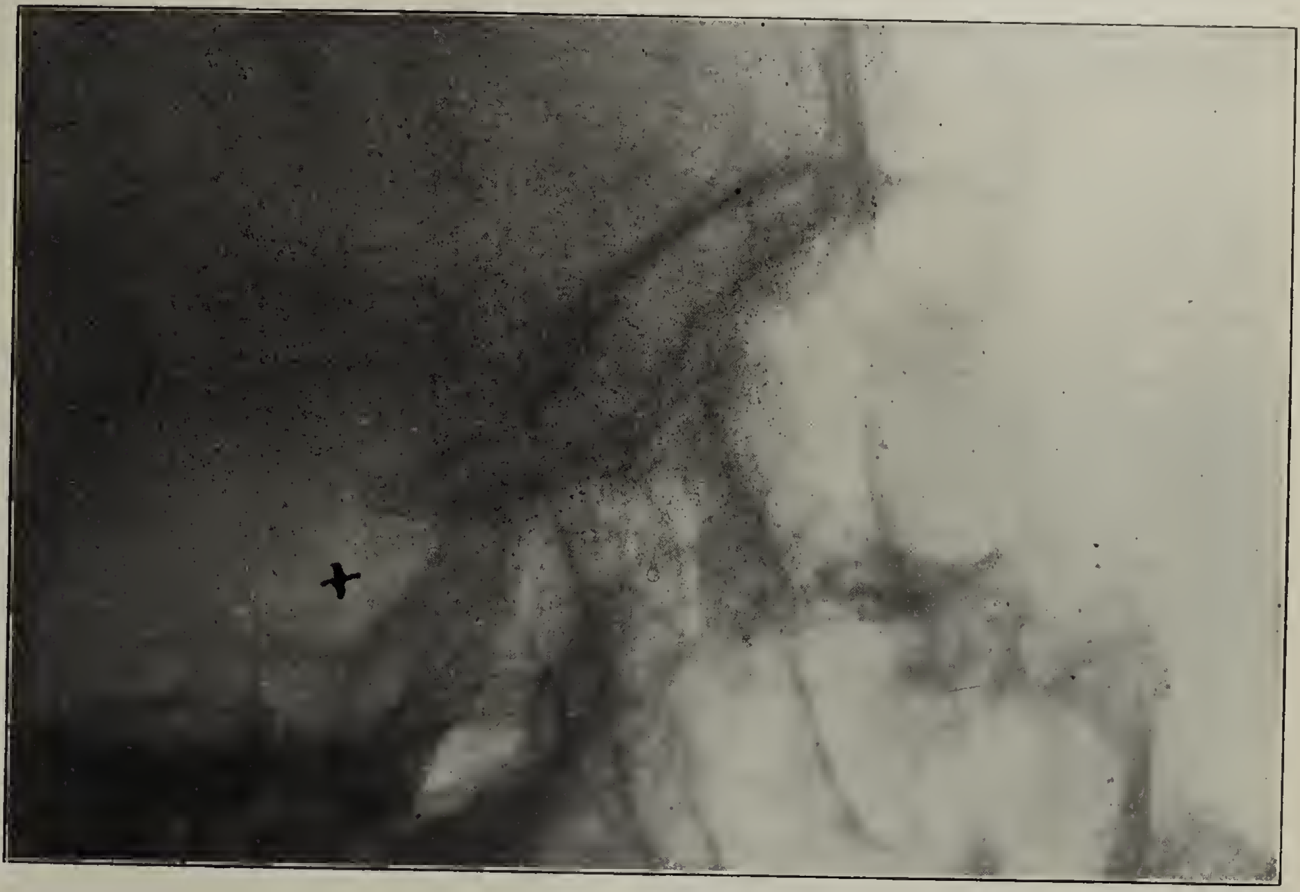

Fig. 9.—From radiogram in Case 4, showing some enlargement of the sella turcica marked +.

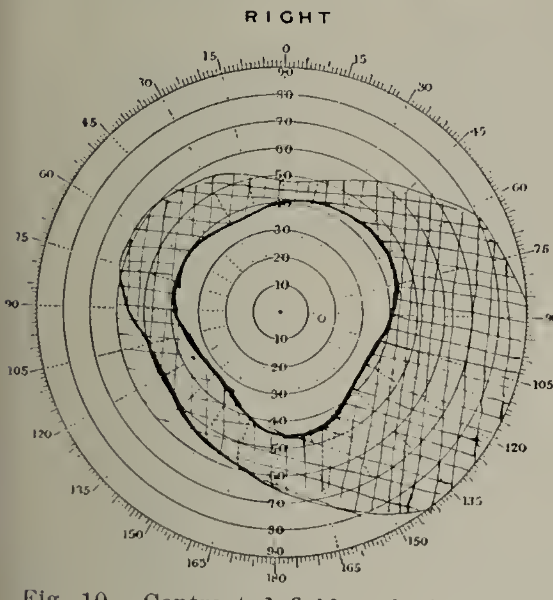

Fig. 10.—Contracted field early in Case 5, Dec. 15, 1900.

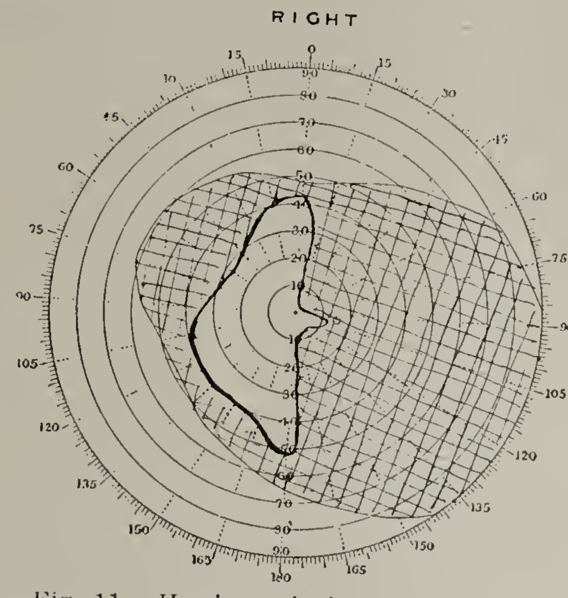

Fig. 11.—Hemianopsia in Case 5, Jan. 14, 1901.

General Examination.—The boy presented a very excellent physical condition, being up to his years in all respects. There was some vasomotor disturbance of the skin and tendency to factitious urticaria. In all other respects he seemed normal.

A diagnosis of probable pituitary tumor was expressed, but no *x*-ray picture was made, as at this remote time its relation to the condition was not appreciated. In the following January, Dr. Wilder made the following report in regard to the patient's eyes:

"After you saw L. B., since Feb. 28, 1901, his vision fell rapidly. I was able, also, to demonstrate the Wernicke hemiopic pupil on March 6, 1901, and on that day his R. V. was 20/100 and his L. V. fingers at eight feet. He was given large doses of potassium iodid by Dr. Favill with apparently no result. Not until early in April did I feel positive that there was atrophy of the optic disc, and then it developed rapidly. He did not suffer from headache or pain, but after that date his vision became rapidly less. There seemed to be no question that our suspicions as to the trouble being a chiasm lesion were well founded. Early in May they visited New York and consulted Dr. Knapp, from whom I received a letter May 9, in which he stated that there was in all probability a growth pressing on the chiasm, probably originating in the hypophysis. Knapp inclined to the belief that this growth was a sarcoma, and he says he would advise an attempt at its removal were it not that the majority of such cases are sarcomatous. Fenger also saw the case, but no operative attempt was ever made. The constitutional treatment with mercury and potassium iodid seemed to accomplish nothing and he has gone on to complete blindness. I think no other symptoms have developed, although I have not seen the boy in months, but I have seen his brother within the last few weeks, and he informed me that L. was quite well, did not suffer at all, was bright and cheerful, and mentally apparently all right, but was totally blind."

Later History.—From this time on until the boy's death, which occurred about a year ago, he remained practically unchanged, with the exception that convulsions developed which would occur at varying intervals, of a generalized and severe character. Also at times there was decided headache and some vomiting perhaps of a cerebral character. His mental qualities were unaffected except in so far as his blindness cut him off from educational opportunities. Physically, while he grew reasonably tall, he remained infantile in conformation and the genitals never developed, nor as far as could be learned was there any establishment of the usual genesic tendencies. The beard and pubic hair never grew. His death occurred at a small place in the south, rendering a postmortem investigation impossible.

Summary.—The history of this case, the hemianopsia, the atrophy of the optic nerves, the failure of the development of the genitals, beard, etc., combined with diffuse symptoms of brain tumor, make it quite evident that there was a pituitary growth, and that operation undertaken at an early date might have saved both vision and life.

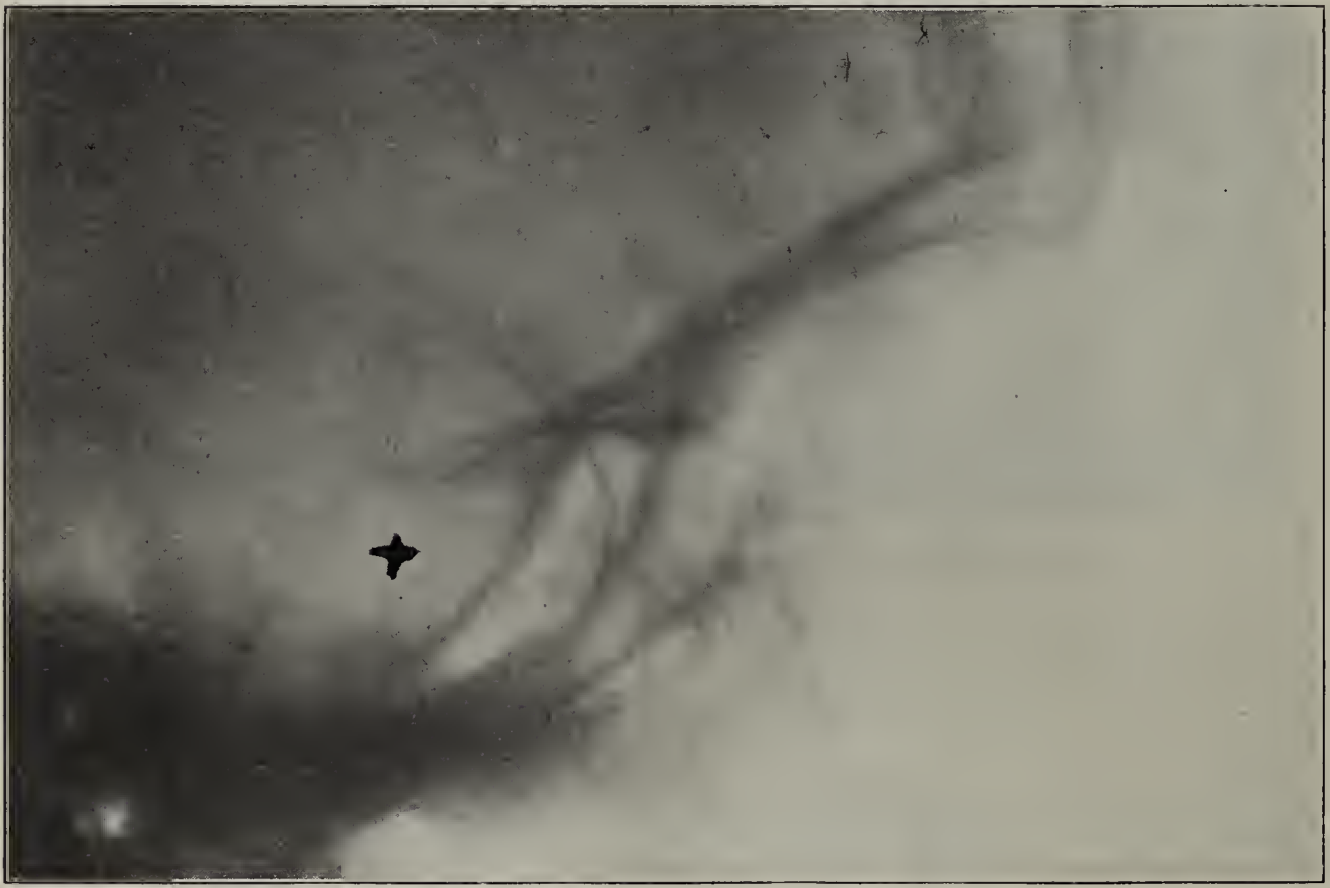

Fig. 13.—Radiogram in Case 6, showing excavation of sella turcica marked +, full size.

Case 6.—*Patient.*—W. R. H., aged 33, father of three children, of good family and one of six brothers and sisters all in good health, came to Chicago to consult Dr. Casey A. Wood regarding progressive blindness. By him he was referred to Dr. Arthur R. Elliott, who kindly allowed me to see him incidentally, and both these men have furnished me with their notes in the case. Aside from grip in 1890 and frequent sore throats and long standing nasal catarrh, the patient personally presented nothing of medical significance. His occupation had been an active outdoor one and his habits good.

History.—Beginning about six years before time of examination the patient noticed failure of vision in the right eye. This at first was confined to the outer half of the visual field, but subsequently the inner portion also failed, and at present he is totally blind in that eye. One year before I saw him the left eye became similarly involved, the progression of sight disturbance being the same. At the time of examination the outer half of the left visual field is blind. Of recent months he had had a good many darting pains back of the right eye and had had toothache, for which several teeth have been extracted without material relief.

General Examination.—The patient showed a ruddy, clear complexion and a general appearance of good health. Aside from some irritation in his gums and offensive breath, the physical examination was practically negative. There was no infection of the nasal passage or sinuses. His muscle reflexes were all exaggerated, perhaps because of a course of strychnin in large doses. There was no incoordination or pupillary disturbance. Pulse, chest organs and abdominal organs were normal; genitals normal. His sexual power was only moderate and his physical strength was much less than one would expect in an individual of his proportions, and was less than it used to be.

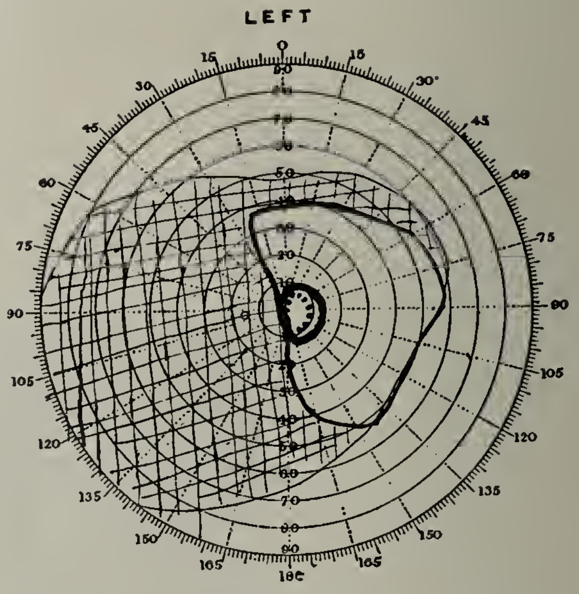

Fig. 12.—Fields of vision in Case 6.

Ocular Examination.—Dr. Wood reports as follows: "His ocular history shows that with the exception of wearing glasses during the past six years for improvement of his near vision, he did not notice any difficulty about seeing until six years ago. At that time vision in his right eye began to fail and in a year or so he was unable to read ordinary print. The record of Dr. Goode shows that in the early stages of visual failure he had V. L. = 20/15 and V. R. = 20/30. He was conscious of the failure in sight occurring in the temporal field of the right eye until a year ago, when it was reduced to light perception. Within the past year he noticed the sight in his left eye failing—to the temporal side of the meridian line—just as in the case of the right eye. This obscuration of vision took the shape of a dark spot which grew larger and larger until one-half of the field was cut off. For more than a year he has had shooting pains in the temples, as well as in the right eye, extending to the center of the head. The tension of both eyes is normal and the pupillary reactions of the left eye are active. There is no perception of light in the right eye, but the left has 20/15, and J. 1, with a fair accommodation range. Wernicke test not applicable. The fundus examination shows well-marked gray atrophy *right*, with an atrophic scleral ring, vessels of fair size and chorioidal disturbances. The papilla, *left*, is slightly pale but otherwise the papillary area with its vessels is normal. Small, round, whitish chorioidal exudates are sparsely scattered throughout the fundus. The perimeter (Fig. 12) shows in the left eye a well-marked hemiopia."

General Examination.—In my personal examination of the patient nothing further was found except that I was struck with the sausage-shaped fingers which conveyed a feeling of cutaneous resiliency or elasticity such as I have frequently noted in acromegaly. The proportions, however, were not particularly enlarged according to the patient's statement. An *x*-ray picture (Fig. 13) shows unquestioned enlargement of the sella turcica, which, as is shown in this case, is usually at the expense of the sphenoidal sinus; that is to say, the tendency of the tumor is to advance toward the nasal spaces.

The patient returned to his home in the northwest with the understanding that any further encroachment on the visual field of the left eye would be the signal for an operation.

To these six cases a number could be added in which acromegaly was present. That condition, however, is so self-evident that it is needless to detail instances in this connection. It is much more important that the surgeon, the ophthalmologist and the neurologist should recognize that a pituitary tumor may be present without the association of acromegaly. It is evident from the experience already obtained by the various operators and observers that the removal of the pituitary gland is indicated in both groups of cases. In the first place it furnishes the only possibility of the prevention of blindness, and in the second case seems to hold out some hope of a curative effect for the acromegaly, and in all instances promises the prolongation of life. It is not unlikely that the operation will be fraught with good results in proportion as it is undertaken early.

2 Adams Street.

FOOD INTOXICATIONS IN CHILDHOOD *

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Much has been written and said about food fevers, autointoxications and similar conditions, but little has been done concerning this class of cases, which, it would seem, ought to be established with comparative definiteness both from the standpoint of diagnosis and treatment; and as a result the patients, both large and small, frequently suffer in the hands of those who do not know what to do for them, or are buffeted about from specialist to specialist for eyes, ears, stomach, or what not. Many a practitioner has been satisfied with telling his patient or his patient's parents that there is some obscure disturbance of metabolism and prescribing various more or less inexact methods of treatment, feeling that because he is unskilled in the chemistry of nutritional disorders he can neither diagnose nor treat them. While one realizes the necessity for the investigation and careful and exact study of the conditions under consideration, there is no reason why, in the absence of such knowledge, the patient should be left to suffer.

A large proportion of the conditions which the pediatrician is called on to treat are due directly or indirectly to errors in diet. Leaving out of consideration a large number of cases in which the trouble is an acute or chronic gastric or intestinal disturbance, there are still a large number in which the mere overfeeding in some direction causes symptoms. These untoward symptoms may be caused by too much food of all kinds and too little exercise, or by too much fat, protein or carbohydrate, or too much of any combination of these. The symptoms referred to are easily produced in otherwise normal children. There are still other children in whom the maximum limit of fat, protein or carbohydrate consumption is abnormally low, so that what appears to be a more or less correct diet may in any particular child be an unsuitable one, and result in symptoms often not even suggestive of errors in diet. It is well to remember that, on the other hand, disease of some organ may reflexly upset the digestion or metabolism and often unsuccessful attempts are made by regulating the diet to relieve symptoms caused by eyestrain or some other condition.

It is not possible to separate a symptom-complex out of each one of these conditions, although some light has been thrown in this direction, and it is to be hoped that with further study more may come. In other words, the symptoms produced by too much food of all kinds may resemble excessive fat-feeding, or too much protein may cause a condition similar to too much carbohydrate and *vice versa*, so that at times a certain amount of experimenting must be done to determine the proper course of treatment. The symptoms that may be produced are too varied to permit of lengthy description at this time. The most suggestive thing is a train of symptoms recurring periodically; it matters not what combination these may present. The next step in the diagnosis is by careful physical examination to exclude any disease of any organ and, this having been done with greater or less accuracy, a study of the child's habits and food must be undertaken. In over half the cases the error is usually evident; in others it requires careful investigation and often trial diets. These cases require individualizing more than any other class, but the results are often so brilliant as to reward one for the time and trouble taken.

As previously noted, while one can not make symptom-complexes, the following points have been found of use:

Taking of too much food of all kinds usually causes such attacks as are described by the laity as biliousness. The attacks recur with greater or less frequency, and are characterized by fever, a coated tongue, foul breath, headache, malaise, often drowsiness; there is often vomiting or diarrhea or both, and the liver may be somewhat enlarged and tender. A brisk purge and limitation of the diet usually are all that is needed.

Too much protein causes, as a rule, much the same symptoms. Sometimes some one symptom is especially prominent, as recurring headache, or recurring neuralgia, or attacks of vomiting, or in milder cases periods when the tongue is furred and breath foul without much other disturbance.

Too much fat is a frequent cause of trouble, and many children are often intentionally overfed with fat. These are cases of malnutrition in which large quantities of butter, cream, cod-liver oil, and other fats are given with the idea of fattening the child and restoring its normal condition. The result is that the nutrition is not improved, but is usually made worse. The child is unwell, has a pale, muddy skin and large dark circles under the eyes; one of the most striking features is a coated tongue and exceedingly fetid breath. There is gastric disturbance, and vomiting is frequent and there is often diarrhea with the passage of undigested fat in the stools.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The carbohydrate cases are the commonest of all, owing to the fact that a great many children are given large quantities of starches and sugars, not only at their meals, but between meals in the shape of sweets of various kinds, often of the cheaper varieties of candies. Many children have a very low capacity for utilizing sugar, and some for both sugar and starches. As in the other forms the periodicity of the attacks is the most striking feature. Perhaps the commonest form of the attack is recurrent vomiting, although this may be seen in cases in which protein metabolism is at fault. In some instances the attack consists merely of fever, or a sick headache, while in other cases there are attacks of asthma which sometimes follow indiscretions in diet. The most difficult cases to manage are those in which there is a combination, an inability to utilize normal quantities of protein and carbohydrate, as it is difficult to arrange the diet satisfactorily. The results in preventing the attacks are remarkable if the cooperation of the family can be secured. Having found out the food factor at fault, an effort should be made to determine about what quantity of that particular food can be utilized, then to keep the child on a diet well within the limits of its powers of assimilation. In addition to this it is exceedingly important to see that the bowels are regular, and a rather good plan is to use some fairly active purge at least once a week. Outdoor life and plenty of exercise is exceedingly important and many patients are greatly benefited by a sojourn in the country, not at a summer resort, but on a farm where a very active outdoor life may be led without too much restriction in the matter of observing social forms.

The following cases illustrate what may be done in the different classes of cases:

OVERFEEDING WITH PROTEINS

As an example of protein poisoning the instance of a small child 2½ years of age may be cited; an only child and one very badly brought up, who had an idea in its head that it would eat nothing except meat, or very little else. The child was having periodic attacks of an illness consisting chiefly of fever and prostration, the attacks being rather promptly relieved by the administration of calomel. In addition the child was having repeated seizures, almost epileptic in character, which would come on if the child became angry, or sometimes without any warning whatever. The child was put first on a milk diet and from that on an ordinary normal diet, making a complete recovery and has remained well ever since.

OVERFEEDING WITH FATS

An example of the cases of overfeeding with fats is shown in the case of a boy 6 years old who was very much undersized and under the normal weight, who had never been robust since an attack of ileocolitis in infancy. His mother, being anxious to make him a large, strong boy, under the advice of her physicians, gave him large quantities of cream, yolk of egg, cod-liver oil, and overfed him in other directions as well. The result was considerable gastric and intestinal disturbance, and a typical picture as described above from overfeeding with fat. The attacks of this character had been recurring for years. The diet of the boy was entirely readjusted, he was taken out of doors, and made a very good recovery. He gained in weight and strength, and the periodic attacks ceased altogether with the change in diet.

OVERFEEDING WITH CARBOHYDRATE

The carbohydrate cases present many different features. The following illustrate some of these points:

Recurrent Vomiting.—A boy aged 5 had been having attacks of vomiting, for several years, lasting four or five days at irregular intervals varying from a few days to a few weeks. These attacks began after an attack of some sort of a diarrhea when he was a small infant. Numerous physicians were consulted and the diagnosis of gastric disturbance was made in every instance, and the boy's diet arranged with that disease in view. He was finally taken to New York, where the diagnosis was confirmed, and finally on his way through Baltimore to his home in the south he was taken with a severe attack. The mother decided not to consult any physician, but, the boy's condition becoming alarming, she feared that the attack would prove fatal and sought aid. The diagnosis of cyclic vomiting was made; the boy was put on a diet without sugar and one containing comparatively little starch, and in the past three years he has improved in every way. He has had only one or two attacks of vomiting and these followed overindulgence in sweets.

Recurrent Fever with Diarrhea.—A small girl, aged 3, who was given excessive quantities of starchy foods and candies, was having attacks of fever with diarrhea coming on every other day. The diagnosis of malaria had been made, but there were no parasites in the blood and quinin had no effect. The case was seen in consultation and the suggestion made to cut out the sugars and limit the starchy foods. The child made a rapid recovery, and has had practically no recurrences of the trouble except on overindulgence in sugars.

Asthma.—The first case was one of an infant who had severe eczema and also frequent attacks of asthma. The child had a severe intestinal disorder, and was living on cereal gruels and fruit. The child refused to take milk or milk mixtures, and finally after considerable difficulty he was put back on a normal diet with the result that the eczema became very much better, but the asthma persisted. The amount of sugar and starch in the diet was limited, and under this diet, as long as the child was out of doors and getting plenty of exercise, he remained free from asthmatic attacks.

A second case is more striking. A girl of 13 was having recurrent attacks of asthma for which she had been treated in many different ways, having had her tonsils removed and her nose operated on without any result. The attacks were more or less periodic, and during them the urine contained acetone and diacetic acid. A trial was made of cutting out the sugars and limiting the starchy foods, with the result that the child has only had two attacks in the past year, both of these following overindulgence in sweets at a children's party.

Recurrent Fever.—A boy of 8 was having recurrent attacks of fever so that he was ill about one-third of the time. The urine contained no diacetic acid during these attacks, and beyond the symptoms caused by the fever nothing could be discovered. With the same dietary precautions and free purgation once a week the boy has been entirely free of these attacks with exception of one shortly after the treatment was instituted.

839 North Eutaw Street.

Saline Transfusion to Arrest Hemorrhage.—The coagulating power of the blood is said to increase materially after injection of 5 or 10 c.c. of a 3 or 5 per cent. solution of salt. Van den Velden has announced the hemostatic value of small amounts of a hypertonic saline fluid, and their harmlessness.

THE TREATMENT OF ANEMIA IN INFANCY WITH CITRATE OF IRON ADMINISTERED SUBCUTANEOUSLY *

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The percentage of hemoglobin in infancy gradually rises from 55 per cent. to 60 per cent. at the end of the first month to 70 per cent. at six months, where it remains during the rest of infancy. The number of red corpuscles in infancy varies between 5,500,000 and 6,000,000. Compared with the adult, therefore, in the infant the hemoglobin is relatively low. This comparative deficiency in hemoglobin is presumably due to the fact that the infant normally receives an insufficient supply of iron in its food and that the reserve of iron present in the liver at birth is not large enough to keep the percentage of hemoglobin at the adult standard This reserve of iron may, moreover, be insufficient and in any event is comparatively easily exhausted.

It is probable that the disease chlorosis never occurs in infancy. The chlorotic type of blood is very common, however, in the anemias of this age. The explanation of the occurrence of this type of blood is that, since the percentage of hemoglobin is normally relatively low in infancy and the number of red corpuscles larger at this age than later, a diminution in both gives a combination like that found in chlorosis in later life. Moreover, owing to the comparatively small reserve of iron at birth, almost all anemias in infancy have a relatively low percentage of hemoglobin. It is not uncommon to see the chlorotic type of blood develop in the course of any of the anemias of infancy and disappear later. In fact, this type of blood is almost always present to a greater or less degree at some time in the course of every anemia in infancy.

Iron is especially indicated, therefore, in the anemias of infancy. This is doubly true because milk, which makes up so large a part of the food at this age, contains a relatively small amount of iron. It is rather difficult to get infants to take sufficient amounts of iron by the mouth. Iron by the mouth is also very likely to disturb the digestion. In severe cases, therefore, it is often very advantageous to give iron in some other way. Iron may be given to infants subcutaneously without injury. A very serviceable form of iron for subcutaneous use is the aqueous solution of the citrate. This can be put up in pearls and sterilized, each pearl containing a single dose. When prepared in this way it remains sterile indefinitely. This solution is absolutely non-irritating and is never followed by induration or abscess if the injection is properly given. The injection is, however, sometimes followed by pain lasting from a few minutes to an hour. A glass syringe with asbestos packing, which can be sterilized, is necessary. The needle must be of platinum, as the solution corrodes the ordinary steel needle. The average dose during infancy is ¾ of a grain every other day.

I have used the citrate of iron in this way in a number of cases—some of the chlorotic type, some mild cases not of this type, and some cases of severe anemia with splenic tumor—with, on the whole, pretty satisfactory results, even in the severe cases. In the milder cases the improvement during treatment has been very rapid. In most cases the rise in the percentage of hemoglobin has been more rapid than that in the number of red corpuscles. In fact, in some cases, the red cells have diminished in number while the hemoglobin has continued to rise.

The following cases are examples:

Case 1.—*Patient.*—Lawrence H., 14 months old, was seen June 20. He was born at seven months, weighing but 4½ pounds. He had done very well on the whole, but during the last six weeks had refused everything but milk and had lost a great deal of color.

Examination.—He was well developed and nourished, weighing 16 pounds. There was marked pallor. The liver was palpable 2 cm. below the costal border. The spleen was not palpable. The cervical lymph nodes were palpable, the others were not. The general examination was otherwise negative.

Blood: Hemoglobin, 30 per cent.
Red corpuscles, 2,500,000.
White corpuscles, 16,700.
Mononuclears, 76 per cent.
Polynuclear neutrophiles, 22 per cent.
Eosinophiles, 1 per cent.
Mast cells, 1 per cent.

There was moderate variation in the size and shape of the red corpuscles with some achromia. Three normoblasts were seen in counting 200 white cells.

Course of Disease Under Treatment.—Citrate of iron, gr. ¾ subcutaneously, every other day, was begun. Improvement began after the first injection of iron. The child ate better and began to improve in color. The examination of the blood July 16 after twelve injections of iron was:

Hemoglobin, 50 per cent.
Red corpuscles, 4,200,000.

This case belongs in the class of secondary anemias due to too long continuance of milk without other food. There is a slight, but only a slight, tendency to the chlorotic type.

Case 2.—*Patient.*—Alma H., 7 months old, was seen April 11. She had had practically nothing but the breast. According to the story, anemia developed rapidly following the painting of the house about ten days before. There were no other symptoms, besides a somewhat apathetic condition, pallor and poor circulation.

Examination.—She was well developed and nourished. There was a very marked yellowish pallor. There was a slight venous hum in the neck and a slight systolic murmur at the base of the heart. The liver was palpable 3 cm. below the costal border; the spleen was not palpable. There was no enlargement of the peripheral lymph nodes. There was slight puffiness of the feet and a little about the eyes.

Blood: Hemoglobin, 20 per cent.
Red corpuscles, 1,490,000.
White corsupscles, 11,000.
Mononuclear, 85 per cent.
Polynuclear, 15 per cent.

There were many large forms of red cells, moderate polychromatophilia, slight poikilocytosis and an increased number of blood plates. Some of the mononuclear cells looked like those from the bone marrow and were throwing off blood plates. Three normoblasts and one eosinophile were seen on a slide.

Course of Disease Under Treatment.—The baby was started on tartrate of iron and potash, by mouth, 4 grains, three times daily. There was no improvement on this treatment. Citrate of iron, gr. ¾ subcutaneously, was begun May 11 and was given about every third day until July 27. The hemoglobin June 8 was 60 per cent.; July 4, 80 per cent.; July 29, 80 per cent., and September 1, 100 per cent. The red corpuscles were unfortunately not counted. Examination of stained specimens July 8 showed, however, that the red cells were normal in size, shape and staining qualities. One normoblast was seen on a slide. The blood plates were normal, the leucocytes estimated at about 10,000. Improvement in the color of the skin and general appearance was almost immediate after beginning the citrate of iron, and continued steadily.

Case 3.—(No. 2204.)—Male, 1 year old, entered the hospital Dec. 12, 1904.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

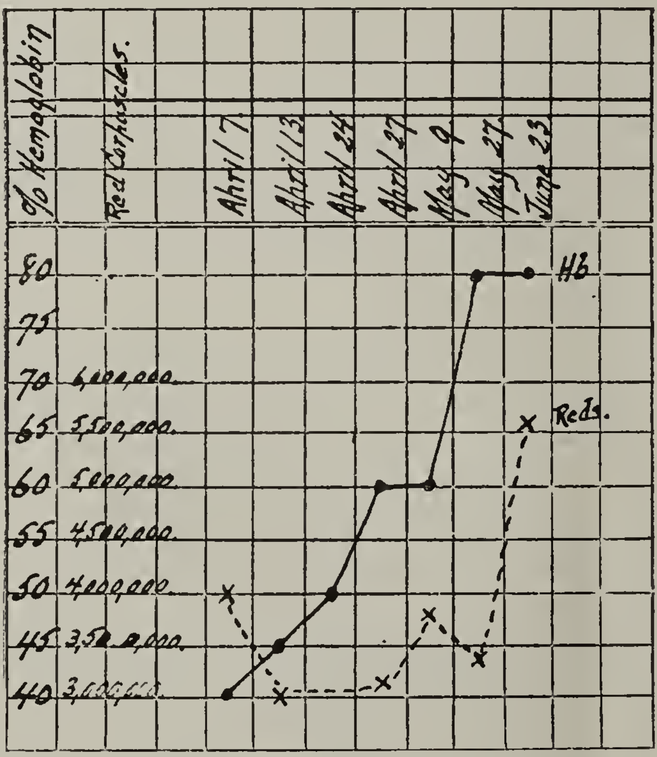
Examination.—He was emaciated and pale. The spleen was palpable 4 cm. and the liver 4 cm. below the costal border. The urine was negative. The blood showed:

Hemoglobin, 35 per cent.
Red corpuscles, 3,416,000.
White corpuscles, 24,800.

While in the hospital he had otitis media and an abscess of the neck. During this time he had had no iron. The abscess of the neck was healed February 1. The skin then showed a marked yellow pallor. The liver and spleen were each palpable 2 cm. below the costal border. The cervical and axillary lymph nodes were slightly increased in size.

February 6. Blood: Hemoglobin, 20 per cent.
Red corpuscles, 2,083,000.
White corpuscles, 23,000.
Mononuclears, 55 per cent.
Polynuclear neutrophiles, 43 per cent.
Eosinophiles, 0.5 per cent.
Myelocytes, 1 per cent.
Basophiles, 0.5 per cent.

There was slight variation in the size and shape of the red corpuscles as well as slight polychromatophilia. One megaloblast was seen in counting 500 white cells.



Percentage of hemoglobin and number of red corpuscles in Case 5.

Course of Disease Under Treatment.—On February 8 citrate of iron, gr. ¾, subcutaneously, every other day was begun.

February 23. Blood: Hemoglobin 65 per cent.
Red corpuscles, 2,408,000.
White corpuscles, 13,000.

The general condition improved decidedly during this period. It is noticeable how much the hemoglobin improved, although the red corpuscles diminished in number.

The anemia in this case was distinctly of the chlorotic type.

CASE 4.—(No. 2363.)—*Patient.*—Male, 20 months old, entered the hospital May 3, 1905. He had been very badly fed, but his digestion had been fair. Enlargement of the abdomen had been noticed for four months.

Examination.—He was small and poorly nourished. There was moderate pallor and signs of marked rickets. The liver was palpable 4 cm. below the costal border. The spleen was palpable, running out from under the ribs in the left nipple line, downward just outside the navel, then below the navel to the anterior superior spine and backward into the flank. The surface was not quite smooth; the edge was sharp. There was slight enlargement of the cervical and inguinal lymph nodes.

Course of Disease Under Treatment.—On May 4 citrate of iron, ¾ gr., subcutaneously, every other day, was begun.

May 5. Blood: Hemoglobin, 50 per cent.
Red corpuscles, 4,000,000.
White corpuscles, 15,000.
Mononuclears, 38 per cent.
Polynuclear neutrophiles, 59.5 per cent.
Eosinophiles, 0.5 per cent.
Myelocytes, 1.5 per cent.
Mast cells, 0.5 per cent.

There was slight variation in the size and shape of the red corpuscles and considerable polychromatophilia. Two normoblasts and 8 megaloblasts were seen in counting 200 white cells.

May 20. Blood: Hemoglobin, 75 per cent.
Red corpuscles, 4,800,000.

During this time he had had a slightly elevated temperature. The digestion was fair at first, later good. He was taken from the hospital by his parents May 21, not relieved.

In this case, also, the improvement in the percentage of the hemoglobin was much greater than in the number of red corpuscles.

CASE 5.—(No. 2869.)—*Patient.*—Female, 1 year old, was admitted to the hospital April 4, 1907. No history was obtained.

Examination.—She was small and poorly nourished. There was moderate pallor and marked signs of rickets. There was a venous hum in the neck and a systolic murmur at the base of the heart. The liver was palpable 2 cm. below the costal border. The spleen was palpable, running out from below the ribs in the left anterior axillary line, downward to the navel, backward to the anterior superior spine, then along the crest of the ileum and disappearing in the back in the scapular line. The surface was smooth, the edge rounded, the notch distinct. The cervical and inguinal lymph nodes were the size of peas.

Course of Disease Under Treatment.—April 5 citrate of iron, gr. ¾, subcutaneously, every other day, was begun.

April 7. Blood: Hemoglobin, 40 per cent.
Red corpuscles, 4,054,000.
White corpuscles, 13,000.

The improvement in the blood is evident from the chart.

June 23. Blood: Hemoglobin, 80 per cent.
Red corpuscles, 5,600,000.
White corpuscles, 22,000.

During her stay in the hospital the morphology of the blood improved as materially as did the hemoglobin and number of red corpuscles. The general condition also improved decidedly. She was discharged relieved June 28. In this case the gain in the hemoglobin was steady, while the number of red corpuscles diminished for a time, but later improved rapidly.

My experience leads me to believe, therefore, that the subcutaneous use of iron in the way just detailed is often most advantageous. The results are more marked and are obtained more rapidly than when the iron is given by mouth and there is much less danger of disturbing the digestion. The subcutaneous use of iron is especially indicated in the severe cases of secondary anemia with disturbance of digestion and in those of the chlorotic type.

70 Bay State Road.

AMETHYST-TINTED LENSES

A PRELIMINARY COMMUNICATION*

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PHILADELPHIA

While man has always instinctively protected his eyes from the harmful influences of light, no reliable historical data are available to demonstrate the evolution of the use of colored glasses. Like many other customs originally based on empiricism, the subject is inextricably blended with the mists of antiquity. Ever since ophthalmology has become an integral part of medical science, ophthalmic surgeons have been confronted with the problem as to what color is best incorporated with glasses for the purpose of protecting the eyes against the various harmful influences attributed to light, quantitatively as well as qualitatively. Up to a comparatively recent time the injurious effects were supposed to be due to excessive luminosity, but we know that the ultraviolet rays are chiefly responsible. The problem is not only of importance from a scientific standpoint, but is assuming economic proportions of no small degree, when we consider the number of cases and the virulence of the symptoms that go hand in hand with the increasing employment of artificial sources of illumination.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

A century ago green glasses were worn. Later these were superseded by blue glasses of the same tint as the sky. As these were easy to manufacture in all dark gradations of color and comparatively inexpensive, they became popular with the laity, but otherwise acquired very little status. Glasses of neutral tint or smoke-color have afforded considerable relief, although the glasses were sometimes made so dark in color as to impede decidedly the power of vision.

In 1887 Fieuzal,[1] after numerous investigations, introduced a combination of gray, yellow and green, which still bear his name under the term "Fieuzal glass." This glass was so colored, as the result of the investigations of Van Genderen Stort,[2] who showed experimentally that the pigment, as well as the movement of the retinal elements, were reduced to a minimum under the influcnee of yellow light. The glass was not intended to arrest the ultraviolet rays, as their harmful effect upon the eye was not yet known at that time. While these glasses have been found acceptable and soothing, they afford no protection against artificial sources of illumination, which are rich in ultraviolet rays, as for instance, the electric arc lamp. Various other tints have been introduced from time to time, many of which, although withstanding spectroscopic and other tests, have failed on practical application.

In 1887 I was first led to use the amethyst-tinted glasses on noting that dentists, by constant use of their eyes in filling teeth with gold, became gold blind, failing to differentiate the walls of the tooth and the gold, and could continue their work only after a certain period of rest. It occurred to me that the yellow of the gold was producing over-stimulation of the retina and that a possible remedy would be the amethyst-tinted glass found in some of the old Philadelphia windows. Some of this glass was procured and I had a pair of spectacles made for a dentist patient which promptly relieved him and enabled him to pursue his work continuously for days without intermission. This good effect was confirmed in many other cases, and I next began to investigate the phenomenon of the coloration.

THE COLORATION OF GLASS FROM CONTINUED EXPOSURE TO LIGHT

After some window glasses have been exposed to intense sunlight for some time a violet coloration frequently develops, varying from a faint to a deeper color according to the time of exposure. The images of letters which have been removed from show windows often appear colorless against a background having a violet coloration. In 1905 Sir William Crookes presented to the Royal Society two panes of glass which had been colored a deep violet as a result of having been exposed to sunlight in South America at an altitude of almost 1,500 feet. On account of the increasing intensity of sunlight, the higher the altitude, it seems probable that the ultraviolet rays were responsible for the coloration. Indeed, it has been shown that glass can be colored violet after having been exposed for forty-eight hours to the ultraviolet rays emanating from the radiation of a mercury vapor lamp.

At one time it was supposed that the coloration was due to traces of manganese which glass manufacturers add to the glass to overcome the yellowish tint derived from the presence of iron, but this theory has been practically exploded. According to Ladenburg the coloration is the result of the formation of manganic acid from the ozone which the rays originate. But this theory is refuted by the fact that we also find the coloration inside of a Crookes tube in which the amount of oxygen is too small to be taken into consideration. It is now held that the coloration produced by ultraviolet rays, radium, x-rays, cathode rays, and the Becquerel rays from radioactive substances is due to very minute (ultramicroscopic) particles of metallic potassium or sodium in the glass.

DISTRIBUTION OF THE GLASS IN THE UNITED STATES

It may be interesting to note that I have found specimens of glass which had been changed from a white to an amethyst color by the sun in different parts of the country. Some I found in Philadelphia windows, and it was from these specimens that the evolution of the amethyst-tinted lenses took its inception. These window panes were brought from England seventy-five years ago, and at that time were white and clear, like any ordinary glass; but in due course of time their color has changed to a beautiful amethyst tint, and the singular fact has manifested itself that these changes only took place in the windows on the north side of streets running east and west, or else on the corner of the street where the glass was exposed to the sun. I have found other specimens of glass in Montana, Colorado, Florida, Maine, New Hampshire, New Jersey, and other states. While in Estes Park, Colorado, last summer, through the courtesy of Mr. Enos Mills, I learned that it required eighteen months to change an ordinary glass cup (white) to an amethyst tint No. 1. Mr. Mills purchased this glass cup and placed it near a spring on Long's Peak where it was constantly exposed to the sun's rays for the time mentioned, at an altitude of 12,000 feet.

THE EFFECT ON THE EYE OF ULTRAVIOLET RAYS FROM ARTIFICIAL ILLUMINATION

Artificial illumination, especially when considered from an economic standpoint, is undoubtedly the chief factor responsible for the various ocular affections attributed to the ultraviolet rays. In all large industrial establishments requiring the employment of artificial light, in all forms of passenger transportation in which electricity is used for illuminating purposes, in modern dwellings, and in the illumination of thoroughfares of all large cities as well, it has been the object to increase the luminosity of electric light appliances. The result has been that the apparent disregard of the effects on the eyes has caused an increasing number of cases, varying from simple conjunctivitis to profound ocular disturbances, as the result of electric ophthalmia. Before the introduction of electricity for illuminating purposes the cases were largely confined to accidental exposure to direct sunlight, as the viewing of solar eclipses with unprotected eyes, snow blindness, or from lightning, etc. We now find the cases increasing both in in number and virulence among clerks, typewriters, compositors, printers, seamstresses, and, in fact, in all vocations requiring close application under artificial light.

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[1] Bull. de la clinique nationale ophthal. de l'hospice des Quinze Vingts, 1887, v, No. 2; 1885, iii, No. 3.

[2] Arch. f. Ophth. (Graefe's), 1887, xxxiii, 3.

While the ultraviolet rays generally cause intense conjunctival irritation, the crystalline lens, as a rule, prevents them from affecting the retina, the lens itself becoming intensely fluorescent, as originally shown by Widmark. That this fluorescence is to be attributed exclusively to the ultraviolet rays is proved by the fact that if a glass which will absorb the rays, such as the euphos glass discovered by Schanz and Stockhausen,[3] is placed between the eye and the source of radiation, the fluorescence disappears, only to reappear again when the glass is removed, and at the same time there occurs a reflex closure of the lids in the animal. It is now recognized that the spectrum is lengthened toward the ultraviolet side after cataract extraction, and that the erythropsia occurring in these cases is due to the influence of the ultraviolet rays on the retina. It may also occur, however, in normal eyes, as Fuchs and others have observed, when a dark hut is suddenly entered after prolonged trips among glaciers. Experiments made on the aphakic eyes of rabbits by Birch-Hirschfeld[4] have shown that, after the eyes have been exposed from half to three-quarters of an hour to the ultraviolet rays from an electric light, retinal changes appeared, characterized by a solution of the chromatin substance of the ganglion cells, the formation of vacuoles in the protoplasm, and loss of chromatin in the nuclei of the inner nuclear layer, and a bleaching and change in structure in the nuclei of the outer nuclear layer. The absorption of ultraviolet rays by the lens has furthermore been substantiated by Schulek, Hertel and others.

PROTECTION OF THE EYES FROM THE ULTRAVIOLET RAYS

The large number of theoretical data which have been obtained in the search for the proper coloration of glass as a means of protecting the eye against ultraviolet rays, particularly those of from 300 to 400 mm. wave length, largely depend on animal experimentation, the human eye being obviously unfit for such investigations. And yet, after all the painstaking experimentation on the part of such singularly astute observers as F. Schanz and K. Stockhausen,[3] the astonishing assertion is made by them that, although their euphos glass succeeds in absorbing the ultraviolet rays, it is more practical to use it for the manufacture of lamp chimneys, electric light bulbs, etc., than to employ it for the manufacture of spectacle lenses. Furthermore, while the discovery of this glass fulfills the purpose of protecting the eyes from ultraviolet rays, it is admitted that it is not a matter in indifference if the eye is entirely removed from the influence of the rays.

While theoretically, and scientifically, much has been done toward solving the matter, the practical side of the question is, after all, the one toward which we must look for an answer, once more illustrating, what has so often been found in the development of medical science, that an empirical fact is often the forerunner of a scientific discovery. Vaccination was discovered long before the theories of immunity were established on a scientific basis, nor could it wait for a theoretical corroboration; quinin was discovered as a specific for malaria long before the microscope became trained on its etiologic factor; likewise many therapeutic measures were discovered and successfully employed long before their scientific status had been established.

AMETHYST-TINTED LENSES

As stated above, the amethyst-tinted lenses had their inception in my observations of the sun-colored glass. The only mention in literature that I have been able to find relating even to the experimental use of window glass is that of Widmark, who found that the interposition of a piece of window glass 2.5 mm. in thickness between the source of light and the eye lessened the severity of the symptoms. It does not state, however, whether this piece of window glass had previously been exposed to action of sunlight. F. Schanz and K. Stockhausen also tried the experiment with a piece of plate glass 18 mm. in thickness, using an arc lamp very profuse in its ultraviolet radiations, but in their experiments the symptoms were not materially influenced. It is possible that the plate glass in their case had never been exposed to sunlight, while the window glass of Widmark probably had.

As the amethyst window glass of Philadelphia is becoming continually scarcer, efforts are now being made to procure the coloration by artificial means. I am not yet prepared to state whether the artificial glass will have the same therapeutic effect as that naturally colored, but this will be a subject of future observation.

I have graded the color into various shades, calling them 1, 2 and 3, respectively, and am using them according to the manifest clinical conditions.

The glass can be used in the manufacture of lenses of all foci and curvatures.

THERAPEUTIC INDICATIONS AND RESULTS

The results which I have obtained from amethyst-tinted lenses date back to their employment in the case of dentists afflicted with goldblindness and cover an experience of over twenty years. In cases of asthenopia the results have been most gratifying. In the case of printers, typewriters, students, seamstresses, and all those who are required to apply the eyes closely under artificial illumination, prompt and permanent relief was afforded, especially when the amethyst tint was incorporated with correcting lenses. Especially in asthenopia of anemic women the results were most satisfactory; like results were obtained in other cases of ocular fatigue. No. 1 tint is prescribed in all mild forms of asthenopia; No. 2 and 3 in severer forms. As the severe cases become relieved I change to No. 1 color, and these are then worn indefinitely. After wearing even the pale tint the patient does not care to go back to the colorless glass. The glass has been prescribed with great relief to those whose eyes are exposed in *x*-ray laboratories. In one case a patient of mine who had been almost blind for red, as a result of continually working on that color in a factory, was promptly and permanently relieved by amethyst tint No. 3. On my recommendation many of my friends have prescribed this glass and have met with the same beneficial results.

I have requested various opticians of Philadelphia to furnish lists of the number of prescriptions for amethyst lenses, filled during the last five years, and as nearly as we could ascertain there were about three thousand. A majority of these prescriptions were given by Philadelphia ophthalmic surgeons and in many instances they came from elsewhere. The records also show that the demand for these glasses is increasing monthly.

Whether the production of the amethyst tint by sunlight or its reproduction by artificial means imparts a quality to the glass which acts as an immunizing agent against the harmful effects of excessive ultraviolet rays, or whether the beneficial results obtained depend on purely spectroscopic principles, future observations will determine.

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[3] Arch. f. Ophth. (Graefe's), lxix, 49.

[4] Trans. German Ophth. Society, Heidelberg, Sept. 14, 1903.

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ABSTRACT OF DISCUSSION

Dr. Nelson M. Black, Milwaukee: Dr. Fox states that "artificial illumination, especially when considered from an economic standpoint, is undoubtedly the chief factor responsible for the various ocular affections attributed to the ultraviolet rays." From this statement it is assumed that Dr. Fox considers the cause of "the various ocular affections" to be the ultraviolet rays emanating from artificial illumination.

It is a well-known fact that serious and lasting eye lesions have been induced by exposure of the eyes, even when protected, to light rich in ultraviolet rays. This is, however, usually the result of experimenting with the various arc lamps or the result of drilling armour plate with an electric arc.

Dr. Charles P. Steinmetz, probably the greatest authority in the world on electricity, in his lecture on the "Physiologic Effects of Radiation," speaking of ultraviolet rays, says:

"While artificial illuminants, and especially metal arcs, give an appreciable amount of ultraviolet light, these ultraviolet rays extend only to about one quarter octave beyond the visible violet, if, as always the case, the illuminant is enclosed by glass; the harmful effect of these long ultraviolet rays is negligible; the radiation of the sun also contains ultraviolet rays, and a large percentage, compared with the total radiation, than any glass-enclosed artificial illuminant, and as the light of the sun, that is, daylight, is recognized as perfectly harmless, as far as this specific destructive action is concerned, the same applies to the artificial illuminants, as they contain less ultraviolet rays than the light of the sun."

The above statement would make it seem that the agitation at present going on about the injurious effects of ultraviolet rays from commercial illumination is without rhyme or reason, and while the ocular discomfort which Dr. Fox has succeeded in relieving with amethyst lenses is undoubtedly due to close use of the eyes under artificial illumination, we can find the primary causative factor within the visible spectrum. This theory is founded on four main considerations: (1) The fact that sufficient ultraviolet light does not emanate from the commercially employed sources of artificial light to produce the ocular conditions mentioned in Dr. Fox's paper; (2) the effect of monochromatic light on the visual purple of the eye; (3) the fact that the amethyst-tinted lenses relieve the ocular discomfort of individuals who have vocations requiring close use of the eyes under artificial illumination, such as clerks, typewriters, printers and seamstresses; (4) the spectroscopic analysis of the amethyst-tinted glass used by Dr. Fox.

Dr. William Churchill, of the Coming Glass Company, to whom I submitted a sample of this amethyst glass for spectroscopic analysis, writes: "This amethyst glass cuts out a certain proportion of the greeenish-yellow light of the spectrum; I should say, roughly, 10 or 15 per cent."

To summarize: The visual purple or protecting tissue of the retinal elements is rapidly bleached or used up by the greenish-yellow rays emanating from artificial illumination which is reflected into the eyes from material having a high degree of reflection. This visual purple can be reproduced only by exclusion of light. The eye is exposed for long intervals day after day to this reflected light; the pigment is rapidly used up and does not have a chance for reproduction; as a consequence the retinal elements are exposed to constant source of irritation which finally results in the ocular conditions mentioned by Dr. Fox.

Dr. Mortimer Frank, Chicago: Dr. Fox and Dr. Black have evidently overlooked the valuable contribution on the subject of the action of sunlight on glass by Thomas Gaffield, before the Society of Arts of the Massachusetts Institute of Technology, at a meeting held in January, 1881. Gaffield's experiments were conducted over a period of ten years, and his conclusions can still be considered.

In Gaffield's experiments every specimen of colored glass exposed for ten years showed some change of color or tint, except some white flint glass, such as is used for fine glassware and optical glass, which showed only a very slight change of tint, leading him to think that the oxid of lead entering largely into the composition might act as a protecting shield against change by sunlight exposure. It is a curious fact, noticed by Pelouze and Percy, and confirmed by Gaffield's experiments, that with a few exceptions among the colored specimens all the glasses changed in tint or color by sunlight exposure can be restored to their original color by the heat of a glass-stainer kiln, and can again be colored after a second exposure to sunlight, and that this coloration by sunlight and decoloration by heat can be carried on indefinitely.

Gaffield, in his experiments, took notice of the part which some of the metallic oxids play in the coloration of glass, and which manganese plays in its coloration and decoloration. He suggested that the explanation of this wonderful alchemy of sunlight, whatever it may be, and however accomplished, is probably attended by two circumstances; first, by an interchange or a redistribution of the oxygen among the constituent materials of the glass; and, second, by the development in consequence of this redistribution of the special coloring power of the metallic oxid, which has the greatest affinity for oxygen, or stands in the greatest proportion to the other constituents.

In the early days the color of glass was slightly greenish owing to iron being present; to remove this color manganese was added. Under the action of sunlight the manganese became liberated and gave the violet color. We know that glass is more or less opaque to ultraviolet rays, and with that knowlelge we ought to be very careful in ascribing therapeutic results from amethyst glass to any unusual feature of the lens and overlook the psychologic element which might be obtained from its use.

Dr. Walter L. Pyle, Philadelphia: I have prescribed amethyst-tinted lenses for probably ten years, but I think with less and less frequency. I have, however, undoubtedly had numerous cases in which the results have been most remarkable. Of course, in considering these results we have to discount the psychologic element and also the careful correction of refraction at the time of last prescription. My best results have been among patients who must either read, write or do some fine manual work under an intense artificial white light, such as the Welsbach or the Nernst lamp. Contrary to my first expectations, I have not had the best results in cases of general photophobia in bright daylight. In this connection I wish to lay stress on one point particularly—it is necessary to use the *naturally* tinted lens. The artificial substitutes that I have seen have a preponderance of red tint which seems to destroy their value. There must be an abundance of amethyst-tinted glass all over the United States. In Philadelphia whenever there is an old building dismantled the opticians are on the lookout for this old window glass. If the members of the section prescribe lenses other than those of the naturally tinted glass, particularly the artificial product imported from England, I am sure that they will be disappointed in their results. In agreement with Dr. Fox, I believe that in obstinate cases of photophobia, and in special cases, such as dentist's work on gold, the natural amethyst-tinted lenses are well worth a trial.

Dr. C. H. Williams, Boston: I remember being present at the meeting to which Dr. Frank refers at which Gaffield's experiments were shown, and it was a beautiful demonstration of the effect of sunlight on glass. Where the glass was protected from the sunlight it did not develop the amethyst color. I should like to ask whether any comparison has been found between the amethyst glass and the yellow amber glass and the Fiengal glass, which cut off more particularly the blue and ultraviolet rays. My experience is that they give special relief in these cases of sensitiveness of the eyes to light. There is another glass which has not been mentioned which I find in many cases still better. It is made at the Jena works in Germany and is a heavy lead glass. Ordinary glass has an index of refraction of 1.5. This new Jena glass has an index of 1.9. It is very heavy and cuts off much of the blue and ultraviolet rays. It has a little yellow tinge but very much less than the amber glass. The disadvantage is that it is very heavy and, being soft, scratches easily. In some cases of extremely high myopia I have had the best results and the patients have worn spectacles made from this glass with greater comfort than any other kind.

Dr. Barton Pitts, St. Joseph, M.: I have never found any beneficial effect from colored glasses no matter what color or tint used, otherwise than in special extraneous conditions; that is, in exposure to intense furnace heat, and to reflected sunlight on the water, and in pathologic conditions, such as supersensitiveness of the retina and conjunctiva from irritation. Colored glasses in such conditions as those referred to, afford some satisfaction. The health ray lens, manufactured in my section of the country, is of no especial virtue so far as I have been able to observe, nor is any tinted lens otherwise than from the psychologic effect. I believe the clearer and more perfect the lens for refraction of the ordinary rays of light by which we are surrounded, the better it is adapted for all practical purposes.

Dr. George Friebis, Philadelphia: Suetonius says that Nero, who was quite myopic, used an amethyst lens whenever he wished to see or identify an object. Suetonius, the most competent authority of that period, states that the amethyst lens was used in order to see clearly in cases of photophobia.

Dr. Walter L. Pyle, Philadelphia: My remembrance of Suetonius is that Nero used an emerald, likely of concave curvature, to improve the vision of his myopic eyes. This, I think, is also Prof. Hirschberg's belief.

Dr. George Friebis: I have just had a discussion with Dr. Bullitt, and he is also under the impression that it was an emerald instead of an amethyst which Nero used. I believed that it was the amethyst lens, although both gentlemen say I am probably in error and I am indebted to them for the correction. I simply wished to call attention to the fact that colored lenses are historic and were used as long ago as Nero's reign.

Dr. Edward Stieren, Pittsburg: The earliest account we have of the use of a tinted glass dates from Nero's time, who, being an albino, wore an emerald when viewing the gladiatorial contests. The present-day need is not for relief from daylight, as Dr. Fox has so clearly stated, but to relieve tired, aching eyes from the baneful effects of the newer electric and gas lights with their added richness in ultraviolet rays. I personally derive great relief from an amber-tinted lens; as a grateful patient remarked to me several years ago, "I wear my clear glasses outside and my amber glasses in the office. As soon as I put the latter on my eyes feel as refreshed as though I had bathed them in cold water." It is just such a relief that my eyes experience when I change to my tinted glasses after a busy day with the ophthalmoscope. The reported discovery of two Germans, Shanz and Stockhausen, of a glass impervious to the invisible radiations from light sources but perfectly transparent to luminous rays is highly interesting and opportune. With a flaming arc or Nernst lamp thus encased the acme of illumination can be obtained minus the present harmful effect.

Dr. L. Webster Fox, Philadelphia (closing): I wish to thank Dr. Black for the very interesting contribution which he has made to the scientific side of my paper, and I am also indebted to Dr. Frank for his information concerning the investigations on amethyst glass made by Garfield, of Boston, in 1881. In answer to Dr. Williams, I would say that my experience with amber glass is limited. In those patients by whom it was used it did not relieve the "hyperesthenia of the retina" as quickly as the amethyst glass. Neither did the amber glass suit the pink cheeks of the ladies of Philadelphia, who are famous for their beauty, which is certainly enhanced by purple hats, bonnets and dresses, and last but not least by amethyst-tinted glasses. This makes a harmony of color which is not only gratifying to the patient but also to her friends.

The Absorbing Capacity of the Animal Skin for Salicylic Acid and Sodium Salicylate.—Georg Schumacher (Inaugural-Dissertation, Giessen, 1908), says that the intact skin of horses, cattle, dogs and rabbits is permeable for salicylic acid either in the form of salts or in alcoholic solution. Sodium salicylate either in the form of salves or in alcoholic solution is likewise absorbed by the intact skin of these animals. The absorbed salicylic acid appeared in the urine, on an average, in two hours after application as a salve with neutral lard or lanolin as base, or as an alcoholic solution. The excretion of salicylic acid continued for approximately two days when it was applied as a salve.

REFLEX AURAL NEUROSES CAUSED BY EYESTRAIN

WITH REPORT OF CASES *

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Although nearly all the ills that flesh is heir to, not excepting dysmenorrhea, dysuria, sterility and habitual constipation, have been ascribed to eyestrain, but scant consideration has been given to the influence which, not very rarely, it exerts on the auditory apparatus. So scant, indeed, is this consideration that, though I am sure the matter has been treated of, I have been unable to find mention of it in any treatise on diseases of the eye or the ear at my command, or a single reference to it in the titles of papers contained in the Index-Catalogue of the Surgeon-General's Library.

I have heretofore, in enumerating the less common consequences of eyestrain, mentioned tinnitus aurium as one of them,[1] and in the discussion of a paper on "Objective and Subjective Tinnitus," presented to the American Otological Society, in 1896, by Dr. Alexander B. Randall, I reported a case of this character observed several years previously.[2] Since this first observation the subject has been of interest to me, and I am convinced from the number of cases of similar character which I have encountered in the interim that it is one deserving of greater consideration than it has hitherto received.

While tinnitus is the aural reflex that I have most frequently observed, as a result of eyestrain, it is not the only one. Others that may be mentioned are a "muffled" or "stuffed" sensation in the ear, pain, not severe, and as often felt around and in front of as in the ear, and impairment of hearing, which the tuning fork seemed to indicate was due to disturbance of the perceptive rather than of the conducting apparatus. Whether, as well, the vertigo recognized as a by no means unusual symptom of eyestrain, and which was present in several of my cases, deserves to be regarded as an aural reflex I am not prepared to say, though it seems not at all improbable that the derangement that gives rise to it is in the semicircular canals.

Of tinnitus due to eyestrain I have observed three distinct varieties—the more usual or vascular type, the relatively low-pitched, whirring or fluttering sound caused by irregular contractions of the tensor tympani, and the high-pitched, almost musical, intermittent tinkling produced by like contractions of the stapedius muscle.

The evidence in favor of the ocular origin of the aural sensations enumerated is, first, their disappearance after relief of the eyestrain; second, that the ear affected—for the sensations were commonly unilateral—was usually the one on the side of the more troublesome eye, and, third, that they often became more pronounced when the eyestrain was most annoying, or were brought on, or at least intensified, by use of the eyes. The ocular fault often present was astigmatism, sometimes of high degree and associated with other marked refractive errors, though in some instances it was chiefly heterophoric.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Prevalent Diseases of the Eye, p. 390.

[2] Tr. Am. Otol. Soc., xi., 365.

Politzer remarks, in his exhaustive and interesting discussion on "Subjective Sensations of Hearing," that such sensations are "occasionally produced reflexly from the trigeminus,"[3] and this doubtless is the explanation of those which are caused by eyestrain.

The nerve supply of the tensor tympani is derived from the motor branch of the fifth nerve; the stapedius receives a twig from the seventh, and it is as easy to comprehend how eyestrain may produce irregular contractions in these two muscles as in the orbicularis, which, as is well known, it often does.

The more subjective and more usual varieties of tinnitus, when caused by eyestrain, as well as the impairment of hearing which sometimes coexists, are to be explained, in all probability, by a vasomotor disturbance of the intralabyrinthine blood vessels. The "muffled" or "stuffed" sensation in the ear, not infrequently complained of, may be similarly explained, or, like the otalgia, may be due simply to a reflex irritation of aural branches of the trigeminus, of which familiar examples, such as otalgia dentalis, might be cited.

I have the notes accessible of about twenty cases of subjective aural sensations which, it seemed probable, were produced, in part at least, by eyestrain. I shall, however, describe briefly but four of the most striking of these, and first I may speak of a personal experience.

Case 1.—Having inherited what may be termed a very intractable pair of myopic and astigmatic eyes, I have had occasion to adjust and readjust my glasses oftener than I care to confess. About sixteen years ago I developed a very subjective, one-sided tinnitus, which persisted for some weeks despite my efforts to rid myself of it. Finally it occurred to me that my eyes, which were giving me trouble at the time, might be responsible for it. I, therefore, readjusted my glasses, and the tinnitus promptly disappeared. Some months afterward it returned, and disappeared as quickly as before with another change of glasses.

Several years elapsed without further aural sensations, when a tinnitus of a different character made its appearance—an intermittent, whirring or fluttering sound, less subjective than the tinnitus previously experienced—which I made no doubt was caused by irregular contractions of the tensor tympani. This, too, promptly ceased when my glasses were once more modified.

More recently, with a return of asthenopic symptoms, I became aware of an intermittent clicking or tinkling sound, of high pitch, in the right ear, the previous sounds, if I remember rightly, having been heard always in the left ear. Sometimes there would be a single click, sometimes two or three in rapid succession, and again a longer succession of clicks—a not unpleasant, semimusical metallic tinkling. The sensation was much less annoying and entirely unlike that previously experienced from irregular contractions of the tensor tympani, and was, I feel sure, caused by like contractions of the stapedius muscle. As had happened before, it disappeared with a further change of glasses and relief of the asthenopia. It may be of interest to add that I have in times past been annoyed by spasmodic twitching of the palpebral fibers of the orbicularis palpebrarum.

Case 2.—Mr. N., aged 19, a student in Johns Hopkins Medical School, complained of asthenopia, chiefly in right eye, a "stuffed" feeling in right ear, a numb sensation around and in front of this ear, and occasional giddiness. Choreic contractions of the right orbicularis palpebrarum, of the levator of the upper lip on the same side, and of some one of the small muscles having to do with the nose, which caused perceptible movements of his eyeglasses, were subsequently observed.

Examination.—He was found to have a low grade of hypermetropia, slightly greater in the right eye, and a very high degree of left hyperphoria.

Treatment.—Notwithstanding the great amount of hyperphoria shown by the tests—from 10 to 16 degrees in distant, and from 20 to 22 degrees in near vision—he was not inclined to accept a very considerable prismatic correction. Spheroprismatic lenses correcting his manifest hypermetropia and but 4° of the hyperphoria were, therefore, prescribed. These for a time afforded a measure of relief. Subsequently, I performed a "guarded" tenotomy on the left superior rectus, reducing the hyperphoria by about 8°, and this, supplemented by the glasses, which he continued to wear, was followed by more decided relief as to both the asthenopia and the reflex symptoms.

Result.—The relief, however, was not complete, and has not proved lasting, and as the residual hyperphoria is still marked, I am waiting for an opportunity of a short rest from work, which he will soon have, to tenotomize the right inferior rectus. I may add that the patient notices a definite improvement in the aural manifestations from even a brief rest of the eyes from near work, and, further, that his hearing is not impaired.

Case 3.—Mrs. R., aged 37, consulted me in November, 1908, complaining of asthenopia, headache, giddiness, a "stuffed" feeling in the ears, and of bilateral earache, which had manifested itself only a short time previously. She was found to have compound hypermetropic astigmatism, and glasses, for constant use, were prescribed as follows:

R. eye + .62s ⌒ + .25c 100°
L. eye + .50s ⌒ + .37c 100°

She was requested to report the effect produced, and, on January 5, wrote me: "I have found a great deal of relief from headache and dizziness by the constant wearing of the glasses. I have suffered no inconvenience from earache, and have at no time since seeing you noticed any muffled feeling in my head."

Case 4.—Mr. S., aged 45, of distinctly neurasthenic temperament, complained of tinnitus, occasional giddiness, a "stuffed" feeling in the ears, nervousness, and "severe pain in the head." Attempts to use the eyes in reading, he said, increased the tinnitus and nervousness. The pain was more severe on the right side of the head, the noise louder in the right ear, and in addition to the tinnitus, which was constant, he occasionally experienced a "clicking" sensation, usually in this same ear.

Examination.—He was wearing, in far and near, + 1.s lenses, prescribed by a well known New York oculist. His hearing was practically normal for watch and voice, and the tuning fork showed nothing worthy of note. With his glasses on, the muscle balance was normal, except that he had only 1/2° of exophoria at the reading distance. Compound hypermetropic astigmatism, against the rule, was easily made out; but, as the ciliary muscles were very irritable, a cycloplegic was employed.

Treatment.—As a result of several tests, glasses were prescribed for distance as follows:

R. eye + 1.75s ⌒ — .50c 95°
L. eye + 1.75s ⌒ — .37c 75°

and for reading the sphericals were increased in strength .75D. Three months later the correction for distance was changed to:

R. eye + 2.37s ⌒ — 1.12c 97½°
L. eye + 2.12s ⌒ — .50c 70°

and + .62s was added for near vision.

Result.—As a result of this change, his asthenopia and head pains were relieved, and after a few weeks, ammonium chlorid having been administered in the meantime, he reported the tinnitus as appreciably lessened, and as having become intermittent.

Subsequent History.—Nearly four years elapsed without the patient having further occasion to see me, when a return of asthenopia from near use of the eyes, occasional headaches, failing vision for small print, and "some tinnitus," which he was not disposed to admit he had ever been entirely rid of, led him to seek further advice. An increase of .12 D in the astigmatic correction of the right eye was found to be indicated and, of course, a considerable strengthening of his presbyopic lenses. This was two years ago and he has not consulted me since. In reply to a recent letter addressed to him, he writes that the "noises and stuffy feelings" are better, but that he is not entirely free from them. He adds that he is now under the care of a well known psychiatrist, whose treatment has given him a great deal of relief.

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[3] Diseases of the Ear. Lea Bros. & Co., p. 772.

ADDENDUM

When the writing of this paper, except the notes of cases reported, had been completed, Dr. H. O. Reik, whom I had asked to assist me in searching the literature for anything that might have been published having reference to the production of subjective aural sensations by eyestrain, brought to my attention the paper of Dr. F. Park Lewis,[3] of Buffalo, New York, on "The Ophthalmic Origin of Otic Disturbances, with the Cerebellar Control of the Eyes." I was much interested to find my observations confirmed by those of Dr. Lewis and to note the close similarity between some of his cases and some of my own. And especially was I interested to find mention in his enumeration of aural symptoms of the sensation of "stuffiness" in the ears which I have so frequently encountered, and which, I think it will be admitted, is not a symptom often complained of in purely aural affections.

Dr. Lewis' search of the literature bearing on "The Ophthalmic Origin of Otic Disturbances," as he phrases it, evidently has been more thorough and more successful than my own, for he mentions a case of this nature described by Dr. George T. Stevens in a paper read before the International Medical Congress in 1881; a paper by Dr. Arthur A. Boyer on "The Relative Importance of Labyrinthine and Ocular Defects in the Etiology of Vertigo," presented to the Neurological Section of the New York Academy of Medicine in 1895, in which the author cites ten cases of "vertigo and lowered hearing" associated with refractive and muscular faults, and which were relieved by their correction, and, finally, a more recent article by Dr. Marcel Rollet,[4] of Blois, "De l'influence de l'oeil sur l'oreille *à* l'état normal et pathologique."

ABSTRACT OF DISCUSSION

Dr. Park Lewis, Buffalo: The subject of Dr. Theobald's paper is one of peculiar interest and one which I must say I had a little reluctance to present in the form of a paper because of its bizarre character. It seemed so unlikely that eyestrain could produce definite irritations in the ear that I hesitated until I was quite sure from repeated observations that ear disturbances had an eye origin before presenting the subject at a meeting of the American Ophthalmological and Otolaryngological Society at Cleveland. An interesting fact is that four or five men have independently had their attention called to the fact that certain eye conditions may be productive of disturbances of one character or another in the ear. Recently a case came under my notice of a woman, highly neurotic, who had a small corneal ulcer accompanied with a great deal of blepharospasm. With each contraction of the lid there was a sharp pain in the corresponding ear. That had continued two days. Cauterization and healing of the ulcer caused the pain to cease in the ear. Since the presentation of these papers I have been much interested at the voluntary suggestions on the part of the patients, of relationships between the ears and the eyes. Recently a patient told me that whenever she had drops put in the eye of a cycloplegic character she had a moisture in the ears. Another patient volunteered the information that when he put on glasses at the theater there was a sensation of confusion and deafness and he was obliged to take the glasses off. This may or may not mean anything, but I am inclined to believe that we will be surprised to find how many instances occur in which like conditions are found to be present. The value of this observation lies in its application. It is not merely a curious and interesting thing to note from time to time that there is a relationship between the eyes and ears, but if we get a sufficient number of cases a study of them may make it possible to determine some of the unknown pathways through which impressions are carried from one sense organ to another, and it is possible that we may find that some intractable ear conditions may have been influenced, if not produced, by eyestrain as an exciting cause.

Dr. E. E. Holt, Portland, Me.: My experience in the treatment of tinnitus aurium and allied affections coincides with Dr. Theobald's to a large extent. These affections of the ear are among the most common and troublesome the otologist is called on to treat. In the early practice of otology, treatment for the relief of tinnitus was almost wholly directed to the external and the middle ear. In many patients who had been the rounds of different practitioners and all had been done for them that seemed possible the tinnitus would still persist. Considering the marked relief given to disturbances of the nervous system by the correction of ametropia, I began testing the eyes of such patients about twenty years ago. This test was often made against the will of the patients, for they would insist that the eyes were all right. When, however, a sufficient error was found and lenses were worn for its correction relief would be given to the tinnitus aurium. We know that we give relief to affections of the eye and ear from the treatment of the nose and it seems to me that in the treatment of affections of these organs we should examine all parts and organs to which the fifth nerve is distributed. I did not know that any one had made reports relative to the correction of ametropia for the relief of tinnitus aurium. I continue the practice of examining the eyes of all patients who come to me complaining of tinnitus aurium and allied affections and prescribe glasses with excellent results. In fact, I give as much relief from having my patients wear glasses as from any other single remedy prescribed.

Dr. Lucien Howe, Buffalo: Although I do not think the cases are so very rare of tinnitus following efforts at accommodation, probably the explanation which the Doctor gives of the phenomenon is the right one, and as we contract one set of muscles by association we also contract another set. Just a word of criticism in the use of the term "eyestrain." I think we should do away with that term or else consider it simply the result of some pathologic condition. Thus we have astigmatism in most cases as the underlying cause. It is this which disturbs the normal balance, and produces what, for lack of a better definition, we may call imbalance. It would seem better if we could thus unify our nomenclature and get rid of some confusion.

Dr. Samuel D. Risley, Philadelphia: To me, the interesting fact in Dr. Theobald's paper, and the reported cases, is the demonstration it affords of the intimate relation existing between the special senses. In the normal individual with model special sense organs there is a concordance of function which is of great importance to his comfort. In health the sense organs are in tune, to borrow for illustration an expression from another branch of science, and they act in harmony, flowing or overflowing mutually. For example, a famous musical composer called a certain opera his "yellow dog," and to me certain high notes on the piano or violin have always given the sense of pale violet. It is quite conceivable that derangement of function in any one of the special sense organs may lead to discord in the symphony of the senses, one of the illustrations of which Dr. Theobald has presented to us, naming it "reflex aural neuroses caused by eyestrain." I have seen a high pitched, whistling tinnitus, in a healthy ear, disappear at once after the correction of hypermetropic astigmatism. It is not always easy to differentiate between the senses of taste and smell. One can experimentally upset the concord between the special sense organs by placing a prism base down before an eye and then make the attempt to walk on a crowded street or to ascend the stairs.

Dr. S. Theobald, Baltimore: I have nothing to add except a protest against the criticism of the term eyestrain. It exactly expresses what I want to convey, and it would be difficult to suggest a better term to describe it.

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[3] Ann. Ophth., January, 1909.
[4] Rev. hebd. December, 1908.

ACCOMMODATION AND DONDERS' CURVE AND THE NEED OF REVISING OUR IDEAS CONCERNING THEM *

[Editor's Note: The article with the above title, by Dr. Alexander Duane, Denver, appeared in The Journal, June 19, before the discussion thereon had been submitted to the speakers for correction. The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

Dr. Edward Jackson, Denver: An experimental study like this valuable one is of practical interest largely in proportion to the near resemblance of the results obtained by laboratory tests, with those secured by methods in ordinary clinical use for the measurement of accommodation. That the resemblance is here a close one is brought out by comparison with a paper I published three years ago giving the results of testing the accommodation in 3,643 persons ranging from 5 to 70 years of age. In all of these cases the static refraction had been carefully measured for the prescription of correcting lenses, and the near point was determined, not with a special test object as in the investigation of Dr. Duane, but with fine print visible to the normal eye at 10 or 15 inches. The sources of error in such examinations referred to in the paper now under discussion were guarded against by instruction of the patient and repetition of the tests.

The results which I reported have here been reduced to a chart, a reproduction of one used to illustrate my paper, modified for comparison, by estimating the accommodation by the distance of the near point from the anterior focus of the eye, as Dr. Duane has done. Personally, I prefer to estimate the distance from the anterior principal point of the eye, at which point the ocular refraction may be taken as occurring. In any case, the real point of departure has to be the summit of the cornea, and it is quite as easy to estimate from 2 mm. back of the corneal surface as from 13 mm. in front of it. While the principal point gives us a more just conception of the true relations of the amount of accommodation at different ages, especially when the accommodation is strong as in early youth. When it comes to prescribing glasses to supplement the accommodation of the presbyope these are so weak that the distance between the anterior focus and the anterior principal point makes no practical difference (one-tenth diopter for a 3.D. lens) and may be wholly disregarded. However, my chart was constructed on the same plan as Dr. Duane's.

You will note that throughout the results of the two studies of the subject correspond closely, more closely to each other than either does to the chart of Donders. My curves, based on the larger number of cases, show, as would be expected, wider departures between the maximum and minimum and a greater regularity of averages.

My statistics include the minimum powers of accommodation found at the different ages, except in connection with well-marked oculomotor paralysis or acute diseases. Many of the cases might be criticised as distinctly abnormal. And yet it is impossible to draw any sharp line of demarcation between the normal and the abnormal cases, except that line be purely arbitrary. By any scheme the latitude for normal variations of range of accommodation is a wide one. And when the accommodation is about equal in the two eyes; and there is no pronounced ocular or general disease to influence it. The assumption seems fair that the restricted accommodation is due to the same factors, which normally limit the accommodation range.

Of the conclusions reached by Dr. Duane, I would call special attention to the seventh: The discovery several years ago that an important range of accommodation might be retained to very advanced age was quite a surprise to me. It will be noted that I give the maximum at 70 years as 1.5 D. I have seen almost or quite 1. D. at 80 years of age. Some of these remarkable cases I have studied very carefully by skiascopy as well as by the ordinary method, making an objective determination of the near point and excluding any influence of a narrowed pupil, or of differences of refraction in different parts of the pupil, that might give the impression of a range of accommodation that did not actually exist. But these cases of the persistence of an important range of refraction to such advanced age are exceptional. On the other hand, are the exceptional eyes, that I must regard as normal, which lose all power of accommodation by the age of 45 or 50. A good many eyes have lost all accommodation before 60, although the persistence of accommodation at this age is much more common than is generally supposed.

With regard to the rather rapid decline of accommodation at certain periods, shown in Dr. Duane's charts, and still more strikingly exhibited by the charts of accommodation of individual cases, there is this to be said: They are probably due, at least to a large extent, to strain of accommodation and to temporary departures from health of the individual. I would regard them as more distinctly abnormal than the low minimums of accommodation that I have admitted in my statistics. The chart shows such a rapid drop between the ages of 40 and 50, when a very large number of people are straining their accommodation to put off the evil day of wearing glasses for presbyopia, or of changing to "stronger" glasses. After adjustment of the proper glasses I have many times seen the decline of accommodation wholly cease for two or three years, and in not a few cases there has been a gradual increase of accommodation extending over several weeks or months. Finally, without detracting from the just fame and pre-eminence of Donders, based on the work that he did in this connection, we can congratulate the section that in this experimental study presented by Dr. Duane there has been a distinct advance in this important field of practical ophthalmology.

Dr. Alexander Duane, New York: When I first began tabulating these cases I found a large number of very low ranges of accommodation. Examining these same patients a year afterward, I found in many instances a higher range of accommodation, and it was evident that the low range previously found had been due to temporary causes in many cases of neurasthenia. That is, I found a neurasthenic weakness of accommodation, which was in a way characteristic, and also found that when the patient's general condition improved the accommodation would come up a number of diopters and be maintained at a high point. More than that, I found that by systematic practice with the test-object described the accommodation could actually be stimulated in these cases. I do not mean, of course, that this could be done in cases of real paresis of accommodation. I mean that in the subnormal accommodation of the neurasthenic the accommodation can apparently be increased by systematic exercises and the patient's subjective symptoms can be correspondingly improved.

Now as to the rapid drop in the accommodation which the same patient may show when examined at short intervals. I agree with Dr. Jackson that in many cases this is abnormal, being due to temporary causes. The marked drop normally occurring between the ages of 38 and 50 is present in both Dr. Jackson's chart and mine, and in my paper attention is called to the fact that this drop is twice as great as Donders found in the same period.

A Herniotomy Under Difficulties.—There is a hospital in Aintab, Turkey, which is famous throughout all Northern Syria. It was established and is presided over by Dr. F. D. Shepard, a medical missionary under the American Board. He was once asked what he considered his most successful surgical operation. He replied: "An operation I once performed for strangulated hernia, in the night, in an old hovel without floor or bed or window, the patient, a man, lying on a mass of filthy rags on the ground that had been trodden by the feet of ten generations at least, my only assistant an old, ignorant woman who held the native oil lamp that gave off 90 per cent. smoke and smell to 10 per cent. of light. The operation had to be performed at once or the patient must die. He made a good recovery, thus proving the uncertainty of the microbe theory as applied to those conditions."

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Clinical Notes

MASTOIDITIS DUE TO THE MICRO-ORGANISMS OF VINCENT'S ANGINA

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NEW YORK

The following case is unique in several particulars. The character of the infection, the pathologic conditions found on operation, and the curative measures adopted were all unusual in my experience.

Patient.—M. C., a girl of 12, was admitted to the New York Eye and Ear Infirmary (service of Dr. Kenefick) and came under my care Dec. 11, 1908. The history was briefly that of a neglected running ear of several month's standing. Two weeks before coming to the hospital the child complained of earache, headache and tenderness back of the ear. A swelling over the mastoid region made its appearance, but nothing was done until the symptoms became urgent and the patient's condition bad. On examination the usual signs of a subperiosteal abscess were found. A large, soft, fluctuating mass occupied the postauricular region, and bulged into and occluded the canal so that inspection of the drum was impossible. Thick, foul pus issued from the meatus. The temperature was 101 F. and the general condition mildly septic.

Operation.—An abscess cavity containing about one and a half ounces of evil-smelling pus was opened by a small incision behind the ear. The mastoid area was then laid open in the ordinary way. The soft parts being retracted, a most unusual picture was revealed. The larger part of the mastoid cortex had disappeared, and left exposed to view a dark-red, spongy mass that filled the entire space normally occupied by the cellular structure of the bone. The dura of the middle fossa was extensively exposed, the lateral sinus uncovered from knee to bulb, and a part of the posterior bony canal wall destroyed. Throughout the spongy mass (which was taken to be partially organized granulations) were scattered small, dark sequestra, like plums in a pudding. The sinus was covered with a stringy, yellowish membrane, giving the appearance at first glance of a thrombosed and shriveled vein. Further investigation, however, showed that the sinus was not involved. All diseased tissue having been removed, the question arose as to whether or not a "radical" operation was indicated. The fact that the middle ear had not been inspected, and the presence of the unusual, gave us pause. Moreover, I hesitated to plaster back flaps on so much exposed dura. It was therefore decided to content ourselves with the simple Schwartze operation. The wound was flushed with alcohol and normal saline solution, closed above, packed with iodoform gauze and dressed.

The laboratory report showed the infection to be a mixed one. due to the micro-organisms of Vincent's angina (*Spirochæta denticola and Bacillus fusiformis*).

Subsequent History.—The patient remained in the hospital twelve days; the temperature became normal and healing progressed satisfactorily, although the dressings were foul and a most penetrating putrid odor persisted. There was a steady gain in the physical condition. The case being of some interest, the patient did after her kind, and promptly vanished on transfer to the outdoor department. She was found by Dr. Eves, the house officer, at Carteret, N. J., and a month later Dr. Reason, her family physician, kindly had her report at the clinic. The mastoid had healed, but the ear was still discharging. Examination of the pus still showed the bacteria. The patient again remained away for a month, contracting measles. During her illness the trouble in the ear lighted up and a discharging sinus appeared behind the ear. with tenderness and some swelling. On her return she was taken into the ward and a radical operation again considered and rejected as entailing too much risk. The acute symptoms abated, however. After two weeks' further dressing and treatment the sinus refusing to close, I determined to try Dr. North's lactic acid serum,[1] a supply of which the doctor kindly placed at my disposal. The treatment was carried out as follows: The aural canal and sinus having been thoroughly irrigated with normal saline solution and dried by sponging, the child reclined on the side opposite the affected ear, and the serum was simply poured into the canal until it made its appearance in the sinus behind the auricle. A sterile dressing was then applied, and the procedure repeated two days later. Under this treatment the sinus closed and the ear ceased discharging in ten days. After a short period of observation the patient was discharged with a dry ear (the drum and larger ossicles being destroyed of course) and good function, the low whisper being heard at fifteen feet.

The case suggests several observations. The character of this infection in the throat is now fairly well known. Vincent's angina is among the most tenacious and troublesome of diseases. In the mastoid cells the bacteria seem to follow a slow, insidious, but destructive career, giving rise to few symptoms until softening is far advanced. Whether or not they can attack the ear primarily is a question. My belief is that they can not, but owe their entry into the tympanum to the good offices of a preceding infection. North's lactic acid preparation must be given credit for eradicating the disease in this case. Whether it has a specific action against the organisms of Vincent's angina, and whether it will prove efficacious in the throat are questions which should be investigated. The case just related was a favorable one anatomically for the serum, since every part of the cavity could be reached and the medicament retained for a considerable time. Evidence is lacking as to whether the associated organisms described by Vincent are capable of producing the necrosis of tissue found in this case, and as to whether they occur in pure culture. R. J. Held[2] fully reported a case in which a pure culture is said to have existed, and in which there was extensive destruction, death occurring from purulent meningitis, after a radical operation had been done. Held calls attention to the characteristic and persistent odor. At the laboratory of the New York Eye and Ear Infirmary, Vincent's spirillum is found not infrequently in the pus from the middle ear, mastoid and even old brain abscess, but always in association with other organisms.

79 West One-hundred-and-fourth Street.

Hereditary Muscular Atrophy.—The condition of muscle atrophy was traced through a number of family lineages by A. Kehrer (Inaug. Diss., Heidelberg, 1909). It occurs relatively seldom and conforms to the theory of heredity as advocated by Mendel and further extended by Bing. Children otherwise sound were found to show the phenomenon. As was found by Bing for other diseases, hereditary muscle atrophy proved to be transmitted three times as often by the mother as by the father. The disease considered by Kehrer belonged to the dystrophic type of atrophy, and in the main to the scapulohumeral type. The dystrophy often extended to the back muscles, but there is reported a complete absence of nervous symptoms, as well as also all indications of pseudohypertrophy of the muscular elements. Two cases of apparently neurotic muscle atrophy are also described at length. These are considered to be hereditary or endogenous and to represent the total number of cases of such reported in the literature. A tabulation of the cases of neurotic muscle atrophy heretofore reported is given. All of these, however, are associated with tabes or other systemic disorders and are considered purely exogenous.

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[1] This is a suspension of a pure culture of lactic acid bacteria in bouillon. See North, Charles E.: Reports of 300 Cases Treated with a Culture of Lactic Acid Bacteria, Med. Rec., March 27, 1909.

[2] Post-Graduate, September, 1906.

GASTRIC SARCOMA

G. K. DICKINSON, M.D.
JERSEY CITY, N. J.

History.—For nine days Mrs. S., aged 53, an Italian who could speak no English, was attended by her physician, Dr. Stack of Hoboken, who could not understand Italian. The main observations made were: Rise in temperature, which, at the time of consultation, the ninth day, was 104 plus in the rectum, with a pulse of 110 and respiration in the twenties. The patient placed her hand on the upper portion of the abdomen, seeming there to locate the distress; examination revealed a rigidity of the recti in that region; pressure caused expressions of pain, which was, apparently, more acute at Robson's point; examination of the chest and lower portion of the abdomen elicited no evidence of lesion. A tentative diagnosis of cholecystitis was made and the patient was removed to Christ Hospital. On the tenth day of the disease rectal temperature had dropped to 101; the abdomen had softened and a lump was discovered at the left of the mesial line just below the costal margin. It was deemed advisable to proceed with operation.

Operation.—The patient was celiotomized through the right rectus. The gall bladder was found perfectly normal, containing limpid bile. There was no evidence of past inflammation of it or of the ducts. There were no calculi. The duodenum and pylorus showed no defect. The head of the pancreas was normal to the touch and was not movable. The stomach on delivery was about 17 cm. long, and on its anterior surface midway between the orifices was a nodular growth, hemispherical in shape, 4 cm. in diameter, rather purplish at apex, assuming the color and appearance of the stomach at margin. Its upper edge overlapped the lesser curvature. The stomach was completely delivered, the lesser curvature stretched open, and between clips this growth and a cuff of a centimeter was removed, requiring a V-shaped resection from the anterior wall and a partial resection of over 6 cm. of the lesser curvature. The stomach wound was closed by the usual method and the viscus dropped.

Postoperative History.—The day following the operation the temperature again went to 104, and this elevation of temperature was maintained for six days, with corresponding acceleration of pulse and respiratory movement. On the fifth day after the operation she began coughing and a plastic pneumonia of the right lower lobe was discovered, but from this on a steady convalescence was maintained and she was discharged from the hospital on the fourteenth day after the operation.

Pathologic Report.—The tumor was referred to Dr. G. E. McLaughlin, pathologist of Christ Hospital, who made the following report: "The tumor from Mrs. S., received May 17, 1909, had a distinct capsule, from which it could be shelled out without evidence of special adherence and without any penetration of gastric mucosa. Microscopic examination of the stained sections showed a rather dense mass of large spindle cells with large and well stained nuclei and with numerous capillary blood vessels. In some portions these vessels were very much dilated and of a decided angiomatous type. There was also noticed some dilatation of the lymphatics. Diagnosis: Nodular sarcoma (spindle cell) of the exogastric type."

The reason for reporting this case is the rare occurrence of sarcoma of the stomach and the fact that there are very few cases mentioned in literature in which the histologic report has been given. Hosch, out of 13,387 autopsies of stomach tumors, found six gastric sarcomas. Yates gives the proportion of spindle celled sarcomas as being 33 per cent.; the position of the sarcoma, according to this writer, is generally reverse to that of carcinoma. Fenrick reported but 53 recorded cases of sarcoma which were proved. Of these, 12 were spindle cells.

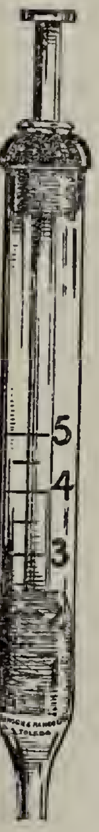
An interpreter was employed after the operation and an effort made to discover any symptoms which might be ascribed to the presence of the growth, but the patient denied any "stomach symptoms."

Of course, the febrile state preceding the operation was not explained by the findings. In conclusion, I am inclined to think that there was a hidden pneumonia which had reached a crisis on the day of the operation, and either through reinfection, or irritation of the anesthetic (ether, drop method), or through an embolic spray from the site of operation, a fresh pneumonia was established.

280 Montgomery Street.

A FILTRATOMETER

GEORGE JONES, M.D.
TOLEDO



The illustration shows a convenient little instrument which is especially useful to those making analyses of gastric filtrates.

It consists of a graduated glass barrel and asbestos-wrapped plunger, the whole apparatus being about the size and shape of an old-style urethral syringe (2 dram). I have used this filtratometer for about a year and have discarded all other pipettes. Its advantages are apparent or will be quickly seen if the instrument is used. I have found no objections to it, and repeated tests have proved that it may be thoroughly cleansed. After drawing up the filtrate, the instrument is taken in one hand, the little finger encircling the barrel above the graduations, while the thumb rests on the top of the plunger and forces the fluid to the desired level. All the fluid may then be expelled by a few short movements of the plunger.

845 Nicholas Building.

DECAPSULATION OF BOTH KIDNEYS FOR ACUTE NEPHRITIS FOLLOWING SCARLET FEVER

G. F. HARDING, M.D.
SALT LAKE CITY

History.—A boy, aged 12, had an ordinary case of scarlet fever with only a moderately high temperature and well-defined rash; was out of bed on the tenth day, feeling well and showing no signs of any complications. Urinalysis, made on the fifteenth day, showed no trace of albumin or sugar; specific gravity of 1023. Twenty days after the onset of the fever the boy was taken with severe vomiting; twelve hours later he had a hard convulsion, and passed a small amount of bloody urine heavily loaded with albumin. The boy was put in hot packs with hot linseed poultices over the kidneys, pilocarpin and digitalin given hypodermatically. This treatment was followed four successive days with no apparent benefit. On the morning of the fifth day there was complete loss of vision and hearing, and a few hours later the patient lapsed into unconsciousness, with complete suppression of urine.

Operation.—Drs. Middleton, Allen and Calderwood were called into consultation on the case, and it was decided to do a Diebold operation on both kidneys. The boy was removed to the Latter Day Saints Hospital the next morning, and under ether anesthesia both kidneys were decapsulated at the same time. They were found to be as large as an adult's kidneys, very tense and congested. On removal of the capsule the blood fairly boiled from the kidney surface, showing the very high pressure it was under.

Postoperative History.—The first twenty-four hours after operation the apparently functionless kidneys secreted twenty-four ounces of urine. On the third day sight and hearing began to return, and at the end of the first week both were normal. The kidneys were also secreting the normal amount of urine. The boy left the hospital on the eighteenth day, able to walk, and feeling normal in every way.

Therapeutics

DIABETES

The dietetic treatment of this disease is well described by Theodore C. Janeway in the *American Journal of the Medical Sciences,* March, 1909.

Before inaugurating any particular diet for the diabetic patient it is necessary to learn exactly his ability to metabolize properly carbohydrates and sugars. Janeway gives the usual caution of not making the diet too rigid for a patient whose ability to care for a carbohydrate-free diet without causing acidemia has not yet been ascertained. However, he states that patients who can not at first stand a rigid diet without the appearance of diacetic and beta-oxybutyric acids in the urine may after a period of such diet be free from such symptoms of increased systemic acidity. It is not the purpose of this article to describe the various standard diets for mild, moderately severe, and severe cases of diabetes; for these the clinician is referred to Dr. Janeway's paper.

The patient is first put on a rigid diet with the addition of a known amount of white bread, three ounces at first, a day. The amount of sugar in the urine is noted and the amount of bread generally reduced, if diacetic acid or ammonia do not appear in the urine. It is thus soon found whether the patient has glycosuria on a carbohydrate-free diet. If glycosuria persists, the patient has the disease in a moderately severe form, and the proteids are then reduced in amount. If with carbohydrate-free and protein-restricted diet the patient still passes large amounts of sugar, then the disease is severe, and the diet that will keep up the patient's weight and cause the least excretion of sugar is the one that should be selected. When the patient's urine becomes clear of sugar on the restricted diet, it will often be found that later one or more of the carbohydrate foods in small amounts may be added, he having acquired a tolerance for them. It may, however, be found that a patient with mild diabetes may tolerate one starch better than another; this should be determined by investigation.

When too little carbohydrate is ingested, or too little burned in the system, the fatty acids are burned, and may form beta-oxybutyric acid, which is perhaps often the precursor of diacetic acid and acetone.

Whenever diacetic acid appears in the urine, which is the acid product whose presence it is the easiest to determine, ordinarily more carbohydrate food should be given, and that immediately, as there certainly is danger of acidemia and coma. Diacetic acid should be tested for on every examination of the urine, and is of as much importance, or more, to the patient, as is the amount of sugar in any given specimen. The simplest test for diacetic acid is a drop of a 5 per cent. ferric chlorid watery solution or a drop of a 5 per cent. ferric alum watery solution in a test-tube one-third full of urine. A crimson color denotes the presence of diacetic acid; the more intense the color, the greater the amount of the acid.

The amount of fat that should be given to offset the carbohydrate removed from the diet must be determined for each individual patient by his ability to digest it without stomach or intestinal disturbance, and by the maintenance of his normal body weight. The more fatty meats may be advised in lieu of actual oil and fats. Janeway finds that a patient will digest more fats when alcohol is allowed him than when he does not take alcohol, and in fact finds that patients on a starch-free diet who must take large amounts of fat can not digest it without alcohol. Of course, alcohol also furnishes heat to the body.

Janeway speaks of the hunger days, or the days of low diet which has now come to be generally advised in diabetic patients, and the same is of advantage in patients with chronic nephritis. In these hunger days of diabetics various simple low nutritives may be given, as broths, some green vegetables, a little butter, a little coffee, and alcohol in some form. Sometimes skimmed milk is an advantageous diet for such a starvation day.

Such changes from much to very little carbohydrate in the food must not be made. The gradation should be gradual and not sudden, and there seems to be less likelihood of acidemia. If acidemia occurs Janeway thinks that it is not often successfully removed by allowing large amounts of carbohydrates, but certainly starches should be freely given if diacetic acid is found in the urine or other symptoms of acidemia are present. It is, however, much better so gradually and carefully to modify the diet with repeated examinations of the urine that acidemia is prevented rather than to combat it when it has occurred.

GAS POISONING

In the *Boston Medical and Surgical Journal,* May 27, 1909, Dr. Harold W. Dana, Boston, describes a method of treatment found successful in all of the six instances reported. While some of the treatment was varied in the individual cases, the main treatment to which Dana ascribes the success is the subcutaneous injection of from 1 to 2 pints of hot sterile modified Ringer's solution. The injection was always made under the breasts, and the solution used is as follows:

Calcium chlorid	.25	gram.
Potassium chlorid	.083	gram.
Sodium chlorid	7.50	gram.
Distilled water	1000.	c.c.

Other treatments which were instituted were oxygen inhalations, the hypodermic injection of 1/40 of a grain of sulphate of strychnin, hot milk by the mouth and sometimes by the rectum, sometimes brandy or whiskey, sometimes 1/100 of a grain of atropin hypodermatically, and sometimes the patient was surrounded with dry heat. Sometimes ammonium carbonate, 0.30 gram (5 grains), once in four hours, was administered. Sometimes caffein was used. A favorite mixture for administration was as follows:

℞.	gm. or c.c.			
Strychninæ sulphatis		008		gr. ⅛
Ammonii carbonatis	1	60	or	gr. xxv
Spiritus frumenti	150			fl.℥v

M. et Sig.: Two tablespoonfuls, in water, every 4 hours.

Leukemia and Kidney Stones.—F. Leclerc reports in the *Lyon Médical,* Jan. 10, 1909, a case of leukemia in a man of 55 long subject to gout and voiding gravel and stones at times. The leukemia came on two years ago, and is of the myeloid type with predominance of polynuclears over the myelocytes. Leclerc has found only three similar cases on record, which he summarizes and discusses the uric dyscrasia in connection therewith. It seems probable that there is more than mere casual coincidence between the leukemia and renal lithiasis, as recent research has revealed the part played by the leucocytes in the production of uric acid. In three of the four cases there were no signs of kidney stones until after the onset of the leukemia. It is remarkable, he says, that the coincidence of leukemia and renal lithiasis is not more frequent.

New and Nonofficial Remedies

Since the publication of the book "New and Nonofficial Remedies, 1909," the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections to aid in the revision of the matter before publication in the book are asked for.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

(Continued from page 33)

SODIUM PERBORATE—Sodii Perboras.

Sodium perborate, $NaBO_3.4H_2O$, is the sodium salt of perboric acid. It should contain not less than 9 per cent. of available oxygen.

Sodium perborate may be prepared by the action of an alkali peroxide and carbon dioxide on an alkali borate (U. S. Pat. No. 842.470) and by other methods.

Sodium perborate occurs as a white granular salt, odorless and soluble in water; the solution has a saline taste. It is decomposed by water into hydrogen peroxide and sodium metaborate, $NaBO_3 + H_2O = H_2O_2 + NaBO_2$ producing an alkaline solution. It is decomposed by catalyzers, ferments and animal tissues. Heated to 60° C. (140° F.) it evolves oxygen and when heated to a higher temperature it gradually loses all its available oxygen and water of crystallization.

On adding to 10 Cc. water in a test tube, one drop of potassium dichromate test solution then ten drops of dilute sulphuric acid and pouring a few Cc. of ether on top, the subsequent addition of a few drops of an aqueous solution of sodium perborate will cause a blue color to appear at the zone of contact of the two liquids. After shaking the ether layer will separate with a blue color.

If 0.20-0.03 Gm. sodium perborate accurately weighed be dissolved in 50 Cc. water and 10 Cc. dilute sulphuric acid added, to produce a permanent pink color, not less than 11.25 Cc. tenth normal permanganate solution should be required for each 0.1 Gm. of substance taken (indicating not less than 9 per cent. of available oxygen).

Action and Uses.—Sodium perborate is an antiseptic, deodorant and bactericide, and is used in wounds, purulent sores, varicose ulcers, etc. In general, it is used in place of hydrogen peroxide, over which it has the advantage of yielding an alkaline solution. It is applied as a dusting powder or in a 2 per cent. solution.

Non-proprietary Preparation:

Sodium Perborate Merck. E. Merck, Darmstadt (Merck & Co.).

HEMOGLOBIN—Haemoglobinum.—Haemoglobin, Haematocrystallin. The red coloring matter of blood.

Hemoglobin is a brownish-red powder, soluble in water. It is decomposed by extremely small amounts of acids, coagulates at 64° C. (147.2° F.) and is dextro-rotatory. It does not give characteristic albumin or iron reactions until decomposed. A solution mixed with a little sodium chlorid, evaporated over sulphuric acid to a syrupy consistence, mixed with 15 times its volume of glacial acetic acid and heated on a water bath for several hours, yields on cooling flat rhombic crystals of haematin hydrochloride with a dark violet red color and metallic luster.

Action and Uses.—See organic iron. It is converted into hematin in the stomach.

Dosage.—0.3 to 2 Gm. (5 to 30 grains).

OSMIUM TETROXIDE—Osmium Tetroxidum.—Osmic acid, Osmium anhydride.

Osmium tetroxide, OsO_4, the anhydride of a theoretical acid, is obtained by the action of nitrohydrochloric acid on osmium.

Osmium tetroxide occurs in the form of white or yellowish crystals which are slowly soluble in water (1-50); it is also soluble in alcohol and ether but the solutions decompose. Osmium tetroxide melts at 40° C. (104° F.) and boils at about 100° C. (212° F.). It vaporizes even at ordinary temperatures yielding very irritating and extremely poisonous vapors, attacking the eyes and lungs. It is decomposed by contact with organic substances. (Brit. Codex, 1907).

From aqueous acidified solutions of osmium tetroxide, hydrogen sulphide precipitates brown osmium sulphide, OsS_4 which is insoluble in ammonium sulphide. An aqueous solution of osmium tetroxide decolorizes indigo solution. Iodine is liberated from potassium iodide solutions by osmium tetroxide. Treated with sulphuric acid, aqueous solutions of osmium tetroxide become yellow, turning to brown and finally becoming blue; tannic acid produces a red color becoming brown; ferric chlorid and alcohol reduce osmium tetroxide to the metal osmium.

Action and Uses.—Intraneural injections are used to produce degeneration of nerves for the relief of persistent neuralgias. The treatment is best applied by injecting ½ to 1 Cc. of a fresh 1 to 2 per cent. solution directly into the, preferably exposed, nerve. The result is sometimes immediate, but more commonly it is not complete until after one or two weeks, or it may even fail entirely. If successful, the effects may persist for several months, when it may become necessary to repeat the injection as the cure is rarely, if ever, permanent. The local reaction is always painful, but not serious. It is not advisable, perhaps, to use osmium tetroxide in renal disease.

DEXTROSE.—Saccharum Amylaceum.

Dextrose, $C_6H_{12}O_6 + H_2O$, is a carbohydrate prepared by the action of dilute acids on starch; it also occurs naturally.

Dextrose containing a molecule of water of crystallization occurs in white crystalline masses. It is soluble in its own weight of water at 15° C. (59° F.); in 50 parts alcohol (85 per cent.) at 17° C. (62.6° F.) and in 11 parts at the boiling temperature.

An aqueous solution (1-10) of dextrose should yield after the addition of dilute nitric acid not more than a slight turbidity with either barium nitrate or silver nitrate; and after the addition of ammonia should produce no precipitate with ammonium oxalate.

An aqueous solution (1-20) of dextrose should not change when heated with hydrogen sulphide.

Action and Uses.—Dextrose is quite readily digested and may be used in place of cane sugar as a food.

Dosage.—180 Gms. (6 oz.) daily.

THORIUM NITRATE—Thorii Nitras.—Thorium nitrate, $Th\ (NO_3)_4 + 4H_2O$, is the thorium salt of nitric acid.

Thorium nitrate occurs as white crystalline granules or lumps. Very soluble in water and alcohol. On calcification yields a voluminous, white oxide, which should amount to 48-50 per cent. of the original salt. The aqueous solution dries over sulphuric acid to a crystalline mass.

An aqueous solution gives a white precipitate with ammonium carbonate, the precipitate being completely soluble in an excess of the precipitant. The aqueous solution gives with caustic alkalies a voluminous precipitate of the hydroxide insoluble in an excess of the precipitant. The presence of tartaric acid prevents the precipitation. Potassium ferrocyanide produces an amorphous precipitate.

Action and Uses.—The soluble thorium salts bear a close resemblance to alum in their local astringent and irritant properties. They are not absorbed from the alimentary canal. Hypodermically, they cause local sloughing, and intravenously, they kill by coagulating the blood. The non-precipitant double salts are practically non-toxic, even intravenously. They are excreted by the kidneys. Thorium salts are fairly radioactive. They have been recommended for local application in malignant diseases and thorium emanation has been inhaled in phthisis. Reliable evidence as to the therapeutic value of thorium salts is lacking.

Dosage.—A solution of thorium nitrate (1 to 5) is neutralized with ammonia and allowed to stand in a bottle four-fifths full; the emanation that accumulates in the vessel is inhaled (Br. Codex).

OIL OF PINE NEEDLES—Oleum Pini.—Oil of Pine (British Pharm., edit. 8), Oleum Pini Pumilionis (Pharm. Austriaca, edit. 8). The oil distilled from the fresh leaves of Pinus Pumilio, Haenke (British Pharm., edit. 8).

Oil of pine occurs as a colorless or faintly yellowish liquid, having a pleasant, aromatic odor, and a pungent taste. The oil is soluble in 4-8 volumes 90 per cent. alcohol (Hager, 1908). Specific Gravity, 0.865 to 0.875; begins to boil at 165° C. (329° F.). (British Codex, 1907.)

It should rotate the plane of a ray of polarized light from 5° to 10° to the left at 15.5° C. (60° F.) in a tube 100 millimeters long. Not more than 10 per cent. should distil below 165° C. (329° F.).

Action and Uses.—Oil of pine is employed principally as an inhalant with hot water for its stimulating and disinfecting action in catarrh of the respiratory passages, chronic laryngitis and bronchitis. It has been applied locally and given internally in the treatment of chronic rheumatic affections. When added to ether it is said to allay the irritation and diminish the bronchial secretion, which frequently become excessive, during or after the production of anesthesia by the latter drug.

Dosage.—0.05 to 0.3 Cc. (1 to 5 minims). The oil is given internally as a respiratory antiseptic and "expectorant," being taken on sugar, in capsules, or in the form of pastilles. It is rubbed over rheumatic joints, which are then covered with cotton wool, or 4 Cc. (1 fluidram) of the oil may be added to a warm bath.

Vapor Olei Pini.—Oil of pine, 10 Cc.; Magnesium Carbonate, 5 Gm.; Distilled water, sufficient to produce 100 Cc.

Mix the oil with the magnesium carbonate and add the water. A quantity sufficient for one inhalation, 4 Cc. (1 fluidram), is to be placed with 300 Cc. (10 fluidounces) of cold water and 300 Cc. (10 fluidounces) of boiling water in an apparatus so arranged that the air to be inhaled may pass through the solution.

Pine oil inhalation is used as a mild antiseptic in catarrhal affections of the respiratory passages.

(To be continued)

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[*For other information see second page following reading matter*]

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THE PATHOLOGIC ANATOMY AND PATHOGENESIS OF ACUTE APPENDICITIS

After several years of extensive and systematic study, Aschoff, one of the best known pathologists in Germany, has published a monograph on appendicitis[1] which is of great importance because of its scope, its thoroughness and the apparent finality of some of its teachings. It may be of interest to discuss briefly some of the more striking results reached.

In the first place, Aschoff made a thorough study of the normal appendix at various periods of life, using for this purpose the most approved methods. In the newborn the appendix does not contain any lymph follicles in the submucosa and the lining is not folded, but during infancy and childhood the lymphatic tissue in the submucosa greatly increases, the muscularis mucosæ becomes better marked and the mucous membrane folded. In the adult the mucosa presents quite definite furrows, partly longitudinal and partly transverse, and the submucosa consists of lymphatic tissue with follicles of varying sizes and numbers, these being most marked toward the distal end.

Anatomically, Aschoff regards acute appendicitis as always one and the same disease, the different anatomic forms simply representing various stages in development or special complications. A superficial catarrhal appendicitis is not recognized; the attack is held never to begin as a diffuse surface inflammation, but always as one or several foci of primary infection in the crypts and furrows of the mucous membrane and in the subjacent tissue outside of the lymphatic follicles. The first change is a subepithelial accumulation of neutrophilic leucocytes in the bottom of a furrow, corresponding to which there is a small defect in the epithelial lining. In this stage bacteria are found only about the defect and not deeper down in the wall of the appendix. There is also more or less diffuse leucocytic infiltration which spreads out more broadly toward the serous coat than toward the mucous side. Later, in the next stage, various primary foci may coalesce and the muscular and serous coats now become more or less diffusely infiltrated with leucocytes and serum. Most instances of acute appendicitis do not pass beyond this stage, the stage of diffuse inflammation, but subside rapidly.

In case the inflammation progresses, small abscesses form in the wall, which may perforate into the lumen of the appendix and thus give rise to ulcerations; or the perforation may take place into the peritoneal cavity. In some instances the submucosa may be so riddled with abscesses that the mucous membrane is loosened (appendicitis dissecans). Ulcerations arise practically always from purulent softening of the mucosa, beginning in the bottom of the furrows and thence spreading, a fibrinopurulent deposit being often present. The softening may spread into the outer walls of the appendix and give rise to larger perforations. The necrosis preceding the softening is caused partly by the toxic action of the numerous bacteria present and partly by thrombosis of the lymph and blood vessels. Quite typical anemic and hemorrhagic infarcts may form, most often opposite the mesenteric attachment because the blood-supply in this district is poorest. On entrance of putrefactive bacteria the necrosis passes into gangrene.

Aschoff distinguishes three kinds of perforations of the appendix: perforations of miliary intramural abscesses, perforations caused by more diffuse purulent softening of the wall, and perforations associated with gangrene, the latter being the largest.

As stated, acute appendicitis begins in the bottom of the normal furrows of the mucosa, the localization often being determined by obstacles to the current of its contents, as, for instance, behind a bend in the appendix. Aschoff found small fecal stones only three times in normal appendices, otherwise always in diseased appendices; hence the calculi may be regarded as rather a consequence than a cause of appendicitis, the diseased appendix being less able to dispose of the feces and mucus than a normal one. In the previously diseased appendix, calculi are of importance as they may cause retention both in the part behind them as well as in the part immediately in front of them, in the latter case because regular contractions of that part of the wall of the appendix can not take place, and thus maintain conditions favorable for continued reinfections. Accordingly inflammation is oftenest found behind the calculus, occasionally immediately in front, but, so says Aschoff, not at the points at which it comes in contact with the mucous membrane itself; but, as the wall of the appendix is often stretched over the calculus, and the nutrition consequently is not so good at that point as elsewhere, necroses are likely to occur here and lead to the large perforations seen about calculi.

Without entering into any of the details of the healing processes, suffice it to point out that acute primary infections may heal without leaving any trace; that diffuse cellular infiltrations often lead to thickening of the serosa and intermuscular septa, and that ulcerations give rise to scars on the mucosa with deformities of the lumen. More or less actual obliteration of the lumen takes place (58 times in 290 cases), the proportion of such cases being greatest in the fourth and fifth decennia. The most pronounced narrowing and cicatricial occlusions are always found behind a calculus or a bend in the appendix. Now the reparative processes after an acute attack may be prolonged on account of such changes in the lumen and on account of the presence of fecal calculi. The latter may prevent granulating surfaces from coming in contact, and that is one reason why calculi have been and are regarded as a direct cause of ulceration.

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[1] Die Wurmfortsatzentzündung, 1908.

There is, according to Aschoff, no evidence that a primary chronic appendicitis exists; the cases described as such probably are acute inflammations in process of healing; and the so-called physiologic obliteration of the appendix, on which stress has been laid, is also denied because all obliterations he studied were associated with changes indicating pre-existing inflammations.

As for the etiology of appendicitis, Aschoff, from his work, finds no evidence whatever in favor of acute appendicitis in the usual sense arising from hematogenous infection. Micrococcal emboli in the lymph follicles of the appendix occur only in pyemia, and the blood is said to be sterile in acute appendicitis. His tenet is that acute appendicitis originates from enterogenous infection of the mucous membrane at the bottom of furrows in the mucosa. If appendicitis develops after tonsillitis, which clinically there is reason to believe may occur, then the infecting germs probably are transferred to the appendix by way of the intestinal tract and not by way of the blood.

A JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

We have just received the first number of a new journal, the *Journal of Pharmacology and Experimental Therapeutics*, edited, with the assistance of a number of associate editors, by J. J. Abel, the distinguished professor of pharmacology at Johns Hopkins University. This journal is devoted to the publication of original investigations in pharmacology, experimental therapeutics and closely related subjects. The publication of a journal of this character is a most encouraging indication of the rapid growth of pharmacology in this country. It is but comparatively recently that pharmacology has received recognition here as a separate branch of medical science. Both in the medical schools and in the government laboratories the work of the pharmacologist has been done by men who had no special preparation for the work—in the medical schools by clinicians, in the government laboratories by chemists.

Recently there has been a marked development in pharmacology in the United States. A number of medical schools have within the past two or three years established chairs of pharmacology; this movement has been stimulated to no inconsiderable extent by the revelations made by the Council on Pharmacy and Chemistry of the deplorable condition into which the manufacture and sale of drugs had fallen. It is with much gratification that we note the names of four members of the Council on the list of associate editors of this journal. The value of pharmacology has also been recognized by the United States government, which now maintains four well-equipped pharmacologic laboratories in charge of competent pharmacologists.

The spirit of pessimism concerning drug therapeutics which has been somewhat prevalent for some years is giving way to a sane optimism. Many are recognizing the truth of the statement made some time ago by Ehrlich, quoted in the editorial announcement of the present journal: "There can be no doubt that the three great fields of knowledge, pharmacology, toxicology and therapeutics, in their theoretical and practical aspects, form the most important branches of medicine."

The publication of a journal devoted to pharmacology and "experimental therapeutics"—which, after all, is only more or less immediately practical pharmacology—should stimulate further interest in this very important branch of science. The fact that among the associate editors are men eminent as clinicians as well as some of the leading professors of pharmacology and some of the pharmacologists engaged in public health work should give the new enterprise the cordial support of all interested in the advancement of medical science and practice.

WANTED—TRAINED NURSES FOR THE MIDDLE CLASSES

In addressing the graduates of a hospital training school a physician recently departed a little from the usual line of eulogistic remarks about the beneficent and important functions of the trained nurse, and offered some suggestions which are worthy of consideration. The fees of the trained nurse, he said, have been pretty solidly established at a figure that, while within the reach of the well-to-do, is so high as to be almost prohibitive to the great middle class. The very rich can take care of themselves; the very poor are well provided for through various organizations; but the great class of persons whose incomes are not much more than sufficient for their necessary expenses in the style of life which they have to maintain, can not bear, for any length of time at least, the expense of a trained hospital nurse. In such cases the attending physician often has to forego his fee in order that proper nursing may be had. The physician's suggestions are: first, that the last six months of the nurse's training be spent in work outside of the hospital and that a moderate fee, say twelve or fifteen dollars a week with or without bed and board, be charged for such services. Let this money all be paid either to the hospital or the nurse, or let it be divided between them, and let this outside work be supervised by the head nurse of the training school, who should visit the patient at short intervals and offer such suggestions as are necessary. In this way the nurse is given some valuable practical experience and people of so-called moderate means can secure competent nursing for what is to them a possible compensation. This would not reach all classes which would require and deserve attention. A man trying to rear a family on a hundred dollars a month could hardly afford to pay out one-half or two-thirds of his salary as nurse's fees for many weeks, but it would be better than the present condition of things. The second suggestion was that certain nurses should establish a practice of going out to nurse by the hour, a plan already in practice in certain cities and one that needs to be more generally known and systematized. A third suggestion was that hospitals should graduate three grades of nurse, according to the length of time of training, distinguished by different badges and diplomas and their fees be graded accordingly, those who have had the least training charging the least. As a lay paper says, this last scheme is a little more doubtful, and it applies to it Gresham's law of bad money driving out good money; the high-priced nurse might find herself short of work while her cheaper sisters were busy. Perhaps, the nursing profession can hardly be expected to be as altruistic as the medical profession, but something should be done for the better treatment of the great middle class who constitute the greater part of the real worth of any country and have necessarily to bear the greater part of its burdens.

A HEALTHY TROPICAL SERVICE

Campaigning in the tropics will not be the perilous occupation hereafter that it has been in the past, according to Major General Barry's statement that the soldiers under his command in Cuba had a much lower non-effective rate than troops stationed in the United States. It must be remembered, however, that his men were regulars. An equal force of volunteers taken fresh from civil occupations would probably show a less favorable figure with two and a half years' residence in a climate so different from that to which they had been accustomed. Admitting this, however, a repetition of the experience of the Cuban war would hardly be expected.

We have learned a great deal in the last eight or nine years, both from our own experience and from the results of the Japanese war, as regards army sanitation. Colonel Gorgas' address published in our last issue has shown how a much larger army than that of General Barry, and of non-combatants, can endure hard work in the tropics and yet preserve its health. His opinion that the tropics will become the centers of future civilizations may not be altogether accepted. It is yet many years, perhaps centuries, ahead of us, but we can not discount its possibility, as would have been done by almost every one a very few years ago. There are some who believe with Dr. Woodruff and others that the tropics are deadly to the best development of the white race, but the possibility of white men becoming acclimated to the hot portions of the earth seems much nearer now than in the past.

Another Medical School for China.—It is proposed to build and endow an institution in China modeled after the Harvard Medical School, to be administered in this country by a board of trustees which includes ex-President Eliot and other eminent Harvard men. While independent of all religious or missionary control it will supplement with the best scientific instruction the hospital work now carried on by missionary physicians, who have laid broad and deep foundations in that empire for the study and practice of medicine.

Medical News

ARKANSAS

New Members of State Board.—The governor, on June 1, appointed the following members of the State Medical Board of the Arkansas Medical Society: Dr. Frank B. Young, Springdale, to succeed Dr. George V. Poyner, Green Forest; Dr. William S. Stewart, Pine Bluff, to succeed Dr. Vernon MacCammon, Arkansas City; and reappointed Drs. Fred T. Murphy, Brinkley, and James C. Wallis, Arkadelphia.

Personal.—Dr. H. N. Street has been elected assistant professor of gynecology and pelvic surgery, and Dr. George H. Martindale, Hope, has been elected professor of theory and practice of medicine in the College of Physicians and Surgeons, Little Rock.——Dr. Clinton P. Merriwether, Little Rock, has been elected secretary of the board of trustees of the Arkansas Tuberculosis Sanatorium. Drs. George S. Brown, Conway, and Jefferson D. Southard, Fort Smith, are also members of the board.——The recently organized Lawrence County Board of Health consists of Dr. John E. Pringle, Hoxie, president; Dr. John C. Hughes, Walnut Ridge, secretary; and Dr. William J. Robinson, Portia.

ILLINOIS

Personal.—Drs. George W. Boot, Evanston; Samuel M. Wylie, Paxton; John F. Page, Eureka; William B. Peck, Freeport; and Thomas H. Wagner, Joliet, have sailed for Europe. ——Dr. Joseph Robbins, Quincy, is still seriously ill in Blessing Hospital.

Golden Jubilee Celebrated.—Champaign County Medical Society, on June 26, celebrated its golden jubilee, at which two of the charter members of the society were present, Drs. Hartwell C. Howard, Champaign, and John T. Miller, Urbana. The society was organized March 4, 1859.

Hospital Notes.—About $3,000 was cleared for the proposed Lake Forest Hospital for Contagious Diseases at the annual horse show, July 2 and 3.——The new addition to St. Joseph's Hospital, Bloomington, recently erected at a cost of about $75,000, was opened for public inspection June 19 and 20. The addition includes about seventy rooms and wards.——The Hospital Aid Society of Monmouth, at its session June 16, voted $1,000 to the building fund.——The Jewish Consumptive Relief Society dedicated its building for female patients, June 27. The building has been presented to the Chicago-Winfield Tuberculosis Sanatorium, and will accommodate 10 patients.

Chicago

Personal.—Dr. and Mrs. E. Wyllys Andrews, Dr. and Mrs. Nathan S. Davis and family, Dr. Edmund J. Doering, and Dr. Edward Luehr have gone to Europe.——Dr. Anton G. Carlson has been appointed professor of physiology and Dr. H. Gideon Wells, professor of pathology in the University of Chicago.——Dr. Albert J. Ochsner has been elected president of the Wisconsin University Alumni Association.

Extermination of Flies.—The Department of Health of Chicago has issued an illustrated poster entitled "Speaking of Flies!" the text of which is four-fold, and is as follows:

> "Don't allow flies in your house."
> "Don't permit them near your food—especially milk."
> "Don't buy foodstuff where flies are tolerated."
> "Don't eat where food has been exposed to flies."

The poster sets forth the dangers due to flies, what to do to get rid of flies, and how to eliminate the breeding places of flies.

INDIANA

Found Not Guilty.—Dr. George E. Snearly, Roann, charged with having poisoned his wife, has been exonerated, as the autopsy disclosed no poison. It is stated that the prosecution was the result of malice or meddlesome gossip.

May Disease and Deaths.—The order of disease prevalence for May was rheumatism, tonsillitis, bronchitis, measles, influenza, pneumonia, diarrhea, pleurisy, scarlet fever, whooping cough, intermittent fever, remittent fever, typhoid fever, and diphtheria. There were 2,793 deaths, equivalent to an annual death rate of 12 per 1,000. The deaths of children under one year of age numbered 341, and the deaths of those 65 years old and over, 867. Tuberculosis caused 384 deaths; typhoid fever, 35; diphtheria, 5, and smallpox, 1 death.

Commencement.—The commencement exercises of the Indiana University School of Medicine were held in Bloomington, June 23. President David Starr Jordan of Leland Stanford, Jr., University, Palo Alto, Cal., an alumnus of the college, delivered the address of the occasion on "The Burbanking of the Human Race." A class of 64 was graduated. The election of officers of the Alumni Association resulted as follows: Dr. Frederick R. Charlton, Indianapolis, president; Dr. Leslie Maxwell, Indianapolis, vice-president; and Dr. J. Don Miller, Indianapolis, secretary-treasurer.

Personal.—Dr. Harry C. Sharp, formerly surgeon of the Indiana State Reformatory, Jeffersonville, has been appointed a trustee of that institution.——Dr. J. William McKinney, Bluffton, who suffered from appendicitis at Atlantic City, N. J., June 11, and was operated on in the German Hospital, Philadelphia, is reported to be doing well.——Drs. George D. Kahlo, French Lick, and Herbert T. Wagner, Indianapolis, have gone abroad.——Dr. Charles J. Overman has been elected secretary of the board of health of Marion.——Dr. J. Preston Christie has succeeded Dr. Edgar F. Kiser, resigned, as superintendent of the Indianapolis City Dispensary.

IOWA

Abolishes Public Drinking Cups.—The Iowa Central railroad, in accordance with the wishes of the State Board of Health, has abolished public drinking cups on all its trains. Water will be provided but passengers must furnish their own cups.

Graduation Exercises.—The Sioux City College of Medicine graduated a class of six, May 25. The address was delivered by W. L. Harding and the diplomas were presented by Dr. Frederick E. Franchere, president of the college. The college will open for its fall term in a new location nearer the center of the city.

Society Meeting.—At the semi-annual meeting of the Iowa Union Medical Society, in Iowa City, June 22, Dr. Hugh T. Patrick, Chicago, gave a clinical demonstration of the differential diagnosis of organic and functional diseases of the nervous system; Dr. Joseph C. Beck, Chicago, gave a clinic on diseases of the ear, nose and throat; Dr. James R. Guthrie, Dubuque, gave a gynecologic clinic; and Dr. John B. Kessler, Iowa City, a clinic on skin diseases. The following officers were elected: Dr. Alexander Crawford, Mount Vernon, president; Dr. John B. Kessler, Iowa City, vice-president; Dr. Frederick G. Murray, Cedar Rapids, secretary; Dr. George P. Carpenter, Cedar Rapids, treasurer, and Drs. Lawrence W. Littig, Iowa City, Edwin Burd, Lisbon, and Frank S. Skinner, Marion, censors.

Personal.—Dr. William W. Bowen, Fort Dodge, is a patient in a Philadelphia hospital on account of an accident to his eye.——Dr. Charles F. Smith, Des Moines, has been elected a member of the board of trustees of Drake University.——Dr. Benjamin E. Eversmeyer has been selected as health officer of Muscatine.——Dr. Edward E. Blythe, Reinbeck, formerly a member of the medical faculty of the University of Iowa, sustained severe injuries to the face and eyes by an explosion of gasoline.——Dr. Charles S. Grant, Riverside, has been appointed surgeon of the Fifty-fourth Infantry, Iowa N. G., with rank of major, and Dr. Donald Macrae has been appointed assistant surgeon of the Fifty-sixth Infantry with rank of captain.——Dr. and Mrs. Lawrence W. Littig, Iowa City, have returned from Europe.

MARYLAND

Medical Care for National Guard.—At the encampment of the Maryland National Guard to be held at Westminster, July 18-25, systematic medical care is to be provided. A field hospital is to be established and hospital corps arrangements will be consolidated. Each regiment will have a dispensary for treatment of minor cases, the more severe cases being taken to the field hospital, which will have a capacity for 12 patients. Strict sanitary inspections will be made. Major Alexius W. McGlannan, brigade surgeon, N. G. Md., will have charge of these arrangements.

Expert Testimony Bill.—At a meeting of the Maryland Psychiatric Society, held June 30, the "Expert Testimony" bill prepared by the Baltimore Bar Association for presentation to the next legislature was discussed by members of the association and physicians. The bill provides that the judge shall appoint experts and fix their fees, and they will therefore possess official standing and not be so likely to be partisans. The expert, after investigation, is to submit to each counsel a written report before testifying. A committee of three physicians was appointed to confer with a like committee from the bar association on the parts of the bill at which physicians and lawyers are at variance.

Baltimore

Personal.—Drs. Robert M. Beech, Arthur S. Lovenhart, and William Green have sailed for Europe.——Dr. H. Warren Buckler will be resident physician at Jamestown, R. I., for the summer, and Dr. John A. Luetscher, resident physician at Ocean City, Md.——Dr. Irving J. Spear has been appointed clinical professor of neurology and psychiatry at the University of Maryland.

MASSACHUSETTS

Carnation Day.—The Lynn Tuberculosis Committee announces a net profit of $2,056.41 from the sale of carnations on Carnation Day, which will be applied toward the establishment of a day camp for tuberculosis.

Floating Hospital.—The Boston Floating Hospital made its first trip for the season June 30. A bronze tablet has been placed at the entrance of the boat acknowledging the services of Rufus B. Tobey, founder of the Boston Floating Hospital.

Hospital Buys Land.—The Massachusetts General Hospital has purchased all of the land of the Parkman estate, lying between the hospital on the north, North Anderson street on the east, Cambridge street on the south, and North Grove street on the west, at a cost of more than $166,000.

MICHIGAN

Commencement.—The forty-first annual commencement exercises of the Detroit College of Medicine were held May 27. The faculty address, "The Road to Success," was delivered by Dr. J. Henry Carstens, and Dr. Ernest L. Shurly presented the diplomas.

Dangerous Communicable Diseases.—During May, there were reported in the state, 161 cases of pneumonia, 102 cases of typhoid fever, 159 cases of diphtheria, 34 cases of meningitis, 75 cases of whooping cough, 287 cases of scarlet fever, 1,216 cases of measles, and 70 cases of smallpox.

Personal.—Dr. and Mrs. Ovidus A. Griffin, Ann Arbor, sailed June 19, for Europe.——Dr. Harry W. Long has qualified as health officer, and Dr. John O. Groos, as city physician of Escanaba.——Dr. Perry Schurtz has been elected chief of staff, Dr. Robert J. Hutchinson, vice-chief, and Dr. Christian Vander Veen, secretary of the medical staff of Butterworth Hospital, Grand Rapids.——Dr. George H. Voelkner has been appointed a city physician of Detroit.——Dr. John W. Hoffman, in charge of the hospital work of Detroit, has resigned.

Vital Statistics for May.—During May, there were 3,117 deaths reported, equivalent to an annual death rate of 14.2 per 1,000. Of these 518 were of infants under one year of age, 193 of children from one to four inclusive, and 1,007 of individuals sixty-five years of age and over. Among the important causes of deaths were tuberculosis, 251; pneumonia, 218; violence, 165; cancer, 134; measles, 49; influenza, 46; enteritis of infants, 40; typhoid fever, 34; meningitis, 27; diphtheria and scarlet fever, each 26, and whooping cough, 22. Three deaths were reported from tetanus during the month.

NEW JERSEY

Sanitarium Opened.—The North American Sanitarium for Convalescent Children opened for its eighth season at Atlantic City, June 21. It is announced that this year the sanitarium will devote its attention to the care of cases of tuberculous diseases of childhood.

Vital Statistics for May.—During the month ended May 15, 2,955 deaths were reported in the state, a decrease of 378 from the previous month. Of the deaths, 505 were of infants under 1 year of age, 324 of children between 1 and 5 years of age, and 883 of individuals 60 years old and more. Chief among death causes were tuberculosis, 390; pneumonia, 375; diseases of the circulatory system, 345; diseases of the nervous system, 316; diseases of the respiratory system, 252; nephritis, 213, and cancer, 132. Of the communicable diseases, diphtheria caused 56 deaths; scarlet fever, 45; measles, 34; whooping cough, 27, and typhoid fever, 14.

State Society Meeting.—The one hundred and forty-third annual meeting of the Medical Society of New Jersey was held in Cape May, June 22-25, under the presidency of Dr. David St. John, Hackensack. The following officers were elected: President, Dr. Benjamin A. Waddington, Salem; vice-presidents, Drs. Thomas H. Mackenzie, Trenton; Daniel Strock, Camden, and Norton L. Wilson, Elizabeth; corresponding secretary, Dr. Harry A. Stout, Wenonah (re-elected); recording secretary, Dr. William J. Chandler, South Orange (re-elected); treasurer, Dr. Archibald Mercer, Newark (re-elected), and councilors, Drs. Thomas W. Harvey, Orange; Edward F. Denner, Paterson; William A. Clark, Trenton; William H. Izard, Camden, and James Hunter, Westville, and delegates to the American Medical Association, Drs. Claudius R. P. Fischer, Bound Brook; Alexander Marcy, Riverton, and Luther M. Halsey, Williamstown. It was decided to hold the next annual meeting in Atlantic City.

NEW YORK

New York City

Personal.—Coroner Robert F. McDonald of the Bronx was seriously injured in an automobile accident.——Dr. and Mrs. S. Oakley Vanderpoel; Dr. and Mrs. Samuel E. Getty, Yonkers; Dr. and Mrs. M. Allen Starr, Dr. and Mrs. Walter F. Chappell and Dr. and Mrs. Russell S. Fowler have sailed for Europe.

Junior Seabreeze Open.—The Rockefeller Summer Hospital for Babies, managed by the New York Association for Improving the Condition of the Poor, has been opened. One feature of the work will be the daily conference for mothers at which the nurses will instruct mothers in the proper care of their babies.

Anti-Noise Ordinance Passed.—An ordinance has been passed and awaits the signature of the mayor, which provides that no peddler, vendor or huckster shall blow any horn or other instrument or make any improper noise tending to disturb the peace and quiet of a neighborhood for the purpose of directing attention to his wares. The penalty is to be not more than $5 for each offense.

Lowest Death Rate Since 1860.—The death rate for New York City for the first six months of 1909 is lower than it ever has been since 1860. The death rate in 1904 was 22.08; in 1905, 19.04; in 1906, 18.88; in 1907, 18.99; in 1908, 17.59, and in 1909, 16.92. In 1904 there were 210 deaths from typhoid fever, but only 169 in 1909. There has, however, been a notable increase in the number of deaths from organic heart disease. In 1904 there were 2,656 deaths from cardiac disease and 3,673 in 1909. This year there have been 84 more deaths from sunstroke than in all four of the preceding years.

OHIO

Personal.—Dr. Robert C. Longfellow, Toledo, has been appointed consulting clinical bacteriologist of the volunteer staff of the Ohio Sailors' and Soldiers' Home Hospital, Xenia.——Dr. Ora O. Fordyce has succeeded Dr. O. H. Rorick, resigned, as superintendent of the Athens State Hospital.——Dr. Hugh A. Baldwin, Columbus, returned from Europe June 13.——Dr. Henry C. Schoepfle has been reappointed health officer of Sandusky.

Ill and Injured.—Dr. Milton S. Williamson, Findlay, who has been ill with pneumonia and pleurisy, is reported to be improving.——Dr. Francis M. Michael, N. Eaton, is reported to be critically ill.——Dr. Hugh G. Campbell, Logan, is reported to be seriously ill in Grant Hospital, Columbus.——Dr. James A. Sherbondy, Youngstown, was operated on in the City Hospital for appendicitis, June 16.——Dr. William D. Deuschle, Columbus, is suffering from a badly contused shoulder, the result of an automobile accident.

Cincinnati

Want New College Buildings.—Arguments were made before the city council for a large bond issue for university purposes. Nearly $300,000 was asked for new medical buildings which have become an imperative necessity since the merger of the Ohio and Miami Medical colleges.

Commencement.—Under the auspices of the University of Cincinnati, the Medical College of Ohio and Miami Medical College graduated their last separate classes, June 16, the former institution issuing diplomas to 31, and the latter to 17.

Dr. Phelps Honored.—Dr. Albert T. Phelps, who recently resigned as secretary and as a member of the faculty of the Medical College of Ohio, was given a complimentary dinner by the faculty, alumni and students, June 2. Dr. Joseph Ransohoff acted as toastmaster. Dr. Phelps has declined the position of dean of the merged colleges and expects to enter practice in Watch Hill, R. I.

Alumni Association Merger.—On June 4, the first banquet of the combined alumni of the Ohio and Miami Medical Colleges was held, with over 200 in attendance. The following officers were elected: President, Dr. E. Otis Smith; vice-presidents, Drs. Walter Griess and Charles A. Langdale; secretary, Dr. Charles E. Iliff; treasurer, Dr. W. H. Streitmann, and executive board, Drs. W. H. Campbell, Henry Van A. Spargur, Robert W. Bledsoe, Sidney Lange, Frederick W. Lamb and Clement C. Fihe.

Personal.—Dr. Julius C. Stammel has been appointed resident physician of the Boys' Industrial Home, Lancaster, O.——Dr. Horace J. Whitacre was thrown from an automobile, June 1, and sprained his wrist.——Dr. Sidney Lange has been appointed radiographer on the staff of the Cincinnati Hospital.——Dr. William Muhlberg has been added to the faculty of the department of medicine, and Dr. S. P. Kramer to the faculty of the department of surgery in the Ohio-Miami Medical College.——Drs. John M. Withrow, Miriam Schaar and Dr. Christian R. Holmes have gone abroad for the summer.

PENNSYLVANIA

Advisory Health Board Appointed.—On June 30, Governor Stuart appointed the following members of the advisory board of the State Department of Health: Drs. Leonard Pierson and Charles E. B. Penrose, of Philadelphia, Dr. Adolph Koenig, Pittsburg; Dr. George W. Guthrie, Wilkesbarre; B. Harry Warren, West Chester, and Lee Masterton, Johnstown.

Philadelphia

Old Municipal Hospital Empty.—The last of the patients in the old Municipal Hospital, comprising 87 children suffering with diphtheria and a convalescent smallpox patient, were removed, June 30, to the new institution.

Personal.—Drs. Wharton Sinkler, J. M. Godfrey, C. Sigmund Raue, Burton A. Randall and Gordon M. Christine, have sailed for Europe.——Dr. James M. Anders has been made an officer of l'Instruction Publique by the French government.——Drs. George Woodward, William W. Keen and John H. Musser have been appointed trustees of the newly organized Philadelphia Bureau of Municipal Research.——Dr. Benjamin B. Wilson was thrown from his carriage, June 30, and seriously injured.

Bequests.—The will of the late Mrs. Julia D. Stroud bequeaths $15,000 to the Eliza Cathcart Home for Incurables.——The will of the late Harry S. Henry directs that at the death of his wife and sisters, his estate shall be divided in equal portions among the following institutions: Hospital of the University of Pennsylvania, the Hospital of the Protestant Episcopal Church of Philadelphia, the Presbyterian Hospital and the Board of Managers of the Contributors to the Pennsylvania Hospital, share and share alike for the establishment and maintenance in each of the said hospitals of a ward to be known as the H. S. Henry ward for the treatment of white children only.

Psychologic Clinic.—Mentally and morally defective children are to be examined at the new physiologic clinic which opened at the University of Pennsylvania, July 7. Clinics will be conducted daily, except Saturdays and Sundays, until August 17. Parents may have children examined free and courses of education and treatment will be advised or parents will be directed to the proper institutions for training and treatment. The clinic will be under the direction of Dr. Arthur Holmes, instructor of psychology in the university, assisted by Dr. Seymour P. Ludlum, instructor of neurology and neuropathy, Dr. William Burdick, Dr. Clara H. Town, psychologist at the Friends' Asylum for the Insane, and Dr. Stevenson Smith.

Dispensary for Epileptics.—A few months ago as the result of papers read before a local medical society and the Presbyterian Ministerial Association of Philadelphia, "The Society for the Securing of Suitable Employment for Epileptics" was formed. It is estimated that there are at least 2,000 epileptics in Philadelphia alone, and as yet there is no institution for the exclusive and special oversight of these patients where they may be treated without leaving home and while at their daily avocations and where, at the same time, efforts are being made to secure suitable work for the unemployed, so that accidents consequent on sudden seizures may be prevented. The Letchworth Clinic for the Home Treatment of Epileptics has been formed, and together with the society first named will study the means for the prevention and care as well as cure of epilepsy, and will establish a propaganda for the enactment of a law prohibiting the marriage of epileptics until at least three years after recovery. The medical staff of this important charity is composed of Drs. Matthew Woods, J. Madison Taylor, John H. Rhein, Charles E. deM. Sajous and William M. Clapp.

Filtration Reduces Typhoid Fever.—The report of the director of health for the first six months of this year shows a marked diminution in typhoid fever, and the cause of this change is attributed by the health authorities to the use of filtered drinking water. The total number of cases of typhoid reported since January 1 aggregates 1,383, as compared with 2,195 cases reported during the corresponding six months of last year, a decrease of 812 cases. The figures for the first half of this year are still more marked by comparison with those for the first six months of 1907, when 5,005 cases were reported or 3,632 more than occurred this year. Based on the number of cases for the current six months, it is estimated that the total number of cases this year will not exceed 2,000, or 80 per cent. less than the number reported in 1906. In that year there were 9,721 cases reported, and at that time only a small section of the city was receiving filtered water. The following year, with the extension of the filtered water supply, the number of cases was reduced one-third, and by a further extension of the filtered water last year another decrease of 40 per cent. was made. With the exception of parts of the four wards, which still receive raw water, the whole of the city has been receiving filtered water since March 1. The reduction of the cases in typhoid may be further illustrated by the fact of the early months of 1906, when the weekly number of cases of typhoid fever was from 300 to more than 400. For the week ended June 26, only 17 cases were reported. In the week preceding 22 cases were reported, and in the week prior to that 15 cases, the smallest number in the history of the Bureau of Health. The mortality from typhoid fever has correspondingly decreased from 606 in 1907 to 351 in 1908 and 205 (estimated) in 1909.

TEXAS

Commencement.—The medical department of the University of Texas held its eighteenth annual commencement exercise, May 29, when a class of 37 was graduated. Dr. William Keiller delivered the faculty address, and the diplomas were presented by President Mezes of the university.

State Medical Board Re-election.—At the annual meeting of the State Medical Examining Board, held in Cleburne, the following officers were re-elected: President, Dr. James D. Osborne, Cleburne; vice-president, Dr. John D. Mitchell, Fort Worth, and secretary, Dr. Marquis E. Daniel, Honey Grove.

Personal.—A banquet, followed by a smoker, was tendered Dr. Charles M. Rosser by the medical fraternity of Dallas, June 5.——Dr. Paul Renger has been appointed health officer of Hallettsville.——Dr. George W. Larendon, city health officer of Houston, has been appointed a state health officer.——Dr. John F. Y. Paine has resigned as professor of obstetrics and gynecology in the State Medical College, Galveston.——Dr. David Berry, San Antonio, has been appointed physician of Bexar county.

Ruling on Osteopathy.—The Court of Criminal Appeals holds that the practice of osteopathy is healing the sick and the practice of medicine, thereby bringing osteopathic practitioners under the provision of the state medical act. It was so found in the case of Ira W. Collins, El Paso, charged with failure to secure license to practice medicine in Texas, who instituted habeas corpus proceedings, but was remanded to the custody of the sheriff, and this action was sustained by the court of appeal.

State Board of Health Named.—The governor, on May 21, named the six physicians who, with Dr. William M. Brumby, Houston, state health officer, will compose the State Board of Health: Drs. Hatch W. Cummings, Hearne; Jacob E. Gilcreest, Gainesville; John W. Burn, Cuero; M. H. E. Whitesides, Timpson; Thomas F. Burnet, Seymour, and Boyd Cornick, San Angelo.——Dr. Edward B. Parsons, Palestine, has been appointed a member of the State Board of Health, vice Dr. M. H. E. Whitesides, Timpson, resigned on account of ill health.

WASHINGTON

New Hospital.—Dr. Frank H. Collins has opened a new hospital in Goldendale, which has accommodation for 15 patients.

Secures Damages from Physician.—The jury in the case of Leslie Lamb versus Dr. Charles P. Thomas, Spokane, in which damages were sought on account of the alleged leaving of a roll of gauze in an operation wound, is said to have found for the plaintiff, June 18, and to have assessed the damages as $889.

Personal.—Dr. Philip Frank, North Yakima, has succeeded Dr. Thomas Tetreau as health officer of Yakima county.——Dr. Wilbur W. MacKenzie, Spokane, fractured his right wrist while cranking his automobile, June 18.——Dr. Alice Hall Chapman, Woodland, seriously injured her left hand, June 15, by the explosion of a gopher gun which she was placing in position.——Dr. W. L. Ludlow, Seattle, has resigned as physician of King county.——Dr. James A. LaGasa, city bacteriologist of Tacoma, has been appointed health officer, vice Dr. Spiro Sargentitch, resigned.——Dr. Hilbrand J. Hards has been chosen city bacteriologist of Tacoma.

WISCONSIN

Will Direct Pasteur Institute.—Dr. Mazyck P. Ravenel, director of the State Hygienic Laboratory, Madison, will, it is said, be placed at the head of the Wisconsin Pasteur Institute recently established in connection with the state laboratory.

New Hospital.—The Knowlton Hospital, Milwaukee, has been sold to a Milwaukee syndicate which proposes to enlarge it and carry it on as a non-sectarian institution. The incorporators have chosen "Columbia Hospital" as the name of the institution.

Exaggeration.—Dr. Marshall Surenson, Viroqua, whose death was announced in the March 13 issue of The Journal, writes asking the correction of the item, as he is "not dead yet." The information was derived from the *Wisconsin Medical Journal* for January.

Graduation Exercises.—At the annual graduation exercises of the Wisconsin College of Physicians and Surgeons, Milwaukee, May 27, a class of 15 received diplomas from the dean of the faculty, Dr. A. Hamilton Levings. The doctorate address was delivered by President Wilbur O. Carrier of Carroll College.

Personal.—Dr. and Mrs. Lewis J. Daniels, Milwaukee, sailed for Europe, June 10.——Dr. Lawrence P. Mayer, Hudson, who has been seriously ill with septicemia in St. Paul, is convalescent.——Dr. William A. Gordon, Oshkosh, is reported convalescent.——Dr. Frank J. Pope has been chosen president of the board of health of Racine.——Dr. Frederick R. Hyslop has been elected health officer of Whitewater.

Medical College Affiliation.—Dr. Thomas C. Phillips has been appointed dean of the Wisconsin College of Physicians and Surgeons, the medical and dental departments of Carroll College.——On June 15 the trustees of Carroll College, at their annual meeting, voted unanimously to accept the proposition of the Wisconsin College of Physicians and Surgeons, Milwaukee, to affiliate with that institution.

GENERAL NEWS AND COMMENT

Carroll Fund Oversubscribed.—As more than enough money has been contributed to meet the needs of the committee in charge of the fund to pay for the home for the widow and children of the late Major Carroll, it is especially requested that no more subscriptions be made. The following amounts have been received since the last report:

Medical Officers, U. S. Army	$20.00
U. S. P. H. and M.-H. Service	10.00
Dr. W. H. Sharp, Parkersburg, W. Va.	1.00
Dr. Katharine R. Collins, Atlanta, Ga.	5.00
Dr. A. B. McKee, San Francisco	5.00
	41.00
Previously acknowledged	8,196.31
Total	$8.237.31

Interstate Association Meeting.—The sixth annual meeting of the N. S. Davis District Medical Association, whose territory includes parts of Iowa, Illinois and Missouri, will be held in Keokuk, Iowa, July 13, under the presidency of Dr. Elmer E. Sherman, Keosauque, Iowa.

Neurologists Elect Officers.—At the annual meeting of the American Neurological Association, held in New York City, May 27-29, the following officers were elected: President, Dr. Morton H. Prince, Boston; vice-presidents, Drs. John K. Mitchell, Philadelphia, and Herman H. Hoppe, Cincinnati; secretary-treasurer, Dr. Alfred R. Allen, Philadelphia, and councilors, Drs. Charles L. Dana, New York City, and James J. Putnam, Boston. The next meeting will be held in Washington.

Transportation of Lepers.—An amendment to the interstate quarantine regulations has been issued by the Public Health and Marine-Hospital Service, which provides that lepers may be accepted for transportation under proper supervision when en route to seaport of deportation, also for transportation to a designated place for care and treatment, with the necessary consent of the proper health authorities, provided proper sanitary regulations are enforced with regard to the leper en route to destination.

CANADA

Gift to McGill.—Lord Strathcona, Canadian High Commissioner in London, has given half a million dollars to McGill University. Of this amount, $450,000 is to be used for completing the new medical building, and the balance for the augmentation of salaries of the faculty.

Personal.—Drs. Ridley McKinzy and Thomas G. Roddick, Montreal, will spend the summer in Europe.——Dr. and Mrs. William B. Thistle, Toronto, are taking a trip to Seattle and the Pacific coast.——Dr. Robert M. Coulter, Ottawa, deputy postmaster general of the Dominion, has returned from a trip to Australia and New Zealand.——Dr. Benjamin G. Bourgeois has been appointed house surgeon of Notre Dame Hospital, Montreal.

Hospital Notes.—The Montreal Maternity Hospital has urgent need of funds for its current expenses of about $2,000 per month. The May deficit amounted to $1,200. Friends have recently contributed $1,600 to defray current expenses.——The sum of $75,000 is needed by the board of management of the Royal Columbian Hospital, New Westminster, for the erection of new buildings, rendered necessary by the constantly increasing number of inmates in the present institution.——Dr.

Lorne McGibbon, Montreal, has given $125,000 for the erection and equipment of a sanatorium for tuberculosis at St. Agathe in the Laurentian mountains.

Provincial Medical Association Meets.—The first annual meeting of the Manitoba Medical Association was held in Brandon, June 22 and 23. It was unanimously decided to affiliate with the Canadian Medical Association. The following officers were elected: President, Dr. W. Harvey Smith, Winnipeg; vice-presidents, Drs. Harvey E. Hicks, Griswold, and John S. Matheson, Brandon; honorary secretary, Dr. Jasper Halpenny, Winnipeg; honorary treasurer, Dr. Robert F. Rorke, Winnipeg; executive committee, Drs. Henry A. Wright, Oak Lake; F. S. Keele, Portage LePrairie; Daniel G. Ross, Selkirk; Harry M. Speechly, Pilot Mound, and William J. Harrington, Dauphin, and auditors, Drs. Robert J. Blanchard and Arthur W. Moody, Winnipeg. The 1910 meeting will be held in Winnipeg.

LONDON LETTER

(From Our Regular Correspondent)

London, June 26, 1909.

The Darwin Centenary

The centenary of the birth of Charles Darwin has been celebrated at Cambridge University in a unique manner worthy of the great biologist. Festivals have been held at this ancient seat of learning to celebrate the foundation of some great institution in the distant past or in honor of some great name which has become historic. But no such tribute has been paid to any man within so short a period of his death. Over two hundred universities, academies and learned societies at home and abroad sent delegates to the celebration. The whole biologic world was represented. Thirty institutions in the United States were represented. Darwin's old college (Christ's) was a sort of shrine to which the delegates made pilgrimages. The rooms once occupied by him were open to the visitors and an exhibition of portraits, books, specimens and other objects of interest in connection with Darwin was organized. The latest addition was a large bust in bronze, executed by an American artist and presented by the American delegates. Among the British delegates were Darwin's sons, Sir George Darwin, Mr. Francis Darwin, Major Leonard Darwin and Mr. William E. Darwin, all of whom are distinguished scientists.

A Diploma in Ophthalmology

The University of Oxford has made an innovation in medical diplomas by instituting a special diploma in ophthalmology. The advisability of this step is questioned, as it is thought that it is carrying specialism too far. The question is asked, if there is to be a special diploma in ophthalmology, why not one in laryngology, otology, dermatology, etc.?

A New Departure in the Treatment of Ophthalmia Neonatorum

At. St. Paul's Hospital for Diseases of the Eye and Ear, Liverpool, a new departure has been made in the treatment of ophthalmia neonatorum which has given excellent results. As this disease is one of the most fruitful causes of blindness, the hospital authorities have decided to endeavor to prevent this dread result. A special ward is set apart for the accommodation of children suffering from the disease as well as for their mothers. It contains four beds and four cots. Thus while the children have all the advantages of hospital treatment, the evil of separating them from their mothers soon after birth is avoided. A necessary condition for the success of the scheme is the fact that midwives are required, under a penalty, immediately to notify the health officer of all cases of discharge from the eyes in new-born children. In the first year the number of cases treated numbered 75 and in the first eighteen weeks of the present year, 53.

A Crew Disabled by Beri-Beri

The Norwegian bark *Lalla Rookh* arrived in Newport after a terrible experience on a voyage from Para, Brazil. Of a crew of 13 only 2 escaped an attack of beri-beri. All went well until the vessel left French Guiana on May 8. Soon members of the crew became ill and on June 1 it was discovered that the disease was beri-beri. On June 3 the carpenter died and day by day one man after another fell ill. At one time 6 out of the 13 men were in bed. Some partially recovered. Both the captain and the mate were attacked. At one stage the captain and one man worked one watch and the mate and two men another. Upon arrival only 7 men were on duty; the remainder were removed to a hospital, where two are in serious condition.

PARIS LETTER

(From Our Regular Correspondent)

Paris, June 24, 1909.

Congress on Gynecology, Obstetrics and Pediatrics

The sixth session of the National Congress of Gynecology, Obstetrics and Pediatrics will be held at Toulouse Sept. 22-27, 1910, under the presidency of Professor Kirmisson of Paris, president of the section of pediatrics. The president of the section of gynecology is Professor Hartmann of Paris, and the president of the section of obstetrics is Professor Rouvier of Algiers. The committee of organization has chosen the following subjects for consideration: curable acute forms of pulmonary tuberculosis in infants; eczema of infants; vertebral osteomyelitis; pyloric stenosis of infants; megacolon; solid tumors of the ovary; relation of biliary lithiasis to pregnancy and labor; the pathogenesis and treatment of the pernicious vomitings of pregnancy.

Election of Dr. Schwartz to the Academy of Medicine

On June 15 the Academy of Medicine elected Dr. Schwartz, surgeon at the Cochin Hospital, a member in the section of surgical pathology in place of Dr. Chauvel, who died last December. Dr. Schwartz is about 57 years old; he is an *agrégé* of the College of Medicine and has published important works on operative medicine and external pathology.

The Practice of Radiography

The commission named by the Academy of Sciences to regulate the practice of radiography (The Journal, Jan. 16. 1909, lii, 224) has reported. It recommends that the medical or therapeutic application of radiography should be expressly forbidden to all except graduate doctors of medicine, but this restriction should not apply to laboratory researches solely for scientific purposes. The institution of a special examination in radiography at the College of Sciences is not recommended. The radiographer of the hospitals should be a physician and chosen in *concours*.

Increase of the Rate of Physicians' Fees

The medical society of the fourth ward or *arrondissement*, Paris, has recently resolved that, considering the increased cost of living for the last twenty years and the liberality with which free medical care is everywhere given, physicians' fees should also be increased and fees for visits should be raised by at least one-third over the present rates. Similar resolutions have been passed of late by other medical societies.

Health of French and German Armies Compared

A little more than six years ago an article in the *Kölnische Zeitung*, which commented unfavorably on the state of health of the French army, especially in comparison with the German army, aroused a discussion in the senate and created a great sensation throughout France. The report which Dr. Lowenthal, member of the extraparliamentary commission on depopulation, has made to the Academy of Medicine during its last session, will certainly create as deep an impression. Dr. Lowenthal has studied the condition of health of the French army for 1906, the last year for which the ministry of war has published the sanitary report and the first year in which the two-year military service law has been in force. Compared with that of 1905, which was itself unfavorable, the year 1906 shows an appreciable increase in cases of infectious diseases, such as typhoid fever, scarlet fever, cerebrospinal meningitis, scrofula, diphtheria and tuberculosis. Lowenthal believes this to be one of the effects of the new law for two-year service which enlists in the auxiliaries men unfit and useless for national defense, who merely increase the rate of military morbidity and mortality. Moreover, a constantly decreasing number of men pronounced good for active service is recorded. Lowenthal says that obsessed by a mania for numbers, we wish to maintain an army of the same size as Germany, in which the population is greater than ours and in which the number of births is increasing instead of falling off as with us. In 1908 the French army contained 582,000 men against the 572,000 of the German army, and in that same year the number of male births in Germany increased to 885,000 against 466,000 in France. Thus we maintain a superior number of standing forces, with a number of births 100 per cent. lower.

Taking account only of deaths by disease (7,578 in the French army against 3,400 in the German army), the sanitary condition of the French army is shown by a loss of 4.178 men more than in the whole of the German army. Moreover, thousands of invalids go home from the French army to die soon after their release from service; and others, incurably diseased, drag out a short and miserable existence.

As remedies for this disquieting state of affairs, Dr. Lowenthal proposes the amelioration of the general sanitary condition of the country; the doubling of the number of the barracks, which are at present overcrowded; the sanitary improvement of the present barracks; the thorough reform of our system of recruiting; a reduction of enlistments (if it were reduced to about 100,000 men, the army would gain in quality what it would lose in quantity): and the military training of young men. This last question is uppermost in official circles, as I indicated in one of my preceding letters (The Journal, Dec. 26, 1908, li, 2226).

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, June 16, 1909.

Robert Koch Foundation Against Tuberculosis

Under the auspices of Prof. Kitasato there has been collected in Japan for the Koch foundation $2,300 (9,500 marks), a sum which, considering the scarcity of money in Japan, is a marked evidence of the esteem which Robert Koch enjoys in that country.

Personals

Pflüger, the famous Bonn physiologist, celebrated his eightieth birthday June 7. On this occasion the city of Bonn gave him the freedom of the city.

Professor Israel, the Berlin surgeon, was injured on his face and legs three days ago by being thrown to the pavement in jumping from his carriage, while the horse was running away. Fortunately, serious consequences will not result.

Vital Statistics of Prussia

The recently published vital statistics of Prussia for 1907 furnish some interesting data. The births were reduced by 10,621 and have fallen from 36.52 born living per 1,000 inhabitants in 1901 to 33.23. The death rate is low, however, 17.96 per 1,000 inhabitants. From this it results that in spite of the reduction in the birth rate the increase in population is greater than formerly.

To Check Overproduction in Medical Literature

The German Physiologic Association at its last session adopted the motion of Professor Abderhalden that the members should not support any new journals. This action will go far toward restraining the unnecessary multiplication of journals and overproduction of medical articles. Naturally, it applies only to physiologic literature, but it is to be hoped that the example of the physiologic association will be followed by other scientific societies and the restriction extended to the entire field of medical literature.

Opposition to the Insurance Bill

The imperial bill for regulation of industrial insurance has aroused most active opposition throughout the entire medical fraternity of Germany because physicians believe that it is entirely unsuited to remove the evils in the medical service of the *Krankenkassen*, but on the other hand is calculated to restrict more than formerly the independence of physicians. The leader in this fight against the imperial insurance law is the so-called Leipsic League. How this fight is to be carried on if the bill, in spite of protest, shall be adopted by the legislature, is shown by a declaration which the directors of the league have sent to all German physicians for their signature. According to this, each physician is to declare that it is his determination if the law is passed to have nothing to do with the *Krankenkassen* in case the present conditions for medical service or any equivalent ones receive legal sanction. Among other things, the physicians would not accept the prescribed right of election to the special institutions (the arbitration committee and arbitration chamber); they would not solicit appointments directly to the medical service of the new *Krankenkassen* which are to be established, but only through the medical organizations; also they would treat the members only as private patients at special rates, and they would give them no certificates for the *Krankenkassen*, etc. The final decision in this very important matter belongs to the German Medical Association (*Deutscher Aerztetag*) which holds its meeting at Lübeck within a week.

In case of disagreement between physicians and the *Krankenkassen* provision is made for two boards of arbitration, the arbitration committee (*Schiedsausschuss*) and the chamber of arbitration (*Schiedskammer*). Both of these boards are to have medical members who are to be elected, in the case of the arbitration committee by the physicians of the district and, in case of the chamber of arbitration, by the medical council.

Pharmacology

COLLARGOL

Schering & Glatz's Reply to the Report of the Council and the Rejoinder Thereto

REPORT OF THE COUNCIL ON PHARMACY AND CHEMISTRY

The letter of Schering & Glatz which is printed below is a reply to the Council's report on collargol published in The Journal, March 13, 1909. The letter having been submitted to the Council it was voted that it should be referred to the committee which prepared the collargol report with the request that it report to the Council whether or not the letter is pertinent and should be published in The Journal. The letter of Schering & Glatz having been transmitted, the committee recommend to the Council that the letter be published, also the rejoinder which appears below. This recommendation was adopted and in accordance therewith the matter is published.

W. A. Puckner, Secretary.

SCHERING AND GLATZ'S LETTER TO THE COUNCIL

Sirs:—We are glad to learn that your Chairman has, on further consideration, decided to submit to you, with our request for publication, our reply to the articles on collargol in The Journal, March 13, 1909. We shall here answer only the most important points raised by your committee.

COLLARGOL IN THE BLOOD STREAM

Kunz-Krause and Lange (*Therap. Monatsh.*, 1900, No. 10) by means of a method they specially evolved for the purpose, demonstrated collargol in the blood after 195 minutes. Beyer (*München. med. Wchnschr.*, 1902, No. 8) found traces of it in the blood after eight to ten hours. Our statement that collargol disappears from the blood within an hour did not mean that its disappearance was absolute within that time.

Hocheisen did find that collargol circulates in the blood as colloidal silver; he said (*Med. Klin.*, 1907, No. 33, case 27):

> "Autopsy showed: endometritis gangrenosa, septic degeneration of the spleen, liver and kidneys; in spleen and kidneys septic infarcts. Recent ulcerative endocarditis of the aorta. Findings: on aortic valves, below the noduli, deposits of black and grayish-black coloration, or grayish-yellow, matted round structures. Microscopically these deposits proved to be crowded fields of streptococcus cultures mixed with small, bluish-black, irregularly formed scales and granules, *which were nothing else than collargol.*"

Van Waveren merely demonstrated the admitted fact that collargol is precipitated when added to a salt solution; but this is incompetent, since blood is no mere salt solution, over 7 per cent. albumen being present in the blood. Hamburger (*Arch. f. physik. Med.*, 1906, Nos. 2-3) refers to "colloid silver or collargol which has lately been recommended in bacteremias" and asks:

> "How is it possible that it remains in colloidal state in the blood stream, when the blood contains so much salt and when—as already stated—salts precipitate colloids? This is due to the presence of other colloids, namely albumen."

Hamburger says, incidentally, that collargol solutions are less stable than Bredig's silver; but this referred to the old collargol. The collargol now supplied has added to it, in the course of manufacture, a little albumen, so that its solutions are very stable.

Klimmer (*Ztschr. f. Thiermedizin*, 1900, No. 8) said:

> "If we did not add a substance to protect colloid silver from change by salt and hydrochloric acid, it would be precipitated by the salts of the blood and other animal fluids, and thereby virtually deprived of effectiveness."

His *in vitro* tests showed that gum acacia and albumen materially retard change of colloid silver by sodium chlorid, hydrochloric acid, lactic acid and trypsin. He also gave collargol *per os*, together with gum acacia and albumen, to a dog, and recovered 50 per cent. of the colloidal silver in the dog's feces.

If collargol were changed to salts in the body, it would be fatal in the enormous doses in which it is used. Cohn says:

> "When such enormous doses do not cause the least disease phenomena, this proves with certainty that colloidal silver has no toxic effect on the organism. This behavior is all the more strange because, as is well known, metallic silver and its common salts (for instance silver nitrate) are exceedingly grave poisons which even in minimal doses can destroy that organism soon after introduction."

ABSORPTION OF COLLARGOL

The committee says:

> "The fact that is repeatedly stated in articles referred to in Schering & Glatz's advertising matter, that colloidal silver. *because*

> *of its colloidal character does not pass animal membranes*, contradicts the other contention that it passes the gastric or intestinal mucous membranes in colloidal form."

There is no contradiction whatever between the two facts referred to. It is an elemental law of physiology that the mucosæ absorb *by the activity of the epithelial cells* rather than by diffusion and endosmosis. Loebl did establish the fact that collargol enemata are absorbed. He says literally (*Therap. d. Gegenw.*, April, 1904):

> "The collargol enema is almost entirely absorbed, for a cleansing enema given twelve hours later brings only a slightly blackish fluid."

Seidell (*Deutsch. med. Wchnschr.*, July 20, 1908) says the Roentgen rays show how rapidly a collargol enema is absorbed.

> "Thus in the case of a 15 year old girl, who received, after a cleansing clyster and a salt irrigation, an enema of 2 gm. collargol in 100 gm. water. Roentgenograms were taken at first hourly and then every two hours until ten hours after the enema. It was very clearly visible how the silver shadow changed. Most of the enema is absorbed in the first hour, the rest almost entirely in the second hour. An aqueous irrigation after eight to ten hours is returned almost clear or but slightly brownish."

NOT EXCRETED IN THE URINE

The data which we gave on this point in our October, 1907, pamphlet, were presented only for the sake of completeness, since it is of not the least practical importance or significance if collargol is excreted in the urine or not. We acknowledge that an error was made in stating that Lange found silver in the urine after administering collargol. He found it in the kidneys, not in the urine. It is also true that in Buberl's patients the presence of silver in the urines may be explained on the ground that the respective patients had pyuria. By an error the finding of collargol in the urine was ascribed to Baginsky instead of to Bamberger.

EXPERIMENTAL RESULTS IN ANIMALS

The experiments of Cohn, Brunner and Trommsdorf have been aptly criticised by Dr. Frank P. Vale, Washington, D. C., in a paper entitled "Clinical and Experimental Experience with Colloidal Silver and a Virulent Streptococcus" (read before the Medical Society of the District of Columbia; *Am. Jour. Med. Sc.*, November, 1906). He said:

> "It will be observed that in these experiments, with the exception of two intraperitoneal inoculations, the infective organism was thrown directly into the circulation in relatively overwhelming numbers. This method of inoculation in no way simulates the manner of acquiring disease through the ordinary channels of infection, when the invading organism gains access to the circulation late in the course of the disease or frequently not at all. In experiments with the streptococcus, however, three in number, Cohn inoculated the scarified ear of a dog with a loopful of the culture, followed by an intravenous injection of colloid silver, about 0.1 gm. per kilo of animal body weight, and in each instance the control lived longer.
>
> "But in these last mentioned experiments, the silver was injected at the time of inoculation. Now the leucocytosis following the administration of colloid silver, which is at its height at the end of 24 hours, plays the important, but as yet imperfectly understood part in its action. It has been shown in efforts at prevention of sepsis through hyperleucocytosis induced by the injection of nuclein, pepton and other substances, that to obtain favorable results it is necessary that the inoculation be made at the height of the induced leucocytosis."

Dr. Vale inoculated twenty rabbits subcutaneously twenty-four hours after injecting colloid silver, when the average leucocytosis was 12,000, due chiefly to an increase in polynuclear cells. After the intraperitoneal infection the leucocytosis was of about the same intensity, but due chiefly to an increase in lymphocytes, as if the entire army of polynuclear phagocytes had responded to the call in the peritoneal cavity.

> "In no case was a local reaction from the subcutaneous inoculation with the streptococcus entirely prevented, but with the largest dose of 0.5 gm. per kilo of animal weight, the inflammatory process was transitory and in marked contrast to that in the control."

As stated in our pamphlet, animal experimentation done under conditions that closely simulate those of a clinical infection, invariably has given favorable results. This is shown by the reports of numerous veterinary surgeons.

ITS PROPHYLACTIC VALUE

There is an obvious difference between administering collargol topically for the prevention of a local sepsis in an accidental or operative wound, and its use by injection into the veins. There is, therefore, no contradiction between the claim of prophylactic action for collargol and the objection to its simultaneous administration with infective material in animal experimentation.

ITS ACTION ON LEUCOCYTES

While we have not asserted that the leucocytogenetic effect of collargol is its sole explanation of its virtues, we do not, on the other hand, believe warranted the committee's assumption that the leucocytosis is of no significance whatever.

ITS CATALYTIC ACTION

The committee's "*reductio ad absurdum* argument," applied to Hamburger's findings, is based on wholly incorrect premises, Hamburger says literally:

> "It is apparent from this that argentum colloidale has hastened the oxidation of the hemolytic toxins. The quantity of collargol was very small; 0.00000058 gram atoms of silver proved effective even in 2 c.c. toxic serum."

This number of gram atoms silver is equal to 0.000063 grams of silver. In a liter of toxic serum there must therefore be present, to get an effect, 0.0315 grams silver = to 0.035 collargol. Since in an intravenous injection 0.1 to 0.3 gram collargol are injected each time, Hamburger's tests demonstrate that collargol, in the quantity in which it is introduced in the blood, can hasten oxidation of bacterial toxins. The committee erroneously ascribes to Hamburger the statement that "lesser concentrations increase hemolysis." What he says is that the less collargol is added the more rapid is hemolysis.

In duplicating Hamburger's test, at the instance of the committee, Dr. Anderson has overlooked a vital step: He has failed to conduct oxygen through the solution of diphtheria toxin to which he added collargol. His bad results were therefore inevitable, but, of course, prove nothing.

Robin's work was done with electrolytically prepared colloid silver, but his results were corroborative of those obtained by other observers in demonstrating the catalytic action of colloid silver, and were therefore perfectly applicable to collargol, which is nothing else than colloid silver.

H. Fueth (University Gynecology Clinic at Leipsic) said in the *Centralbl. f. Gynæcologie*, September, 1906):

> "Colloid silver acts as a catalysator, i. e., it hastens the decomposition of H_2O_2 under formation of nascent oxygen, without itself undergoing any change."

THE CLINICAL EVIDENCE

The committee concedes that the clinical evidence is extensive, but implies that it is not competent. In disproof of this we call attention to the standing of some of the physicians who have written favorably about collargol: Professor Roswell Park, Buffalo, in "Principles and Practice of Modern Surgery," 1907. Prof. B. K. Rachford, Cincinnati, in *Am. Jour. Med. Sc.*, January, 1909. Prof. F. Forchheimer, Cincinnati, in "Prophylaxis and Treatment of Internal Diseases," 1908. Prof. Norbert Ortner, Vienna, in "Treatment of Internal Diseases," 1908. Professor Plehn, in *Deutsch. med. Wchnschr.*, Dec. 24, 1908. Prof. E. C. Dudley, in "Principles and Practice of Gynecology," 1908. Dr. F. Kreissl, in "Urogenital Therapeutics," 1908. Dr. L. S. Pilcher, in "*Ann. Surg.*," January, 1907.

Surely this is competent authority. We do not understand that the committee impugns the competency of these distinguished members of the profession. The only question which remains, therefore, is to see if our claims are warranted by the tenor of this the clinical testimony. Our claims are:

1. Used prophylactically, collargol is an almost unfailing safeguard against sepsis from accidental or operative wounds or childbirth.

2. Administered early it usually arrests incipient medical or surgical infections or renders their course briefer and milder.

3. Even when employed only as a last resort, it sometimes achieves brilliant recoveries in desperate, apparently hopeless cases.

The third claim being the one most open to scepticism, its substantiation will justify the others. We refer to the publication from Bumm's clinic, which shows a clear reduction of the puerperal mortality under collargol. One of the members of the committee, Prof. Solis Cohen, has seen "two recoveries from malignant endocarditis and numerous recoveries from other grave infections" as the result of energetic employment of it intravenously and per rectum. Dr. George T. Harrien says: "I have saved cases with it that I could not have saved without it. The collargol literature, so far as we know, comprises close to 500 reports. Now, assuming that 30 of these are unfavorable, you are confronted with the conclusions of 470 observers. There is thus an overwhelming preponderance of favorable evidence. And absolute unanimity exists with hardly any remedy of the materia medica.

OUR PRESENTATION OF THE TESTIMONY

The committee alleges that we quoted from an early edition of Tillmann's "Allegemeine Chirurgie," because he there expressed himself more favorably than he did in later editions. Tillmann said:

IN HIS 7TH (1889) EDITION:	IN HIS 10TH (1907) EDITION:
Mehrfach sah ich ueberraschend guenstige Wirkungen, in anderen Faellen war klein Erfolg zu konstantieren.	Das Verfahren hat sich mehrfach beim Menschen bewaehrt, in anderen Faellen war es erfolglos.
(Frequently I saw astonishingly favorable effects. In other cases no success was determinable.)	(The method has frequently proved successful in man, in other cases it was without result.)

If any difference is appreciable, it is rather in favor of collargol, since in the later edition Tillmann generalizes the favorable conclusion which he originally based only on his own observations. Moreover he devotes more space in the later edition to collargol, citing Netter, von Baracz and others. We certainly would have quoted the 1907 edition in preference to the 1899, if we had been aware of its existence, which we were not. We can not search the medical archives of the world from year to year in order to make sure that an author has not published later writings containing slight alterations of his original phraseology. The library of the New York Academy of Medicine does not possess the eighth and ninth editions of Tillmann's book, and we do not even know if the tenth edition (1907) was obtainable at the time our October, 1907, pamphlet was compiled.

The committee points out that in reproducing Hocheisen's favorable report we left out a part of the introduction, in which he said that collargol was used by him in Landerer's clinic without his seeing any result that could not have been secured quite as well with the customary surgical or general treatment. But it was necessary to omit practically the entire introduction, including a great deal of favorable matter, as we had to sacrifice everything excepting the essence of his report in order to make a 3,000-word abstract of the 15,000-word original.

This procedure must be followed in compiling literature. If we reproduced the publication in extenso the printer's bill would be many times as great, and the physician would be quite discouraged at the very outset by the task of wading through pages of unimportant prefatory remarks and explanations, repetitions, literature reviews, etc. We are convinced of the value of collargol—else we would not introduce it—and we present the material evidence in a manner which renders it available to the busy physician. Since it is impossible to acquaint the physician with all of it, since we can in fact acquaint him with only a small part or with none at all, we must use discretion in selecting that for which we request his consideration. We certainly do not thrust before him material which we consider valueless, but chose only what we consider of real importance.

Therefore, we are obliged to omit many publications, favorable as well as adverse, which seem relatively less important. Thus the committee finds fault with us for not reproducing the report of Baginsky. But he used unguentum Credé in "scarlatinal affections of the gravest form" and "the inunctions were not instituted at the beginning of the disease but only after several days." Now we do not claim that unguentum Credé cures scarlatinal affections of the gravest form in which it is used belatedly; in our October, 1907, pamphlet, we say (p. 7):

> "Unguentum Credé is inuncted as a prophylactic of puerperal sepsis and in the treatment of *mild* general septicotoxic processes."

In "severe and desperate infections" we recommend collargol intravenously. Nor do we claim that even collargol intravenously cures every case. The claim is that it sometimes cures desperate cases.

Therefore, what object could have been served by reproducing Baginsky's report. We warn against the very thing which he has done.

Referring to Jeannin and Bonnaire's paper, it is not correct that "there is no evidence that the patients had actual septicemia or pyemia." These authors say:

> "Collargol treatment was instituted by us only in severe, recalcitrant and general infections, or such as tended to become so. We never used it in merely benign or local infections. . . . The intravenous injections were made only after the failure of the ordinary treatment such as intrauterine irrigations, digitalis, curettage and lavage. Our statistics should therefore be compared only with the most severe form—parenchymatous metritis, septicemia, pyemia."

They conclude:

> "Collargol is a method frequently effective against generalized puerperal infections or those tending to become so."

The committee thinks we intentionally withheld Osterloh's report in the *Deutsch. med. Wchnschr.*, 1902, No. 21, wherein the author expresses himself with some reserve regarding collargol. But we also did not reproduce Osterloh's later and much more favorable report (Jahresber. d. Gesellsch. f. Naturu. Heilkunde, 1904). The following is a literal translation of an abstract thereof in the *Centralbl. f. Gynakologie*, 1906, No. 15:

> "After an exhaustive compilation of the casuistic literature the author relates a case which he himself observed. This consisted of a puerperal fever in a primipara (an insane subject), after manual removal of the placenta. Thrombosed vessels in both parametria, daily chills. Treatment consisted of four intravenous injections of 7 to 8 c.c. of a 1 per cent. collargol solution, in bi-daily intervals, and of 12 enemata with 50 c.c. of 1 per cent solution in average intervals of 2 days. After 5 days no more chills. The effect of collargol was favorable on cessation of chills and in improvement of the general condition. The author considers Collargol treatment especially indicated in general puerperal sepsis without localization."

Döderlein also expressed himself distinctly favorable in the *Ztschr. f. aerztl. Fortbildung*, 1907.

The committee says that we mistranslated one of Hocheisen's sentences thus: "Collargol is an invaluable aid in the treatment of puerperal sepsis," and says that the sentence should read: "Collargol is an aid in the treatment of puerperal sepsis." Hocheisen (p. 893 of the Med. Klinik) uses the word "wertvolles," which, however, would have been better rendered as "valuable."

The committee objects to our quotation from Schlossmann's paper that "he advised 1 per cent. collargol solution in sweetened milk when an intestinal antiseptic is needed." The committee seeks to draw from his paper the inference that he is not really in favor of intestinal antiseptics, but recommends collargol as a placebo to those who are foolish enough to believe in intestinal antisepsis. This assumption is not warranted, as shown by the ending of Schlossmann's paper:

> "*For infectious diseases of the mucous membranes*, above all for ophthalmoblennorrhea neonatorum and cholecystitis, there is no other remedy (than collargol) which so intensively and rapidly leads the disease process to cure."

The committee asserts that Rittershaus reported by-effects from collargol. Rittershaus's by-effects (infiltration, embolism) were, however, not due to collargol, but to his wrong technic in administering the injections; he allowed the solution to escape into the tissues, instead of injecting into the vein, and permitted air to get into the syringe.

The committee's majority report charges that we sought to give the impression that all the reports cited in the "Bibliography" (October, 1907, pamphlet) are favorable. This is disproved by the fact that we distinctly say that Ernst Cohn's report was unfavorable and give immediately after his name the number referring to his report in the bibliography.

COMMITTEE'S CRITICISMS OF AUTHORS

The committee criticises the report of Harrison, Witthauer, Afanassjeff, Wenckebach and Netter. We need hardly take it upon ourselves to defend these authors, and merely call attention to the fact that one of Wenckebach's sentences is misinterpreted by the committee. Witthauer's observations are confirmed by those of Kiebold, Plehn and others. Netter's total experience consists of many hundred cases—not of 73 cases, as the committee erroneously states. *Vide* our bibliography in the October, 1907, pamphlet.

CONCLUSIONS

We are quite ready to admit the occurrence of mistakes in our literature; but these mistakes were all trifling, unintentional, without the least importance. Errors are prone to creep into printed matter, despite every possible care, and all that can be done is to guard against their repetition when we learn of them. The committee's report contains quite a number of very important errors. We therefore regret the fact that the report was arrived at by a method of excluding defence. Having shown the unsoundness of its premises, we believe that it will collapse under the weight of its error and unjustness.

Respectfully,

SCHERING & GLATZ.

THE COMMITTEE'S REJOINDER TO SCHERING AND GLATZ'S LETTER

In reply to the Council's inquiry as to our recommendation concerning the response of Schering & Glatz to our report on Collargol, we would say that we recommend that it be published. We would state, however, that after reading it very carefully, we can not find therein any reason for altering our previous conclusions; nor can we find any evidence that we have dealt unjustly with Schering & Glatz, or misinterpreted or otherwise misused any of the testimony that they submitted in support of their claims.

On the contrary, we find in their reply direct admission of a number of false statements that we pointed out; and further they tacitly admit numerous other objectionable things that we emphasized, such as the exaggerated presentation of authors' views, the suppression of portions of sentences and of portions of reports, and the like—all of which they evade answering, except instances that we shall mention. Indeed, they openly state that they choose for their advertising pamphlets only the matter that they "consider of real importance"—a statement that is much illuminated by the fact that the matter left out in the instance that they are discussing, as well as in various other instances, was exceedingly damaging to their claims concerning collargol.

We find, further, that in their reply they make use of the same methods that we condemned most severely in our report. Carefully comparing our original report and Schering & Glatz's reply will show that they have misquoted what we said as to Bonnaire and Jeannin and Netter in a minor way, but in a manner that appears to be intended to discredit our report. Further, in their reply—and especially in a pamphlet recently sent broadcast throughout the country—they present a most excellent illustration of a practice that we condemned with especial severity; namely, the mutilation of statements of authors through subtraction, addition, and rearrangement of words and sentences in such a manner as to make the statements appear stronger than they were, giving them in quotation marks, as if they had been taken without alteration from the authors. It is somewhat remarkable that they should have employed this practice in attempting to discredit the one instance in which they now claim that we falsely accused them of having done exactly this thing. This, again, seems to be clearly done in the belief that the precise facts will not be looked up. The particulars of this matter are as follows:

Schering & Glatz stated that we were wrong in charging that they had inserted the word "invaluable" in a sentence that they quoted from Hocheisen, and insisted that he used the word "werthvolles," which means "valuable." It would be difficult to understand their reply, were it not for the somewhat more extended reply that they have scattered through the mails. The latter clears up the legerdemain. The sentence in the original pamphlet, and the one that we criticised in our report, was: "Collargolum is an invaluable aid in suitable cases." The sentence they now use is: "Collargol is an invaluable aid in cases of puerperal sepsis." This latter sentence is made up as follows: Near the top of the page of Hocheisen's paper from which they quote occurs the following statement: "Hence, Collargol is no specific, but is an aid in suitable cases." Near the bottom of the same page, after having stated a variety of types of cases in which it is not suitable, Hocheisen says: "Used according to these principles, Collargol injections constitute a valuable measure in cases of puerperal sepsis." Hence, it becomes quite clear that the sentence with which we are now presented in running form and in quotation marks is made up, in its first part, from the top of the page, and in its last part, from the bottom of the page, the word "valuable" having been changed into the word "invaluable," and transposed in position in the attempt to justify what we originally criticized.

We were really very gentle with this point in the original report. Any one who cares to read the extract from Hocheisen in Pamphlet C and compare it precisely with the original will see that Schering & Glatz actually, in Pamphlet C, have not only done what we said, but have eliminated a number of things that Hocheisen said, though the extract is given in running form and in quotation marks: and the things that are eliminated are almost all such as to guard and restrict his statements concerning the use of the substance.

Our original criticism concerning this matter was precisely correct. As to their other statements concerning the clinical evidence, we can not go extensively into this matter. We feel that it is quite sufficient to refer any one back to the details of the original report, merely directing them to note carefully in the reply as contrasted with our report the interpretation of authors in a way that appears entirely unjustifiable and particularly the evasions of the main points at issue in such matters as the quotation from Tillmanns. As to such new evidence as that referred to Osterloh, we would note here, again, that their quotation is from an unauthorized abstract; and that in the entire paper by Osterloh, which they do not seem to have consulted, but which we have, the conclusions are more cautious and guarded than those that are presented in this abstract.

The most important portions of their reply, since they relate in part to actual work, are those concerning the pharmacological evidence. As to the form in which Collargol circulates, we referred to precisely the words which they now quote from Hocheisen, when we said that he had offered no evidence. In regard to this and the other evidence that is offered concerning this point, we would say that it is perfectly palpable to any one that none of this is evidence as to the condition in which Collargol is found in the body. The most recent testimony concerning this point (and, indeed, so far as we know, the only testimony that has some appearance of soundness) is that found in the recent study by Luzzato, who agrees with the statement of Schering & Glatz that Collargol rapidly disappears from the blood-stream and is quickly found in the organs; but states that it is found there chiefly AS METALLIC SILVER, AND NOT AS COLLARGOL. This paper had escaped our attention when we made the report, and it seems still to have escaped the attention of Schering & Glatz.

As to absorption, the work of Loebl and Seidel, to which Schering & Glatz refer, we were familiar with. It is scarcely necessary to say that it is ridiculous to attempt to reach any conclusion regarding scientific matters by such gross methods. In regard to this point, also, Luzzato has some clarifying information. He states that, given per os or by enema, Collargol is either not absorbed at all or is absorbed in extremely slight amount; and he says that this is due to the fact that it is readily precipitated out as metallic silver.

As to the experimental results in infected animals, Cohn, Brunner, and Trommsdorff have, as we noted in the report, given Collargol just before, coincidently with, immediately after, and many hours after the infection; and Cohn even let some of his animals become actually ill with streptococcus skin infections before using the substance. All the results, as we stated in our report, were negative. In this section of the reply, it plainly is admitted that all of these experiments were unfavorable; but now, in criticising them, Schering & Glatz shift their ground. In the original pamphlet, Cohn was severely condemned because he gave his injections of Collargol before the infective material; and it was stated that in such a case the leukocytes would be too busy taking care of the silver to be able to attack the infection. In the new evidence now presented, we are told that the injection should be given twenty-four hours before the infection is set up, when the leukocytosis is at its height. It appears quite true that this is the only chance for success that is left; but, in the first place, these two statements are the opposite of each other and, in the second place, such results would not appear very valuable practically, because it is somewhat difficult to use a treatment before the patient gets sick. In the third place, the practice now recommended is obviously prophylaxis; and yet, in the next section we are told that the committee's criticisms of the claims that Schering & Glatz make for Collargol as a prophylactic were very foolish, because there is a difference between giving it topically and giving it by injection—all of which can only be interpreted to mean that it works as a prophylactic when used topically, but not when given intravenously. Clearly, also, the reply at this point states, through quotation, that the important part of the action of Collargol is the leukocytosis which it sets up; and it is directly compared to nuclein and other substances that produce leukocytosis. This must mean that the supposed direct bactericidal, catalytic, and other effects described are unimportant; for such direct effects could not be dependent on a leukocytosis.

On the other hand, in the next section Schering & Glatz state that the leukocytosis is not the sole explanation of its action; and, in reply to our perfectly correct statement that the leukocytosis can not be considered to be of any definite significance in regard to its effect on a general infection, they merely say mildly that they do not agree with this. We would say, Mr. Chairman, that we consider it a little ridiculous for serious-minded persons to play this game of hide-and-seek any further. We have now been told by Schering & Glatz:

1. Collargol must not be given before the infective material, or the resistance of the organism will be lowered by obstructing the activities of the leukocytes.
2. It must be given before the infection.
3. One must, on the other hand, wait until the animal is actually sick.
4. One must, however, not give the animal a very severe infection.
5. The most important effect is the leukocytosis following its use.
6. The leukocytosis is only a fraction of its effects.
7. It has "direct bactericide energy." (Cover of Pamphlet B.)
8. "We do not claim that Collargol kills bacteria, but that it hinders their growth."
9. It is a prophylactic, when injected.
10. It is not a prophylactic, when injected.
11. It acts like nuclein.
12. On the contrary, it has some mysterious activity, all its own, etc., etc.

Let us again point out, on leaving this section, that Cohn's work is once more misrepresented, as will be seen by comparing the statements as given in the reply with the correct statements in our report.

As to their comment on our interpretation of Hamburger's work, we would say that if these new figures are given correctly, we have done Hamburger some injustice. We can not, however, see that we have done the slightest injustice to Schering & Glatz, for, as we stated in the report, we took the figures that we used and the statement that lesser concentrations increase hemolysis, from their own pamphlet (the one marked B by you), and not from Hamburger's own articles, as the latter were not available to us. The figures and statements that we used are precisely correct as given in the Schering & Glatz pamphlet. Perhaps they will now argue that, after our other criticisms of their pamphlets, it was very unwise of us to have put faith in any figures in them. But the actual figures are not the point at issue, as we noted in our report, and since we have no contention with Hamburger, but only with Schering & Glatz's use of his work we do not need to refer to his original articles.

Every one knows that colloidal silver and various other colloidal substances, as well as a host of other substances, may act as catalysers *in vitro*. The matter for consideration is not the amount necessary to produce this effect *in vitro*, but whether any such effect can be shown to occur in the organism. The assumption that it does occur is entirely unjustified, unless there be evidence in favor of it, and particularly when there is evidence against it. Robin's studies of metabolism, we have already discussed. We would further say that his results might quite as readily be called toxic as catalytic; and in our present knowledge of things, they might more suitably be called toxic. The only work with which we are familiar that bears directly on this point and that was carried out under conditions clearly simulating those met with in the diseased organism are the experiments of Dr. Anderson, in which he injected both diphtheria toxin and Collargol into the circulation of living animals. The Collargol caused no lessening of the toxicity of the diphtheria toxin. These experiments Schering & Glatz skilfully avoid mentioning, and merely insist scornfully that Dr. Anderson's other experiments (*in vitro*) were faulty, in that he did not conduct a stream of oxygen through his mixture of toxin—and Collargol—solutions. We may leave it to the judgment of others whether such a procedure would really make such experiments more convincing or less so, as an imitation of the conditions that exist in the living organisms; but whatever may be said about this point, Schering & Glatz can scarcely demand that in his experiments *in vivo* Dr. Anderson should have conducted a stream of oxygen into the hearts of his guinea-pigs when he injected diphtheria-toxin and Collargol.

The truth of this whole matter seems to be that there is no direct evidence in favor of this interesting hypothesis of Hamburger, while there is some evidence against it; and there is no more reason for building sweeping therapeutic assertions on it than there would be for saying that because colloidal platinum will, *in vitro*, act catalytically in hastening the transformation of alcohol into acetic acid, we might optimistically treat acute alcoholic intoxication by the use of colloidal platinum. If we could transform the alcohol into acetic acid, it would, of course, be easy then to use alkalies to neutralize the acetic acid, and thus make the alcohol wholly innocuous.

One further point: Schering & Glatz charge that we said quite improperly that Rittershaus and others have produced dangerous symptoms with Collargol (signs of embolism of the lungs, etc.), and they state that these results were all due to faulty technic. This is hardly worth while replying to, for it is manifestly merely an entirely unjustified interpretation of the bad results we referred to; but in regard to untoward effects of drugs, experimental results in animals have illuminated many questions, and seemed to have illuminated this one somewhat brilliantly. The animal to which Schering & Glatz refer as having been studied chemically by Lange died three hours and a quarter after an injection of Collargol, nothing else having been done to it, so far as the protocol shows. Furthermore, Luzzato states that when injected into the veins Collargol produces lesions of the lungs "with extreme readiness"; and Foa and Agazzotti who also have recently made an extensive study of the effects of colloidal silver preparations, say that Collargol in small doses produces fever, phosphaturia and slight albuminuria, while large doses produce marked phosphaturia and a very severe nephritis with casts and hematuria, which, in a short time, leads to the death of the animal. In order to avoid misunderstanding we would say that the two articles last referred to we have seen only in abstract, but the abstracts were not the wholly unauthorized kind that we criticized Schering & Glatz for using, but were written by the authors themselves. In consequence of these and the other very disquieting reports we have referred to we must emphasize our previous statement that the claim that Collargol is harmless when administered in any manner is far from justified.

Usefulness of a Card Index of Nostrums

Every physician can testify from personal observation to the harmfulness of "patent medicines;" harmful either because the drugs they contain are contraindicated, because they lead to the formation of a habit, or more often because the person taking them is deprived of proper treatment, perhaps, until it is too late. When, therefore, a physician is questioned in regard to the value of the "patent medicine," it is not difficult for him to speak in general terms of its harmfulness or worthlessness; when, however, he wishes to educate his patients in regard to the viciousness of self-drugging, it is a material aid for him to have a specific knowledge of the nostrum in question.

It is for this reason that The Journal has published, from time to time, analyses of "patent medicines," as for instance, those of "kidney cures," "liver medicines," "obesity cures," etc., and will continue to do so, probably to a greater extent in the future than in the past. But the publication of such matter will be of value for the purpose for which it is intended, only to the extent to which physicians use it. The main object of this paragraph is to suggest that for ready reference, a card index record be kept of all these articles. This will be much more available for ready reference than The Journal index. Such an index is easily kept up and we feel sure will prove handy in emergencies—that is, when one wants some definite knowledge in regard to a particular preparation.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

HOP VINES TO EXCLUDE FLIES

A writer in the *Christian Advocate* of New York suggests that hop vines may be objectionable to flies. Living in a town in Bulgaria, a land where filth and rubbish abound as almost nowhere in America, this writer considers that her house may be considered a fair testing place for the efficacy of hop vines in keeping out flies. The vines run over the porch and over the windows. There are no screens but no flies enter the kitchen no matter what cooking is done there. When the vines were laid on the ground so that the house could be whitewashed, the flies swarmed into the kitchen; on replacing the vines, freedom from flies was again enjoyed. Although we depend so much on screens in the United States, this information may interest many because screens can seldom be perfectly effective. It may be a question whether the flies are actually kept out of the room because the hop vines are objectionable to the insects or because the room is darkened by the vines over the windows. Any room that is kept fairly dark has no attraction for flies. THE JOURNAL will be glad to know if others can answer this point.

DETECTION OF TUBERCLE BACILLI IN THE BLOOD

To the Editor:—Dr. Keen, in his article in THE JOURNAL, June 26, 1909, refers to Rosenberger's method of detecting the tubercle bacillus in the blood. Where may I get information regarding this diagnostic method? J. W. GRAHAM, M.D., Highland, Kan.

ANSWER.—Rosenberger's article is published in the *American Journal of the Medical Sciences*, February, 1909. He withdraws 5 c.c. of blood, mixes it with an equal quantity of a 2 per cent. solution of sodium citrate in normal [physiologic?] salt solution, and places it in the refrigerator for twenty-four hours. The sediment is then transferred to a slide with a pipette, dried and placed in distilled water until complete laking of the blood occurs. The delicate film remaining is dried, fixed and stained by the usual technic for tubercle bacilli. Rosenberger claims to have found bacilli in the blood in every one of 125 cases examined. The value of this method as a diagnostic procedure has not yet been determined.

CLIMATE FOR RHEUMATISM

To the Editor:—Where is to be found a good climate for a rheumatic child, one that would permit of out-of-door life during the winter months? C. R. J.

ANSWER.—One would naturally choose a warm, equable, sunshiny region, not excessively warm nor humid and not too high above the sea level, on account of the added work put on the heart. Southern California or the winter resorts of Georgia, such as Thomasville or Augusta, or even Southern Arizona or San Antonio, Texas, would be especially suitable for such cases.

Origin of Tetanus and Action of Tetanus Toxin.—No. 520 of the *Sammlung klinischer Vorträge* is devoted to a study of tetanus by C. Pochhammer. He says the tetanus toxin is deposited in and bound by the myelin in the medullary sheath. The toxin may be retained in the nerve tracts for years, which is probably the explanation of the connection between syphilis and tabes; infections especially accompanied by nervous symptoms generally leave the patient immune to renewed infection. His research confirms the fact that antitoxins or antibodies are not absolutely specific, but merely induce general processes of regeneration, and that serotherapy in established tetanus is generally useless or actually harmful, taxing the organism, even if it does not have a direct toxic action. Tetanus antitoxin should thus be dropped from the list of curative serums. When the first symptoms of tetanus develop it is then too late for serotherapy. Even when tetanus toxin was injected directly into the animals there was always a period of incubation before symptoms developed, and this interval could never be shortened to less than eight hours, no matter how large the dose. He explains this by the taking up and binding of the toxin in the finest peripheral terminals; owing to their ramifications increasing the surface area, and their abundant circulation, they are able to take up the toxin much more readily and extensively than the main trunks of the nerves. Only when the toxin has finally worked its way to the mixed peripheral nerves and nerve trunks do symptoms develop. For this same reason the shorter, small, mixed nerve branches are more readily affected by the toxin than the larger trunks, a fact which explains the localization of the symptoms in muscles of this kind, such as the muscles in the throat, neck and back, innervated by short, small mixed nerves. The whole syndrome of tetanus is thus robbed of its mystery by this research, he declares, especially by the discovery that there was no cramp in a limb after resection of a considerable stretch of its nerves.

Correspondence

Digitalis and Its Standardization

JUNE 16, 1909.

To the Editor:—The article in THE JOURNAL, June 12, on the above subject, is deserving of more than passing attention. Probably no drug is more extensively prescribed or enthusiastically lauded in the treatment of certain heart lesions (senile weaknesses with dilatation, etc.) than this one; and yet there is a constantly increasing multitude of us who have come to believe it to be absolutely worthless if not contraindicated in these conditions. Who is right?

If digitalis will do all, or even a part of what its admirers claim for it, then we have no efficient substitute therefor, and we "need it in our business"—at least I do, for I have, and have had for many years, constantly under observation many cases in which its administration would be indicated. Can it be that our lack of faith in this drug proceeds from our having used unreliable and inert preparations? If so, I for one am ready to "start over." It has, of course, been long recognized that an infusion of the leaves was the most reliable and efficacious method of administration; but where and of whom are reliable leaves to be obtained, and how is their efficacy to be maintained? I presume that there are good, effective digitalis leaves whose qualities are capable of standardization. My principal object in writing this is to enquire as to the possibility of making a pill containing say three-fourths or one grain of such leaves—such a pill as is advocated by Hirsch of Gottingen. Is it within the province of pharmacy to construct such a pill that will retain its efficacy for a reasonable length of time? If so, I am sure there is a market for it; alcoholic and non-alcoholic preparations are evidently too unreliable to be trusted.

W. H. CURTIS, M.D., Wilmington, Ill.

Kerosene as a Remedy and Its Variability

JULY 1, 1909.

To the Editor:—I have been greatly interested in the article by Dr. Granville S. Haines on Amebic Dysentery (THE JOURNAL, June 19, 1909, p. 1990) and especially his use of "coal oil" (kerosene) as a remedy. This substance is quite popular with a certain class of people as an external application in sore throat, "rheumatism" and other painful affections. All specimens of the oil do not, however, seem to be identical in constitution, for I have seen a number of cases of severe blistering following its use; also one case of severe pharyngitis following the administration of a teaspoonful by mouth. In all these cases the patients (or the parents) claim to have used it previously without such reaction. From this it would seem that the liquid differs in its irritating qualities, probably owing to its origin from different wells.

The result of the use of an irritating specimen in the manner recommended by Dr. Haines might be decidedly unpleasant. G. J. KAUMHEIMER, Milwaukee.

The Public Service

Army Changes

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ended July 3, 1909:

Hartsock, Frederick M., major, ordered to duty at camp at Toledo, Ohio.

Little, William L., capt., ordered to Fort Jay, N. Y., for temporary duty.

Kiersted, Henry S., capt., honorably discharged from the service of the United States, with one year's pay.

Miller, Edgar W., capt., ordered to Fort Wayne, Mich., for temporary duty.

Ewing, Charles B., major, granted leave of absence for two months, about July 25.

Fauntleroy, Powell C., major, ordered to duty at camp at Sparta, Wis.

Owen, Leartus J., capt., ordered to duty at camp at Toledo, Ohio.

McCornack, Condon C., 1st lieut., M. R. C., ordered from Plattsburg Barracks, N. Y., to duty with troops en route at Augusta, Maine.

Kierulff, H. Newton, 1st lieut., M. R. C., ordered from Fort Missoula, Mont., to Fort Snelling, Minn., for temporary duty in the field.

Giffin, Adolphe M., 1st liuet., M. R. C., ordered to active duty July 15, 1909; will proceed to Seattle, Wash., and sail August 5, for Philippine service.

Navy Changes

Changes in the Medical Corps, U. S. Navy, for the week ended July 3, 1909:

Rodman, S. S., P. A. surgeon, ordered to temporary duty at the Naval Recruiting Station, Indianapolis.

Guest, M. S., surgeon, detached from the Naval Academy, Annapolis, Md., and ordered to the Naval Hospital, Las Animas, Colo., for treatment.

Huntington, E. O., surgeon, granted sick leave for three months when discharged from treatment at the Naval Medical School Hospital.

Shook, F. M., P. A. surgeon, detached from duty in the department of government and sanitation, Canal Zone, Isthmus of Panama, and ordered to duty at the Naval Medical School, Washington, D. C.

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the week ended June 30, 1909:

Bailhache, P. H., surgeon, directed to report at Bureau on special temporary duty.

Young, G. B., surgeon, granted 3 days' leave of absence from June 15, 1909, paragraph 189, Service Regulations.

Anderson, J. F., P. A. surgeon, directed to proceed to Detroit and Chicago, on special temporary duty.

Goldberger, Jos., P. A. surgeon, directed to proceed to New York, on special temporary duty.

Glover, M. W., P. A. surgeon, directed to make examination of keepers and surfmen of the Life Saving Service at Seattle Exposition.

Collins, G. L., P. A. surgeon, relieved from duty at Cape Charles Quarantine Station, and directed to proceed to Stapleton, N. Y., and report to the medical officer in command for duty and assignment to quarters.

McKeon, F. H., P. A., surgeon, directed to proceed to Hongkong, China, for temporary duty.

Warner, H. J., asst.-surgeon, directed to assume command of Cape Charles Quarantine Station.

Hunt, Reid, chief, division of chemistry, Hygienic Laboratory, detailed to attend the meeting of the American Chemistry Society, to be held in Detroit, June 29-July 2, 1909.

Doole, T. P., acting asst.-surgeon, granted 3 days' leave of absence from June 28, 1909, Paragraph 210, Service Regulations.

MacCaffry, W. B., acting asst.-surgeon, granted 10 days' leave of absence from July 11, 1909.

Reimer, H. B. C., acting asst.-surgeon, granted 5 days' leave of absence from June 12, 1909, Paragraph 210, Service Regulations.

Stevenson, J. W., acting asst.-surgeon, granted 5 days' leave of absence from June 26, 1909.

Health Reports

Cases reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 2, 1909:

SMALLPOX—UNITED STATES

California: Hobart Mills, April 1-30, 1 case, imported; Sacramento, June 5-12, 1 case; San Francisco, 1 case; Trukee, March 23, 3 cases, imported.

Georgia: Macon, June 13-20, 4 cases.

Illinois: Chicago, June 12-19, 1 case; Danville, June 13-20, 2 cases; Peoria, May 1-31, 44 cases.

Indiana: Fort Wayne, June 5-19, 21 cases; South Bend, June 12-19, 2 cases.

Kansas: Kansas City, June 12-19, 3 cases.

Kentucky: Covington, June 12-19, 1 case; Newport, June 13-20, 1 case; Paducah, June 12-19, 1 case.

Louisiana: New Orleans, June 12-19, 3 cases, 2 imported.

Minnesota: Minneapolis, May 1-31, 20 cases.

Missouri: Kansas City, June 12-19, 1 case.

Montana: Butte, June 10-17, 4 cases.

Nebraska: Lincoln, May 1-31, 14 cases.

North Carolina: In 17 Counties, April 1-30, 87 cases.

Ohio: Cincinnati, June 11-18, 3 cases.

Oregon: Portland, April 1-30, 6 cases.

Texas: San Antonio, June 12-19, 5 cases; San Saba County, April 9-May 26, 11 cases.

Utah: State, May 1-31, 135 cases.

Washington: Spokane, June 5-12, 2 cases; Tacoma, May 16-23, 2 cases, June 6-13, 2 cases.

Wisconsin: La Crosse, June 12-19, 1 case.

SMALLPOX—FOREIGN

Africa: Tripoli, April 24-May 22, 27 cases, 10 deaths.

Brazil: Bahia, May 7-14, 2 cases; Rio de Janeiro, May 16-23, 18 cases, 1 death.

Ceylon: Colombo, May 15-22, 1 case.

China: Canton, May 1-8, 5 cases; Hongkong, May 1-15, 6 cases, 5 deaths.

Egypt: Cairo, May 13-20, 5 cases, 4 deaths.

France: Paris, April 3-10, 2 cases, May 22-29, 7 cases.

Germany: Königsberg, May 15-22, 1 case.

India: Bombay, May 18-25, 12 deaths; Calcutta, May 8-15, 58 deaths; Madras, May 15-21, 2 deaths; Rangoon, May 8-15, 3 deaths.

Italy: General, May 30-June 6, 21 cases; Naples, 7 cases.

Java: Batavia, May 1-8, 3 cases.

Manchuria: Dalny, May 15-22, 2 cases, 1 death.

Mexico: Mexico City, May 8-15, 30 deaths; Monterey, June 6-13, 2 deaths; Veracruz, May 30-June 13, 2 cases, 1 death.

Portugal: Lisbon, May 22-June 5, 5 cases.

Russia: Moscow, May 15-29, 51 cases, 17 deaths; Riga, May 29-June 5, 6 cases: St. Petersburg, May 15-22, 8 cases, 8 deaths.

Servia: Belgrade, May 22-29, 2 cases.

Spain: Barcelona, May 31-June 7, 3 deaths; Valencia, May 22-29, 10 cases, 1 death.

Switzerland: Geneva, May 15-29, 9 cases.

Turkey in Europe: Constantinople, May 23-30, 1 death.

Turkey in Asia: Smyrna, May 6-13, 2 deaths.

YELLOW FEVER

Brazil: Bahia, May 7-21, 11 cases, 6 deaths; Para, May 22-29 3 cases, 3 deaths.

Mexico: Merida, June 4-11, 2 cases.

CHOLERA

India: Bombay, May 18-25, 8 deaths; Calcutta, May 8-15, 61 deaths; Rangoon, May 8-15, 1 death.

Russia: St. Petersburg, June 2-10, 58 cases, 24 deaths, June 23, 75 cases.

Straits Settlements: Singapore, May 1-8, 6 deaths.

PLAGUE

Brazil: Rio de Janeiro, May 16-23, 1 case.

Chile: Antofagasta, May 15, 6 cases in lazaretto; Iquique, May 16, 16 cases in 14 days.

China: Canton, May 1-8, 40 cases, 30 deaths; Hongkong, May 1-15, 9 cases, 6 deaths.

India: May 8-15, 5,239 cases, 4,578 deaths: Bombay, May 18-25, 136 deaths; Calcutta, May 8-15, 160 deaths; Rangoon, May 8-15, 10 deaths.

Japan: Yokohama, May 22-29, 1 case, June 2, 1 case.

Peru: May 8-15, 17 cases, 8 deaths.

Turkey in Asia: Bagdad, May 2-24, 9 cases.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Homeopathic, Little Rock, July 13. Sec., Dr. P. C. Williams, Texarkana.

ARKANSAS: Regular, Little Rock, July 13. Sec., Dr. F. T. Murphy, Brinkley.

CONNECTICUT: Regular, New Haven, July 13-14. Sec., Dr. Charles A. Tuttle, 196 York St.: Homeopathic, New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, New Haven, July 13. Sec., Dr. T. S. Hodge, 17 Main St., Torrington.

DISTRICT OF COLUMBIA: Washington, July 13-16. Sec., Dr. George C. Ober, 210 B St., S. E.

INDIANA: 120 State House, Indianapolis, July 13-15. Sec., Dr W. T. Gott.

MAINE: State House, Augusta, July 13-14. Sec., Dr. Frank W. Searle, 806 Congress St., Portland.

MASSACHUSETTS: State House, Boston, July 13-15. Sec., Dr. Edwin B. Harvey, Room 159, State House.

NEW MEXICO: Santa Fe, July 12. Sec., Dr. J. A. Massie.

OKLAHOMA: Guthrie, July 13. Sec., Dr. Frank P. Davis, Enid.

SOUTH DAKOTA: Watertown, July 14-15. Sec., Dr. H. E. McNutt, Aberdeen.

VERMONT: Burlington, July 13-15. Sec., Dr. W. Scott Nay, Underhill.

WEST VIRGINIA: Charleston, July 13-15. Sec., Dr. H. A. Barbee, Point Pleasant.

WISCONSIN: Madison, July 13-15. Sec., Dr. J. V. Stevens, Jefferson.

NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS

Nineteenth Annual Convention, held at Atlantic City, June 7, 1909

The Vice-President, DR. A. RAVOGLI, Cincinnati, in the Chair

There were present Drs. Edwin B. Harvey and W. T. Councilman, Massachusetts; L. F. Bennett, Wisconsin: Charles A. Tuttle, Connecticut; F. C. Zapffe and A. D. Bevan, Illinois; W. J. Means, N. R. Coleman, J. A. Duncan, R. A. Baker and M. A. Jerome, Ohio; Abraham Flexner of the Carnegie Foundation; N. P. Colwell of the Council on Medical Education; Henry Beates, J. C. Guernsey, Augustus Korndoerfer, Edward Cranch, C. S. Middleton, H. L. Northrop and D. P. Maddux, Pennsylvania; A. B. Briggs, G. T. Swarts and J. H. Bennett, Rhode Island; E. L. B. Godfrey, New Jersey; W. W. Potter, W. S. Ely, A. Vander Veer and A. T. Bristow, New York; F. S. Raymond, Tennessee; George Dock, Tulane University; W. H. Welch, Maryland; and S. D. Van Meter, Colorado.

The minutes of the eighteenth annual convention, held in Chicago, June 1, 1908, were read and approved.

Eulogy of Dr. Happel

Dr. A. Ravogli delivered an address which was a eulogy of the late Dr. T. J. Happel of Trenton, Tenn.

On motion, a committee was appointed to draft resolutions commemorating Dr. Happel, and a recess of five minutes was taken out of respect to Dr. Happel. The following resolutions were submitted by the committee and adopted by the confederation:

WHEREAS, By the death of Dr. Thomas J. Happel, of Trenton, Tenn., which occurred on the twenty-fourth day of May last, the National Confederation of State Examining and Licensing Boards suffers the loss of its honored President, Therefore,

Resolved, That in the death of Dr. Happel the medical profession has lost one of its most valued members and the community an honored citizen. Dr. Happel spent the greater part of his active life in the upbuilding of medical education and the medical profession in this country, and,

Resolved, That this Confederation extends its most profound sympathy to the family and relatives of the late Dr. Happel.

Resolved, That a copy of these resolutions, duly engrossed, be forwarded to the family of Dr. Happel, and the same be spread on the records of this confederation.

Report of the Executive Council

The report of this council was read by the chairman, Dr. N. R. Coleman. Acting on the recommendations contained in this report, a committee of five, all of whom are members of state boards, was appointed to investigate and report at the succeeding meeting of the confederation on the subject of clinical instruction in medical colleges; and provision was made for the presentation of this subject by clinical teachers themselves. The secretaries of each of the state and territorial examining boards, and of the District of Columbia, were appointed as a committee of official correspondents of the confederation.

Report of the Examinations Committee

Dr. J. C. Guernsey read the report of this committee, which was referred to the executive council for further consideration, and on the basis of recommendations contained therein the following resolution was adopted:

WHEREAS, A mixed examination, oral, practical and written, of applicants for medical licensure in every state is important, therefore be it

Resolved, That this confederation earnestly recommends to the various state boards now restricted as to their methods of conducting examinations to take proper steps to secure amendatory legislation to enable them so to conduct their examinations.

Secretary's Report

Dr. M. G. Motter reviewed briefly the work of the subcommittee on the teaching of materia medica and therapeutics of the Council on Medical Education of the American Medical Association. The recommendations contained in this report were referred to the executive council, and the following resolutions were finally adopted:

WHEREAS, It is generally recognized that the time available for instruction in therapeutics, materia medica and pharmacology does not suffice for the study of all the known drugs; and

WHEREAS, It is also recognized that the limited time can be devoted, to best advantage, to acquiring a thorough familiarity with the characters, actions and uses of the important drugs, at the expense of those of doubtful or negative value; therefore be it

Resolved, That the National Confederation of State Medical Examining and Licensing Boards urges on its constituents the advisability of confining examination questions to the most important preparations of the more important drugs.

Resolved, That it recommends to their attention the report of the sub-committee on the teaching of materia medica, etc., of the American Medical Association's Council on Medical Education; and be it further

Resolved, That the president of the National Confederation of State Medical Examining and Licensing Boards be, and he is, hereby authorized and instructed to appoint a committee of three to confer with the Council on Medical Education and to compile and report to this confederation a list of the more important drugs and their preparations to which the examinations of the constituent boards may be confined, this list to be published in THE JOURNAL of the American Medical Association as with the approval and endorsement of the confederation.

Officers Elected

The following officers and members of the executive council were elected for the ensuing year: President, Dr. A. Ravogli, Ohio; vice-president, Dr. J. C. Guernsey, Pennsylvania; second vice-president, Dr. Charles A. Tuttle, Connecticut; secretary-treasurer, Dr. M. G. Motter, Washington, D. C.

Executive council: Dr. N. R. Coleman, chairman; Dr. Edwin B. Harvey, Dr. James A. Duncan, Dr. Henry Beates, Dr. D. P. Maddux.

The following committees were appointed:

Committee on clinical instruction: Dr. Henry Beates, chairman; Dr. Charles A. Tuttle, Dr. Fred C. Zapffe, Dr. M. J. Lewi, Dr. L. F. Bennett.

Committee to compile list of drugs: Dr. M. G. Motter, chairman; Dr. J. C. Guernsey, Dr. George MacDonald.

Papers Read

The following papers were read:

"The Necessity of a Practical Test for Candidates in the State Examinations," by Dr. J. C. Guernsey; "Need, Methods and Value of Medical College Inspection," by Dr. N. P. Colwell; "Standing of Medical Colleges," by Dr. James A. Duncan; "Practical versus Theoretical Examinations," by Dr. W. T. Councilman; "The Inadequacy of the Written Examination," by Dr. Edwin B. Harvey; "What Branches or Portions of Branches Should be Included in the Written, and What in the Oral Examinations?" by Dr. J. C. Guernsey; "Is It to the Best Interests of Students and Medical Examining Boards to Have Divided Examinations?" by Dr. William Warren Potter; "The Feasibility of Practical Examinations," by Dr. Augustus Korndoerfer; "How Can Practical Examinations be Graded and Recorded?" by Dr. L. F. Bennett.

New Members

Dr. Edward Cranch of Erie, Pa., Dr. George MacDonald of Washingon, D. C., and Dr. A. B. Briggs of Providence, R. I., were elected to membership.

Next Meeting Place

St. Louis was selected as the meeting place for 1910, the meeting to be held the day preceding the meeting of the American Medical Association.

Association News

NEW MEMBERS
For the Month of June

The following is a list of new members of the American Medical Association for the month of June, 1909. Names marked with stars or daggers are of those who became members at the Atlantic City session; the dagger indicates that the name so marked was previously on the subscription list:

ALABAMA

Casey, T. A., Birmingham.
†McCafferty, E. L., Mt. Vernon.
*Partlow, W. D., Tuscaloosa.
Taylor, T. F., Tuskegee.

ARIZONA

White, D. W., Phœnix.

ARKANSAS

Caldwell, Robt., Little Rock.
Cannon, G. E., Magnolia.
Gray, E. M., Poughkeepsie.
†Hinkle, C. G., Batesville.
Wood, Clark, Fort Smith.

CALIFORNIA

†Farris, C. M., Sacramento.
Hess, H. A., San Francisco.
Irones, R. B., San Diego.
Jacobs, S. N., San Francisco.
Jones, C. B., Sacramento.
McCue, J. E., San Rafael.
†Morrow, Howard, San Francisco.
Porter, Langley, San Francisco.
Remmel, A. J., San Francisco.
Rookledge, P. L., Cambria.
Smith, F. J., San Diego.
*Wymore, W. W., San Francisco.

COLORADO

Matson, W. F., Denver.
Woodruff, R. H., Segundo.

CONNECTICUT

*Alling, A. N., New Haven.
*Keating, W. P. S., Willimantic.
†Morrissey, M. J., Unionville.
Watson, W. C., Bridgeport.
*Weidner, Calvin, Manchester.

DELAWARE

†Blake, C. H., Newark.

DIST. OF COLUMBIA

Foote, J. A., Washington.
Greene, W. P., Washington.
*Heinecke, G. B., Washington.
†Miller, M. E., Washington.

GEORGIA

Ballenger, E. G., Atlanta.
Cunningham, F. M., Macon.
Jones, Jabez, Savannah.
Massoud, M. A., Stillmore.
*Wise, B. T., Jr., Plains.

ILLINOIS

Barker, F. M., Waukegan.
Bascom, H. M., Ottawa.
Connor, W. H., Chicago.
Enright, W. J., Chicago.
Farrell, E. J., Rockford.
Haeffner, A. W., Chicago.
Hayes, Richard, Odell.
*Hecker, W. H., Watseka.
†Hector, W. S., Chicago.
Herb, Isabella C., Chicago.
deKieffer, O. M., Chicago.
Leeson, F. W., DeKalb.
Paddock, W. R., Lockport.
Tow, Johanna E., Chicago.
Weber, A. T., Chicago.

INDIANA

†Harpole, C. B., Evansville.
Huffman, Wm. G., Richmond.
Krueger, F. W., Richmond.
Mayfield, C. H., Brookville.
†Norton, F. D., Columbus.
*Shimer, Will, Wanamaker.
Spooner, J. P., Peru.
Warwick, C. A., South Bend.

IOWA

Austin, H. M., So. English.
Bothwell, C. D., Fairbank.
Bruechert, H. N., Parkersburg.
Campbell, S. A., Malvern.
Christy, Edgar, Glenwood.
Crabbe, A. A., Traer.
Cretzmeyer, F. X., Emmetsburg.
Ensley, B., Shell Rock.
Everall, B. C., St. Olaf.
†Fox, W. H., Waucoma.
Goff, H. L., Lamoni.
Hartley, G. A., Battle Creek.
Hinkle, G. W., Harvard.
Hunt, H. H., Hazleton.
Ingersoll, R. Z., Promise City.
Jessup, A. E., Diagonal.
McColm, C. W., New Market.
McConnaughey, J. T., Wayland.
Phillips, N. W., Hanlontown.
†Porath, W. C., Varina.
Printz, E. T., Moulton.
Rimer, E. M., Guernsey.
Scott, Sophie H., Des Moines.
Shope, C. C., Des Moines.
Smith, H. T., Humeston.
Stolley, J. G., Moville.
Tate, T. E., Albia.
Van Dyke, J. H., Cedar Falls.
Wailes, J. W., Davis City.
*Walsh, T. N., Hawkeye.
Young, P. G., Hocking.

KANSAS

DePew, F. L., Howard.
Light, R. A., Chanute.
Long, A. J., Elk Falls.
*Maser, G. W., Parsons.

KENTUCKY

*Alderson, S. P., Russellville.
Dale, C. F., Lexington.
Dotson, W. A., Phelps.
Gibbs, S. C., Lawrenceburg.
Hill, A. F., Vanceburg.
Houston, E. B., Hazel.
Kidd, C. E., Paducah.
†McClymonds, J. T., Lexington.
†Minish, L. T., Frankfort.
Patrick, W. F., Louisville.
Richardson, W. F., Lewisburg.
†Strother, F. P., Madisonville.
Taylor, James, East Fork.
Travis, W. T., Tribune.
Washburn, L. L., Heights.
Weidner, Carl, Louisville.

LOUISIANA

Blum, H. N., New Orleans.
*Craighead, C. C., Athens.
*Hendrick, J. A., Shreveport.

MAINE

†Beckler, W. B., Auburn.
Bucknam, R. W., Bryant Pond.
*Kilburn, Frank, Presque Isle.

MARYLAND

†Buck, Jefferies, Baltimore.
*Fitzhugh, H. M., Westminster.
*Hodgson, H. W., Cumberland.
Legg, T. H., Union Bridge.
Leopold, E. J., Baltimore.
*Shull, J. D., Baltimore.

MASSACHUSETTS

Anthony, J. C., Springfield.
Bellehumeur, D. S., Lowell.
Broderick, F. P., Jamaica Plain.
Carey, B. W., Fitchburg.
†Deems, O. M., Springfield.
Fuller, C. B., Waltham.
Kilbourn, A. G., Groton.
†Maloney, D. W., Watertown.
McCarthy, E. A., Fall River.
McKibben, W. W., Worcester.
Morrison, A. B., Boston.
Pettey, J. A., Brockton.
Thompson, F. H., Jr., Fitchburg.
Wernick, B. G., Boston.

MICHIGAN

Baskett, G. T., Ann Arbor.
Berggren, T. J., Battle Creek.
*Black, J. C., Milford.
†Fluemer, O. C., Mt. Clemens.
Macqueen, D. K., Laurium.
Madajesky, E. H., Bessemer.
†Maguire, F. J. W., Detroit.
Mates, E. L., Dowagiac.
†McVeigh, J. A., Detroit.
*Miller, E. C. L., Detroit.
Parker, W. T., Corunna.
Ribbeck, W. A., Addison.
Ulbrich, H. L., Detroit.

MINNESOTA

Collins, A. N., Austin.
Hill, H. W., Minneapolis.
†Moe, A. J., Heron Lake.
Oberg, C. M., Minneapolis.
Rodgers, C. L., Minneapolis.

MISSISSIPPI

Howard, L. H., Kosciusko.

MISSOURI

Bulkley, J. F., La Plata.
†Carter, J. J., Weston.
Chastain, C. W., Plattsburg.
Goodson, W. H., Liberty.
Lemmon, G. B., Springfield.
*Miller, R. F., St. Louis.
Mosher, G. C., Kansas City.
Richter, Geo., St. Louis.
Rohlfing, H. A. L., St. Louis.
Southern, J. N., Monroe City.
Thumser, Lawrence, St. Louis.
Vinyard, Paul, St. Louis.
Weiss, William, St. Louis.

MONTANA

Lakey, W. J., Kendall.
Loomis, E. A., Somers.
Owens, R. L., Hamilton.

NEBRASKA

Crook, Roy, Winnetoon.
Johnson, C. C., Creighton.
Lieber, Chas., Omaha.
Walker, G. H., Lincoln.

NEVADA

Ballance, W. P., Searchlight.
Barbee, C. M., Goldfield.

NEW HAMPSHIRE

Fraser, S., Wentworth.

NEW JERSEY

Bush, A. C., Verona.
Craig, J. M., Lakewood.
†Cregar, P. B., Plainfield.
Day, H. V., Butler.
Frace, P. W., Hoboken.
*Henry, F. C., Perth Amboy.
†Jenifer, Danl. of St. Thos., Atlantic City.
*King, G. W., Secaucus.
†Lamson, W. J., Summit.
*Leavitt, J. F., Camden.
†MacDowall, J. D., Perth Amboy.
*Mahaffey, J. L., Camden.
†Mason, W. M., Atlantic City.
†Mitchell, A. J., Newark.
Rose, H. L., Camden.
†Rosenwasser, C. A., Newark.
Schuck, T. J., Hoboken.
*Shangle, M. A., Elizabeth.
†Van Vranken, G., Passaic.
*Ware, F. V., Millville.
*Wells, J. M., Trenton.

NEW MEXICO

†Cook, J. O., Taos.
†Cornish, P. G., Albuquerque.
†Lukens, C. E., Albuquerque.

NEW YORK

*Andrews, L. M., Warsaw.
*Bates, J. F., Setauket.
Bayliss, F. P., Utica.
Bernstein, H. A., New York City.
*Bogue, F. L., New York City.
*Boyce, J. N., Stanfordville.
†Brown, C. M., Buffalo.
*Bryant, H. A., Schenectady.
Chamberlain, A. R., New York City.
Cohn, Louis, New York City.
†Collins, J. H., Schenectady.
†Cunningham, J. A., Brooklyn.
*Haase, Charles, Elmira.
Hellman, A. M., New York City.
Huntley, J. F., Oneida.
Imperatori, C. J., New York City.
*Johnson, B. C., Buffalo.
Kosak, F. F., New York City.
Lang, Ludwig, New York City.
†Le Brun, Louis, Albany.
Lehman, Max, Glendale.
Locke, H. G., Syracuse.
*Maben, B. W., Kingston.
MacEvitt, James, Brooklyn.
†McParthon, Peter, Schenectady.
Morrison, J. F., Brooklyn.
Mynderse, H. V., Schenectady.
*O'Brien, D. D., Oswego.
†Phelps, A. W., East Aurora.
†Richards, C. A., Dunkirk.
Rickard, W. L., Brooklyn.
Samorini, A. A., Schenectady.
†Shannon, J. R., New York City.
*Shipman, E. W., New York City.
Silliman, G. S., Westbury.
*Slee, Richard, Nanuet.
Snyder, W. H., Newburgh.
Stark, G. W., Syracuse.
†Steen, W. D., New York City.
Steinhardt, I. D., New York City.
Thro, W. C., New York City.
†Wallace, G. B., New York City.
†Warren, J. S., New York City.
Wilcox, H. B., New York City.
Wilson, E. B., Brooklyn.
Woodhouse, F. E., Elmira.
*Yankauer, G. G. Prior, New York City.
Zwetsch, J. D., Gowanda.

NORTH CAROLINA

†Brantly, H., Spring Hope.
*Brookshire, H. G., Asheville.
†Calloway, A. W., Asheville.
*Halsey, B. F., Roper.
†King, R. M., Concord.
†Turner, J. P., Greensboro.

NORTH DAKOTA

*Brandt, A. M., Bismarck.
Marsden, C. S., Grand Forks.
Mayland, L. L., Rydes.
Thyng, D. K., Willow City.

OHIO

†Berghausen, Oscar, Cincinnati.
*Bratton, H. O., Columbus.
Chamberlain, W. P., Cleveland.
*Davis, D. W., Wellston.
*Dowling, Francis, Cincinnati.
Gudenkauf, A. B., Sidney.
†Heller, F. S., Oak Harbor.
Hill, J. E., Akron.
Huffman, O. V., Dayton.
Hull, W. H., Cincinnati.
Kuta, F. J., Cleveland.
*Osborne, H. M., Youngstown.
†Quayle, J. H., Cleveland.
Remy, T. H., Hanging Rock.
*Schaeffer, G. C., Columbus.

OKLAHOMA

Ambrosewf, S. A., Muskogee.
Hollingsworth, J. E., Spavinaw.
Hughson, F. L., Centralia.

PENNSYLVANIA

Armstrong, W. J., Kane.
Beck, F. W., Girard.
Bender, E. C., Philadelphia.
Betts, W. W., Chadds Ford.
Blair, W. W., Pittsburg.
Bogart, A. E., Philadelphia.
Brace, R. W., Philadelphia.
Bricker, E. B., Lititz.
Burkett, J. W., Moon Run.
*Carrier, Frederic, Philadelphia.
Cisna, W. R., Ickesburg.
†Clapp, G. H., Philadelphia.
Clifford, E. M., Greensburg.
Cross, G. H., Chester.
Davis, J. L., Philadelphia.
*Eisenhower, C. W., Jacobus.
Enoch, G. F., Philadelphia.
*Funke, John, Philadelphia.
*Gaughan, M. C., Pittston.
†Gilliland, C. J., Sharon.
*Hazlett, E. M., Washington.
†Heller, C. E., Williamsport.
*Henritzy, O. E., Slatington.
†Howe, William, Shingle House.
†Huber, G. W., Scranton.
*Hunter, J. R. W., Lewistown.
†Hutton, F. C., Philadelphia.
†Kennedy, D. J., Philadelphia.
*Laws, G. M., Philadelphia.
†LeFevre, R. E., Reading.
†Leopold, Samuel, Philadelphia.
†Lownes, J. B., Philadelphia.
†Luburg, L. F., Philadelphia.
†MacCarroll, D. R., Philadelphia.
*McAninch, D. L., Lamartine.
†McGlenn, J. A., Philadelphia.
McLaughlin, P. A., Kingston.
Mellor, Howard, Philadelphia.
Mencke, J. B., Philadelphia.
*Milnor, R. H., Warrensville.
†Moore, J. G., Philadelphia.
†Murray, J. H., Reynoldsville.
Penrose, T. W., Philadelphia.
†Popp, J. M., New Castle.
†Pratt, C. H., Philadelphia.
†Schaubel, C. W., Philadelphia.
†deSchweinitz, G. L., Philadelphia.
Shoemaker, A. M., White Haven.
*Shuman, Ambrose, Catawissa.
*Sutton, H. A., Philadelphia.
Vermilyea, C. S., Russell.
Weyant, H. W., Philadelphia.
Wheeler, A. C., Erie.
White, E. P. C., Norristown.
*Winnebrake, A. J., Scranton.
Wright, H. A., Puritan.

RHODE ISLAND

*Irvine, W. L., Newport.

SOUTH CAROLINA

Edwards, H. A., Latta.

SOUTH DAKOTA

Griffin, M. E., Mitchell.

TENNESSEE

Binkley, D. C., Denver.
Capell, John, Chattanooga.
Cochrane, H. P., Franklin.
Edwards, J. L., Brownsville.
Hayden, E. Forrest, Nashville.
Hunt, I. E., St. Bethlehem.
Littlejohn, Alice, Memphis.
Neas, A. J., Parrottsville.
Toombs, Percy W., Memphis.
Wood, J. O., Morristown.
Yancey, S. M., Dayton.

TEXAS

Ashby, D. S., Amarillo.
†Davis, J. S., Blooming Grove.
Fitzpatrick, W. W., Paris.
Hanks, J. M., Blum.
Hilburn, R. E., Antelope.
†Kennedy, A. B., Bonham.
Mynatt, A. J., Houston.
Rush, H. P., Stanford.
Starker, C. T., El Paso.

UTAH

Steiner, J. J., Richfield.

VERMONT

Buttles, E. H., Burlington.

VIRGINIA

Armentrout, J. F., Staunton.
Chelf, H. T., Culpeper.
Coleman, D. J., Richmond.
*Fowlkes, F. V., Burkville.
Freed, J. W., Waynesboro.
†Freeman, A. W., Richmond.
McCulloch, J. H., Richmond.
*Moomaw, B. C., Roanoke.
Pretlow, R. H., Suffolk.
Rea, M. L., Charlottesville.
Richardson, T. S., Waynesboro.
Thomasson, D. M., Lynchburg.
Thornhill, W. B., Lynchburg.

WASHINGTON

Chessman, F. N., Seattle.
†Cunningham, J. G., Spokane.
Kelley, E. R., Seattle.
Lambert, S. E., Spokane.
O'Shea, T. H., Spokane.
Snoke, J. W., Ft. Steilacoom.

WEST VIRGINIA

Anderson, J. H., Marytown.
Fortney, C. S., Hundred.
*Fox, J. F., Bluefield.
Gruber, M. F., Helvetia.
Klase, W. N., Carbondale.
Littlefield, J. R., Albert.
†Mason, S. M., Clarksburg.
*Spragg, S. L. S., Wheeling.
Talbott, L. W., Elkins.

WISCONSIN

Bauer, K. T., Kewaskum.
Bryant, W. V., Madison.
Burdick, A. F., Beloit.
†Cavanaugh, C. E., Milwaukee.
Egan, G. J., La Crosse.
*Kelly, W. W., Green Bay.
Kings, J. S., Watertown.
Kremers, Alex., Milwaukee.
Matthews, J. B., Milwaukee.
Schmit, A. I., Beloit.
Smith, C. E., Beloit.
Towne, W. H., Shrocton.
Vedder, J. B., Marshfield.

WYOMING

Fox, G. A., Cheyenne.

MANILA, P. I.

*Gurney, S. C., Manila.
Rochester, A. S., Manila.

Marriages

JOHN A. ANDERSON, M.D., to Miss Josephine V. Barron, at Baltimore, June 9.

J. S. HEBB, JR., M.D., Baltimore, to Miss Ida Spranklin, at Baltimore, June 12.

JOSEPH A. MOORE, M.D., to Miss Helen R. Collins, both of Philadelphia, June 23.

T. FREDERIC DOESCHER, M.D., to Miss Emma Pendell, both of Albany, N. Y., June 22.

ELDON JESSE SMITH, M.D., to Miss Ethel Kate McMullen, both of Burwell, Neb., June 23.

PITT STEVENS WILSON, M.D., Negaunee, Mich., to Miss Una Potter of Grand Rapids, June 30.

REUBEN A. WALL, M.D., Baltimore, to Miss Mary Agnes Browne, at Pittsburg, Pa., June 16.

ROBERT BRUCE BLUE, M.D., Wichita, Kan., to Miss Harriette Veronica Read of Chicago, June 30.

LYNN MURRAY JONES, M.D., to Miss George Rosamond Boyer, both of Dayton, Ohio, June 30.

ERWIN STANER HOTTINGER, M.D., Chicago, Ill., to Miss Estelle M. Flanagan of St. Louis, June 19.

FRED ALBERT, M.D., Mason City, Iowa, to Miss Gertrude Giltins of Williamsburg, Iowa, June 18.

CHARLES WESLEY EVANS, M.D., Springfield, Ohio, to Miss Nellie Wiley at New Park, Pa., June 17.

WALTON H. HOPKINS, M.D., Annapolis Md., to Miss Lila Holmes Trenholm, at Baltimore, June 23.

MERRITT FLINT PHILLIPS, M.D., to Miss Elizabeth Gratz Tyler, at Sackett's Harbor, N. Y., June 23.

FREDERICK V. BEITLER, M.D., Halethorpe, Md., to Miss Daisy M. Carson of Baltimore, at Halethorpe, June 22.

DANIEL FRANCIS CROWLEY, M.D., Des Moines, Iowa, to Miss Rosemary Catherine Langdon of Omaha, Neb., June 22.

Deaths

Thomas Brady Greenley, M.D. University of Louisville (Ky.) 1846; a member of the American Medical Association for many years, and a charter member of the Mississippi Valley Medical Association; once president of the Kentucky State Medical Society; an honorary member of the Jefferson County (Ky.) Medical Society; and a member of the American Association of Railway Surgeons; for thirty years local surgeon for the Illinois Central Railroad; a practitioner of Meadow Lawn, Ky., for more than sixty years, and universally respected and beloved; died in St. Joseph's Infirmary, Louisville, June 25, from senile debility, aged 90.

John Wright, M.D. Medical College of Ohio, Cincinnati, 1854; formerly of Clinton, Ill.; a member of the American Medical Association; charter member of the Dewitt County (Ill.) Medical Society; a life member of the Illinois State Medical Society, and its president in 1890; surgeon of the One Hundred and Seventh Illinois Volunteer Infantry; and later brigade and division surgeon during the Civil War, died at his home in Long Beach, Cal., May 21, from heart disease, aged 83.

Quitman N. Kohnke, M.D. Tulane University of Louisiana, New Orleans, 1890; a member of the American Medical Association; for eight years president of the board of health and health officer of New Orleans; once a member of the city council; who figured conspicuously in the yellow-fever epidemic in New Orleans in 1905; died at his summer home in Covington, June 26, from cerebral hemorrhage, aged 51.

James McVean Mackall, M.D. Georgetown University, Washington, D. C., 1873; a member of the Medical Society of the District of Columbia; surgeon of the Third U. S. Cavalry during the Spanish-American War; an expert on yellow fever, and detailed for duty at Diaquiri, Cuba; died at his home in Washington, D. C., June 26, from debility, due to the extreme heat, aged 57.

Meigs Case, M.D. New York University, New York City, 1857; surgeon of the Forty-third New York Volunteer Infantry during the Civil War, and in charge of the Seminary Hospital, Hagerstown, for four months after the battle of Antietam; a lifelong resident of Oneonta, N. Y.; died at his home in that city, June 14, from heart disease, aged 72.

Francis Edward Fitzgerald, M.D. John A. Creighton Medical College, Omaha, 1901; a member of the Nebraska State Medical Association; professor of skin diseases in his alma mater from 1903 to 1904, and demonstrator of anatomy; visiting physician to St. Joseph's Hospital, Omaha; died at his home in Omaha, June 21, from tuberculosis, aged 37.

Warren Bourne Evans, M.D. State University of Iowa, Iowa City, 1873; mayor and postmaster of Dow City and Arion, Iowa; for several years coroner of Crawford county; and local U. S. pension examining surgeon; who had suffered from diabetes for fourteen years; died in Crofton, Neb., from cerebral hemorrhage, June 17, aged 65.

Samuel Biddell Tomlinson, M.D. Medical College of Ohio, Cincinnati, 1855; a pioneer practitioner of Cincinnati; and first secretary of the Cincinnati Academy of Medicine; surgeon in the Confederate Service during the Civil War; died at his home in Cincinnati, June 25, from senile debility, aged 77.

William M. Tomlinson, M.D. Transylvania University, Lexington, Ky., 1849; of Wilmette, Ill.; at one time a member of the Chicago Board of Health, and a member of the local board of U. S. Pension Examining Surgeons; was run over by a train at Wilmette and killed, June 28, aged 81.

Thomas P. Welch, M.D. Barnes Medical College, St. Louis, 1897; a member of the staff of the St. Petersburg (Fla.) Infirmary; surgeon of the First Missouri Infantry, U. S. V., during the Spanish-American War; died at his home in St. Petersburg, June 22, from heart disease, aged 36.

George H. Heron, M.D. Howard University, Washington, D. C., 1877; a veteran of the Civil War; for several years a clerk in the treasury department and pension office, Washington; died at his home in that city, June 27, from cerebral hemorrhage, aged 72.

John A. McGuire, M.D. Starling Medical College, Columbus, Ohio, 1881; of Santa Cruz, Cal.; a member of the Medical Society of the State of California; died suddenly from angina pectoris, while making a professional call at Twin Lakes, June 21, aged 68.

Alexander Wiley McClintock, M.D. Miami Medical College, Cincinnati, 1895; formerly of Cissna Park, Ill.; some-time member of the Ford-Iroquois Medical Society; died at his home near Phoenix, Ariz., June 17, from tuberculosis, aged 42.

Ambrose S. Everett, M.D. St. Louis College of Homeopathic Physicians and Surgeons, 1870; at one time physician of Arapahoe county, Colo.; a veteran of the Civil War; died at his home in Denver, June 24, from heart disease, aged 68.

John Weiszgerber, M.D. University of Pennsylvania, Philadelphia, 1889; a member of the Philadelphia County Medical Society; and a police surgeon of Philadelphia; died at his home in that city, June 23, from pneumonia, aged 43.

Ruel Stearns Gage, M.D. New York University, New York City, 1877; a member of the American Medical Association; for twenty-five years a leading practitioner of Newark, N. J.; died at his home in that city, June 27, aged 64.

John G. Van Schoiack, M.D. Eclectic Medical Institute, Cincinnati, 1861; of Ottawa, Kan.; for many years physician of Franklin county; died at the home of his son in Kansas City, June 19, from cerebral hemorrhage, aged 74.

Franklin Louis Meyers, M.D. Bellevue Hospital Medical College, New York City, 1887; formerly a member of the school board and a city physician of Newark, N. J.; died at his home, June 26, from heart disease, aged 55.

Ralph Detmer Woods, M.D. University of Pennsylvania, Philadelphia, 1907; a surgeon for the Carnegie Steel Company, Pittsburg; died at the West Penn Hospital in that city, June 23, from pneumonia, aged 30.

Wilfred Daniel McDonald, M.D. College of Physicians and Surgeons, Boston, 1908; of Roxbury, Mass.; was drowned while attempting a long distance swim at Woburn, Mass., June 27, aged 33.

Abraham H. Iler, M.D. Medical College of Ohio, Cincinnati, 1861; surgeon in the Federal service during the Civil War; died at his home in Blue Ball, Ohio, June 23, from senile debility, aged 88.

John H. Ruhl, M.D. University of Pennsylvania, Philadelphia, 1883; an eye, ear, nose and throat specialist of Middletown, Pa.; died at his home June 27, from rheumatic endocarditis, aged 49.

Walton S. Greene, M.D. University of Pennsylvania, Philadelphia, 1888; for three terms a member of the State Board of Health of Mississippi; died recently at his home in Aberdeen, aged 45.

James H. Thomas, M.D. University of Maryland, Baltimore, 1851; died at his home in Cabin Creek, near Hurlock, Md., June 20, from cerebral hemorrhage, aged 81.

Levi W. Carter, M.D. Hahnemann Medical College, Chicago, 1871; of Peoria; died at the Proctor Home in that city, June 23, from paralysis, aged 74.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

VITAL STATISTICS

CRESSY L. WILBUR, M.D.

Chief of the Division of Vital Statistics, Bureau of the Census
WASHINGTON, D. C.

A very high degree of interest continues to be manifested in the subject of vital statistics and the necessity for adequate registration laws as a part of the sanitary administration of the state. Bills for this purpose have been before the legislatures of seven states during the present year, and in five states more or less comprehensive registration laws have been passed.

Delaware: First in order, in Delaware, some amendatory legislation was enacted so that the provisions of the state law for the registration of deaths are now strictly in compliance with those recommended by the American Medical Association, the American Public Health Association, and the Bureau of Census. It may not be remembered that for a brief period Delaware was considered a registration state, but a test made of the completeness of registration under the old law proved that much less than the requisite number of deaths was actually registered. The amendments of the present law require the division of the three counties of the state into suitable local registration districts, each with a local registrar, and provide that the body of no dead person shall be interred or removed without the immediate filing of a certificate of death of the standard form and the issue of a burial permit. I confidently expect that under the operation of this law Delaware will soon be entitled to admission as a registration state. The provisions relating to births and marriages were left unchanged, it being deemed wiser to secure their amendment after the new method of registration of deaths has proved a complete success in practice.

North Carolina: The year 1909 will always be memorable if our anticipations are realized, for the enactment of the first, fairly general registration law for deaths capable of giving accurate results in any of the southern states. I refer to the law passed by the recent legislature of North Carolina through the efforts of Doctor Lewis, which makes the requirement of burial permits compulsory for all municipalities of 1,000 population and over. The expectation is that, after the law has been effectively enforced for some time, it may be extended to the rural portion of the state. It is the first instance, however, of a general requirement applicable to all cities of a southern state, as our returns at present are based solely on the results of registration under municipal ordinances.

Missouri: The most notable result of the movement for better legislation is the enactment of a thoroughly comprehensive law for the registration of births and deaths in Missouri. This law follows closely the methods which have resulted in success in Pennsylvania and Ohio, and the state authorities are now engaged in the preliminary work of organization. As all practical registration officials know, there is many a difficulty to overcome in transmuting an adequate registration law into accurate registration returns, but I have confidence that for Missouri, as for Pennsylvania and Ohio, with an adequate registration law, the details of its operation will be worked out satisfactorily and we shall have a notable addition to the registration area as a result of the legislation during the present year.

Arizona: Through the energy of Dr. Godfrey a registration law has been passed also for the territory of Arizona, and very excellent blanks of the standard form for both births and deaths will soon be in use.

Tennessee: The remaining state in which a registration law has been passed during the present year in Tennessee. I have not available a certified copy of the act as passed, but from a copy of the bill which I understand was passed without material modification, I am very sorry to say that this is one of the old type of registration laws concerning whose usefulness or, rather, lack of usefulness, there can be no question of doubt. It provides for the discarded method of enumeration for births and deaths, for their return annually through the clerks of the county courts, and in general includes all of the worthless features of similar laws that have been tested and discarded in many states. It is unfortunate that such legislation should be enacted for it only makes more difficult the passage of a proper law. This is shown clearly in the effort made this year to secure a modern law for Illinois and perhaps also for Kansas. The fact that these states have laws at the present time whose imperfections are not well understood except by those who have given careful consideration to the subject undoubtedly hinders the passage of proper legislation.

In addition to the seven states to which I have referred, it is possible that some effort will be made to secure legislation in Georgia, whose legislature meets during the present month. For the first time in the history of the census an effort has been made to secure transcripts of all births registered in the United States based on the original returns in state and municipal offices. The resulting compilation will be for the year 1908 and will doubtless present data of interest and importance, although one of the principal services to be rendered by it will be to demonstrate clearly the very unsatisfactory condition of birth registration in this country. The return of transcripts of the original records of births will enable a system of checking and testing to be made by the Bureau of the Census, so that the relative amounts of deficiency in registration of births can be determined approximately for the various states. Should the results justify it and the registration be found sufficiently complete in any extended area, the regular annual compilation of births may be continued.

Society Proceedings

COMING MEETINGS

American Ophthalmological Assn., New London, Conn., July 14-15
British Columbia Med. Assn., Seattle, Wash., July 19.
Idaho State Medical Association, Seattle, Wash., July 19.
Oregon State Medical Association, Seattle, Wash., July 19.
Washington State Medical Association, Seattle, July 20.

RHODE ISLAND MEDICAL SOCIETY

Ninety-eighth Annual Meeting, held in Providence, June 1, 1909

The President, DR. FRANK B. FULLER, of Pawtucket, in the Chair

Officers Elected and Committees Appointed

The officers elected for the ensuing year were named in THE JOURNAL, June 12, p. 1935. The following committees were appointed: Committee of arrangements, Drs. F. E. Burdick, A. A. Barrows and J. B. Ferguson; committee on the library, Drs. G. D. Hersey, G. L. Collins, F. L. Day, G. S. Mathews and H. G. Partridge; committee on publications, Drs. G. D. Hersey, C. M. Godding and G. T. Swarts; committee on necrology, Drs. D. Churchill, E. E. Pierce and C. G. Hilliard; committee on legislation, state and American Medical Association, Drs. G. T. Swarts, W. F. Gleason, W. L. Munro, E. Kingman and S. A. Welch; building committee, Drs. J. W. Mitchell, R. F. Noyes, F. H. Peckham, F. T. Rogers and J. M. Peters; committee on education of the American Medical Association, for three years, Dr. C. V. Chapin.

Official Reports

The annual report of the secretary showed that the society had 392 members. Of these, 353 were active fellows, 28 nonresidents and 11 honorary.

The committee on library, through Dr. Hersey, chairman, reported that 319 bound volumes, 288 reprints and 312 pamphlets had been received.

The committee on legislation through Dr. Swarts, chairman, reported that during the year the optometry bill had become a law; the bill regulating the practice of osteopathy had failed; the fee of the medical examiners for a view had been increased from four to five dollars, and a law had been passed requiring physicians to report all cases of tuberculosis to the State Board of Health, beginning July 1, 1909. Dr. Swarts also said that since the visit of the committee of the American Medical Association to the medical schools of the country and their rating of them, no applicant to practice medicine in this state had been or would be examined unless he came from a school having a rating of 70 per cent. or more.

On invitation of Dr. John M. Peters, the Crawford Allen Ward of the Rhode Island Hospital, situated at Quidnessett, near East Greenwich, was selected as the place of the September meeting.

Essay Prizes Offered and Awarded

The trustees of the Chase-Wiggin Fund reported that for the year ending May 1, 1910, a prize of $50 is offered for the best popular essay on the subject of "Tobacco and Its Evil Effects on Those who Habitually Use It."

The trustees of the Fiske Fund reported that the prize of $200 offered for the best essay on the subject, "The Mode of Infection and the Duration of the Infectious Period in Scarlet Fever," had been awarded to Dr. Charles V. Chapin of Providence.

For 1910 a prize of $200 is offered for the best essay on the subject, "The Classification and Treatment of the Diseases Commonly Known as Rheumatism."

Treatment of Tuberculosis

DR. JAMES L. WHEATON, JR., Pawtucket: Many so-called modern ideas of the treatment of tuberculosis were practiced by the ancient Greeks, such as elevated places of residence and open air life. Socrates and Aristotle recognized contagiousness. The laws of the Talmud, 500 years before Christ, forbade the eating of tuberculous meat. During the dark ages we hear little of tuberculosis because the barbarians who overwhelmed civilization were open air dwellers and tuberculosis did not flourish among them. The search for a specific treatment has been long and has progressed only to the extent that tuberculin is recognized as an adjunct in diagnosis. Most methods of treatment have helped but little, such methods as inoculation, hydrotherapy, inhalations, electricity or surgery. Climate helps, but care is needed in selection. Sanataria are of benefit but also need to be used with judgment. Inasmuch as most patients remain at home special clinics and district nursing are of great service. On the whole, we may assert that we have done little but cover the smoke while the fire rages underneath. We need to study allied problems. As tuberculosis is largely a disease of the poor, we must look at it from the poor man's position. Why may we not have committees of public-spirited men who will consider what laws should be enacted, what supervision of schools, what regulations of employments and over shops and tenements, and what educational methods regarding tuberculosis shall be employed? Bring all methods into play in the spirit of cordial cooperation.

Working of the Medical Practice Act in Rhode Island in the Last Fourteen Years

Dr. Gardner T. Swarts, Providence: The act regulating medicine in Rhode Island went into effect July 16, 1895. Before that time considerable work had been done by the Rhode Island Medical Society and others but without success. The law started with a time limit provision for those who had practiced five years, with the result that many are practicing today who were best excluded. It was thought that this class of men would soon die out, but the contrary has been the experience. Among those who receive certificates because they present diplomas there are constantly appearing men with like evil tendencies, especially abortionists. It may be stated in this connection that only one conviction has been secured in Rhode Island of an abortionist, and here the defendant confessed. After seven years' trial, the medical practice act was amended to require an examination of every applicant. The poorer students were found to come to Rhode Island and Massachusetts, where requirements were not so arduous as in many states. In 1908 a good deal was required, and since then the number of applicants has diminished and qualifications have improved. After the visit of the committee of the American Medical Association to the various medical schools and its rating of them, a requirement has been that the applicant must come from a school rated as over 70 per cent. Certain sects and special lines of practice are always asking for special legislation and the optometrists have succeeded. Midwives do harm, as cases prove. Peripatetic clinics prey on the public but are gone before evidence can be secured or used. A photograph of applicants to practice is required as substitution was formerly practiced. Residents just over the state line invade Rhode Island for a few hours. Advertisers need constant attention. Few changes have been made in the law but, rather, its provisions have been tested by time. The law has been administered not in spectacular ways but used as a deterrent to unlawful practices. While the executive officer of the board may have chafed in not having more perfect law and also under the sometimes seemingly singular interpretation of the laws by a higher court, yet the people of the state and the profession should, with the board, feel comforted to know that the working of the medical practice act has held improper practice of medicine within the safety line.

President's Address: Medical Progress During the Last Thirty Years

Dr. Frank B. Fuller, Pawtucket: The great change is the beginning of the establishment of scientific basis for many medical procedures and the hope that many more will follow. As a practicing physician, the one discovery that has impressed me is the work of Behring, Roue and others concerning diphtheria. Tuberculosis has been successfully attacked. The way of looking at it has changed for the better. Many new methods of treatment have sprung up. The mortality of rabies has greatly lessened. Tetanus has been aborted with timely injections. Epidemic cerebrospinal meningitis has been reduced in mortality three-fourths. In the South the discovery of the hookworm disease and its cure through the investigation of Dr. Stiles is of widespread importance. Preventive medicine has made wonderful progress in the destruction of carriers as mosquitoes, rats, flies and pests. Surgery has had a wonderful development. We are in advance in the possession of governmental and endowed institutions for scientific study. Special lines have become necessary with special laboratories. Compulsory scientific treatment will follow compulsory notification. Society already cares for the sick and unfortunate, and old age pensions are proposed. Regulation of water and food supplies, of dwellings, workshops and many other things is in progress. Diagnosis is more certain, more quickly made and satisfactory treatment applied. In the future, teachers of specialties will be more and more needed and perhaps paid regular salaries.

Doctors and Other Doctors

At the anniversary dinner, Dr. Edmund D. Chesebro presided. Ex-Governor Utter of Westerly, R. I., made an address in which he said that the average man had not that fear of the medical man that he once had. The time had come when the profession should inaugurate a movement to bring about the appointment by the court of three men to act as medical experts, not for the defense or for the prosecution, but for the state. Doctors are studying men more and medicine less. Medical men are builders of the Temple of God. The apostle goes one step further and says condemnation comes to him who mutilates the temple.

The Natural History of the Medical Man

Rev. A. A. Berle, D.D., Boston: The mystery of the medical profession is just beginning. Experience with 200,000 people who cross the threshold of my church and contact with humanity makes me believe that the mystery has not begun to be penetrated. The Christian Science movement is one of the gravest of menaces, undermining the soundness of thought of this generation. The next generation will reap the harvest. You members of the medical profession ought to speak out against it. Do not be deterred by the cry that you are speaking for your pockets' sake.

IOWA STATE MEDICAL SOCIETY

Fifty-Eighth Annual Session, held at Dubuque, May 19-21, 1909

The officers elected were given in The Journal, May 29, 1909, p. 1766.

President's Address: Stock Taking and Prospect

Dr. C. F. Wahrer, Fort Madison, departed from the usual custom of giving advice for the benefit of an unappreciative public, but suggested that physicians take stock of their present ability to practice medicine under modern methods. He urged them to fit themselves by attending medical societies, postgraduate schools, by acquiring good libraries, and studying collateral and cognate sciences. He urged harmony among physicians and the culture of ethical ideals. He warned of the blighting influence of commercialism, which made nations drunk with its vaunted success, that strangled the Muses to death, and enthroned the Dollar in their place. Dr. Wahrer bewailed the fact that the heroes of science, of the laboratory, and of sanitation, who sacrificed their lives, no less than the soldier on the field of carnage, were not appreciated by the public. Few, if any, monuments were erected to them by a grateful people, and what praise was accorded was scantily and grudgingly given. The works of men like Rush, Virchow, Behring, Pasteur, Koch, Carroll and Reed and a host of others like them, surely compared favorably with those of Napoleon, Grant, Washington, Alexander, Wellington, Dewey, Cæsar and Cromwell; only the one class conserved life, the other destroyed it. He closed by admonishing all physicians to cultivate the friendship of the secular press, to prepare useful literature at times, and have it published by the papers that are read by thousands where medical journals are read by a few. He urged industry in all things relating to medicine because, as a rule, physicians were intellectually lazy. He recommended the course of study outlined by The Journal of the A. M. A., and asked physicians to add enthusiasm to industry. An enthusiasm supported by a united and high-minded profession was the golden key that would unlock the portals of Utopia. Like the prophecy of the seer whose vision was begotten by a high desire, like the poet whose dreams enabled him to see glimpses of Paradise, made bright by the torch of his genius, so Dr. Wahrer caught a far-distant view of the column of smoke by day and the beacon fires of the night, that blazed the paths to the Promised Land.

Pancreatitis

Dr. D. C. Brockman, Ottumwa: The importance of the diseases of the pancreas has not been understood by the average physician; hence many cases of this kind have been overlooked or mistreated for some other disease. The great majority of cases of acute pancreatitis are due to diseases of the bile passages, and can only be remedied by the proper treatment of the original condition. Here, as everywhere else, the first thing to do is to make a diagnosis; when the diagnosis is made and the pathology understood, there will be no question about the line of treatment to pursue. In chronic pancreatitis the majority of cases are either not diagnosed at all, or erroneously diagnosed as cancer, and the patients allowed to die without treatment. Unfortunately, the diagnosis can not be made from the outside; exploratory incision is required, located so that if the trouble is inflammatory, proper curative treatment may be instituted through the same incision. The treatment of either the acute or duodenal type of the disease may be summed up briefly in one word, "drainage" of the bile passage.

Bacterial Vaccines

Dr. Henry Albert, Iowa City, dealt principally with a review of the various conditions in which vaccines have been used for prophylaxis and treatment. He presented statistics to show how preventive inoculation had influenced the incidence and mortality of typhoid fever, and urged particularly the trial of this method in the early part of epidemics of typhoid fever, when a large number of persons were known to have been exposed to infection. He also believed it should be given a trial in treatment of chronic typhoid bacilli carriers. Although autogenous vaccines were given the preference over stock vaccines, the use of the latter was urged when it was difficult to secure autogenous vaccines, as in tuberculosis and chronic gonorrhea, or when it was not desirable to wait for the preparation of the autogenous ones, as in some of the acute conditions. Dr. Albert had little faith in the opsonic index as a routine method of controlling the size of the dose and frequency of treatment. He urged that careful studies be made to determine if the symptoms of intolerance recognized in connection with tuberculin therapy do not find greater parallelism in connection with the newer bacterial therapy than has heretofore been believed to be the case.

Oration on Medicine: The Old and the New Medicine

Dr. G. E. Crawford, Cedar Rapids: The title of this paper assumes that there is in our profession of medicine that which is old and that which is new. When we undertake to study the history of almost any subject we are impressed with the fact that much that is supposed to be new is in reality old, and much that is old is new, in that we see it with a new understanding and association. An old science may be said to have become new when it comes to be based on newly discovered principles which are fundamental in character. The foundations of the new medicine are metabolism and immunity. In the light of these discoveries, diseases divide themselves essentially into two classes: derangements of metabolism and infections. With this view of metabolism, and the important part the pituitary-adrenal-thyroid system, with the internal secretions, performs in these most intricate processes, it is the problem of the new medicine to assist Nature in maintaining the equilibrium of these vital movements. In infections, "immunizing medication is the foundation of rational therapeutics"—a therapeutics which can govern the efficiency of the defensive mechanism of the body. The old medicine is the collaborated empiricism of the ages The new medicine is the dawn of scientific rationalism. We are only at the beginning. What we need is a constructive therapeutics in accordance with these new principles. While we as yet are obliged to practice largely in the old, we think in the new, and look forward to the time when all of these processes will be as completely under our control as some of them are now.

Oration on Surgery: The Seamy Side of Surgery

Dr. G. G. Cottam, Rock Rapids, analyzed his subject both from the scientific and economic standpoints. He dwelt on the various accidents, complications and other untoward sequels of operation, emphasizing the deplorable lack of adequate training and fitness in many who undertake to do major surgery, and the present-day tendency toward ultra-specialism, which makes a surgeon little else than a skilled technician. The surgeon should never cease to be a practical pathologist or lose his contact with general medical diagnosis, since so many surgical conditions merge into the medical and *vice versa*. These considerations apply especially to surgeons in an agricultural state like Iowa, where the peculiarities of geographical distribution of population over a large area prevent the constant close association of surgeon, physician and pathologist. He deprecated the prevalent leaning to lowering of professional standards in surgery, as shown by various commercialistic tendencies, for which there seems to be no adequate remedy save enlightenment of the public for the present and elevation of general professional ideas for the future.

Dysmenorrhea

Dr. Carl F. Wahrer, Fort Madison: The unsatisfactory results of treatment in dysmenorrhea are usually in those cases of nervous origin in young women. When definitely associated with pathologic changes in the pelvis, dysmenorrhea is easily relieved. The conditions most often found accompanying it are retrodisplacements in nulliparæ, chronic gonorrheal salpingitis and fibroid tumors of the uterus. Retrodisplacement is not so apt to cause dysmenorrhea in women who have borne children. From one-third to one-half of all cases seen in general practice are in young girls who have no abnormal changes in the pelvis. These cases are due to hysteria and neurasthenia, and should be treated as such. Dilatation and curettement are not justifiable in these patients, except in a small few in whom the pain is almost entirely relieved when the flow begins.

DISCUSSION

Dr. M. J. Kenefick, Algona: This is one of the most practical subjects that could be brought up, for dysmenorrhea is a very common complaint and one that gives us a great deal of annoyance in the treatment. If we submit some young women suffering from dysmenorrhea to pelvic examination and direct their attention to the pelvic organs, we are very likely to get them into a state of hypochondria, and then they will read the "patent-medicine" literature and take Lydia Pinkham's compound, and go on from bad to worse.

Dr. G. H. Skinner, Cedar Rapids: The neuralgic forms of dysmenorrhea can not be treated or benefited by any plan of surgical procedure. It may be relieved in a great many cases by repeated curettage and dilatation, but I believe that more can be done with what is called obstructed dysmenorrhea and neuralgic dysmenorrhea by hygienic treatment, change of climate, etc., than by all other means combined. Two-thirds of the graduates of our high schools have dysmenorrhea, and with a great many it is hemorrhagic. The less one meddles with the pelvic organs the better it will be.

Dr. J. W. Osborn, Des Moines: I think medicinal treatment is neglected, and that if we would study our therapeutics as well as our patients, many girls now subjected to dilatation and curettage would not require it.

(*To be continued*)

AMERICAN PEDIATRIC SOCIETY

Annual Meeting, held at Lenox, Mass., May 27-28, 1909

Considerations Concerning Scarlet Fever, Rubella Scarlatinosa and Duke's Disease

(*Concluded from page 72*)

Dr. D. J. Milton Miller, Atlantic City, thought the recognition of a new exanthem would be very confusing and that it had not been proved. German measles he considered a rare disease. Practitioners should be impressed with the fact that scarlet fever may occur with the mildest symptoms and he advised treating all these cases as scarlet fever until desquamation occurred, and called attention to the mildness of scarlet fever at the present day. He thought this explained the condition of rubella scarlatinosa. He desired to show that there was a disease which was a scarlatinous rubella which so closely resembled scarlet fever that in isolated cases it was impossible to make a diagnosis and that the cases should be treated as scarlet fever for the protection of the public.

DISCUSSION

DR. J. P. CROZER GRIFFITH, Philadelphia, had seen cases of scarlet fever without the strawberry tongue and thought that measles occurred more rarely the second time than does scarlet fever.

DR. HENRY KOPLIK, New York, thought second attacks of scarlet fever possible though rare and referred to recorded cases of measles of a very mild nature. He agreed with Dr. Miller that in practice it was better to assume that a case was scarlet fever no matter how mild the eruption.

DR. HENRY SHAW, Albany, referred to an epidemic of mild scarlet fever at Round Lake in which it had not been deemed necessary to quarantine. He had recently seen a boy of 15 with a very acute rash and found that he had had four other attacks since going to school in each of which he had been quarantined.

DR. SAMUEL S. ADAMS, Washington, thought it rare that a second attack of scarlet fever occurred in the same individual although the history would often seem to indicate it.

DR. R. G. FREEMAN, New York, thought that in a questionable diagnosis between scarlet fever and German measles it was best to assume that it was scarlet fever; he had seen an epidemic with very slight symptoms followed by bad complications.

DR. THOMAS MORGAN ROTCH, Boston, had never seen a recurrent scarlet fever and felt that it must be quite rare.

DR. ISAAC ABT, Chicago, had diagnosed scarlet fever twice in the same individual. He was in accord with Dr. Miller that the cases which closely resemble scarlet fever had better be so called.

DR. T. S. SOUTHWORTH, New York, thought all such cases should be quarantined until the physician could be absolutely sure.

DR. ALFRED HAND, Philadelphia, agreed with Dr. Miller and did not attach much importance to the absence of desquamation in private practice.

DR. J. P. CROZER GRIFFITH, Philadelphia, had seen two attacks of scarlet fever in the same patient without doubt.

The Stools of the New-Born and Their Signficance

DR. THOMAS S. SOUTHWORTH, New York: I disagree with the present day teaching that for a period varying from 3 to 5 days the meconium gives way to yellow or orange yellow stools and that these are of a uniform homogeneous semisolid consistence and that this is the normal stool and that any departure from this classical type indicates a disturbance of digestion on the part of the infant. Statistics of 50 infants successfully breast-fed were given from which he concluded that the clasical orange-yellow, semisolid stools appear in the majority of infants later than is usually stated. Considerable variation in the color and consistency of the stools of newborn infants are entirely compatible with regular gains in weight. Such variations in stools for ten days or more, even with slow or irregular gains in weight, give no certain indications that successful breast feeding can not be carried on. Whatever the character of the stools weaning is not indicated if the infant is gaining steadily in weight.

DISCUSSION

DR. J. L. MORSE, Boston, thought the variations in the stools often depended on changes in the breast milk and on the relation between the amount of fat and the amount of proteids.

DR. J. P. CROZER GRIFFITH, Philadelphia, agreed with Dr. Southworth that the infant's general condition of health and gain is of more importance than the character of the stools. Change in the stools might give a warning, but was not an indication to stop the feeding.

DR. R. G. FREEMAN, New York, was also in accord with Dr. Southworth and thought if the baby were gaining in weight the matter of change in the stools could be ignored.

The Urine in the Gastrointestinal Diseases of Infancy

DR. JOHN LOVETT MORSE, Boston, reported that 300 cases were examined as to the frequency of albuminuria in these conditions, and he concluded that albuminuria was found in 8 or 10 per cent. of babies ill with various diseases of the gastrointestinal tract; more often in the acute than in the chronic cases. In the chronic cases, there was no relation between the albuminuria and the symptomatology. The presence of albuminuria in an individual case did not materially affect the prognosis.

DISCUSSION

DR. HENRY KOPLIK, New York, agreed with Dr. Morse and thought the condition simply one of the manifestations of the general toxemia.

DR. MILLER, Atlantic City, had observed that in cases of chronic diarrhea seen in the hospital there had been the presence of a small amount of albumin without any apparent nephritis in the course of the disease. He thought it was of significance only as showing the intensity of the toxemia.

The Irritating Effects of Cathartic Drugs on the Intestinal Mucosa

DR. ISAAC A. ABT, Chicago: Experiments were made to determine the irritating effects of the common cathartics on the intestinal mucosa of infants. The benzidin test was used for blood. Calomel, magnesium sulphate and castor oil were the cathartics given. Both blood and mucus were shown in the stools after several days. Calomel seemed to produce the greatest amount of irritation and castor oil the least.

Abnormal Development of the Bones

DR. BLACKADDER, Montreal, exhibited a sketch of a case of great abnormal development of the large bones, with *x*-ray plates showing peculiar arching of the bones. The circumference of each wrist at the joint was 3½ inches and over the swelling 4¾ inches. The length of the foot was 5 inches. The child weighed 24 pounds and was 3 years old.

Soy Beans in Infant Feeding; Preliminary Report

DR. JOHN RUHRÄH, Baltimore, thought soy beans would be of advantage in certain kinds of feeding, as in diabetes. These beans were used very much in China and Japan. They contained less starch than any other diabetic food, furnished a food easily digested and easily assimilated. They could be used in marasmus and summer disorders and diarrheas.

AMERICAN SURGICAL ASSOCIATION

Annual Meeting held at Philadelphia, June 3-5, 1909

(Continued from page 70)

The Fecal Origin of Some Forms of Postoperative Tetanus and Its Prophylaxis by Proper Dietetic or Culinary Measure

DR. RUDOLPH MATAS, New Orleans, drew conclusions which may be summarized practically as follows: Postoperative deaths from this form of tetanus occur in seemingly clean surgical cases. The origin and regional distribution of accidental and postoperative tetanus in the concealed parts of the body (protected from surface exposure) has not been sufficiently investigated or recognized, certainly not sufficiently insisted on in accounting for postoperative deaths in which the rules of surgical asepsis have been apparently well observed. Experience has shown that while the risk of tetanus infection can be absolutely eliminated in all operations on sterile tissues in which a rigorous postoperative asepsis can be maintained until healing has occurred, this liability can not be removed in those regions in which postoperative asepsis can not be secured; for example, the extremities and the anorectal region. The occasional postoperative deaths, which occur from time to time, are not dependent on defects of technic or contaminated material, *e. g.*, imperfectly sterilized catgut, but to other sources of infection outside of, and apart from, the operation.

This hitherto unrecognized or disregarded factor in the causation of postoperative tetanus is the direct contamination of the alimentary canal and its contents with living tetanus bacilli and their spores, swallowed in raw, uncooked vegetables, berries and other fruits which are cultivated in fertilized or manured, *i. e.*, tetanized soil. It may be a mere coincidence, but it is a fact, that in all the cases of postoperative tetanus occurring after operations in regions liable to fecal contact, which I have investigated (two in my own practice), the patients had eaten copiously of uncooked vegetables—celery, lettuce, chicory, watercress, cabbage (cold slaw), radishes, turnips, carrots, tomatoes and other green vegetables, strawberries, blackberries and other berries and fruits which are grown in the soil or brought in contact with it. The tetanus bacillus and its spores survive the passage through the intestinal canal of the domesticated animals, especially the herbivorous horse and cow, and the dung of these animals is a perpetual culture medium for the tetanus bacillus, swallowed constantly with the grass of the pasture and the fodder of the stable; not only are the bacilli ejected alive, but their virulence and activity are probably intensified by their temporary residence in the favorable conditions of the lower intestinal tract. Of normal men, 5 per cent. harbor the tetanus bacillus or its spores in an active state in the intestinal canal, and of hostlers, dairymen, etc., 20 per cent. In accordance with the preceding statements, and my convictions, I have taught and insisted that no patient should be brought to operation without antitetanic preparation, whenever an operation is to be performed on parts in which fecal contamination is unavoidable (hemorrhoids, fissure, fistula, stricture, etc.). This antitetanic preparation is very simple and consists of: (a) purgation three days before the operation; (b) the suppression of all raw, uncooked food, especially green vegetables, berries and other fruit for the same period of time before the operation. In emergencies, when dietetic preparation is impossible, 10 c.c. of tetanus antitoxin are injected subcutaneously at the time of the operation, while the patient is still under the anesthetic.

DISCUSSION

Dr. John E. Owens, Chicago: A few years ago I saw a woman, past middle age, suffering from tetanus. She had no appearance of a wound; but two or three days before consulting me she had a tooth pulled. Before the attack of tetanus began she had been eating celery, of which she was very fond, and I have no doubt the attack resulted from eating the uncooked celery.

Dr. Nathan Jacobson, Syracuse, N. Y.: I recall one case in which tetanus developed after an operation for hemorrhoids, which was performed by a so-called rectal specialist, the so-called injection method having been resorted to. It was thought the tetanus was due to carbolic acid or to the ligature material that was used. In other cases of tetanus I have seen following operations on the anorectal region, trismus was a late manifestation.

Dr. W. H. Hutchings, Detroit: I have treated three cases of postoperative tetanus. In one the tetanus followed an abortion. In the other tetanus followed injuries to the hand. In a third tetanus followed an apparently clean operation for suprapubic shortening of the round ligaments. It developed twelve days after operation; but the wound healed by primary intention. All three patients recovered.

Dr. Joseph Ransohoff, Cincinnati: A few years ago I did considerable anorectal work, but only saw one case of postoperative tetanus, and that was in the practice of a colleague. The patient had been curetted, and fuming nitric acid introduced into the uterus. Acute tetanus developed; but there was not trismus, but an open mouth, a symptom I had not seen before. In every case the alimentary tract should be thoroughly emptied.

Dr. Maurice H. Richardson, Boston: I have never seen a case of postoperative tetanus. It must be very rare when we consider infections through the alimentary canal, as acute appendicitis cases, enterostomies, and other operations by which the large intestine is opened.

Dr. Arthur Dean Bevan, Chicago: Is it not possible that tetanus varies considerably in different localities?

Dr. Arpad G. Gerster, New York: In thirty-two years of surgical practice in two hospitals I have not seen a single instance of postoperative tetanus.

Dr. Beverly MacMonagle, San Francisco: In an experience extending over thirty ears I have seen but one case of tetanus following operation. In this case a trachelorrhaphy was done; catgut was used, and I have no doubt infection came from the catgut. I have operated in the houses of Italians and Spanish, where they have a horse or a pig, or cow adjoining their rooms, yet I have not had a case of infection from the tetanus bacillus in any of those bad surroundings.

Dr. F. H. Gerrish, Portland, Me.: Twenty-five years ago I had in close proximity to each other two cases of postoperative tetanus. One patient was a child in the teens, and tetanus followed an operation for necrosis of the tibia; in the other patient tetanus developed after ligation of hemorrhoids. Tetanus seems to come in waves. In the year these two cases occurred tetanus was prevalent. Three years ago in the hospital with which I am connected there were sixteen cases of tetanus in the course of eighteen months, and there is still doubt as to the occasion for those cases.

Dr. J. Collins Warren, Boston: It ought to be said in this discussion that tetanus is to a certain extent a tropical disease; that latitude has some influence on the growth of the bacillus of tetanus, and that in the tropics it grows more luxuriantly than in temperate zones.

Dr. S. Stillman, San Francisco: I can see how there is danger of tetanus developing after ligature operations for hemorrhoids. That was the experience of Lane in the navy on the Pacific Coast, at Panama, and in the early days in San Francisco. The danger was a real one at that time, and his experience was extensive in those days. Tetanus also occurred in my work a number of times, but no particular precautions were taken to guard against it developing.

Dr. Albert Vander Veer, Albany, N. Y.: My experience does not bring to my mind a single case of tetanus in connection with operations on the rectum. The cases of tetanus I saw in army practice generally resulted from shell wounds in which a great deal of dirt was carried into the wounds.

Dr. George E. Brewer, New York: I see no objection to using serum as a prophylactic in these cases. It is used at the Roosevelt Hospital in all cases of injuries to the hands and feet. Seven years ago sixteen cases of tetanus occurred in about two months in the summer following injuries of the hands and feet, and after that it was made a definite rule to give such patients an immunizing dose of antitoxin, and since that practice has been adopted no case of tetanus has developed there.

Dr. Dudley P. Allen, Cleveland, Ohio: There have been a number of cases of tetanus at the Lakeside Hospital in Cleveland from the use of toy pistols. In every case in which the wound was opened early and packed the patient recovered. The patients whose wounds were not opened early and packed died.

Dr. C. B. G. De Nancrede, Ann Arbor: There are certain sections of the country where tetanus is unknown, while in others a few miles distant the disease is rife; at least, the germs of the disease can be found in the soil. For the past eleven years in my lectures I have warned my students about the dangers of unripe fruit as a possible source of tetanus.

Dr. Robert G. Le Conte, Philadelphia: Fifteen years ago tetanus developed in a patient operated on by a colleague in this city. The disease developed on the eighth day following an operation on the perineum, and resulted in death. At the Pennsylvania Hospital there formerly were a number of cases of tetanus, but since it has been made a rule to give patients with injuries of the hands and feet, or patients with suspicious looking wounds, an immunizing dose of the antitetanic serum tetanus has not developed.

Dr. R. Matas: At the Charity Hospital, New Orleans, there is no case of railroad injury that is contaminated with dirt in which the patient is not given antitoxin or antitetanic serum. Nearer the tropics the prevalence of tetanus increases. It is less prevalent in northern than southern latitudes.

(To be continued)

Medicolegal

Varicose Veins from Contusion—Care of Wound—Ordering of Physical Examinations

The Supreme Court of Nevada says, in the personal injury case of Murphy vs. Southern Pacific Company, that the defendant company contended that the only injury sustained by the plaintiff as the result of the collision he was in was an inconsequential bruise on his left leg, which, with ordinary care and attention, would have healed without any appreciable injury, and that the varicose veins from which he was suffering were brought on by septic poisoning that resulted from his lack of care in the interim between the time of the accident and the time of the trial, etc. Five gentlemen of the medical profession were examined as witnesses, from all of whom expert testimony was exacted on the causes likely to produce varicose veins, and as to whether or not the varicosity of the veins from which the plaintiff was suffering was directly attributable to the accident or to the septic poisoning, or neglect of the plaintiff after the accident. From the testimony of one eminent physician, whose testimony was not disputed by any of the other medical experts called in this case, it appeared that varicosity could be produced from pressure on the veins, and evidently the jury, in considering the accident, after hearing all of this testimony, concluded that the varicosity from which the plaintiff was suffering was due directly to the contusion which resulted to him at the time of the accident, and not from any negligence on his part.

Conceding that the plaintiff, immediately after the accident, did not take the best of care and did not secure the best medical assistance in the treatment of the wound, it did not follow that he was to be deprived of damages because of his failure to secure attention to the degree of care named. Evidence was disclosed that he used his best judgment in caring for the wound received at the time, and that he gave it such medical attention as he believed it was entitled to. Where there is such a disagreement of medical opinion as to what might cause varicosity of the veins, it would be more than presumption to expect a common layman to believe that from a contusion the serious consequences which he was later suffering could follow. The evidence preponderated to the effect that at the the time of the accident the plaintiff was not afflicted with the malady affecting the limb in question, but it did appear that shortly thereafter varicose veins appeared and caused the plaintiff the intense suffering and injury of which he was complaining. Every man is differently constituted physically, and what might affect one individual might not have any damaging effect on the other. And so the jury in the present case, after listening to the medical testimony introduced, and all the evidence and facts adduced, believed, in their judgment, that these varicose veins were directly attributable to the accident occasioned by the negligence of the defendant.

Innumerable authorities can be produced where persons, through neglect, have brought on different diseases, and in many cases death, which are manifestly not attributable to an accident. But in the present case the court believes the evidence justified a verdict of the jury believing that varicosity could and did affect the plaintiff as a direct result of the injury complained of. Every case of this character, as has been well said on numerous occasions by courts considering questions such as the one under discussion, must be governed and controlled by the particular fact of each case.

With regard to compelling the plaintiff to submit to a physical examination by physicians, the court thinks that the reasons and principles advanced in those opinions which sustain the power of the trial court to order a physical examination in cases of this character, and which repose such power in the sound discretion of the trial court, to be sound in law and in furtherance of the ends of justice. The purpose of allowing this examination is to prevent a defendant from being subjected to fraudulent, assumed and dishonest claims, and the court believes that the defendant should be protected in every way from any imposition which may be perpetrated by plaintiffs in suits of this character against them. But there is a limit to everything, and unless this power, which is vested in the sound discretion of a trial court for the purpose of promoting the ends of justice, is so reposed, the court can see where prejudicial errors could happen to the plaintiff by the evidence of a defendant, if the latter could and had the power to compel limitless examinations in the hope of securing some medical expert who might agree with some theory, character of disease, or injury contended for by the defendant, and where this power, which is for the purpose solely of ascertaining the truth, could be so distorted as to prove an engine of destruction to the plaintiffs' rights in the hands of unscrupulous or dishonest defendants.

A judgment for $7,500 in the plaintiff's favor in this case is affirmed.

When Testimony of Physician and Patient Differs as to Pain

The Supreme Court of Washington says, in the personal injury case of Hoyt vs. Independent Asphalt Paving Co., that if a witness testifies that she experiences pain, and a physician testifies that there is no condition existing which would or could produce pain, and that, therefore, she can not be experiencing pain, the testimony would be conflicting, and the jury would be warranted in believing the witness who testified to experiencing the pain. But when she testifies that she experiences pain, and undertakes to give the cause of the pain, or the cause of certain painful conditions, and introduces expert scientific witnesses to corroborate her, and, instead of corroborating her, they flatly contradict her, and swear positively that the cause to which she attributes her injury and pain is an impossible cause, and testify as to what the actual cause is—it would seem that, if there is anything at all in medical science, the proof would be conclusive that the cause of the admitted condition was not the cause to which the condition was attributed by the suffering person.

Confined Constantly to the House

The Supreme Court of Nebraska holds, in the case of Breil vs. Claus Groth Plattsdutchen Vereen, that it cannot be said, within the meaning of an insurance contract for sick benefits, that an assured is not confined "constantly to the house" during an illness characterized by recurring periods of severity, although at intervals he may occasionally step into his yard, or make visits to his physician, or other short and unusual trips, the assured at all times being unable to resume the ordinary duties or pleasures of life.

No Fixed Measure of Damages for Pain

The Supreme Court of Nebraska holds, in the personal injury case of Bayard vs. City of Franklin, that there is no fixed rule for the measure of damages occasioned by pain. The amount is to be determined by the circumstances of each case, and is a matter peculiarly within the province of the jury.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

June 26

1 *So-Called Cardiac Epilepsy. R. C. Newton, Montclair, N. J.
2 *Two Unusually Severe Cases of Myocarditis in Children, Caused by Profound Toxemia: Recovery. L. Fischer, New York.
3 Baldness. J. O. Cobb, Milwaukee.
4 Indications for Operation in Acute Mastoiditis. E. Danziger, New York.
5 *Congenital Heart Disease. W. N. Bradley, Philadelphia.
6 *Severe Autointoxication with Acetonuria and Extreme Bradycardia. D. A. Singer, New York.
7 Pharmacology. C. A. Hofer, Philadelphia.
8 No Free Hydrochloric Acid in the Stomach. R. F. Faulkner, Pittsburg.

1. **Cardiac Epilepsy.**—Newton reports five cases illustrating cardiac neuroses or cardiac epilepsy. In one case there were distinct spasms of angina pectoris which were abundantly explained by the autopsy findings. As there was no postmortem examination of the brain, the opportunity was lost of ascertaining whether there was any change in the cerebral structures which might account for these seizures, and for the slight paralyses. In two cases the angina succeeded the epileptic

attacks, and there can be little doubt that they may have been due to the same cause. In a fourth case it seems quite likely that angina may supervene later. The fifth case, perhaps, ought not to be called epileptoid at all. Only one of the cases cited was remarkable for its persistent slow pulse. Numbers of cases of slow pulse unaccompanied by any symptoms have been reported in people apparently in excellent health, so that when bradycardia is coincident with epilepsy, the conjunction may be purely accidental. In fact, a number of good authorities, probably a majority of observers, maintain the same proposition with regard to the coincidence of cardiac disease and epilepsy. Still, Newton believes that there are cases in which the condition of the heart is the cause of the epileptic attacks.

2. **Myocarditis in Children.**—Fisher says that the outcome of a case of myocarditis depends on persistence in the nutrition of the body, aided by carefully selected cardiac and vasomotor stimulants. Fresh air and sunshine are invaluable as aids in the proper establishment of metabolism.

5. **Congenital Heart Disease.**—In the case reported by Bradley the foramen ovale was patulous and there was almost complete stenosis of the pulmonary artery. The ductus arteriosus was patulous.

6. **Severe Autointoxication with Acetonuria and Bradycardia.**—Singer's case presents the following points of interest: 1. Acetonuria. 2. Bradycardia. The pulse registered from 4 to 8 to the minute and was synchronous with the heart beat. This shows the extreme grade of the intoxication of the inhibitory vital centers and of the myocardial degeneration. 3. Leucocytosis of 22,000. 4. Two separate and distinct toxemias; on the one hand, a clear history of chronic nicotine poisoning, and, on the other, superimposed, an acute infection justified by the history and symptoms, especially the acetonuria, indicanuria, anemia and convulsions.

Medical Record, New York

June 26

9 Tuberculosis of the Lungs with Remarks on Microscopic Diagnosis. L. M. Hurd, and J. Wright, New York.
10 *Use of Atropin Sulphate and Atropin Methylbromid in Diabetes Mellitus. J. Rudisch, New York.
11 Compensatory Albuminuria. H. Stern, New York.
12 Treatment of Pott's Disease at the Sea Breeze Hospital. L. W. Ely, New York.
13 *Combined Operation for the Radical Cure of Inguinal Hernia and Appendicitis. A. H. Harrigan, New York.
14 Dermatobia Noxialis Infection. J. D. Manget, Atlanta, Ga.
15 Practical Points in Treatment of Fracture of the Lower End of the Radius. E. C. Beck, New York.
16 Thiosinamin in Otology. F. M. Fernandez, Havana.

10. **Atropin in Diabetes Mellitus.**—Rudisch had administered atropin in diabetes in the form of the methylbromid and the sulphate. As the initial dose of the methylbromid he has given gr. 2/15 t. i. d. to adults, gradually increasing this by gr. 1/15 until gr. 8/15 t. i. d. are being taken. In one case three grains were given daily over a short period with no other toxic effect than dryness of the throat. The initial dose of atropin sulphate should be gr. 1/150 t. i. d., that may be gradually increased to gr. 1/20 t. i. d. Children require a dosage proportionate to their age. It is noteworthy that these unusually large amounts of atropin are well tolerated, provided the initial dose is small and the increase gradual. It is not necessary to attain the maximum dose in the majority of cases, however, much smaller amounts often causing the glycosuria to disappear. With the appearance of the first toxic symptom, usually a marked dryness of the throat, the atropin was either stopped entirely, or, more often, the attempt to increase the dosage was temporarily abandoned. It was always possible to resume the drug after a period of rest. The action of atropin may be summed up under the following heads: (1) Reduction in the amount of sugar excreted; (2) increase in carbohydrate tolerance.

13. **Combined Operation for Inguinal Hernia and Appendicitis.**—Harrigan reports a case in which he employed the Torek operation with a slight immaterial modification.

Boston Medical and Surgical Journal

June 3

17 Extensive Calcification of Pleuritic Exudation Causing Curvature of the Spine. T. Dwight, Boston.
18 Etiology and Diagnosis of Iritis. P. H. Thompson, Boston.
19 Chronic Glomerulo-Nephritis in which Double Decapsulation was Performed. E. Garceau, Boston.
20 *Placenta Prævia. N. R. Mason, and J. T. Williams, Boston.
21 Exercise in Pulmonary Tuberculosis. B. S. Putts, Pittsburg.

June 17

22 *Conquest of the Tropics for the White Race. W. C. Gorgas, Ancon, Canal Zone.
23 *Diagnosis and Prognosis of Gallstone Disease from the Point of View of the Surgeon. M. H. Richardson, Boston.
24 Placing out of High-Grade Imbecile Girls. W. N. Bullard, Boston.
25 Symptom-Complex of a Series of Exanthematous Diseases, or is there a New Contagious Exanthem? J. W. Watson, South Braintree, Mass.

20. **Placenta Prævia.**—Mason and Williams have gone over the records of the Boston Lying-in Hospital for the past thirty-five years with the object of studying placenta prævia. The authors found that among 32,453 out-patients during a period of twenty-seven years, there was about one case of placenta prævia to every 700 pregnancies. The most important results of their investigation of the hospital records were those in regard to the treatment of the condition. After briefly outlining the histories of the fatal cases, the authors sum up their conclusions as follows:

1. Improvement in the results of the treatment of placenta prævia is to be expected not so much from any particular method of delivery as from early delivery.
2. The advantages of early delivery are as great for the child as for the mother.
3. Every patient should be instructed and enabled to notify a competent obstetrician at once of any uterine hemorrhage during pregnancy.
4. Any hemorrhage during the second half of pregnancy demands an immediate investigation of the contents of the lower uterine segment.
5. A routine vaginal examination should be made on every patient at the end of the seventh month.
6. In multiparæ, rapid dilatation, followed by version and extraction, offers a safe and satisfactory method for both mother and child.
7. In primiparæ, at the beginning of hemorrhage, while still in good condition. Cesarean section should be the operation of choice.

22. Published in THE JOURNAL, June 19, 1909, p. 1967.

23. **Gallstone Disease.**—This paper discusses very fully the diagnosis and the outlook of gallstone disease as contemplated by a surgeon after a thousand observations. Richardson says that the diagnosis of gallstones, though it presents many difficulties, is essentially easy and successful. The exact location of gallstones in the biliary tract is a matter of greater difficulty, but on that exact location almost wholly depends the prognosis. The diagnosis must be made positively before an operation should be undertaken—unless a diagnosis is impossible and failure to operate means increased suffering and ill-health, or death and disability, then an exploratory operation may be done.

Kentucky Medical Journal, Bowling Green

June 1

26 Abortions. W. R. Burr, Auburn, Ky.
27 Idem. C. M. Brown, Price's Mill, Ky.
28 Mode of Entrance and Localization of Infection. J. A. Stucky, Lexington.
29 Am I My Brother's Keeper? J. G. Carpenter, Stanford.
30 Justification of Surgery in Connection with a General Practice. C. P. Price, Harrodsburg.
31 Postnasal Adenoids, Etiology, Symptomatology, Diagnosis and Treatment. O. B. Demaree, Frankfort.
32 Disease of Gall Bladder and Gall Ducts. J. C. B. Foster, Monterey.
33 Renal Calculi: Pyonephrosis; Report of a Case. A. W. Davis, Mortons' Gap, Ky.
34 Iron. T. C. Nichols, Morgan.
35 Ascites. S. R. York, Centre.
36 Factors which Influence the Prognosis of Chronic Valvular Disease of the Heart. T. O. Meredith, Burgin.
37 Diagnostic Value of Pain in Diseases of Abdominal and Thoracic Viscera. D. H. Erkeletian, Hopkinsville.
38 Acute Nephritis; Report of a Case. D. G. Simmons, Adairville.
39 Expectorants. S. M. Hopkins, Demossville.
40 Treatment of Gonorrhea and its Complications. J. W. Rickers, Cincinnati.
41 Acute Bronchopneumonia in Children. J. C. McCreary, Cave City.
42 Management of a Woman During Pregnancy and Labor. J. N. Bailey, Fredonia.
43 Fracture of Upper Third of Femur. J. T. Green, Leitchfield.
44 Arthritis Deformans. P. A. Hart, Murray.
45 Fracture in Children Under Ten Years of Age. A. D. Willmoth, Louisville.

Northwestern Lancet, Minneapolis

June 1

46 Diphtheria. E. J. Clomens, Aberdeen, S. D.
47 Conservatism in Traumatic Surgery. W. Courtney, Brainerd, Minn.
48 Postoperative Treatment. G. R. Curran, Mankato, Minn.
49 Acute Gangrenous Appendicitis. C. J. Holman, Mankato, Minn.

American Journal of Medical Sciences, Philadelphia

June

50 *Short Duration Typhoid Fever. W. Coleman, New York.
51 Heart Failure in infectious Diseases: Prevention and Successful Management. W. P. Worster, New York.
52 Symptoms of Descending Thoracic Aneurism. A. W. Hewlett, Ann Arbor, Mich, and W. R. P. Clark, San Francisco.
53 *Reversion Theory and Classification of Goiter. W. C. MacCarty, Rochester, Minn.
54 *Nature, Diagnosis and Treatment of Metabolic Osteoarthritis. P. W. Nathan, New York.
55 *Primary Splenomegaly of Gaucher Type. N. E. Brill, F. S. Mandlebaum, and E. Libman, New York.
56 *Primary Carcinoma of the Lungs. A. L. Garbat, New York.
57 Detection of β-Oxybutyric Acid in the Urine. T. S. Hart, New York.
58 *Effect of Certain So-Called Milk Modifiers on the Gastric Digestion of Infants. T. W. Clarke, New York.
59 Treatment of Boils. G. T. Jackson, New York.

50. Abstracted in The Journal, Feb. 13, 1909, p. 581..

53. **Classification of Goiter.**—MacCarty has been struck by the variance of the opinions and also the variance in the methods of attack in the study of the etiology. He has come to the conclusion that the process of goiter may be a process of reversion of the thyroid gland to some former function. Hyperthyroidism is a toxemia the result of absorption of the products of the hyperactive thyroid. The stimulus causing the hyperactivity may be the same that stimulated the thyroid to activity in primitive man. This stimulus was then probably a normal stimulus to the gland, just as we have normal stimuli for glandular activity in man in his present condition. This stimulus may still be present in the food or water, formed through some process in the intestine or in the metabolism of the body, or it may exist in the air. The types of goiter are probably not types at all, but stages in a general process. MacCarty suggests the following classification of goiter on a pathologic basis: (a) Cystic goiter (thyroidea cystica); (b) hypertrophic parenchymatous goiter (thyroidea parenchymatosa hypertrophica; (c) papillary cystic goiter (thyroidea cystica papillare); (d) hypertrophic fetal thyroid (thyroidea fœtalis hypertrophica; (e) fetal adenoma of the thyroid (thyroidea fœtalis adenomatosa). Hyperthyroidism always occurs in *b* and *c*, and may occur in *e*.

54. **Metabolic Osteoarthritis.**—Nathan believes that metabolic osteoarthritis is a distinct pathologic condition of the joints, which can easily be recognized clinically; it is not, however, a primary joint disease causing secondary general symptoms; nor is a uniform specific general disease responsible for it; it occurs in connection with a number of distinct clinical conditions, some of which are known to be specific diseases; the joint disease is not due directly to the conditions with which it is associated, but it is due to their deleterious influence on the general nutrition.

How the metabolism is affected or what changes it undergoes has not been determined. What is certain, however, is that the changes in the joint are passive: simply an atrophy which can only be induced by inadequacy of the nutrition. For these reasons, the joint disease here discussed has been grouped with the nutritive or trophic joint diseases. In order to distinguish it from those conditions which cause local changes only, it has been termed metabolic, and to distinguish it from the rather uncommon metabolic conditions which cause synovial changes only, it has been called osteoarthritis. Thus, metabolic osteoarthritis is a chronic osteoarthritis due to a vice of the metabolism caused by a number of conditions, organic or functional; insidious in onset; symmetrically involving new joints toward the trunk, it gradually leads to more or less deformation and crippling. The *x*-rays show circumscribed bone rarefication in the early stages, and a more or less complete absorption of the epiphyses in the later stages, but never proliferation or bony ankylosis. Pathologically, beginning in the bone, there is a pure atrophic degeneration of all the joint structures. Nathan has had uniformly good results with the use of the thymus gland extract in these cases. His method of proceeding is as follows: The thymus is given immediately, beginning with two 5-grain tablets, thrice daily. In two weeks the dose is increased to three tablets, and after a few months three tablets, four times a day, are given. The patient is kept at rest until all symptoms of active joint disease have subsided. Then begin passive motion in all the affected joints. This is carefully done at first and gradually increased until one has an arc of free motion which is only limited by the shortened tendons. Massage, which is often painful, is unnecessary, and may even be harmful. The next step is to get the patient on his feet. This is sometimes a tedious affair, for patients, particularly adults, are timid at trusting themselves at first, but by persistence, the patient eventually gains confidence, and finally is able to get around as well as the deformity in the lower extremity will permit. As soon as the patient is able to be on his feet or to use his joints without the appearance of joint irritation, all contracted tissues are divided with the tenotome and the deformity is corrected. This, of course, requires immobilization for three or four weeks, but with light plaster-of-Paris bandages it does not preclude the use of the lower extremities. A few days after the operation the patient is again induced to be about, and he is usually able to hobble around quite comfortably with crutches or a cane until the bandages are removed. With such treatment all but the most severe cases, which have existed for a long time, can be improved definitely. Often the patients recover sufficiently to be about and attend to their avocations. The treatment, however, requires patience, a definite knowledge of the condition, and time; without these only in the very mild cases can one be successful.

55. **Primary Splenomegaly.**—Brill, Mandlebaum and Libman claim that splenomegaly (Gaucher type) is a distinct disease, starting in early life, often affecting several members of a family, and running a chronic course. It may be recognized by a great enlargement of the spleen, which precedes a similar enlargement of the liver, and is unaccompanied by jaundice or ascites; by the discoloration of the skin, especially where exposed to light; and by the absence in the blood of any characteristic findings. The disease has none of the characteristics of malignancy, and usually terminates as the result of an intercurrent affection. The organs affected are the spleen, liver, lymph nodes and bone marrow. Histologically, these organs show the presence of large cells with small nuclei and a peculiar hyaline cytoplasm, which arise from the endothelium or normal reticulum, and the presence of pigment containing iron. The etiology is unknown, though a peculiar susceptibility of the endothelium or reticulum of the hematopoietic apparatus to some unknown toxic agent is most likely present. There is nothing in the authors' two cases even suggesting tuberculosis. They say that when found in cases of this disease, it must be considered as a superimposed process.

56. **Primary Carcinoma of the Lungs.**—Garbat reports one case, a study of which has convinced him that while pulmonary alveoli and bronchial mucous membrane show no neoplastic tendency, there is conclusive evidence that this primary carcinoma of the lungs originates from the mucous glands of the smaller bronchi still containing cartilage. Several clinical features in his case deserve mention. The patient gave a history of distinct hereditary predisposition to tuberculosis. Several old tuberculous lesions were found in the left apex. This coexistence of tuberculosis and carcinoma of the lungs, although denied in general by Rokitansky, is not at all rare. Wolff described 31 cases of carcinoma of the lungs, of which 23 were complicated by tuberculosis. Schwalbe described 10 cases, of which 3 were complicated by active tuberculosis. Furthermore, Friedländer, Hildebrand, Seigert and Ribbert described cases of carcinoma developing in tuberculous portions of the lung.

The clinical diagnosis of tumor of the lung was made rather late in the disease. The probability of tuberculosis seemed so great that one was inclined at first to favor this diagnosis rather than that of carcinoma. The asymmetry of the chest, the diminished expansibility of the affected side, the bloody pleural fluid, and the persistence of dulness after evacuation of the fluid, speak for both tuberculosis and carcinoma. The fact, however, that the apices remained practically clear while the process was localized entirely at the right base, and in addition to this the absence of tubercle bacilli, should have suggested strongly the diagnosis of carcinoma. The sputum examination, too, proved interesting. The sputum was examined almost daily, and the only almost constant finding was blood. Naturally, it was profuse and mucopurulent. The variously described so-called characteristic "granule cells" ("*Kernzellen*") for carcinoma of the lungs were not found. As a rule, in a man over 50, profuse expectoration which almost constantly contains blood and no tubercle bacilli, associated with physical signs denoting some abnormal lung condition, should always make one very suspicious of neoplasm.

Two complications which arose—the abscess of the lung and the empyema of the gall bladder—masked the diagnosis in the lungs to a great extent; but the fact that even after those operations the patient did not get any relief, but became progressively worse, spoke highly in favor of an underlying malignant condition. When stenosis of the air passages became sufficient to produce symptoms, the diagnosis became more evident; but this, as usual, came late in the disease. Summing up the age of the patient (64 years) the bloody pleural fluid, the persistence of dulness after tapping, and the constant presence of blood in the sputum without tubercle bacilli, there was enough ground for making the diagnosis of carcinoma of the lung.

58. **Gastric Digestion of Infants.**—Clark believes that the motility of the infant stomach varies inversely to the concentration of the food. The more dilute the food the more frequently may the feedings be given. Lime water does not reduce the acidity of the gastric contents, the neutralizing of a portion of the acid being overcome by an increased stimulation of hydrochloric acid by the gastric glands. This may increase the amount of the acid available for digestion. Sodium citrate acts on the acid in the stomach, converting it into sodium chlorid and thus markedly reduces the "available hydrochloric acid." Barley water seems to have no constant effect on the chemistry of gastric digestion in the infant. The type of infants who vomit persistently may be divided into two classes, hypoacidity and hyperacidity. Test feedings should be given to this type of infants to determine to which class they belong. A 5 per cent. milk sugar solution seems to be the most satisfactory feeding to determine fine differences in the gastric contents. This may be followed by a mixture of milk of one part, water two parts, to determine to what extent the gastric glands are capable of responding to stimuli. For the lactose solution, thirty minutes is the most satisfactory time to allow the feeding to remain in the stomach; for the milk mixture, sixty minutes. On purely thoretical grounds, it would appear that when the acidity is low either small doses of alkalies or of hydrochloric acid are indicated, while in hyperacidity sodium citrate holds out the best hope of benefit. Protein digestion in the infant's stomach is slight and is proportional to the amount of hydrochloric acid in the organ.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

June

60 *The Sensory System of the Facial Nerve and its Symptomatology. J. R. Hunt, New York.
61 Second Attack of General Postdiphtheritic Paralysis Occurring After an Interval of Two Years. F. E. Coulter, Omaha, Neb.

60. **Sensory System of Facial Nerve.**—Hunt gives a general survey of the clinical development of the facial nerve from a sensory point of view. That this nerve has a sensory system of importance finds corroboration on many sides. The results of investigation in the realms of embryology and anatomy find their counterpart in symptomatology and pathology. He believes, therefore, that the seventh nerve should take a definite place as a mixed nerve and should rank with the fifth in symptomatology and nomenclature. This anatomic division of the trigeminal system has proved to be a very practical one, and it has seemed to Hunt that a reconstruction of the facial system along similar lines would have a clinical value. Such a reconstruction would recognize on the proximal side of the ganglion a motor and a sensory root, and on the distal side of the ganglion three branches:

Peripheral Divisions of the Seventh Nerve.—(1) The great superficial petrosal with its tympanic branch and connections with Meckel's ganglion; (2) the small superficial petrosal nerve with its tympanic branch and connections with the optic ganglion; (3) the Fallopian facial, including the motor trunk, the chorda tympani and sensory fibers for the auricle.

Sensory Functions of the Seventh Nerve.—Special sense fibers to the anterior two-thirds of the tongue (chorda tympani). Sensory anastomosis with the terminations of the auditory nerve (internal ear). Sensory fibers to the middle ear, mastoid cells, eustachian tube (deep branches of the petrosal nerves). Sensory fibers to the anterior two-thirds of the tongue (chorda tympani). Sensory fibers to the external ear (emerging with the facial trunk at the stylomastoid foramen).

Sensory Symptoms and Syndromes of the Seventh Nerve.—Pain—Organic Origin: Fallopian neuritis (third branch); tabetic degenerations (sensory root); herpetic otalgia (geniculate ganglion). Functional Origin: Primary otalgia (tic douloureux of the ear); reflex otalgias. Anesthesias: Hypesthesia of the concha; hypesthesia of the anterior two-thirds of the tongue; ageusia of the anterior two-thirds of the tongue. Reflex: Reflex etiologic factor in the production of reflex facial twitchings and spasms. Syndromes: The herpetic inflammations of the geniculate ganglion; herpes oticus; herpes oticus with facial palsy and acoustic symptoms; herpes facialis and herpes occipito-collaris with seventh palsy and acoustic symptoms.

Southern Medical Journal, Nashville

May

62 Tuberculosis of the Breast. W. L. Rodmau, Philadelphia.
63 Early Differential Diagnosis of Typhoid Fever. C. Thoriugton, Montgomery, Ala.
64 Prevention of Ophthalmia Neonatorum. H. H. Martin, Savannah, Ga.
65 Technic of Tonsillectomy. E. C. Ellett, Memphis.
66 Methods of Ascertaining Renal Function, and Its Importance to Surgery. L. W. Bremerman, Chicago.
67 Cystoscopic Findings in 65 Consecutive Cases. H. L. Kretschmer, Chicago.
68 Hematuria Occurring in Chronic Appendicitis. H. A. Royster, Raleigh, N. C.
69 Mucous Colitis. G. M. Niles, Atlanta, Ga.
70 Cesarean Section that must be Elective. J. D. Bloom, New Orleans.
71 Chronic Appendicitis. E. M. Williams.
72 Lord Lister is not a Scotchman. L. L. Hill, Montgomery, Ala.

Interstate Medical Journal, St. Louis

June

73 Development of Milk Laboratories in Connection with the Dispensing of Food Stuffs. T. M. Rotch, Boston.
74 *Bence-Jones Albumosuria Accompanying Myeloid Sarcoma of the Humerus Coincident with Trauma. G. W. Cale, St. Louis.
75 Diet as a Prophylactic and Therapeutic. H. W. Wiley, Washington, D. C.
76 Lichen Planus; Four Cases Occurring in Two Families. M F. Engman, and W. H. Mook, St. Louis.
77 Tumor of the Cerebellum. M. A. Bliss, and N. B. Carson, St. Louis.

74. **Bence-Jones Albumosuria.**—Cale's case is peculiar in that the albuminous substance was found by a physician a year ago before the appearance of the bone disease, and in there being only one bone involved, the humerus. It is also remarkable that such complete destruction should have taken place in about two months. The patient was disposed to attribute the trouble to an injury, but Cale is inclined to believe that it was rather coincidental, or at the most a slightly contributing cause, inasmuch as the albumose was apparently present for a long time before the development of the myeloma. Had the nature of the growth been periosteal sarcoma, then there would have been better ground for regarding the injury as the cause of the growth. This is the second case which has been recognized and come to operation, the other case being reported by Ewald, who removed the right clavicle—it being the seat of a myeloma; the other cases were inoperable on account of the number of bones involved.

Military Surgeon, Washington, D. C.

June

78 *Prevention of Typhoid Fever by Vaccination and by Early Diagnosis and Isolation. F. F. Russell, U. S. Army.
79 Bacteriology of Plague. G. W. McCoy, U. S. P. H. and M.-H. Service.
80 The Flea in its Relation to Plague, with Synopsis of the Rat Fleas. C. Fox, U. S. P. H. and M.-H. Service.
81 Examination of Rats for Plague Infection. G. W. McCoy, U. S. P. H. and M.-H. Service.
82 Management of a Plague Campaign within the Provisional Plague District. J. R. Hurley, U. S. P. H. and M.-H. Service.

78. **Vaccination in Typhoid.**—Although Russell discusses this subject from the viewpoint of the Army surgeon, his views

are in accord with those of the civil practitioner. He says that typhoid fever can be stamped out by an aggressive campaign in which the sources of infection are traced by modern methods. This disease is practically contagious, and the patients should be isolated and routine disinfection should be carried out, not only until they are convalescent, but also until they have ceased to excrete bacilli. The correct diagnosis at the earliest possible moment of all cases is of prime importance to the sanitarian. Earlier diagnosis can be made by blood cultures than by the agglutination test or by clinical signs. The diagnosis of mild and ambulatory cases is of the greatest importance for the sanitarian. Vaccination against typhoid is the most promising way of keeping down the noneffective rate due to this disease.

Medical Herald, St. Joseph, Mo.

June

83 Tic and Chorea. H. T. Patrick, Chicago.
84 How the Physician, as a Physician, Can Best Serve the Community in which he Lives. E. H. Miller, Liberty, Mo.
85 Diphtheritic Paralysis. F. E. Coulter, Omaha, Neb.
86 Early Treatment of Cross Eyes. W. H. Graves, Pittsburg, Pa.
87 New Therapeutics. W. Waugh, Chicago.

Bulletin Johns Hopkins Hospital, Baltimore

June

88 Life and Times of Gerhardt Van Swieten. A. G. Gerster, New York.
89 The Moderator Band and Its Relation to the Papillary Muscles, with Observations on the Development and Structure of the Right Ventricle. R. Retzer, Baltimore.
90 *Effect of Scarlet Red, in Various Combinations, on the Epitheliation of Granulating Surfaces. J. S. Davis, Baltimore.
91 Disposal of the Waste of the Brain Tissues. H. J. Berkeley, Baltimore.
92 Postanesthetic Acidosis. F. F. Gundrum, Baltimore.

90. **Effect of Scarlet Red on Epitheliation of Granulating Surfaces.**—Davis' paper is based on observations made during the treatment of 60 cases with scarlet red. He used 2, 4, 5, 8, 10 and 20 per cent. scarlet red ointments, with a simple vaselin base. Sterilization of the ointment caused the color to become somewhat darker, but this change did not seem to affect the stimulating power of the preparation. Clean, healthy granulations should be bathed with boric solution and dried. If the granulations are unhealthy, peroxid of hydrogen is used before the boric-acid solution. Free use of silver nitrite stick is advisable to keep down exuberant granulations. The skin surrounding the defect should be anointed with some bland ointment up to within 1 cm. of the edge. Since this has been done the irritation complained of in some of the early cases has been, to a large extent, eliminated. The scarlet-red ointment may be applied over the whole surface of the wound if it be small, or simply to the growing epithelial edges. Whichever method is chosen, it is best to apply the ointment on perforated old linen, to which the granulations will not adhere, and which allows the escape of secretions and thus prevents maceration. When applied to the edges, the old linen should be used in narrow strips with a thin layer of the ointment. Another very satisfactory method is to apply a thin coating of the scarlet red ointment to the wound edges with a camel's hair brush, being sure that the edges are dry. Then either cover with strips of old linen, or expose to the air. This is especially useful in the partial skin-graft cases, and on small wounds, as the ointment can thus be placed accurately and the amount regulated. The portions of the wound not covered by scarlet red may be dressed as seems best, or may simply be exposed to the air under a cage. A light dressing of sterile gauze secured by a bandage completes the procedure.

This dressing should be removed within 48 hours, 24-hour intervals being preferable, and replaced by some bland ointment, such as zinc or boric ointment. After the same interval has elapsed, the scarlet red dressing should be replaced. There were 60 cases treated. Of these 44 were males and 16 females, the youngest being 2 years old, and the oldest 76 years. Duration of the lesions, a few days to 15 years. The cases were grouped as follows: Partial skin grafts, 7 cases; ulcer following operation for infection, 10 cases; ulcer following burn, 11 cases; traumatic ulcer, 10 cases; specific ulcer, 8 cases; varicose ulcer, 7 cases; ulcer following Cotting operation for ingrown toe nail, 3 cases; bedsore, 2 cases; miscellaneous ulcer, 2 cases.

The general health of the patient seems to have some bearing on the stimulating effect of the scarlet red, which is distinctly less marked in nephritic and diabetic cases. The age, on the other hand, has little or no effect. The rapid-growing epithelium is thick and at first a bluish-red in color with an opalescent spreading edge. Venules of considerable size can be seen close to the surface. The color and the enlarged vessels soon disappear, however, and the newly formed tissue rapidly assumes the color and characteristics of the normal skin. A section through an area thus healed shows practically normal skin. As a rule, after a short time this skin becomes freely movable over the underlying tissues. The exact strength and combination of the ointment to be used on different types of wounds can hardly be dogmatically stated, as experience is necessary for this knowledge. However, a few general observations may be of advantage. The 8 per cent. ointment is used unless especially contraindicated. In some cases which were sluggish to the 8, the 20 per cent. ointment has caused rapid stimulation of the edges. Davis does not advise the constant use of the 20 per cent. strength, as on several occasions it has proved too irritating in spite of all precautions. It is of value now and then, although its action should be carefully watched. On several wounds which were nearly closed, the pure scarlet red powder was dusted on the uncovered area, after protecting the surrounding skin. It had a marked drying effect and caused no irritation. When the wounds are covered with unhealthy granulations, and the discharge is profuse and foul smelling, the scarlet red in iodoform ointment, or balsam of Peru, or blue ointment is very efficacious in cleaning up the granulations, and at the same time stimulating the epithelial growth.

Kansas City Medical Index-Lancet

June

93 The Doctor in Court. W. F. Langdon, Cincinnati.
94 Thoughts Connected with the State of Sleep. C. B. Hardin, Kansas City.
95 Rheumatism of the Throat and Eye. W. H. Graves, Pittsburg, Kan.
96 Treatment of Membranous Croup. C. S. Merriman, Kansas City.
97 Paralysis of the External Rectus Muscle, Due to Disease of the Sphenoid Sinus. J. W. Bell, Kansas City.
98 Varicocele. B. A. Poorman, Kansas City.
99 Unusual Injuries to the Eyes. J. W. Kimberlin, Kansas City.

West Virginia Medical Journal, Wheeling

June

100 Cardiac Asthma, Cheyne-Stokes Respiration, Bradycardia, Adams-Stokes Syndrome. L. D. Wilson, Wheeling.
101 Sarcoma of the Uterus in a Girl 12 Years Old. J. T. Thornton, Wheeling.
102 Power of the Mind over the Body. H. H. Phelps, Wellsburg.
103 National Formulary vs. Proprietaries. C. W. Halterman, Clarksburg.
104 Relationship of the Practice of Medicine to the Practice of Pharmacy. C. D. Sturm, Clarksburg.
105 Origins of Tics and Hysterical Symptoms. T. A. Williams, Washington, D. C.
106 *Large Foreign Body in Eye. J. L. Dickey, Wheeling.

106. **Foreign Body in the Eye.**—Dickey reports the case of an engineer who was struck in the left eye by a piece of glass from a lubricator tube. The cut extended from the center of the cornea to the margin and as far beyond it through the sclera. The glass was not discernible, and it was supposed to have bounced off after cutting the eye. But pain and inflammation did not subside under proper treatment, and the sight gradually disappeared until the patient had not even light perception. Skiagraphs showed a large piece of glass imbedded in the eyeball and protruding near the optic nerve. The eye was enucleated, and the piece of glass, was found to be of the dimensions shown by the skiagraphs, namely: three-fourths of an inch long, three-eights of an inch wide, and about one-eighth of an inch thick, concavo-convex in shape. No sympathetic symptoms occurred.

Progressive Medicine, Philadelphia

June

107 Hernia. W. B. Coley, New York.
108 Surgery of the Abdomen. E. M. Foote, New York.
109 Gynecology. J. G. Clark, Philadelphia.
110 Diseases of the Blood, Diathetic and Metabolic Diseases of the Spleen, Thyroid Gland, and Lymphatic System. A. Stengel, Philadelphia.
111 Ophthalmology. E. Jackson, Denver.

Illinois Medical Journal, Springfield

June

112 *Relation of the Medical Profession to the Secular Press. J. W. Pettit, Ottawa, Ill.
113 Hygiene of the School Child. J. W. Van DerSlice, Chicago.
114 School Playgrounds. H. B. Favill, Chicago.
115 Tuberculosis, Its Treatment with Tuberculinum Koch and an Index to Dosage. L. Snoddy, Chicago.
116 *Indications and Limitations for the Use of Antigonococcus Serum. R. H. Herbst, Chicago.
117 The Principles of Revision of the Pharmacopeia of the United States of America. F. Billings, Chicago.
118 A Comparison of the United States Pharmacopeia with some Foreign Pharmacopeias. W. A. Puckner, Chicago.
119 *How Can We make the Pharmacopeia more Popular with Physicians? B. Fantus, Chicago.
120 Diagnosis and Treatment of Chronic Catarrh of the Bowels in the Light of Recent Clinical and Physiological Research. J. L. Jacque, Chicago.
121 *A Modern Method of Treatment of Typhoid Fever. J. P. Roark, Bushnell, Ill.
122 Some Lessons in Tonsil Surgery. C. B. Younger, Chicago.

112. Abstracted in The Journal, June 12, 1909, p. 1951.

116. **Use of Antigonococcus Serum.**—In the last year Herbst has used the serum only in 24 joint cases, with excellent results in almost every instance. In 4 cases the patients did not show any improvement. In 2 of these, however, he was able to demonstrate the gonococcus in fluid aspirated from the affected joints. In the other 2 aspiration was refused, but he is convinced from the clinical picture in both of them that they were infections of the joints and not toxemias. Of the 20 cases in which results were good, 6 were of a very acute type, the joints being greatly swollen and extremely painful and tender. When cases in which the serum has been used with good results occur after a few weeks or months, it is because the source of the toxic material has not been eliminated before the use of the serum. The local infection should be cleaned up at the time or, better, before the serum is used. Another reason for the recurrence seen in these cases is the insufficient quantity of serum given. Unless the patient receives at least from 18 to 24 c.c. and, better, 30 c.c., he is likely to have a recurrence. Partial relief after the use of the serum in most cases is due to an insufficient dose. If a correct diagnosis is made; if the condition of the joint or joints is due to a toxemia and not an infection with the germ; if the original focus of infection is cleared up before or at the same time the serum is administered; if the serum is given in sufficient quantity, then antigonococcus serum will give the results expected of it. The serum has absolutely no effect on acute gonorrheal infections, whether they exist in the lower urinary tract or in any other part of the body. Its value in toxemic gonorrheal joints is without question. In the past these painful joints accompanying and following gonorrhea have been most resistant to treatment, both local and general, but in the serum we now have a remedy which will give rapid and permanent relief to the sufferers from this common complaint.

119. **How Can We Make the Pharmacopeia More Popular with Physicians?**—The pharmacopeia is not so popular with physicians as it ought to be; and that is one of the roots of the nostrum evil. Is there much in it to make it attractive to physicians? Is it not a pharmacist's rather than a physician's book? The Pharmacopeia contains but few of the facts that a physician must know in order to be able to prescribe, and many that the physician is not in need of. Would it not be well to have a book that would give in an authoritative, systematic, concise and yet complete manner all the facts that a physician might need in order to compose a prescription for and pharmacopeial remedy that he has not prescribed before? Such a book, according to Fantus, should contain: 1 The names of the drug—Latin name, English name, synonym. 2 The physical characteristics of the drug. 3 The chemical characteristics of the drug, including composition in case of compound drugs, for the purpose of teaching chiefly how to avoid incompatibilities. 4 Dosage—the average dose or doses, and the average frequency of repetition to obtain or maintain effect. The minimum fatal dose should be given wherever possible. Dosage for children might advantageously be added in connection with important drugs. For external remedies strength of application should be noted. 5. Administration—best methods known for prescribing the remedy in a pleasant and efficient manner. 6. Antidotes, antagonists and the treatment of poisoning. 7. The preparations of the drug, each of which should be treated from the above named first five standpoints. If more than one preparation is official, the relative merits and special uses of each should be pointed out. This, Fantus thinks, would be the physician's pharmacopeia, which every physician would have occasion to make frequent use of. To give such a book the greatest degree of reliability, completeness, and therefore usefulness, a body of experts such as constitutes the Committee of Revision of the Pharmacopeia would be required as its authors, and it should be published simultaneously with the pharmacist's pharmacopeia.

121. The practical points in this paper are the same as in a similar paper by this author in The Journal, April 3, 1909, p. 1089.

The American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

June

123 *Cesarean Section in Placenta Prævia. C. Jewett, Brooklyn, N. Y.
124 *The Indications for Abdominal Cesarean Section in Placenta Prævia. H. D. Fry, Washington, D. C.
125 *Sterilization in Cesarean Section. J. O. Polak, Brooklyn, N. Y.
126 *The Justifiability of Sterilizing a Woman after Cesarean Section, With a View to Preventing Subsequent Pregnancies. C. M. Green, Boston.
127 *Further Reasons for Examining and if Necessary Removing the Vermiform Appendix in Every Case of Abdominal Section. A. L. Smith, Montreal.
128 *The Nurse as Anesthetist. J. M. Baldy, Philadelphia.
129 *Renal Excretion During the Administration of Chloroform and Ether in Gynecologic Surgical Operations. J. W. Bovée, Washington, D. C.
130 *Conservatism in Surgery of the Pelvic Organs. H. J. Boldt, New York.
131 Acute Postoperative Dilatation of the Stomach. E. H. Grandin, New York.
132 Streptococcus Infection and Medullary Carcinoma of the Breast in Pregnancy. E. P. Davis, Philadelphia.
133 Acute Anterior Poliomyelitis. J. D. Morgan, Washington, D. C.
134 Anterior Poliomyelitis. H. W. Frauenthal, New York.

123 to 126. Abstracted in The Journal, May 8, 1909, pp. 1527, 1528, 1529.

127, 128, 129. Abstracted in The Journal, May 15, 1909, pp. 1612, 1614.

130. **Conservatism in Surgery of Pelvic Organs.**—Boldt says that exsection of a part of an ovary, the seat of small cystic degeneration, or the puncturing of the small cysts does not deserve the name of conservative surgery, because the small cystic degeneration is without significance. Plastic surgery on suppurating Fallopian tubes is considered as bad surgical judgment, rather than as conservative surgery, because the patient on whom such a procedure is undertaken is not cured by it. The removal of a pedunculated subperitoneal myoma should not be considered conservatism; it is only a common sense procedure. Good judgment must be used in interstitial multiple myomata, and in subperitoneal myomata if the latter have attained to more than 4 or 5 centimeters in diameter. To retain the uterus in such cases is conservative surgery. It is also conservative surgery to retain the whole or a part of the uterus in cases of an abscess in the uterus. In cases of ovarian tumors, an attempt should always be made to regain functionating ovarian stroma from the base of the tumor. In all cases of doubtful character of the tumor a frozen section of it should be made, if possible, by the pathologist of the hospital, and his report on the character of the tumor be obtained before the abdomen is closed. Boldt has done the operation 45 times in cases of bilateral tumors during the past 20 years, and, with one exception, there has been no occasion to regret the procedure. The menstrual function had been retained in all patients; some had conceived and were delivered at term.

Dominion Medical Monthly, Toronto

June

135 Anterior Poliomyelitis. H. T. Machell, Toronto.
136 Paraplegia. J. T. Fotheringham, Toronto.
137 Hyperpyrexia. D. J. G. Wishart, Toronto.
138 Tuberculosis in the General Hospital and its Relation to the Milk Problem. J. N. E. Brown, Toronto.
139 The More Important Germs Found in Aural Discharge, with some Clinical and Pathologic Manifestations. G. Royce, Toronto.

Journal of Advanced Therapeutics, New York

June

140 Employment of the Caldwell Cavity Tube as a Surface Electrode. C. R. Dickson, Toronto.

141 Treatment of Arteriosclerosis and Hypertension. W. B. Snow, New York.
142 Electrochemical Minor Surgery. E. S. Smith, Bridgeport, Conn.
143 High-Frequency, High-Potential Currents in Diseases of the Nose and Throat. I. C. Soule, Kansas City, Mo.

Laryngoscope, St. Louis

June

144 Observations on Esophageal Cases and the Presentation of Two New Instruments. H. P. Mosher, Boston.
145 Chronic Stenosis of the Larynx Cured by Dilatation. D. B. Delavan, New York.
146 *Sheet of Directions Given to the Patient After a Tonsil Operation. E. Pynchon, Chicago.
147 Early Immunization, the Essential Function of the Tonsil. R. H. Good, Chicago.

146. This article also appeared in the *Virginia Medical Semi-Monthly*, May 21.

St. Paul Medical Journal

June

148 The Genesis of the Transmissible Diseases. J. M. Armstrong, St. Paul.
149 *The Parathyroids. J. S. Gilfillan, St. Paul.

149. **The Parathyroid Glands.**—Gilfillan reviews the literature on the physiology of the parathyroids and points out that the postoperative tetany is almost certainly, other forms of tetany probably, due to parathyroid insufficiency. That certain diseases manifesting disturbed calcium metabolism, notably rachitis and osteomalacia, may possibly have a similar origin, while as yet the evidence is insufficient as to the many other constitutions mentioned in this connection. The value of parathyroid therapy, he says, is still doubtful.

Albany Medical Annals

June

150 *One Hundred Cases of Herniotomy in Children with End-Results. H. C. Deaver, Philadelphia.
151 The Emmanuel Movement. A. S. M. Chisholm, Bennington, Vt.
152 Some Relations of Normal Suggestion. H. Elliott, Troy, N. Y.

150. **Herniotomy in Children.**—Deaver sent a circular letter to the parents of 100 children. There was no operative mortality in this series. Replies received from 63 showed no instance of recurrence. These operations were performed from 1 to 16 years ago. All these children were below the age of 14 years. The youngest patient was a baby 28 days old, who was operated on for strangulated hernia. In this series there were 2 instances in which brothers of nearly equal ages were operated on in succession. In this series there were 3 scrotal hernias of large size in children under 5 months of age. Based on the above cases, Deaver concludes that if the hernia be small and the truss easily kept in place, it is feasible to persevere in the use of this apparatus. If there is no cure after a year's trial, operation should be performed. The truss should only be advised when the mother is intelligent enough to carry out the instructions as to its proper use. It is not advisable to order trusses among the poor where the care of the children and their environments are not so favorable as among the intelligent classes. Too often in such cases the wearing of the truss offers a false sense of security against accidents, such as strangulation, and the hope that the truss will cure these hernias often proves futile. The expense of the truss must also be considered. Since the operation has practically no mortality, and since the results are so good, radical operation is justifiable, and this wholly irrespective of age. In large scrotal hernias he would not advise in any class of patients the use of the truss because the operation is not serious and the results are perfect and permanent. As to the operation itself, the most important point in the closure of the canal is the separation of the layers so as to get firm union between them in their new relations and, at the same time, to prevent any tension on the deep sutures. The skin incision should not be prolonged too far outward toward the scrotum; not more than half an inch below the external abdominal ring. The sac should be completely removed, and, if cut properly, its stump disappears from sight by the elasticity of the peritoneum. The only true indication that the limit of the sac has been reached is the end of the thickening of the tissue forming the sac.

Mississippi Medical Monthly, Vicksburg

June

153 *Indigestion from a Surgical Standpoint. J. Darrington, Yazoo City.
154 The Neglected Gynecologics. L. C. Feemster, Nettleton.
155 Enterocolitis in Children. G. S. Bryan, Amory.

153. Abstracted in The Journal, May 15, 1909, p. 1606.

New Orleans Medical and Surgical Journal

June

156 A Year's Progress in Tropical Medicine. J. M. Anders, Philadelphia.
157 *Relation of House-Flies to the Spread of Disease. H. Skinner, Philadelphia.
158 Positive Differentiation of Hysteria and Psychasthenia—Essential Characters. T. A. Williams, Washington, D. C.
159 Thymokesis. A. E. Fossier, New Orleans.
160 Hemoglobinuria, or Blackwater Fever; Its History, Geographic Distribution, and Etiology. M. Brady, New Orleans.
161 The Doctors and Their Ethics. E. D. Martin, New Orleans.
162 Classics and Modern Training. W. Miller, New Orleans.

157. Abstracted in The Journal, May 8, 1909, p. 1536.

Iowa Medical Journal, Des Moines

June

163 How to Interest the Young Man in the County Society. J. V. Littig, Davenport.
164 The Lazy Secretary and His Baneful Influence on the County Society. N. M. Whitehill, Boone, Ia.
165 *New Method for Closing Canalis Femoralis in Large Femoral Hernia. H. J. H. Hoeve, Des Moines.
166 Protest and Prophesy. C. A. Henry, Farson, Ia.
167 Peculiar Nervous Phenomena Exhibited During Pregnancy and Labor. H. T. Walker, Dubuque.
168 Infections Complicating Labor from a Clinical Viewpoint. H. G. Welpton, Des Moines.
169 Unusual Infection of the Face. E. E. Dorr, Des Moines.
170 Case of Anencephalus. J. A. Goodrich, Des Moines.

165. **Femoral Hernia.**—All operations for the radical cure of femoral hernia have the same object in view, namely, reduction of the contents of the sac, doing away with or obliterating the sac and prevention of recurrence by closing the annulus et canalis femoralis. The only method which meets all the requirements anatomically as well as surgically, would be a total obliteration of the annulus femoralis and the canalis femoralis, a closing up of this entire space in such a way that there is no traction on the stitches and that it is stronger than it was under normal conditions. To meet these requirements, Hoeve offers the following method. He has never seen a recurrence when this method was followed properly:

1. Make a curved incision from the middle of the ligamentum inguinale (Pouparti) inward and downward, until well below the lower level of the hernial sac.
2. Free the entire sac as far up as possible and after opening it, deal with its contents as necessary. Omentum can be cut away, bowel may be replaced if in good condition, etc.
3. Close the neck of the sac as high up as possible with a purse-string suture and remove it.
4. Introduce two stitches from without inward, including the cornusuperious marginis falciformus, the internal fibrous septum, the neck of the sac and the antero-superior part of the ligementum lacunare (Gimbernati), but see to it that there is no tension.
5. Dissect up a flap of fascia pectinea, (pubic portion of the fascia lata), and loosen it carefully forward and upward until the pecten ossis pubis is reached.
6. Ligate the arteria pudenda externa near the external cut margin of the flap.
7. Strengthen the rolled margin or base of the flap by introducing two or three stitches through it into the muscle pectineus (mostly not necessary).
8. Introduce two deep stitches through the middle of the flap and the puckered up neck of the sac and pull them tight.
9. Sew the external margin of the flap carefully against the anterior surface of the margo falciformis, introducing the stitches from without inward through it, the vagina vasorum and the areolar tissue without injuring the vena femoralis.
10. Continue with the same chromacized catgut and sew the internal border of the flap against the inferior part of the ligementum inguinale (Pouparti).
11. Sew the loose margin of the fascia pectinea, just internal to the fossa ovalis to the muscle pectineus.
12. Close the wound by bringing together the tela subcutanea and the integument.

Bulletin of the American Academy of Medicine, Easton, Pa.

June

171 *Statement of the Entrance Requirements and the Didactic and Laboratory Portions of the Medical Course at Colleges Requiring Preparatory Studies Beyond the High School Course Equivalent to One or More Years at College. N. P. Colwell, Chicago.
172 *Can the Third and Fourth Years of the Literary College Give Any of the Subjects of the Medical Course? W. M. Miller, Columbia, Mo.
173 *Can the Colleges Give as Electives in the Junior and Senior Years Any of the Work Required in the First Two Years of the Course in Medicine? J. L. Heffron, Syracuse, N. Y.
174 What Are the Underlying Principles Permitting the Entrance of a Student to Advanced Standing in a Medical College; And What Methods Should be Used to Make These Principles Effective? C. McIntire, Easton, Pa.
175 Preliminary and Graduation Requirements for the Medical Course in Terms of Work Done. E. Jackson, Denver, Colo.

171, 172, 173. Abstracted in THE JOURNAL, April 3, 1909, p. 1132, 1133.

174, 175. Abstracted in THE JOURNAL, April 10, 1909, p. 1201, 1202.

The Old Dominion Journal of Medicine and Surgery, Richmond

June

176 *The Treatment of Locomotor Ataxia by Exercises of Precision. J. K. Mitchell, Philadelphia.
177 *Diverticulum of the Intestine. G. B. Johnston, Richmond, Va.
178 *The Treatment of Fracture of the Patella, Especially Old Fractures. F. W. Parham, New Orleans, La.
179 Requisites for the Treatment of the Psychoneuroses; Psychopathologic Ignorance, and the Misuse of Psychotherapy by the Novice. T. A. Williams, Washington, D. C.
180 Fractures of the Head and Neck of the Radius. G. P. Laroque, Richmond, Va.
181 The Motais Operation for Ptosis. H. D. Bruns, New Orleans.
182 The Modern Teacher of Internal Medicine. G. C. Robinson, Philadelphia.

176. **The Treatment of Locomotor Ataxia by Exercises of Precision.**—When the ataxic has been unwisely advised, activity, and is suffering from fatigue, increased lack of control, and severe pains, Mitchell orders rest in bed for two or three weeks, with massage. Under this treatment the pains are said to grow less or wholly to disappear—partly from the absence of exertion, partly because the patients are not exposed to sudden temperature changes, partly through the influence of the massage. Massage must be deep, hard and slow, to be effectual. After this rest, Mitchell begins training in control—variously described as coordination exercises and reeducational gymnastics, but which he prefers to call precision exercises. The general principles which should govern the instruction are to proceed on natural lines in the way one would use in teaching any unaccustomed movement, remembering above all that the point and essence of the whole plan is precision. The exercises, from the simplest to the most complicated, must be performed accurately, with the idea always before both teacher and pupils that to do the prescribed movement correctly and exactly is the task—not just to do it. If the patient walks, he walks not to reach a certain spot but to walk in a certain fashion. Individual teaching is absolutely required in the beginning. After the first lessons and when the patient is once able to do a little work on his feet, he may join a class and find not only that the stimulus of competition is a help, but that his observation of the errors of others assists him to correct his own. The vision may be used as a guide, in bad cases. When improvement has begun, some of the exercises may be performed with closed eyes. A very few minutes twice a day will be found sufficient at first. In very early cases this method has seemed to exert a sort of prophylactic influence in holding the diseases in check. This statement is made by Mitchell with full knowledge of the fact that ataxia is a disorder which advances a stride and then pauses—and that the pauses which belong to the natural history of the disease may be mistaken for improvements or considered to be consequent on treatment. The result has occurred too often and lasted too long for this conclusion. A case is at present under observation which has not advanced in fifteen years; another whose improvement has remained unimpaired nine years and others have dropped out of sight after six or seven years had brought no change for the worse.

177. **Diverticulum of the Intestine.**—Johnseton's case was one of those in which the distal end of the diverticulum is free, and some accident, such as acute diverticulitis (comparable in all respects to an acute inflammation of the appendix), causes the fixation of the end of the diverticulum to the wall of the abdomen, the omentum or the intestine, thus forming a loop, and in this loop a coil of intestine or omentum becomes strangulated.

178. **Fracture of the Patella.**—Operative treatment being considered the desirable one for the case under consideration, Parham recommends approximation by suture of the soft tissues only in recent fractures. In old fractures this plan is out of the question and other measures usually advised must be employed. Parham reports one case of fracture of both bones—one recent, the other of five years' standing. The former was treated as stated above, the latter was wired. The result was excellent, complete approximation with restoration of function being secured in both patellæ.

Louisville Monthly Journal of Medicine and Surgery

June

183 Increasing Prevalence of Animal Tuberculosis. A. D. Melvin, Washington, D. C.
184 Obstetrics on the Thibetan Border. A. L. Shelton, Bating, W. China.
185 Mucous Colitis. C. Thompson, Louisville.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

June 12

1 *Modern Treatment of Fractures. J. Lucas-Championnière.
2 Prodromas of Migraine. Sir W. R. Gowers.
3 Diagnosis of Syphilitic Diseases of the Nervous System. F. W. Mott.
4 *Chronic Intestinal Stasis. W. A. Lane.
5 Hypertrophic Osteoarthropathy of Hands without Visceral or Constitutional Disease. R. C. Worsley.
6 Biotripsis, or Life-Wear: Trophic Changes in Old Age. G. L. Cheatle.
7 Aspects of the Legal Responsibility of Medical Men. A. O. Cowburn.
8 A Thirty Days Fast. F. Penny.
9 True Elephantiasis. H. S. Reynolds.
10 Nævus Pigmentosus. E. N. M. Ross.

1. **The Modern Treatment of Fractures.**—Lucas-Championnière gives a summary of the history of the treatment of fractures down to the present day, and then proceeds to the discussion of the method employed by him with good results. He says that a certain amount of movement between the fragments ensures the best bony repair; this is the cornerstone on which his method is based. Every movement which is not injurious by reason of its amplitude favors repair; but the movement must be measured—dosed, so to say. The movement which is necessary for the repair of the bones is not less necessary to the vitality of all constituent parts of the limb, and particularly for all the organs of motion—joints, muscles, ligaments and tendons. Massage forms the best form of movement. By simple mobilization, by massage, and even by his own examination, the surgeon ought never to cause pain, for the pain so caused leads to fresh pain and produces complications.

The reduction of a fracture is only a relative necessity; it should be resorted to only in certain deformations of the axis of the bone which are incompatible with the function of the limb—lower third of the leg, shaft of the humerus. In a large number of cases the maneuver of reduction is useless; it is useless in all fractures of the radius with impaction and moderate deformity, in most fractures of the upper extremity of the humerus, and in the great majority of fractures of the neck of the femur. In all fractures in which the displacement is due to muscular contraction, any attempt at reduction is useless, as in fracture of the clavicle, of the olecranon, and many fractures of the malleoli. After massage the fracture is either spontaneously reduced, as in the case of the olecranon, or is very easy to maintain reduced, as in the case of the clavicle and malleolus. Those conditions which favor the vitality of the limb are all more important than those which produce immobilization of the fragments. The fact that shortening has not the injurious influence on repair which it is said to have should not be lost sight of when considering displacement. A moderate degree of shortening which does not change the static position of a limb is favorable to repair. The muscles surrounding a shortened lever act more rapidly and better than on a lever on which they are stretched. A certain amount of shortening ought not to be interfered with, as it is favorable to the repair of a broken bone. Massage has so great an effect in stimulating bony secretion at the site of fracture that in children, in whom the activity of the production of the bone is great, massage ought not to be applied, save with great moderation, for fear of provoking excessive osseous secretion—in fact, a tumor. In their case simple mobilization is often sufficient.

Mobilization from the beginning, within twenty-four or forty-eight hours, is of capital importance, and at this stage movements of very small amplitude are sufficient; passive or induced movements are the best at the beginning. Active or spontaneous movements ought to be measured and directed by the surgeon; to allow the patient to follow his own fancy with regard to active movements is dangerous—all the more dangerous because with Lucas-Championnière's method the pain caused by movement disappears from the beginning, and therefore does not limit the untimely action of voluntary movement. The pain experienced and the degree of sensitiveness of the callus are the best guides in directing and in permitting movement by the patient. The secondary treatment of fractures and their supervision ought not to be prolonged. Functional use of a fractured limb is the condition most favorable to its regaining active power. Even during this secondary period everything likely to irritate the region of the callus ought to be avoided. It is useless to cause pain by movements exaggerated in amplitude or by resort to forcible manipulation.

4. **Chronic Intestinal Stasis.**—Lane refers to a previously described operation for the relief of intestinal stasis in which a stage has been reached in which owing to the delay in evacuating its contents the large bowel has not only ceased to perform a useful function, but has become such a source of danger that its removal from the drainage scheme will be of great service to the body. It depends on the degree of development of the condition as to whether it is sufficient to separate and destroy constricting bands, or to divide the ileum and to connect it with the sigmoid or rectum, or whether it is necessary to remove the large bowel proximal to the junction. While in an early stage, and especially in the male subject, the obstruction at the hepatic or splenic flexures or at the sigmoid may be relieved by the division of bands producing constriction, in a late stage, when the small intestine has undergone extreme changes, the removal of the whole of the large bowel proximal to a junction between the small intestine and the sigmoid affords only a temporary alleviation of symptoms. The most favorable cases for operation are those in which the symptoms are of a toxic rather than of a painful nature. In such the division of the ileum and its junction with the lower part of the large bowel give complete relief to the symptoms and the consequent physical and mental improvement is extraordinary. When painful symptoms are much in evidence the large bowel should be removed. The risk entailed by operation can be reduced very materially by first relieving the toxic symptoms by connecting the divided ileum with the sigmoid or rectum, and later, when the general condition of the patient has improved in consequence of this procedure, the large bowel can be excised if the symptoms demand it.

Lancet, London

June 12

11 *Modern Treatment of Fractures. J. Lucas-Championnière.
12 Diagnosis of Syphilitic Diseases of the Nervous System. F. W. Mott.
13 Operative Treatment of Fractures. W. A. Lane.
14 *Vaccine Therapy of Enteric Fever. D. Semple.
15 *Facial Palsy Treated by Faciohypoglossal Anastomosis. C. A. Ballance.
16 *Surgical Treatment of Colitis. G. Heaton.
17 Fatal Hemorrhage into the Pons Varolii in a Young Infant. S. Phillips.
18 Internal Hernia; Extensive Resection of Gangrenous Ileum; Recovery. W. S. Handley.
19 *Bacillary Infection of Urinary Tract Treated by Corresponding Serum and Vaccine. H. O. Butler.
20 Instructive Fatal Case of Appendicitis with Advocacy of Early Operation. J. S. Boden and E. M. Corner.
21 Rupture of the Heart. W. H. Davis.
22 Hydatid Cyst of Uterus: Hysterectomy; Death after 48 Hours. S. Clark.

11. See Abstract No. 1.

14. **Vaccine Therapy of Enteric Fever.**—Semple claims that the administration of bacterial vaccines in cases of enteric fever is a practical method of increasing the bacteriotropic substances in the blood, as evidenced by an increase in the opsonic index of cases treated by this method. When appropriate doses are given the method is devoid of all risks, is easily carried out, produces no apparent disturbance in the patient's condition, and does not interfere with any other treatment the physician may deem necessary In six of the nine patients treated well-marked improvement set in after the inoculations, especially in two cases treated with autogenous vaccines. In the remaining three there was an amelioration of the clinical symptoms.

15. **Facial Palsy Treated by Faciohypoglossal Anastomosis.**—Ballance reports the case of a young woman of 25 who had complete left facial palsy and unhealed disease of the temporal bone. She gave a family history of phthisis and had herself suffered from hemoptysis. Six attempts to cure the bone disease by operation were made, but proved ineffectual. In January, 1906, foul pus was discharging from the left ear. There was complete facial palsy on the left side; the patient suffered from pain in the left ear and from frontal and occipital headache. She was slightly ataxic on the left side. In walking she occasionally tended to deviate, but the direction of deviation was not constant. There was no aërial conduction of hearing on the left side, but bone conduction was still present. There was no optic neuritis, but the left external rectus was weak. The reflexes were normal. The right ear was normal. On Jan. 24. 1906, a radical mastoid operation was performed. Ballance found that the facial nerve had been divided in the descending portion of the Fallopian canal, the horizontal semicircular canal had been opened, and there were two other openings into the semicircular canals as if an attempt had been made to remove them. The antrum had been incompletely exposed and was full of greenish pus. The tegmen tympani was carious and was removed; the dura over it was thickened, but not perforated. On July 4, 1906, there was slight constant left internal strabismus, in addition to complete left facial palsy of peripheral type. On July 10 a nerve-grafting operation was done. An incision was made along the anterior border of the sternomastoid; the posterior belly of the digastric was exposed and divided; the facial nerve was found at the lower part of the parotid and was identified by direct electrical stimulation; the retrahens aurem was the only muscle which responded to the stimulus. The trunk of the facial nerve was followed up to the stylomastoid foramen and divided at its point of emergence. The hypoglossal nerve was divided at the posterior border of the hypoglossus, and the occipital artery was divided between two ligatures so as to set free the nerve. The central end of the hypoglossal nerve was then anastomosed with the peripheral end of the facial. The spinal accessory nerve was next isolated and split longitudinally for about two inches; one-half of the nerve was divided transversely at the distal peripheral end of the slit. The strip of spinal accessory so raised up was united end to end with the peripheral end of the divided hypoglossal. The posterior belly of the digastric was sutured and the wound closed. Six weeks after the operation the left trapezius and sternomastoid muscles and the left side of the tongue were atrophied. When the patient returned 20 months after the operation the nutritional and functional recovery of the facial lingual and cervical muscles was complete. The movements of the face and tongue were dissociated, but when the shoulder was suddenly jerked a wave of muscular contraction was seen to pass from the back of the left side of the tongue toward the tip, so that the movements of the shoulder and tongue are not yet completely dissociated.

16. **Surgical Treatment of Colitis.**—Heaton is firmly convinced that in some cases of chronic colitis, when the symptoms have remained unabated in spite of years of patient medical treatment, a removal of the appendix will sometimes completely cure the patient, and this even when after removal there is apparently little or nothing pathologic in the removed organ. For membranous colitis he prefers appendicostomy. In acute ulcerative colitis surgical treatment is urgently called for. The large bowel must be kept empty and at rest, and yet to starve such patients is to kill them, while rectal feeding is out of the question. An artificial opening is made in the cecum, or the appendix is fixed to the abdominal wall and opened. In chronic ulcerative colitis an appendicostomy with prolonged daily irrigation of the colon will in many cases effect a cure.

19. **Bacillary Infection of the Urinary Tract.**—The prompt action of anticoli serum, the absence of action of a polyvalent antistreptococcus serum, and the uselessness of rectal injection of the anticoli serum seem to be the points of interest in Butler's case.

The British Journal of Children's Diseases, London

May

23 Chronic Rheumatoid Polyarthritis in a Child. O. J. Kauffmann.

24 General Suppurative Peritonitis Due to Gangrenous Appendicitis and Followed by Subphrenic Abscess; Two Operations; Recovery. A. J. Cleveland.
25 Rheumatoid Arthritis in a Child, Aged Two and a Half Years. J. P. Parkinson.
26 Pancreatic Cyst in an Infant. W. H. Telling and J. F. Dobson.
27 *Frequency of Pulmonary Tuberculosis in Children. J. E. H. Sawyer.

27. **Pulmonary Tuberculosis in Children.**—There were only 19 cases of tuberculosis of the lungs in Sawyer's series of 244 postmortem examinations. The condition of the lungs in the cases of generalized tuberculosis was of recent origin in every instance, and does not seem to have been the starting point for the dissemination of the tubercles. The disease in the bronchial glands was of much longer standing in many of the cases, and it is very probable that the generalized tuberculosis originated from them. The only case in which a fairly large tuberculous cavity in the lungs was found was in a child, aged 6 months, so that considering the age of the patient the disease could only have been of short duration. In the two cases of bronchopneumonia the disease was again acute. In the remaining 7 cases, one child was aged 2½ years and another 1 year and 10 months, so that the disease in the lungs can scarcely be described as chronic. In another child, aged 3 years, with tuberculous meningitis, although the meningeal condition may have been secondary to the disease in the lungs, yet the appearance of the lungs suggested a recent infection. There remained, therefore, 4 cases in which the pulmonary tuberculosis can be described as at all chronic. Of these four cases, only the first child, who died from tuberculous meningitis, and the one who suffered from cerebral tumor of tuberculous origin, can have suffered from pulmonary tuberculosis for any length of time, and only these two appear to present the condition which corresponds to that found in phthisis when occurring in adults. The small caseating foci found in a girl aged 6 years, with fibrosis of the lungs, were of recent origin, and were due to a terminal infection in a fibrosis which was evidently not due to tuberculosis. It is a remarkable coincidence that in one child who died from septic meningitis, due to perforation of the right supraorbital plate by a knitting needle, recent caseating foci were found in the lower lobe of the left lung; but it must be remembered that this was one only out of 244 cases. In none of the others, except one of those suffering from bronchopneumonia, was tuberculosis found only in the lungs and bronchial glands.

In 244 cases of children dying under the age of 15 years, there were found, therefore, at the postmortem examinations only 2 cases in which the condition could be described as phthisis of the adult type, and in all the other 20 cases of tuberculosis of the lungs the disease was either due to an acute affection or one of a comparatively short duration. Sawyer adds, however, that patients suffering from phthisis are not usually admitted to a general hospital, except for some urgent reason; but when it is considered how very frequently phthisis and evidence of past tuberculosis of the lungs are found in the postmortem examinations of adults, and that it was only in 2 cases out of 244 children under 15 years of age that a condition at all comparable with the chronic phthisis of adults was discovered, one must conclude that phthisis is a rare disease during childhood. Sawyer concludes from the results of his postmortem examinations that pulmonary tuberculosis in children presents itself either as part of an acute disseminated tuberculosis, in which the lung condition is also acute, or as a bronchopneumonia of short duration which is tuberculous from the beginning. He has therefore formed the opinion that the latent and chronic form of phthisis as found in the adult is a rare disease in children.

Australasian Medical Gazette, Sydney

April

28 Presidential Address: Work Done by the New South Wales Branch of British Medical Association. G. H. Abbott.
29 Syphilis and Nervous Diseases. A. Davidson.
30 Early Recognition of Tuberculosis. A Plea to the Profession. A. Stewart.
31 Causes, Results, and Treatment, Immediate and Remote, of Injuries of the Genital Tract. R. Worrall.
32 *Rapid Death Due to Acute Septicemia. J. E. Dods.
33 *Barany's Tests in Labyrinthine Affections. G. S. L'Estrange.
34 Septic Conditions of Mouth in Relation to General Medicine. R. Jones.
35 Staining (? Poisoning) by Manganese. A. Palmer.
36 Subphrenic Abscess. A. H. Rutherford.
37 Acute Rupture of Appendix; Peritonitis, Operation; Recovery. F. Clarkson.

32. **Rapid Death Due to Acute Septicemia.**—Dods reports three cases of rapid death, which came under his notice during one week. They were doubtless cases of acute septicemia with a sudden onset and a fatal termination within 24 hours. Prior to the onset of the illness, all three patients were in good health and at work, and in none could the source or entrance of the infection be discovered. The first two died before they were seen by a medical man, and the third was sent to the hospital, but died shortly after admission. The first two cases were reported as suspected plague cases, but as no bipolar bacilli could be found and the guinea-pigs did not appear to be susceptible, the cause of death was ascribed to acute septicemia. No suggestion is offered as to where the seat of infection was, as Dods failed to find any wound or sore in any of the cases.

33. **Barany's Test in Labyrinthine Affections.**—L'Estrange says that it is possible by this method to obtain a further insight regarding labyrinth affections than is afforded by the fork, watch and acoumeter. More especially in cases of deafness with dumbness can a clearer estimate of the nature and extent of the lesion be formed. The vestibular apparatus, the cochlea and the semicircular canals having various functions are differently affected by the test, but further and repeated observations are necessary before any rules can be absolutely laid down. All records he has been able to examine show that of all labyrinthine affections syphilis gives the most constant and marked reaction to Barany's test, and this he has himself found in three patients whom he has been able to examine recently, while in many cases of otosclerosis which are at hand for every aurist the test shows an increased sensibility and a marked increase in duration. Going further, Barany's test will give some indication as to the part of the labyrinth affected, for while affection of the upper part of the basilar membrane of the cochlea renders low tones better heard and an affection of the lower basilar membrane renders high tones better heard, still the variation here is not sufficient to discount the main axiom of lessened perception of low tones in labyrinth affections. Going further, lessened nystagmus with slight disturbance of hearing in a case of labyrinth trouble would point more to a lesion of the semicircular canals than of either the vestibular apparatus or the cochlea, whereas normal or seminormal nystagmus resulting in a case of undoubted labyrinth disease would indicate an affection of the vestibular apparatus and the cochlea to the exclusion of the semicircular canals. Finally, Barany's test helps in the sometimes difficult task of estimating the amount of labyrinth affection when complicated with a middle-ear sclerosis and a central lesion; moreover, it enables us to distinguish with some precision between affections of the vestibular apparatus, the cochlea, and the semicircular canals.

Indian Medical Gazette, Calcutta

May

38 *Inoculation Accident in Manila, in 1906. W. M. Haffkine.
39 Accidental Inoculation with the Virus of Plague. P. C. Freer.
40 Spinal Analgesia. E. E. Waters.
41 Preparation, Assistance, After-Treatment, and Management of Cataract Cases. A. Bakhsh.
42 Splenic Anemia. C. Donovan.

38. This article was published in full in The Journal, May 15, 1909, p. 1565.

Annales de Gynécologie et d'Obstétrique, Paris

May, XXXVI, No. 6, pp. 257-320

43 *Exophthalmic Goiter in Relation to the Reproductive Function in Women. A. Pinard.

43. **Exophthalmic Goiter and the Reproductive Function.**—Pinard's experience includes nine cases in which exophthalmic goiter showed an unmistakable connection with ovulation. In several, restoration of normal ovulation was accompanied by the subsidence of the exophthalmic syndrome. He does not accept the German view that pregnancy aggravates the tendency to the latter, but rather agrees with Charcot that improvement is liable to follow measures to regulate the menstrual function. In his first case the exophthalmic goiter de-

veloped at puberty, but subsided as menstruation became regular; it returned in typical form during a period of amenorrhea, but subsided again during a pregnancy, and this fluctuation occurred during three pregnancies. In another case exophthalmic goiter developed during a period of amenorrhea and persisted for five years with varying intensity. The genital apparatus was infantile, but it developed between 25 and 30 and menstruation returned and became regular about 30, at which time the exophthalmic triad vanished completely. Pregnancy occurred in the next year; disturbing vomiting occurred at first, ceasing about the fourth month, and conditions have been normal since, for eleven years. The confinement and lactation were normal. In one family exophthalmic goiter was observed in three generations, the affection becoming attenuated or disappearing with regular menses. A number of other cases showed the constant sequence of increasing corpulence, suppression of the menses and development of the exophthalmic goiter. Nearly all these patients were practically cured under treatment which generally included hydrotherapy, restriction to a milk diet or electricity, or all combined. He comments on the case reported recently by H. M. Stowe in which the exophthalmic goiter became apparently aggravated during a pregnancy—his impression being that the alleged aggravation was in reality merely the result of autointoxication and uncontrollable vomiting.

Bulletin de l'Académie de Médecine, Paris

May 18, LXXIII, No. 20, pp. 583-636

44 *Thyroid Instability, and its Paroxysmal Form. Léopold-Lévy, H. de Rothschild and Huchard.
45 Prophylaxis of Infectious Diseases in Sweden and Norway. (La lutte contre les maladies infectieuses en Suède et en Norwège.) F. Widal.
46 *Serotherapy of Gonococcus Septicemia. Dieulafoy.
47 Epidemic Cerebrospinal Meningitis. E. Boinet.

June 1, No. 22, pp. 643-650

48 Advantages of Machine-Made Bread. (Fabrication mécanique du pain.) A. Railliet.

44. **Thyroid Instability.**—Lévy and Rothschild apply the term of thyroid instability to a series of morbid conditions between the extremes of myxedema and exophthalmic goiter. Conditions may be observed in which the symptoms, simultaneous or successive, indicate both deficient and excessive thyroid functioning. This is the result of a general law of nature that an organ functioning defectively strives to restore normal balance, and, when this is reached, is liable to go beyond it with an exaggerated function. In the present communication the authors call attention to a special paroxysmal form of thyroid instability. This comprises a number of syndromes, previously classified as neuroarthritism: migraine, periodical vomiting, asthma, hay asthma, urticaria, eczema, attacks of mucomembranous enteritis and waves of chronic rheumatism. These syndromes are encountered in persons with pronounced thyroid instability, and during the paroxysm the whole picture of thyroid instability is observed, while certain symptoms which form part of it had been hitherto latent. Another argument is the connection between these syndromes and the sexual sphere; owing to the close relation between the ovaries and the thyroid the syndrome sometimes leads to hypoplasia. The most important argument, however, is that thyroid treatment will cure these symptoms and, inversely, thyroid treatment is capable of reproducing them. In myxedema the thyroid functioning is at such a low ebb that there is no reaction for restoration of balance, and the symptoms are continuous. Huchard comments with approval on their work in this unexplored field, and adds that essential paroxysmal tachycardia is probably due to paroxysmal hyperfunctioning of the thyroid. The influence of the thyroid on vascular affections is a further field that will repay study.

46. A similar article by this author was abstracted in The Journal, June 26, page 2120.

Semaine Médicale, Paris

June 9, XXIX, No. 23, pp. 265-276

49 *Sub-hepatic Peritonitis in Pathogenesis of Hernia. R. Tripier and J. Paviot.

49. **Subhepatic Peritonitis in Pathogenesis of Hernia.**—Tripier and Paviot call attention to the unsuspected frequency of subhepatic adhesive peritonitis and to its importance as a factor in hernia. Traces of such a process were discovered constantly in their last series of eighteen cases of hernia, and they maintain that it is probably responsible for the weakening of the tissues that entails the hernia. The inflammation around the sac has hitherto been regarded as secondary, but careful study shows that it can be traced to a primary focus above.

Berliner klinische Wochenschrift

May 24, XLVI, No. 21, pp. 957-1004

50 Modern Treatment of Diabetes. (Behandlung der Zuckerkrankheit.) G. Rosenfeld.
51 Alimentary Lipemia. J. Leva.
52 Sugar of Milk of No Value in Infant Feeding. (Welchen Wert hat Milchzucker für die Ernährung der Säuglinge?) R. Weigert.
53 An Atypical Colon Bacillus Responsible for Certain Disorders. (Nachweis eines atypischen Bacterium coli als Krankheitserreger beim Menschen.) C. Schöne.
54 *Action of Ultraviolet Rays on the Eye. (Wirkung der ultravioletten Lichtstrahlen auf das Auge.) F. Schanz.
55 Technic and Nature of Seroreaction in Syphilis. (Zum Wesen der Wassermannschen Reaktion.) F. Lesser.

May 31, No. 22, pp. 1005-1052

56 *Diagnosis and Treatment of Tuberculosis of Urinary Apparatus. (Blasen- und Nierentuberkulose.) L. Casper.
57 Nephrolithotomy or Pyelotomy? M. Zondek.
58 Influence of Hydriatic Measures on Size of Heart. (Einfluss hydriatischer Prozeduren auf die Herzgrösse.) A. Selig.
59 Antitrypsin Content of Blood of Mother and Child. (Antitrypsingehalt des mütterlichen und kindlichen Blutes.) G. Becker.
60 Vaccine Therapy. G. Wolfsohn.
61 *Atrophy of Optic Nerve from Atoxyl and Arsacetin. (Augenerkrankungen durch Atoxyl und Arsacetin.) Paderstein.

54. **Action of Ultraviolet Rays on the Eyes.**—Schanz emphasizes the injurious action of the ultraviolet rays on the eyes and the means to attenuate it. Glass, such as is used in photography to filter the light, is useful in eye-glasses to keep out the ultraviolet rays, and he advises the use of glass of this kind for lamp chimneys, electric light bulbs, etc. The artificial lights in use are rich in ultraviolet rays, and generate more, the higher the temperature of the illuminating body. Ultraviolet rays with long waves induce fluorescence in the lens and retina, and tests of this property can be utilized in standardizing the glass.

56. **Urogenital Tuberculosis.**—Casper asserts in the conclusion of this review of his extensive experience that tuberculosis of the kidney always commences on one side and generally remains unilateral for years. Primary tuberculosis of the bladder is extremely rare. Every effort should be made for an early diagnosis, with careful examination in every case of unexplained suppuration or hemorrhage in the urinary passages, and surgical treatment in every operative case. Conservative tuberculin treatment has not to date proved its efficiency, but, after removal of the infected kidney, tuberculin may aid materially in the cure as an adjuvant to instillation of 10 c.c. of a 1/20,000 solution of mercuric chlorid; the next week, 9 c.c. of a 1/15,000, and so on down to 5 c.c. of a 1/1,000 solution, only one instillation a week.

61. **Atrophy of Optic Nerve under Atoxyl Treatment.**—Paderstein tabulates the details of thirteen cases of visual disturbances under atoxyl treatment, including one from his own experience, and Ruete's case of blindness from arsacetin. Total blindness developed in four cases, and only one patient recovered completely; the others were left with considerable contraction of the visual field. The arsenic element is probably responsible for the disturbances.

Correspondenz-Blatt für Schweizer Aerzte, Basle

April 15, XXXIX, No. 8, pp. 257-288

62 *Treatment of Tuberculosis of the Lungs. (Behandlung der Lungenschwindsucht.) H. Erni.

May 1, No. 9, pp. 289-328

63 *Surgery of the Bile Passages. (Chirurgie der Gallenwege.) F. Brunner.
64 *Diphtheria and Antitoxin. (Diphtherie und Heilserum.) P. Schönholzer. Commenced in No. 8.

62. **Treatment of Tuberculosis by Therapeutic Percussion.**—Erni is convinced that the tuberculous process in the apex is spread by mechanical influences, especially by aspiration of the secretions into the bronchi. The cough is seldom powerful enough to expel all the secretion and a focus develops where it stagnates. Retention of the secretion is thus the main fac-

tor in the spread of the tuberculous process. If the secretion can be completely drained away, no secondary processes develop. Treatment should aim, therefore, at mechanical drainage, though the best way to ensure this is still a problem. As an attempt to solve it he applies a systematic course of tapping or knocking on the region—the *Klopfkur*—and the results in 82 cases in the course of fourteen years' experience have been almost constantly good. It is the best means of which he has knowledge for ensuring copious expectoration and effectual drainage, but he hopes that some still more effectual method may yet be discovered. He supplements the therapeutic percussion with inunction of a salve over the lung, containing equal parts of turpentine, salicylic acid and lanolin, ½ part white wax and about 5 parts lard. This is used as for mercurial inunctions, striving thus to disinfect directly the blood vessels and lymph passages in the region beneath. That this is accomplished to a certain extent is shown by the appearance of the drugs in the urine. They do not appear in the sputum as when given internally, but the tuberculous are far too much inclined, he says, to dose themselves with drugs internally and thus ruin their already weak digestion.

63. **Surgery in Gallstone Disease.**—Brunner reports 43 operations on the biliary apparatus in the last ten years, with the remote outcome. Jaundice was the most reliable symptom of gallstone trouble, being found in 65 per cent. of the cases; typical colic in 46 per cent.; pains in the gall bladder region in 35 per cent., and in the stomach in 54, while a tumor was palpable in 43 per cent.

64. **Antitoxin Treatment of Diphtheria.**—Schönholzer has been assistant at Krönlein's clinic at Zurich for 28 years, 14 before the introduction of serotherapy of diphtheria and 14 since, and thinks that the present is thus an auspicious moment for reviewing the results of antitoxin treatment. The total number of cases was 3,322 and the mortality 800. The mortality has dropped from 39.7 per cent. in the first period to 13.39 per cent. of all cases in the antitoxin period, and, in the cases with operative treatment, from 66.16 per cent. to 32.54 per cent., and in the medical cases from 14.24 to 6.82 per cent. He is inclined to believe that diphtheria nowadays is less malignant in nature, on the whole, than during the first period.

Deutsche medizinische Wochenschrift, Berlin

May 27, XXXV, No. 21, pp. 913-960

65 *Differentiation of Acute Eruptive Diseases. O. Heubner.
66 *Intravenous Injection of Strophanthin. (Intravenöse Strophanthintherapie bei Verwendung von gratus-Strophanthinum crystallisatum Thoms.) P. Fleischmann and H. Wjasmensky.
67 *Indirect Solvent Influence of Radium on Urates. (Einfluss von Radium auf die harnsauren Salze.) F. Gudzent.
68 *Mixed Tuberculin. (Mischtuberkulin. Polygene Bazillen-Emulsion.) D. Rothschild.
69 Development of Trypanosomes in Glossina. (Weitere wissenschaftliche Beobachtungen über die Entwicklung von Trypanosomen in Glossinen.) Kleine.
70 *Transient Hemiplegia with Migraine. O. Renner.
71 Typical Fractures of the Wrist. (Typische Brüche von Handwurzelknochen.) Granier.
72 *Influence of Uterine Myoma on Childbirth. (Einfluss der Uterusmyome auf die Geburt.) M. Jacoby.
73 Unreliability of Stain Reaction in Diagnosis of Syphilis. (Zur Kritik der Schürmannschen Farbenreaktion bei Lues.) Schminke and Stoeber. Id. E. Meirowsky.

65. **Differentiation of the Acute Eruptive Diseases.**—Heubner calls attention to serum disease as possibly causing confusion, but it should be suggested by the swelling of the glands, beginning with those in the inguinal region, the leucopenia, the increase in weight as sign of general edema, and the absence of an enanthem in the mouth and throat. He has observed, himself, only one case of the desquamating scarlatiniform erythem distinguished by the tendency to recurrence from six to nine times or more. In concluding his review of the various diseases he dwells on the great importance of a biologic test for differentiation of scarlet fever in an early stage, his experiments in this line being promising, as also those reported lately by Handel and Schultz. The latter obtained positive findings with the complement deviation test in 24 of 31 cases of scarlet fever.

66. **Intravenous Injections of Strophanthin.**—This communication from the clinic of Professor His reports favorable results from intravenous strophanthin therapy in 32 cases. In certain acute and chronic weaknesses of the circulatory system the strophanthin gave better results than any other drug. It is important to bear in mind the possible action of digitalis previously taken, its effects not having yet died out.

67. **Indirect Solvent Influence of Radium on Urates.**—Gudzent announces that his research has shown that uric acid circulates in the blood only in the form of a salt—mono sodium urate—and that this sodium urate is responsible for gout. Uric acid forms two primary salts distinguished only by their solubility, the *a* salt being the most soluble. Radium will prevent the transformation into the second, less soluble form, and will even transform the latter back into the *a* form. His experiments have confirmed this fact, proving the possibility of transforming by the action of radium the less soluble sodium urate in the tissues back into the first form, which is twice as soluble.

68. **Mixed Tuberculin.**—Rothschild cites a number of cases in which tuberculin was used; "old" tuberculin in 52 cases with 40 per cent. cured and 32.7 per cent. improved, and "mixed" tuberculin in 26 cases with 54 per cent. cured and 42 per cent. improved. The "mixed" tuberculin is made from seven different strains of human tubercle bacilli, and he regards this use of several different cultures as a decided progress in the means of stimulating the production of truly specific antibodies.

70. **Transient Hemiplegia with Migraine.**—Renner ascribes migraine to a vasomotor spasm in the cortical centers. This assumption is sustained by the three cases reported in which periodically recurring migraine was accompanied by hemiplegic conditions which vanished with the other typical symptoms of the migraine within a short time. The transient nature of the hemiplegia speaks in favor of the vasomotor theory.

72. **Influence of Uterine Myoma on Childbirth.**—Jacoby relates some experiences which show that subserous myomas do not entail any special danger during delivery except when they are located in the cervix. At this point they may prevent delivery by the natural route, although there is a possibility that during labor they may be pushed out of the small pelvis, thus leaving the passage free, as in a case described. Submucous myomas sometimes lead to placenta prævia, in which case the placenta is usually attached to the inner aspect of the myoma. As a further result of the changes in the endometrium the placenta may become pathologically adherent to the wall of the uterus.

Fortschritte der Medizin, Leipsic

May 20, XXVII, No. 14, pp. 529-560

74 Case of Oxycephalia with Atrophy of the Optic Nerve. (Turmschädel mit Sehnervenatrophie.) E. Levi.

Jahrbuch für Kinderheilkunde, Berlin

May, LXIX, No. 5, pp. 505-624

75 Atelectasis of the Lungs. (Lehre von der Lungenatelektase.) E. Ungar.
76 *Treatment of Cholera Infantum with Carrot Soup. (Behandlung der Cholera infantum mit Mohrrübensuppe.) C. Beck.
77 Epidemic of Glandular Fever. (Drüsenfieber Pfeiffer.) K. Schäffer.
78 *Stenosis of the Pylorus in Infants and Children. (Pylorusstenose im Säuglings- und Kindesalter.) Bernheim-Karrer.
79 *Meningeal Phenomena and Bacteriemia in Croupous Pneumonia in Children. (Klinische Beobachtungen und bakteriologische Untersuchungen bei der kruppösen Pneumonie der Kinder.) M. Otten.

76. **Carrot Soup Treatment of Gastrointestinal Disturbances in Infants.**—Beck reports 85 cases of various gastrointestinal affections in children in which he restricted treatment to a change of the diet to carrot soup. It seems to transform the intestinal flora and thus to arrest gastrointestinal trouble. A pound of carrots is chopped and boiled for an hour or two, mashed and forced through the finest sieve and added to beef tea made by extraction, cold, of a pound of beef in about a quart of water, adding a teaspoonful of salt. The sweet taste of the carrots is relished by the children, and the soup is nourishing, containing about 250 calories to the quart. The child is allowed to drink as much as it wants to after taking the soup, which is given at intervals of three or four hours. One of the chief advantages is that it sup-

plies material for stools so that the intestines do not get out of the functioning habit as on a pure water diet. A number of case histories are appended, which, he says, speak for themselves as to the value of this treatment which gave good results in his hands in the majority of cases.

78. **Stenosis of the Pylorus in Children.**—Karrer gives the tabulated details of 7 additional cases of stenosis of the pylorus which show that even after apparent cure of the trouble the anatomic basis may still persist. In the majority of his cases distinct motor insufficiency was evident two or three years later, with much hyperacidity. As there were no symptoms from this condition he thinks that spasm of the pylorus may be excluded. His experience with these and with a number of other cases has convinced him that congenital hypertrophy of the pylorus may cause no signs of trouble for months or even years.

79. **Croupous Pneumonia in Children.**—Otten reviews his experience with 250 cases of croupous pneumonia in children since 1897. The number of cases has shown a constant increase each year. An initial chill was known in only 39 of the cases and sharp pain in the chest in only 60. As children frequently locate the pain wrong, 4 of the patients were sent to the hospital with the diagnosis of acute appendicitis. Stomach and intestinal symptoms are much more frequent in pneumonia in children than in adults. About a third of the children had colic, vomiting and diarrhea at first. Meningeal symptoms are characteristic of the disease in children, and 34 of the 250 children had brain symptoms during the course of the disease, unconsciousness, delirium, hyperesthesia, stiff neck, etc. The fever was continuous in some, remittent in others or irregular, and the retrogression of the lung process occurred more rapidly than in adults. Sputum was obtainable only in 15 cases. Spinal puncture gave insight into conditions in the meninges. Pneumococci were found in the blood in 9 of the 70 children thus examined, and 5 of the 9 succumbed to the disease. The blood count was taken in 72 cases and leucocytosis was found in about half, generally proportionate to the extent of the pneumonic process. If it keeps high as the disease subsides some hidden suppuration may be surmised. The mortality in the 250 cases was 6 per cent.; one child died from an abscess in the lung; 2 children died from suppurative meningitis; 2 from kidney complications, and 7 from complications in the pleura or pericardium. In one case the pneumonia was evidently the work of the *Streptococcus mucosus*, which was cultivated from the blood.

Medizinische Klinik, Berlin

May 23, V, No. 21, pp. 759-800

80 Microsporon Epidemic. (Die Mikrosporieepidemie in Schöneberg.) Huber.

81 Febrile Manifestations in Late Stage of Syphilis. (Fiebererscheinungen in den Spätstadien der Syphilis.) O. Imhof-Bion.

82 Treatment of Tabes Dorsalis. G. J. Müller.

83 Menstrual Hyperemia in the Liver. Pregnancy Liver. (Menstruelle Leberhyperämie Schwangerschaftsleber.) O. O. Fellner.

84 Pain in the Heart, and Means of Relieving It. (Herzschmerz.) A. Selig.

85 Leather Apparatus for Extension. (Lederstreckverbände aus Chrom- oder Formalinleder als chirurgische und orthopädische Universalapparate.) Evler.

86 Importance of Combination of Mercurial Treatment with Sulphur Baths. (Ist die Kombination von Quecksilberkuren mit Schwefelbädern rationell?) R. Schuster.

87 Distribution of Radium Emanation in the Atmosphere. A. Gockel.

May 30, No. 22, pp. 801-836

88 *Cholecystitis. O. Föderl.

89 *Causes of Nervousness; Treatment and Prophylaxis. A. Cramer. Commenced in No. 21.

90 Does the "Minimum" Law Apply to Lime and Iron? (Gilt v. Bunges Gesetz des Minimums für Ca und Fe?) W. Stoeltzner.

91 Iodized Benzin for Disinfection. (Verwendung des Heusnerschen Jodbenzins.) Esau.

92 *Adequate Nourishment and Capacity of Assimilation. (Adäquate Ernährung und Assimilationsfähigkeit des Organismus.) A. Sperling.

93 *Radioactive Sediment in Kreuznach Mineral Waters. (Gewinnung Radioaktiver Substanzen aus den Rückständen der Kreuznacher Quellen und ihre therapeutische Verwendung.) F. Engelmann.

94 Uterine Douches of Superheated Air. (Heissluft-Uterusduschen.) P. Grabley.

95 *Experimental Research on Motor Functioning of Stomach. (Zur Lehre von der Motilität des Magens.) H. Roeder.

96 Practical Application of Opsonin Control in Tuberculosis. (Notwendigkeit der Opsonin-Kontrolle bei Behandlung Tuberkulöser.) D. Rothschild.

88. **Gall Bladder Disease.**—Föderl concludes his review of cholecystitis with the remark that when the gall bladder is incapable of normal functioning in consequence of serious changes it is not only useless but is a decided source of danger which it is safer to remove. He always examines the appendix, if possible, in operating for gallstones, and found periappendicular changes in the majority of cases. He has also encountered a number of cases of recurring gall bladder inflammation in patients whose appendix had previously been removed. The same cause responsible for the recurring appendicitis was probably responsible also for the recurring cholecystitis.

89. **Causes and Treatment of Loss of Nervous Balance.**—Cramer explains the tendency to undue nervousness as the result of over-fatigue of the neuron, either from excessive demands on it or from morbid readiness to fatigue. When the balance between assimilation and outgo is disturbed the neuron is unable to recuperate fully during rest and sleep and grows more and more readily irritable. The causes for the disturbance may be endogenous or exogenous; the former includes all cases with traits of hysteria. He regards the compulsory term of military service as a great blessing for the young men of the nation, compelling them to habits of exercise and hygiene which would be sadly missed in case military service were abolished. He concludes his article with an appeal for sanatoriums for nervous prostration among those unable to pay much if anything for treatment such as the rich now have at their command. A few sanatoriums of this kind would aid materially in the prophylaxis against insanity and would restore large numbers of the predisposed to health.

92. **Capacity of Assimilation.**—Sperling points out that repeated overdistention of the stomach finally stretches the tissues a little beyond what their elasticity can repair: the gland substance is thus stretched a little, the blood vessels, mucosa, nerves and serous covering all experience a little disturbance from the stretching, merely molecular at first, but then follow retention and stagnation of food, blood and lymph. The resulting disturbances are generally at first classed as purely nervous, but they deserve closer study and proper differentiation; the diet should be regulated to prevent their development. Almost all kinds of disturbances in the health commence first, as a rule, in the digestive tract, including those generally classed now as "purely nervous." The food should be chosen to ensure assimilation, and the amount reduced to correspond to the digestive forces.

93. **Radium Emanations in the Kreuznach Waters.**—Engelmann reports therapeutic experiences with the waters and sediment which are known to be very rich in radium emanations. These radium baths were given to 234 patients—a total of 2,595 baths, the principal indications being rheumatism, sciatica, neuralgia, gout and resorption of pelvic exudates. The results are considered as very promising.

95. **Motility of the Stomach.**—Roeder has been conducting extensive research on the motor functioning of the stomach in dogs with a Pawlow fistula, mainly to determine the influence of physiologic, chemical and thermic stimulation on the motility of the stomach. Carbonic acid proved to have a marked influence in stimulating the motor functioning, as also a temperature above or below that of the body and a higher or lower osmotic pressure. Physiologic salt solution is much longer in leaving the stomach than a hypotonic or hypertonic solution; this was observed even when the temperature was warmer or cooler than that of the body.

Münchener medizinische Wochenschrift

May 25, LVI, No. 21, pp. 1057-1112

97 *Otitis Media and the General Practitioner. (Drei Vorträge aus dem Gebiete der Ohrenheilkunde.) H. Schwartze.

98 *Importance of Cammidge Test in Determining Indications for Treatment of Gallstones. (Bedeutung der Cammidgeprobe in der Indikationsstellung bei der Gallensteinkrankheit.) H. Kehr.

99 *Treatment of Paralysis of the Arm. (Behandlung der Lähmungen an der oberen Extremität.) O. Vulpius.

100 Copper in Canned Foods. (Ueber Kupferung von Konserven.) K. Spiro.

102 Instantaneous Roentgen Exposures. (Röntgenmomentaufnahmen.) F. Dessauer.

103 *Importance of Seroreaction in Syphilis. (Bedeutung der Wassermannschen Serodiagnose für die Praxis.) A. Neisser.

97. **Otitis Media and the General Practitioner.**—Schwartze relates unfavorable experiences with constriction hyperemia in suppurative disease of the middle ear. Notwithstanding the relief of pain after application of the elastic band to the neck, the work of destruction still goes on, and sudden chill and fever may reveal the development of thrombophlebitis. This hyperemic treatment is permissible only in the mildest cases, free from suspicion of intracranial complications. Massage may be useful to promote absorption of exudates and in relief of tormenting subjective sounds in the ear, and he advises it as an adjuvant to other measures, especially when the lymph glands in the side of the neck and below the mastoid process are enlarged. The various apparatus on the market for instrumental massage have never induced permanent benefit in his experience, and it is possible that their incautious use may do harm. A little temporary benefit may be derived in cases of incipient ankylosis of the ossicles or adhesions. In treatment of otosclerosis he has never witnessed striking benefit from potassium iodid, but in cases of syphilitic labyrinthitis less than six weeks in duration prompt recovery follows mercurial inunctions; labyrinthine deafness of longer standing is generally incurable. He has frequently obtained good temporary effects in otosclerosis, especially with simultaneous hyperemia of the labyrinth wall, by systematic sweating with hot air baths. This relieves the congestion in the temporal bone and inflammation is favorably influenced. He has never witnessed any harm from the superheated air applied to the patient in bed; the effect on the heart, of course, is watched. Little is to be hoped from technical-mechanical and operative measures in otosclerosis, but it is a broad field for rational internal treatment of the true cause—the dyscrasia—by general treatment, tonic, revulsive, soothing or antirheumatic, not forgetting the frequently accompanying neurasthenia. Warm saline baths and courses of mineral waters are also useful. Cold water treatment should be avoided, especially sea bathing. He advocates leeches for beginning acute otitis media; they are applied in front of the tragus, over the large venous plexus. This not only relieves the pain, but aborts the inflammation and wards off suppuration. If there is already tenderness at the mastoid process or edema, leeches are contraindicated and the ice bag behind the ear or incision is required. He defends the use of leeches, citing the ophthalmologists to show that they are indispensable in certain cases.

98. **Cammidge Test in Gallstone Disturbances.**—Kehr reports instructive findings with the Cammidge test in 58 cases of gallstone affections in which secondary injury of the pancreas was suggested by the symptoms. In 22 cases in which he operated, the findings of the test were confirmed by the operation in all but 2 instances; in one of these there was a cancer in the common bile duct. The other case suggests that the test is more reliable in the chronic form of pancreatitis than in the acute, as constantly negative Cammidge findings were obtained, although symptoms and operative findings indicated sudden, acute necrosis of the pancreas.

99. **Treatment of Paralysis of the Arm.**—Vulpius describes the relief of severe functional disturbances by correcting the excessive inward rotation after separation of the epiphysis; this is accomplished by osteotomy of the humerus at the point of attachment of the deltoid muscle, followed by plaster immobilization in extreme outward rotation and horizontal abduction. The success in the two cases described commends this osteotomy of the shaft for all such cases of false and true obstetric paralysis of the arm.

103. **Serodiagnosis of Syphilis in General Practice.**—Neisser reiterates that the Wassermann test reveals syphilis with such certainty that nothing would induce him to dispense with it now. Positive findings are a distinct symptom of existing syphilis and repeated negative findings are extremely valuable for a favorable prognosis, although the test is not infallible in every case. It is as important for the general practitioner as the microscope for gonorrheal secretions.

Therapeutische Monatshefte, Berlin

June, XXIII, No. 6, pp. 297-352

104 Importance and Measurement of Resistance of Human Skin to the Galvanic Current. (Phorometrie.) F. Frankenhäuser.

105 Negative Action of Tobacco Smoke on Aorta in Tests on Rabbits. (Zur Frage der Tabakrauchwirkung auf die Aorta.) A. Ollendorff.

106 *Action of Bitters on Absorption in Digestive Tract. (Wirkung der Bitterstoffe auf die Resorption.) W. Heubner and K. Rieder.

107 Middle Ear Disease in Infants, especially those with Nutritional Disorders. (Die klinische Bedeutung der Otitis media des Säuglingsalters insbesondere beim ernährungsgestörten Kinde.) H. Rietschel. Commenced in No. 5.

108 *Hydriatic Treatment of Burns and Other Defects in the Skin. (Hydriatische Behandlung von Hautdefekten.) W. Wirz.

106. **Influence of Bitters on Absorption.**—Heubner and Rieder relate experiments which seem to indicate that the influence of bitters on the digestion is the result of their action on the motor function of the stomach. Animals taking small amounts of bitters continuously had the stomach filled with food even fifteen hours after the meal. In many cases of stomach trouble, retention of the food in the stomach for a certain time may favor its digestion. This may explain reflux of the bile into the stomach, sometimes observed with food that is difficult to digest, and also the craving for bitters at times.

108. **Treatment of Burns and Other Defects in the Skin.**—Wirz has been successful during the last fifteen years with hydriatic treatment of burns, etc., according to the method introduced by Winternitz, but which has not been adopted as widely as it deserves. The aim is to relieve the pain and to supply an artificial skin, that is, to cover the defect with a substance that answers the same purpose as the skin. The substitute for the skin which assumes its functions best is a piece of thin linen fitting close over the defect and held immovable by strips of plaster around the edges or applied as a roller bandage. This linen is left for two or three days, kept constantly moist and cold by a compress above, six or eight layers thick, renewed at first every minute, as the cold reduces the pain. Later the intervals can be lengthened to five minutes or longer, and by the second day the compress may not need renewing for hours at a time. A temperature of 50 F. is most effectual at first, but later up to 68 F. may be used. The congestion must be combated by bed rest, the burned part raised a little. This dressing supplies a perfect cover for the wound, protecting the exposed terminals of the sensory nerves from irritation; the secretions become organized under this protecting shield, so that the resulting scar is much less disfiguring than with other technics. This method makes great demands on the attendants, but the more rapid healing and the fine cosmetic results repay the extra care. Winternitz leaves the linen for a week, merely rinsing it frequently, but Wirz changes it by the third day.

Therapie der Gegenwart, Berlin

May, L, No. 5, pp. 217-264

109 *Treatment of Cerebral Paralysis. (Therapie zerebraler Lähmungen.) M. Rothmann.

110 Historical and Critical Study of Artificially Induced Pneumothorax in Pulmonary Tuberculosis. (Künstlicher Pneumothorax bei Lungenschwindsucht.) S. Daus.

111 Action of Glutaric Acid on Phloridzin Diabetes. (Wirkung der Glutarsäure auf den Phloridzindiabetes.) G. G. Wilenko.

112 *Nervousness in Children. (Kindernervosität und Nervöse Kinder.) A. Baginsky. Commenced in No. 4.

113 The Newer Methods of Anesthesia. (Ueber neuere Anästhesierungsmethoden.) W. Busse.

109. **Cerebral Paralysis.**—Rothmann mentions in the course of this study that treatment should be in three phases: first directed against the incipient flaccid paralysis, then aiding to assist restoration of motor functioning, and, finally, the combating of the residual hemiplegic paralysis. The first absolute indication is to keep the head still during the first few days after the stroke, but the position of the arms and legs must be carefully supervised. The tendency in hemiplegia to turn on the paralyzed side causes the paralyzed limbs to be compressed and injured if the compression is long kept up. It is necessary, therefore, to attend to the position of the leg and arm, possibly holding them in place by straw cushions. Passive movements of the limbs should also be carried out from the very beginning. This prevents development of painful affections in the joints, especially in the shoulder, which otherwise are liable to occur from the traction of the relaxed capsule of the joint. The systematic passive movements also aid in the restoration of function in the lower motor centers in the brain. Cautiously done, no injury on the brain process

need be feared. Massage helps materially to promote the process of restitution in the paralyzed vasomotor nerves. The position of the leg should be regulated by its most important function as the support for the body, and thus it should be extended, while the arm requires extension of the hand and fingers to prevent contracture. If the constant current is applied in these early stages the muscles in the arm and leg are aided in restitution which occurs spontaneously only very late or not at all. After the first active movements have appeared, they must not be exercised too much. On the contrary, it is important to begin over again each time, first placing the limb in the proper position, then passive movements, galvanization, massage and efforts to induce active innervation, thus striving to act on the weaker groups of muscles which are less inclined to restitution. The first active movements should be extensive, co-ordinated ones, not single movements. Stimulation of the cortical motor center, cultivation of still existing connections with the cortex and of the innervation of the different groups of muscles of the arm and leg—these points in treatment of cerebral hemiplegia lead to good results.

112. **Nervousness in Children.**—Baginsky gives a comprehensive review of the various abnormal manifestations of nervousness in children as observed in his own practice, discussing the causes, treatment and prognosis of all kinds of functional and organic nervous disturbances. Among the points emphasized is the necessity for investigating the environment in every case. This he does before concentrating his attention on the child, and reports several striking cases to show the necessity for this. The most remarkable, perhaps, was the case of a girl of 12 whose brother-in-law summoned him on account of habit spasms. The man was a physician from Russia and displayed a pronounced tic as he spoke. Arrived at the house, the young man's wife presented the same tic, which was also the trouble in the girl. Each member of the family had the same pronounced spasmodic movements, but each disregarded his own tic while urging medical aid for the others. The only treatment would have been to separate the entire family and treat each member in a different environment, but this was refused, and Baginsky gave up the case, the family leaving town with their tics unmodified. The lesson from this case has proved a great help in treating others; as a rule, the children are not the ones that are sick, but rather the adults with whom they live. He has noticed that the children in the families of stock brokers, lawyers and merchants with a tendency to neurasthenia, are distinguished by unusual restlessness and impatience. The vasomotor innervation in these families is more unstable, and the tendon reflexes are exaggerated. It has always seemed to him that the father participates more in bequeathing this nervous tendency than tne mother. In one case the apparently normal child cried constantly, night and day. He examined the child repeatedly, but nothing could be found to explain its trouble, and the child seemed to be thriving. The explanation developed by the end of the year in the appearance of an itching urticaria resisting all treatment until the child gradually grew out of it in its third year. It had probably been born with an itching in the skin, which gave no objective signs for months. In regard to the influence of alcohol, he mentions a case in which a healthy child in the family of an ambassador suddenly developed convulsions recurring at regular intervals and probably to be ascribed to the bottle of red wine given the wet nurse occasionally as a special treat. She was accustomed to wine, but as soon as the red wine was discontinued the child's attacks of convulsions ceased. He insists on the importance of preparing a child for an operation or other intervention, as the nervous shock from the surprise of an unanticipated operation on tonsils or adenoids is liable to induce severe nervous depression, persisting for months. He has witnessed a number of cases of this intense nervous depression in the children of Russian refugee families, which it will require years to overcome. Entire loss of appetite seldom reaches such intensity as in one of his cases in which an otherwise healthy little girl of 4 or 5 refused to eat and vomited what she was compelled to take, finally succumbing to inanition. Nervous torticollis has frequently led to useless operations, but its sudden appearance and spontaneous disappearance and recurrence indicate its nervous nature. Nervous joint affections are distinguished by the lack of signs of inflammation. Treatment should be by the gentlest measures, winning the confidence of the child. Keeping him in bed sometimes has as favorable an action as with adults. Children must always be told beforehand and prepared for whatever is to be done. Institutional treatment may work wonders in the severer cases. The aim in treatment should be to avoid unnecessary therapeutic measures but, if they are required, not to shrink from energetic means. Sympathy, paternal pedagogic earnestness and infinite patience are the key to success.

Virchow's Archiv, Berlin

May, CXCVI, No. 2, pp. 193-384

114 Atresia of Small Intestine. (Zur Frage der kongenitalen Dünndarmatresie.) S. Ciechanowski and L. K. Glinski. Commenced in No. 1.
115 Multiple Internal Deformities in an Infant. (Multiple Hemmungs- und Defektbildungen bei einem neugeborenen Kinde.) M. Koch.
116 Genesis of "Starchy Bodies" in the Lungs. (Genese der Corpora amylacea in den Lungen des Menschen.) K. Nunokawa.
117 *Nature of Arteriosclerosis. (Wesen der Arteriosklerose.) T. Sumikawa.
118 *Cause of Arteriosclerosis. (Ursache der Arteriosklerose.) W. H. Harvey.
119 *Connection between Kidney Edema and Arteriosclerosis. (Beziehungen des renalen Oedems zur Arteriosklerose.) A. Heineke.
120 Fat in Interstices in the Kidney Medulla. (Fett im Markinterstitium der Niere.) P. Prym.
121 Genesis of Tumors. (Genese der Geschwülste beurteilt nach den Erfahrungen der Missbildungslehre.) E. Schwalbe.
122 *Multiplicity of Primary Malignant Tumors. Metaplasia. K. Beck.
123 Tumors in the Pleura. Ribbert.
124 Mucus-Forming Cystadenoma in the Bladder. (Ein schleimbildendes Cystadenom der Harnblase.) R. Bayer.
125 Genesis of Metastatic Carcinoma in the Peritoneum. J. Misumi.

117-118. **Nature of Arteriosclerosis.**—Sumikawa reports the microscopic findings in 96 cases of arteriosclerosis, showing that the trouble is a chronic, hyperplastic inflammation, commencing in the deepest layer of the intima. The intima tissue is less compact than the other parts of the artery wall and there is thus a little discrepancy between the stretching and elastic contraction of these layers, setting up irritation both laterally and longitudinally as the walls expand and as the blood stream forces the looser tissue along with its current. Harvey describes research which ascribes arteriosclerosis to changes in the blood pressure, his experiments confirming the close connection between high blood pressure and the affection.

119. **Connection Between Dropsy and Arteriosclerosis.**—Heineke reports a case which demonstrates anew the close connection between contracted kidney and arteriosclerosis of the small arteries in the organs. His patient was a comparatively young woman and the extreme arteriosclerotic changes in the large vessels developed promptly after the dropsical kidney affection had settled down into a chronic phase. The small and medium arteries to the organs were normal but the large and medium arteries in the limbs were in advanced sclerosis. The kidney affection had lasted only fourteen months in this case, and he is convinced that kidney affections with a tendency to dropsy are peculiarly liable to be accompanied by arteriosclerosis. The same kidney affection, if unaccompanied by dropsy, does not entail arteriosclerosis in the young, even when the blood pressure is extremely high, while, with the dropsy, the arteriosclerosis rapidly develops.

122. **Multiple Primary Malignant Tumors.**—Beck reports a case and comments on the rarity of such occurrences. He is inclined to attribute this rarity to a possible immunization of the system from the first malignant growth, preventing the development of others as a rule.

Wiener klinische Wochenschrift, Vienna

May 20, XXII, No. 20, pp. 699-736

126 Augenbrugger, the Inventor of Percussion. (Leopold Augenbrugger.) M. Neuburger.
127 Experimental Arteriosclerosis. A. Biedl and L. Braun.
128 *Functioning of the Kidneys and Prostatectomy. R. Paschkis.
129 Hydatid Cysts in the Thyroid. (Zwei Fälle von monolokulärem Echinokokkus der Schilddrüse.) R. R. V. Ultzmann.
130 Anatomic and Clinical Conception of Arteriosclerosis in its Relation to Certain Morbid Conditions in the Skin. K. Ullmann. Commenced in No. 19.

May 27, No. 21, pp. 737-770

131 *The So-called "Uric Acid Pains." (Harnsäureschmerzen.) F. Pineles.
132 *Cardiospasm. W. Zweig.
133 Habitual Constipation. (Klinisches und Experimentelles zur Lehre von der chronischen habituellen Obstipation.) E. Biernacki.
134 Nature of Complement-binding Substances in Syphilis. (Natur der komplementbindenden Stoffe bei Lues.) H. Toyosumi.
135 Idiopathic Epiphora of Nasal Origin. J. Weleminsky.
136 *Prognosis of Acute Anterior Poliomyelitis. M. Berliner.

128. **The Functioning of the Kidneys and Prostatectomy.**—In this communication from Zuckerkandl's surgical service, read at the recent German Urologic Congress, Paschkis gives the details of sixteen cases of retention of urine from enlargement of the prostate in which systematic chromocystoscopy revealed the actual functional capacity of the kidneys. It was thus possible to sift out the cases in which the lesions were irreparable and prostatectomy offered little chance of relief. The urine was examined for chlorids, urea, specific gravity and albumin, and then 4 c.c. of a 4 per cent. suspension of indigocarmin in salt solution was injected into the gluteal muscle, and the interval before the blue tint of the urine became apparent, the intensity of the tint and the length of its appearance were all noted. When this indigocarmin test shows that conditions are improving under systematic catheterization or permanent drainage, the course of the case confirms the assumption that the kidneys are capable of approximately normal functioning. It is amazing, he says, to note the improvement in patients so debilitated that permanent lesions of the kidneys seemed more than probable. Systematic repetition of the indigocarmin test will reveal the cases in which prostatectomy promises permanent benefit, thus avoiding an important factor in the mortality. In four of his cases the test showed impairment of kidney functioning at first, but improving rapidly under treatment, and after the prostatectomy the test gave constantly normal findings, showing that the prostatectomy had induced complete restitution, confirming the subjective and objective benefit of the operation.

131. **"Uric Acid Pains."**—Pineles has been studying these pains in 110 cases besides 17 other cases in which an organic lesion was found to explain them. His analysis shows that, in two-thirds of these cases, these uric acid pains are in reality painful sensations connected with functional disturbances in the sexual apparatus, and this is also probable in many of the others. There is a great difference between them and the pains of true gout, both in regard to the age and sex, the location of the pain and the purin metabolism; not a single feature shows any connection between them and the uric acid metabolism, while everything favors the assumption of a genital pseudo-gout which may be classified as a climacteric, senile and nervous.

132. **Cardiospasm.**—Zweig states that psychic influences are important in treatment; the patient must be tranquilized and taught to practice swallowing movements before meals, as this helps in relaxing the cardia. Diversion during the meal, change of the meal hours and change of environment will sometimes help to cure. One of his patients was freed from the spasm when he ate alone in his room. The moment any one looked at him while he was eating the spasm recurred. Regulation of the diet is important; some patients do better with solid foods and others with fluid. A tablespoonful of pure olive oil before the meal in some cases prevents the contraction. Instead of the pure oil, a mayonnaise of oil and eggs is sometimes taken with less repugnance. The food must be soft and prepared with a great deal of butter or cream. Sedatives may do good in the mild cases, especially belladonna. In the chronic cases the accumulated mucus and débris must be thoroughly washed out, with, possibly, instrumental dilatation of the cardia. He has treated a patient in this way, with an inflatable bag, with excellent results, but this treatment has to be repeated now and then as no instance of a permanent cure by this means has been reported. Dilatation through the opening in the stomach has been successfully done in 12 cases on record. On the whole, he regards chronic cardiospasm as a serious condition, with an unfavorable prognosis in respect to its curability.

136. **Prognosis of Poliomyelitis.**—Berliner gives the details of 14 cases at Vienna last fall. Four of the children died but the others recovered under salicylate and electricity, the improvement sometimes not appearing until after several months. Electric treatment was certainly an important factor in the recovery, each sitting displaying marked benefit.

Zentralblatt für Chirurgie, Leipsic

May 29, XXXVI, No. 22, pp. 785-824

137 Operative Treatment of Old Empyema. E. E. Goldmann.

Zentralblatt für Gynäkologie, Leipsic

May 29, XXXIII, No. 22, pp. 753-800

138 Placenta Prævia. W. Hannes. Id. Richter.
139 Bacteriologic Diagnosis of Puerperal Fever. Pankow.
140 Allowing Women to get up Early after Childbirth. (Zum Frühaufstehen der Wöchnerinnen.) A. Hüffell.
141 Technic for Extraperitoneal Cesarean Section. (Die Blasenfüllung bei meiner Methode des extraperitonealen Kaiserschnittes.) W. Latzko.
142 Measures to Protect Mother and Child During Pregnancy and Puerperium. (Wochenschutz.) T. H. van de Velde.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 18, XXX, No. 59, pp. 625-632

143 Action of Colon Bacillus in Bismuth Poisoning. (Azione del bacterium coli in relazione agli avvelenamenti da sottonitrato di bismuto.) P. Barabaschi.

May 20, No. 60, pp. 633-640

144 Importance of Proportions between Framework of the Chest and the Heart for the Functioning of the Latter. (Importanza dei rapporti fra scheletro toracico e cuore per il normale funzionamento di questo.) E. Silvestri.

May 23, No. 61, pp. 641-656

145 *Pathology of Female Genital Apparatus in Relation to Work. (La patologia dell'apparato genitale femminile in rapporto col lavoro.) L. M. Bossi.
146 *Disguised Malaria. (Il concetto della malaria larvata.) F. Musone.

145. **Pathology of the Female Reproductive Organs in Wage-Earners.**—Bossi deplores the scant attention that has been paid to this subject as the increasing participation of women in the industries is rendering it more and more important. He discusses prophylactic measures, saying that the present conditions menace the future of the race, the affections in the female genital sphere not only threatening future generations but by the loss of nervous and moral balance which so often accompanies utero-ovarian lesions, the peace of the household is destroyed. He criticises the proposed legislation to provide for rest for the working woman after delivery, saying that it neglects to provide for rest during the last months of pregnancy when it is equally needed. It further makes no distinction between miscarriage and normal delivery, which he regrets as liable to favor criminal abortion, while the woman after an abortion is not debilitated by the nursing and care of the child. The displacements that are liable to be induced by certain kinds of work; the inflammation in the genital organs which the trauma of the work keeps up, and the physiologic crises of the menses should all be studied with a view to prophylactic measures. Fibromyoma is liable to develop from the interference with the circulation in certain forms of work requiring long sitting, and hematocele from long standing. The general depression of the vitality from the industrial conditions and strenuous attention required, prepare conditions liable to transform an otherwise mild into a malignant affection.

146. **Disguised Malaria.**—Musone discusses the various forms and reports some cases in which malaria was associated with other diseases. The other affection may interfere with the absorption of the quinin, as in dyspepsia, alkaline fermentation or chronic catarrh of the stomach, so that the therapeutic test may give negative results. In meningitic malaria the complexion and daily fluctuation of the symptoms reveal the malarial origin; in true meningitis the symptoms continue a constantly progressive course. The spleen is more enlarged in malaria, and malarial meningitis may subside, a condition which seldom occurs in true meningitis.

Policlinico, Rome

May, XVI, Surgical Section, No. 5, pp. 193-240

147 *Lumbar Puncture in Diagnosis and Treatment of Trauma of the Head and Spine. (Puntura lombare nella diagnosi e nella terapia dei traumi cranio-encefalici.) R. Malatesta.

148 *Gangrene of the Legs. (Gangrena delle estremita inferiori.) A. Vetri.

149 *Hernia of the Bladder. (Ernia della vescica.) F. Mastrosimone. Commenced in No. 4.

May, Medical Section, No. 5, pp. 193-240

150 Toxic Syndromes in Relation to the Non-Dializable Constituents of Urine. (Sul comportamento del contenuto non dializzabile delle urine, nell'uremia, nella nefrite, in rapporto alle differenti diete [carnea e lattea], ed in un caso di peritonite da perforazione.) S. Mancini.

151 Hemolytic and Nerve Destroying Action of Spider Poison. (Sul potere emolitico del veleno dell'aracnide "Latrodectes terdecim guttatus" e alterazioni istologiche da esso indotte sul sistema nervoso centrale.) O. Pini.

152 Effects on the Kidney of Puncture of the Fourth Ventricle. (Effeti sul rene della puntura del IV ventricolo cerebrale.) A. Capogrossi.

153 *Blood Plates in Malaria. (Le piastrine del sangue nella infezione malarica.) G. Fornaca.

147. **Lumbar Puncture in Diagnosis and Treatment of Trauma of the Head.**—Malatesta reports nine cases in detail to show the benefit derived from lumbar puncture as a diagnostic and therapeutic measure. When there is a varicose tendency the meninges may share in it, and the cerebrospinal fluid may be hemorrhagic without any lesion in the cerebrospinal axis. This occurred twice in his experience with lumbar puncture for spinal anesthesia in 600 cases. One of the varicose patients had leg ulcers and the other hemorrhoids. A hemorrhagic cerebrospinal fluid therefore should be estimated very cautiously in patients with varicose lesions elsewhere. The relief in the traumatic cases after some of the fluid had been withdrawn by spinal puncture was marked in every instance, and the puncture was repeated several times in some cases. In all cases of trauma of the skull in which expectant treatment is justified, lumbar puncture will permit the diagnosis of intracranial hemorrhage, and by repeated puncture its course can be determined. The puncture permits the escape of the extravasated blood and relieves the compression. The retained blood is liable to decompose and cause production of toxins that will injure the nervous tissue still further, the effect shown in stupor, fever and delirium. He agrees with Ferretti that whatever may be the mechanism of the action of lumbar puncture, it is certainly to be commended when doomed to inaction otherwise, as the simple and easy little intervention may induce far-reaching beneficial effects. Nearly three pages of bibliographic references on the subject are appended

148. **Gangrene of the Legs in Pneumonia.**—Vetri's patient was a previously healthy ix-para of 42, at the ninth day of pneumonia when symptoms of gangrene developed in the left leg; the right leg became similarly affected fifteen days later. Amputation of both legs failed to arrest the fatal outcome and autopsy confirmed the assumption that the trouble was the result of inflammatory changes in the walls of the vessels with thrombosis and embolism. The only possible cause known for the trouble was the pneumonia. He reviews the similar cases on record of gangrene in acute infectious diseases, noting the involvement of both sides, although not symmetrical, in most of the cases. In his case the gangrene came on gradually and progressively, invading the left leg from the toes to the upper third of the thigh and the right to the knee.

149. **Hernia of the Bladder.**—Mastrosimone reports seven cases and reviews others on record and the results of experimental research, all of which confirm the opinion that it is almost impossible to recognize beforehand the involvement of the bladder in the hernia, and even during the operation, if the tissues are healthy, the bladder wall is not recognized easily unless the possibility of its involvement is borne carefully in mind. If the bladder wall is gangrenous it is impossible to recognize it. For the bladder to become involved in a hernia it has to be abnormally high and its walls less firm than usual. If the bladder wall has been opened, the herniotomy wound should not be entirely sutured at first.

153. **The Blood Plates in Malaria.**—Fornaca summarizes 30 cases of malaria in which the blood plates were noted, calling attention to the characteristic reduction in their number during the fever and their return to normal under the influence of quinin. The behavior of the blood plates is liable to have differential value in certain cases.

Riforma Medica, Naples

May 17, XXV, No. 20, pp. 533-560

154 Resection of Stomach for Gastric Ulcer. (Caso di resezione di stomaco per ulcere gastriche.) G. Coccl.

155 The Speech Center and Motor Aphasia. (Centro di Broca e afasia motrice.) E. Benvenuti. Commenced in No. 19.

May 24, No. 21, pp. 561-588

156 *Anatomic and Clinical Study of Four Cases of Nasopharyngeal Fibroma. U. Zandonini.

157 Callus Formation after Contusion of Muscles. (Esito raro di contusione muscolare.) S. Rolando.

May 31, No. 22, pp. 589-616

158 Origin of Gallstones. (Sulle teorie per la patogenesi dei calcoli biliari e contributo all loro produzione sperimentale.) O. Marchetti.

159 The Graphic Method Applied to Registration of the Pulse in the Esophagus. (La pulsazione cardio-esofagea nell'uomo in condizioni fisiologiche e in alcuni stati morbosi del cuore.) D. Pace.

160 *Four Cases of Perforating Ulcer of the Foot Cured by Stretching the Nerve. (Cura dell'ulcera perforante del piede mediante lo stiramento dei nervi.) G. Piccioli.

156. **Nasopharyngeal Fibroma.**—Zandonini has found signs of an inflammatory process in the upper air passages so constantly with fibromas that he is inclined to ascribe etiologic importance to it. The fibroma may retrogress, and consequently palliative measures are justifiable if the patient is at an age when such involution is liable to occur. But in the young the growth should be radically removed and he describes four cases in which he did this with success.

160. **Stretching the Nerve in Treatment of Perforating Ulcer of the Foot.**—Piccioli reports four cases after reviewing the history of this method of treatment. His patients were men between 36 and 58, and the case histories confirm anew the neuropathic origin of such lesions. The plantar nerve was the one stretched in one case and the tibialis in the others, but the results observed suggest that it might be still better to stretch the sciatic nerve instead, as liable to have a more decided effect, especially on the spinal nerve centers. The procedure was supplemented by careful toilette of the ulcer, placing it in the most favorable conditions for healing, although cases are on record in which the stretching of the nerve alone, without this, proved effectual. Local anesthesia was employed and the result was permanent in three cases; in the fourth, one of the bilateral lesions recurred; the patient was a syphilitic, much addicted to alcohol, and the ulcer displayed a tendency to gangrene. The conditions in the circulation were evidently too serious for possibility of recuperation in this case.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

SYMPTOMS AND THEIR INTERPRETATION. By James Mackenzie, M.D., M.R.C.P., Physician to the West End Hospital for Nervous Diseases, London. Cloth. Pp. 297. Price, 7 shillings 6 pence. London: Shaw & Sons, 7 and 8 Fetter Lane, E. C., 1909.

A MANUAL OF OPERATIVE SURGERY. By Sir Frederick Treves, Bart. G.C.V.O., C.B., LL.D., F.R.C.S., Consulting Surgeon to the London Hospital, and Jonathan Hutchinson, F.R.C.S., Surgeon to and Lecturer on Surgery at the London Hospital. Edition 3, in Two Volumes. Vol. 1, Half Morocco. Pp. 775, with 193 engravings and 17 full-page plates. Price, $6.50. Philadelphia: Lea & Febiger, 1909.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. Vol. XX. For the Year 1907. Cloth. Pp. 319.

LEHRBUCH DER MAGENKRANKHEITEN FÜR AERZTE UND STUDIERENDE. Von Dr. Hans Elsner, Spezialarzt für Magen und Darmkrankheiten in Berlin. Paper. Pp. 490, with illustrations. Price, 12 marks. Berlin: Verlag von S. Karger, 1909.

HEALTH OF ANIMALS BRANCH [CANADIAN DEPARTMENT OF AGRICULTURE]. SPECIAL REPORT OF MALADIE DU COIT OR DOURINE. Paper. Pp. 63, with illustrations. Ottawa: 1907.

SEVENTH ANNUAL REPORT OF THE DIRECTOR OF THE BUREAU OF SCIENCE, to the Honorable, the Secretary of the Interior. By Paul C. Freer, Director of the Bureau of Science, for the Year Ending Aug. 1, 1908. Paper. Pp. 79. Manila.

REPORT OF ST. MARY'S HOME FOR CHILDREN AND FREE DISPENSARY. Chicago. For the Year 1908. The Sisters of St. Mary, Incorporators. Paper. Pp. 34.

ANNUAL REPORT OF THE WASHINGTON HEIGHTS HOSPITAL OF THE CITY OF NEW YORK. For the Year Ending Sept. 30, 1908. Paper. Pp. 20.

ANNUAL REPORTS, COOK COUNTY HOSPITAL, CHICAGO, ILL. 1908 Paper. Pp. 48.

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Address

VASOMOTOR AND TROPHIC NEUROSES

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON NERVOUS AND MENTAL DISEASES OF THE AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, 1909.

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Professor of Neurology, Columbia University
NEW YORK

In taking the chair I must first thank you for the honor you have done me in selecting me for this office. It is needless to say that I appreciate it and that it gives me much pleasure to preside at this meeting. I shall depend on your consideration and assistance in guiding the discussions and proceedings.

It has always been customary for the chairman to present at the opening of the meeting some general topic which has for him some special interest. In looking over the field of neurology many subjects suggested themselves. There is one, however, which is of much importance, but which seems in recent years to have been rather neglected or overlooked, for there is little in the literature bearing on it. Hence I have chosen it. It is the subject of vasomotor and trophic neuroses, and I have thought that a brief presentation of our present knowledge of the vasomotor system and its nervous supply might enlist your interest.

In the term "vasomotor and trophic neuroses" it is intended to include a number of forms of disturbance of circulation and nutrition which are caused by disorders of the nervous system. Such disturbances may occur in any part of the body. They are not to be regarded as distinct diseases, but rather as symptoms of lesions in the peripheral or central nervous system. They may present themselves in various forms. Vasomotor disturbances manifest themselves (1) by a dilatation of the vessels, producing redness, heat, and rapid metabolism in the part affected; or (2) by a contraction of the vessels, causing pallor, coldness, and malnutrition; or (3) by alternation of these conditions and consequent temporary disturbance of function. Trophic disturbances may occur in consequence of such increase or decrease of blood supply, or independently of any vascular change, causing (1) an abnormal production of tissue in an organ, or (2) a decrease in the size and number of its constituent cells, or (3) an actual degeneration of the elements which make it up, after which their place may be taken by another kind of tissue. Under all these circumstances the function of the part affected will be disturbed, and symptoms will be produced which will vary with the tissue or organ involved. Before proceeding to a detailed consideration of these neuroses it is necessary to review the physiology of the vasomotor and trophic systems, in order to make clear the manner in which they perform their functions. And inasmuch as the pathology of these affections is best understood by comparison with experimental lesions made by physiologists in investigating their function, it will be treated together with their physiology.

PHYSIOLOGY

LOCAL VASCULAR TONE

Since changes in the force and frequency of the heart's action, and variations in the total amount of blood in the body, affect the body as a whole, the state of circulation in any one organ or part must be dependent on the degree of contraction or dilatation of its own vessels. This is known as the local vascular tone. It is under the control of a system of nerve ganglia with their subservient fibers which are found in the middle coat of all arterioles. The energy expended by these ganglia is manifested by a constant moderate contraction of the circular muscular coat of the artery—a contraction which is as constantly opposed by the dilating force of the blood pressure within the vessel. An exact equipoise between these two forces never occurs, since each varies constantly, but in a state of health one never becomes permanently excessive. Considerable variations, however, in the local vascular tone are frequently observed. Thus each organ is influenced to a certain degree by every other, since an increase of blood in one part must involve a decrease in all other parts, the total amount of blood in the vessels being constant. Alteration in the heart's action is felt more quickly in some organs than in others, and thus the general blood pressure by its variations may cause secondarily a disturbance of local vascular tone. The variations now under consideration, however, are not of this kind. They are such as are produced by influences acting directly on the ganglia in the vessel walls.

Local irritation is such an influence, and it may excite the ganglia to increased activity, so producing a contraction of the vessel and consequent pallor; or it may suspend the action of the ganglia, so producing a dilatation of the vessel and consequent flushing.

Another influence is irritation acting from a distance and conveyed to the local ganglia by nerve fibers. These nerve fibers can be distinguished from all others by their structure, being non-medullated, and by the fact that they have an indirect course, passing from the central nervous system to the sympathetic ganglia, and from these to the local ganglia in the vessels. The impulses sent along these nerves may affect the local ganglia in one of two ways, either causing contraction by exciting the ganglia, or dilatation by inhibiting the action of the ganglia. The result produced has determined the names given to the impulse, to the fiber transmitting it, and to the center whence the impulse proceeds, and hence vasoconstrictors and vasodilators are distinguished.

The history of the development of the sympathetic nervous system as well as its gross anatomy, affords distinct proof that it is not an independent system, as Bichat supposed, but is closely connected on its physiologic action with the spinal cord and brain. Impulses which reach the sympathetic ganglia from a distance along the vasoconstrictor or vasodilator fibers originate in the central nervous system. The nervous mechanism which controls the local vascular tone is, therefore, a complex one, consisting not only of the set of local ganglia connected with larger sympathetic ganglia, but also of centers in the spinal cord connected with the higher centers in the brain. The brain centers in turn are complex, consisting of an automatic mechanism in the medulla regulating the action of all the subordinate parts below it, and of a series of cortical centers whose function it is to stimulate or inhibit the medullary mechanism. It therefore becomes evident that local vascular tone may be modified by local causes acting on the ganglia in the vessels.—e. g., cold or heat; by changes in the sympathetic ganglia—e. g., the hyperemia of the face in lesions of cervical ganglia; by reflex action through the spinal cord—e. g., pallor produced by pain; by reflex action through the medulla oblongata—e. g., glycosuria following sciatica; or by conscious or unconscious impulses coming from the cortex—e. g., the blush of shame, the vasomotor paralysis of hemiplegia.

VASOCONSTRICTORS

Such a mechanism, however complex in structure, would be easily comprehended if the constant manifestation of energy in the maintenance of arterial tone had its only source in the action of the local ganglia in the vessels, and was affected only occasionally by impulses from a distance, as has been thus far supposed. This, however, is not the case, as has been demonstrated by a series of experiments beginning with the brilliant researches of Claude Bernard. The classical experiments of the French physiologist were made on the sympathetic cord in the neck of a rabbit. Division of this was found to produce a dilatation of the vessels of the ear. Irritation of the peripheral end of the divided cord produced a contraction of the vessels. Division of the spinal nerves connected with the cervical sympathetic and of their anterior roots, or irritation of the cut ends, produced effects similar in character to those caused by division or irritation of the cervical sympathetic. Destruction of the spinal cord in the lower cervical region, or division of the cord at any higher level up to the medulla, was followed by dilatation of the vessels. If the segment of the divided cord just below the section was irritated the vessels contracted. Destruction of the medulla at the calamus scriptorius and above it for three centimeters produced a general dilatation of all the vessels in the body, but division above this level had no effect. The initial congestion produced by these various experiments was accompanied by a rise of temperature in the part. It was followed after a time by a partial recovery of vascular tone, which was more complete the farther the division from the local ganglia. These facts warrant the conclusion that the energy expended by the local ganglia in holding the vessels in a state of constant moderate contraction is derived from the central nervous system, primarily from the automatic center in the medulla, which in turn is reinforced by each of the secondary centers in the spinal cord and sympathetic ganglia; and also that while the medullary centers control the entire body, the cord and sympathetic centers control only those parts with which they are especially related. In order, therefore, to the maintenance of normal vascular tone the local ganglia must be intact, and they must be in connection with the sympathetic ganglia; these must be active, and must be connected with the spinal cord; the cord must be normal, and its tracts from the medulla must be capable of conduction; the medullary center must be active, and not hindered or spurred by cortical impulses of a conscious or unconscious nature. Any injury to one or more of these parts will produce a vascular dilatation by interfering with the transmission of vasoconstrictor impulses from within outward, and any irritation of one or more of these parts may cause a contraction of the vessels by increasing the normal stimulus sent to the local ganglia by the vasoconstrictors. An example of such an irritation is the enormous rise of arterial tension seen in an increasing cerebral hemorrhage; or in the intracranial pressure due to abscess or tumor.

VASODILATORS

The action thus far considered has been wholly of a vasoconstrictor kind, and the dilatation which has been mentioned has been due to cessation of the constrictor energy normally passing outward. This may be termed a passive dilatation. It is the kind produced by division of any one of the sympathetic ganglia or cords. But further experiments have shown that another kind of dilatation may be produced, traceable not to a mere cessation of constrictor impulses, but to an impulse of a positive kind sent to the local ganglia and resulting in a sudden suspension of their activity. Such an impulse is really an inhibitory impulse arresting the action of the ganglia in spite of the continued stimulus sent to them from the central nervous system. Its result is a dilatation of the arteries, produced by the blood pressure within them, which may be termed an active dilatation. That vasodilators act by inhibiting local ganglia which cause contraction is now accepted, especially since it is found that such inhibitory activity is constantly displayed by other parts of the nervous system, and is competent to explain the facts. The active dilatation produced by the inhibition of the action of the local ganglia is, therefore, to be clearly distinguished from the passive dilatation caused by the cessation of normal tonic impulses sent to them from higher centers. The former is a positive active vasodilator phenomenon. The latter is a negative paralytic vasoconstrictor phenomenon. The former is more effective, the dilatation being greater in degree and more permanent than the latter, and resembles exactly the dilatation produced experimentally by exhaustion of the activity of the local ganglia by overstimulation of the constrictors. An example of this is the low vascular tone and complete relaxation of the large vessels seen in shock or in abdominal injuries.

An important point of contrast which has been established between vasoconstrictor and vasodilator impulses is that while the former are constant the latter are intermittent. Hence they can not be regarded as opponents of one another. In a normal quiescent state vasoconstrictor energy is always being supplied to counteract the continued intravascular pressure ever renewed with the cardiac systole. The vasodilators are inactive. In an organ thrown into functional activity an increased flow of blood at once takes place, proportionate to the work being done by the organ. Such a functional hyperemia might be produced either by a cessation of constrictor impulses or by an inhibition of their effects. It is by the latter means and through the vasodilators that it is produced, and it is probably the chief function of the vasodilator nerves to regulate the blood supply in accordance with the need of a part. For this reason these nerves have been supposed to pass with the motor nerves to the muscles. As few organs exist without a possible use, it is probable that vasodilators pass to all parts of the body, as Vulpian asserts, though they have not been demonstrated in every organ or every part.

Like the vasoconstrictors, the vasodilators can be traced to the spinal cord, and their centers there are governed by a general center in the medulla, which in turn may be affected by impulses from the cortex. A destructive lesion in any part of the vasodilator system does not produce as marked effects as one involving the vasoconstrictor system, since the symptoms of such a lesion will appear only when the vasodilators are called into play. When the vasodilator nerve to the submaxillary gland is cut, no change is observed unless its function should be excited by some sapid substance put in the mouth, when the gland is no longer found to flush with blood as in the normal state. It is by means of the vasodilators that erectile organs become engorged with blood. Eckhard has shown the nervi erigentes of the penis to be vasodilator nerves. If they are destroyed, the organs will not respond to the wonted stimulus—a symptom which, however, would be noticed only at intervals. An irritative lesion of the vasodilator system may produce permanent congestion of an organ or part, but this seems to be rather more rare than a congestion from paralysis of the constrictors. It is seen in injuries of the peripheral nerves. An example of the inhibition exerted by the cortical centers over this part of the vasodilator system is the state of impotence of psychical origin.

ORIGIN OF THE VASOMOTOR NERVES

The exact course of the vasoconstrictor and vasodilator nerves has been traced from various parts into the central nervous system by the careful experiments of Dastre and Morat and by Gaskell. It is now established that they exist as separate nerves, although they often run together, and that they usually enter the spinal cord at different levels.

If the various spinal nerves be cut singly from above downward, and the effects noted, and if the peripheral ends be irritated and the effects noted, and if with proper care the results be analyzed and compared, it will be found that the anatomic connections of the segments of the spinal cord with the sympathetic ganglia, which are so evident at each level, are not the ones by which physiologic impulses pass out at that level. The vasoconstrictors of the head, which can be traced to the superior cervical ganglion, do not come from the upper cervical region of the cord, as might be supposed from the connections of that ganglion, but from the first three dorsal nerves. They reach the ganglion through the sympathetic cord in the neck, having traversed the inferior cervical ganglion on the way. The vasoconstrictors of the arm, which can be traced to the inferior cervical and upper thoracic ganglia and to the thoracic sympathetic cord, are derived from the seven upper dorsal nerves. It is true that division of the roots of the brachial plexus causes a slight dilatation of the vessels of the arm, but this is so much increased when the dorsal nerve roots are divided that it is evident that it is through them that the constrictor fibers chiefly pass. The vasoconstrictors of the leg, which can be traced into the second and third lumbar ganglia and lumbar sympathetic cord, are derived from the five lower dorsal and first lumbar nerves, and only join the crural and sciatic nerves after passing through the abdominal sympathetic. The thoracic viscera are probably supplied partly through the branches of the inferior cervical and thoracic ganglia, and partly through the pneumogastric, the latter statement being disputed by Gaskell. The abdominal viscera are supplied partly through the splanchnic nerves, which are made up of fibers issuing from the cord in the fifth to the twelfth dorsal nerves inclusive, and partly through the pneumogastric. Thus the dorsal region of the cord is the origin of the majority of vasoconstrictor fibers in the body.

The origin of the vasodilators is also to be traced to the dorsal cord. The vasodilators of the buccofacial region comes from the second to the fifth dorsal nerves, whence they pass to the first thoracic ganglion, and thence by the ansa of Vieussens into the cervical sympathetic cord. Those of the eye, head, and ear come from the safe ganglion, but have their spinal origin in the eighth cervical and first dorsal nerves. Those of the arm are traced into the upper thoracic sympathetic cord, which they reach from the five upper dorsal and last cervical nerves. Those of the leg are traced to the first and second lumbar ganglia and the lumbar sympathetic cord, which they reach from all the dorsal nerves from the sixth downward. Gaskell holds, however, that the vasodilators of the extremities pass out of the cord in the cervical and lumbar plexuses and accompany the cerebrospinal nerves. The vasodilators of the thorax and abdomen are supposed to pass in the pulmonary plexus and splanchnie nerves, but this is not yet fully determined.

Vasomotor nerves can be distinguished from motor and sensory nerves in the spinal nerve roots by the smallness of their caliber. The vasoconstrictors issue from the spinal cord in both anterior and posterior nerve roots as medullated fibers, and pass to the sympathetic ganglia lying on the vertebræ (proximal or lateral ganglia); there they lose their medullary sheath, and either end in cells whence new fibers issue, or more probably pass directly onward as non-medullated fibers, having a connection with the unipolar cells of the ganglia only for purposes of nutrition. The number of fibers issuing from any one ganglion is much greater than the number entering it from the cord; hence it is supposed that each medullated fiber splits up into a group of non-medullated fibers; which is possible, as each axis-cylinder is made up of numerous fibrils. Leaving these ganglia, the nerves pass either to the second series of ganglia (distal or collateral ganglia), whence they issue in plexuses to enter the vessels, or to the vessels directly, where they divide in plexuses. It is in the meshes of the plexus that the local ganglia of the vessel walls are found. The vasodilators are thought to differ from the vasoconstrictors in passing directly to the distal ganglia as medullated fibers, not being connected in any way with the proximal ganglia.

VASOMOTOR REFLEXES

Thus far reference has been made only to fibers whose direction of transmission is centrifugal, and whose exit from the spinal cord is by the anterior nerve roots. There are other fibers, however, through which centripetal impulses pass, and these enter the spinal cord with the posterior nerve roots. The function of these fibers is to transmit sensory impulses inward to reflex centers, and thus set in action motor mechanisms of a vosoconstrictor or dilator kind whose effects are produced at the periphery. There are, therefore, vasomotor reflexes, as well as skin and tendon reflexes, whose centers are in the spinal cord. These reflex acts may be excited by impulses reaching the center not only through the vasomotor centripetal nerves, but also through the sensory nerves of the cerebrospinal system. The effect of changes of temperature on the circulation in the skin (if the right hand be plunged in cold water there is a fall of temperature in the left hand), the effect of pain on the color of the face and the size of the pupil, the red cheek on the affected side in pneumonia, the occurrence of glycosuria during sciatica—all these are instances of such reflex acts. Many vasomotor affections are produced by irritation causing reflex effects at a distance from the seat of irritation—a fact always to be kept in mind. The utility of counter-irritation to the surface in diseases of the internal organs is explained by supposing that vascular changes are produced in those organs through reflex mechanisms set in action by the local irritation. While some of these reflexes may have their central mechanism in the local ganglia it is probable that the majority are to be traced to the spinal cord. It is believed that the sympathetic ganglia are not the seat of reflex centers.

Since the vasomotor nerves are connected almost exclusively with the dorsal portion of the spinal cord, it is very natural to conclude that the vasomotor reflex centers are situated in this region; and the hypothesis has been advanced by Jacobovics, and strongly urged by Gaskell, that the cells of the vesicular columns of Clarke, which are peculiar to this region, are the seat of these reflex mechanisms. This hypothesis gains some support from the pathology of syringomyelia. In this disease the gray matter surrounding the central canal and the vesicular columns is destroyed. The characteristic symptoms are vasomotor and trophic disturbances, consisting of changes in the vascular tone, changes of local temperature, and various eruptions, in some cases going on to ulceration in the skin and mucous membranes. It is, however, undecided whether the vasomotor centers of the cord are limited to the columns of Clarke, or are situated in the gray matter surrounding the central canal, since both these parts are destroyed in this disease. That they are not located in the anterior or posterior gray cornua is determined by the fact that diseases limited exclusively to these areas do not cause vasomotor disturbances. The situation of the various reflex centers for the various parts of the body is at different levels of the cord, as has been determined by the experiments already cited to establish the level of origin of the vasomotor nerves. The exact location of the vasoconstrictor and vasodilator reflex centers for definite parts is yet to be ascertained.

VASOMOTOR TRACTS

These reflex centers are connected with the medulla by tracts which lie in the lateral columns of the spinal cord, although it is not determined in which part of these columns. It is not possible as yet to separate the constrictors from the dilators in this tract, nor to determine whether it transmits impulses in both directions or only from above downward. Nor is the course of associating fibers between reflex centers at different levels known. In cases of transverse myelitis the control of the medulla is removed from the vascular centers below the lesion, and the lack of vascular tone seen in the paralyzed limbs, together with the susceptibility to local irritation, is the result of this division of the vasomotor tracts.

MEDULLARY CENTERS

It has been stated already that a general vasomotor center with both constrictor and dilator powers is situated in the medulla. This lies in two divisions on each side of the middle line, in or just beneath the floor of the fourth ventricle, from the calamus scriptorius up to the level of the sixth nerve nucleus. Each division governs the vascular tone of its own side of the body,[1] and lesions in its region in man produced unilateral vasomotor symptoms.[2] This center can be excited to reflex action by strong irritation locally or through the blood, in which case a general constriction or dilatation of the vessels of the entire body will ensue. It seems probable, however, that the general center in the medulla is made up of a number of special centers, each of which governs a definite set of organs. The vascular tone of the thoracic and abdominal viscera is certainly regulated by a series of such centers. Brown-Séquard and Schiff have produced hemorrhages in the lungs, pleura, stomach, intestines, and kidneys at different times by destructive lesions of the medulla, and the well-known experiments of Bernard in which by puncture of the medulla local hyperemia of the liver or kidneys was caused, producing glycosuria or polyuria, confirm this view. Lesions of these parts in man produce similar effects. Charcot has shown that in cerebral hemorrhage ecchymoses may be found in the stomach, pleura, and endocardium, and that pneumonia is especially frequent on the paralyzed side. De Jonge[3] has been able to collect thirteen cases of diabetes mellitus in which a lesion of the medulla (hemorrhage or tumor) was found after death; and Flatten[3] has proved the existence of similar lesions in diabetes insipidus. The medulla contains a special center for the vasomotor nerves of the abdomen, which are in the domain of the splanchnic nerves. This center is excited reflexly by impulses reaching it through the depressor nerve of Cyon from the heart; so that when that organ is overburdened it may be relieved by a fall of arterial pressure produced by dilatation of the abdominal vessels. Whether the connection of the medulla with the centers in the semilunar ganglion which preside directly over these vessels is made by way of the spinal cord or by way of the pneumogastric nerve is still undetermined, though the researches of Gaskell favor the former view. Gastric and intestinal disturbances are certainly produced by nervous lesions in the medulla, but whether they are due to vascular changes is uncertain. The vomiting of mucus and blood, and the large watery evacuations which accompany mental shock or anxiety, as well as the polyuria associated with mental effort, have been ascribed to irritation of local centers in the medulla governing the gastrointestinal and urinary organs by impulses received from the cortex above. I have a patient, a professor in a college, who always has a profuse diarrhea on the way to his lectures, but never has it on a day when he is free from duty. The spleen is under the control of vasomotor centers, since section of the splenic branches of the semilunar ganglia will produce a great enlargement of the organ, and irritation of the cut end of these branches will produce contraction.[4] The medulla also contains a vasodilator center for the erectile tissues of the genital organs, irritation of which by mental action or local disease causes impulses to pass to the nervi erigentes by way of the spinal cord, result-

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1. Owsjanikow: Arb. a. d. Physiol. Inst. zu Leipsic, 1871.
2. Starr, M. A.: Sensory Tract in Central Nervous System, Jour. Nerv. and Ment. Dis., July, 1884, p. 396.
3. Arch. f. Psychiat., xiii, 231.
4. Tarchanoff: Arch. f. d. ges. Physiol. (Pfluger's), viii, 97. Ross: Diseases of the Nervous System, i, 225.

ing in a flow of blood to the parts. The priapism seen in myelitis is due to irritation of the tracts from this center to the vasomotor mechanism of the genital organs. Although a center has been thought to exist controlling the circulation in the lungs, whose paralysis has been supposed to explain the occurrence of sudden pulmonary edema without other known cause, no definite facts regarding it are known. That the action of the heart is under the control of the medulla is a fact too well known to require more than a mention. The physiology of the nervous control of the heart can not be discussed here.

While these medullary centers are certainly influenced by impulses reaching them from the cerebral hemispheres, as is evident from the vasomotor symptoms produced by mental action—e. g., pallor from fright. blushing, etc.—it is impossible to state in what portion of the hemispheres in man the higher vasomotor centers lie. Eulenburg and Landois locate them in the motor area in animals.[5] They are certainly beyond control of the will, and are wholly reflex in their action, a purely mental act in this case being the excitant of a purely physical result. It is rather singular that in the many observations regarding cortical lesions of the brain in recent years no light has been thrown on this subject.

PATHOGENESIS

From this review of the physiology of the vasomotor system it becomes evident that disturbances of vascular tone may be produced by many different causes acting on many various parts. They may be due to local affections of the part in which the symptoms are present, as in the case of erythema after burns or frost-bite, or congestion of any organ after injury. They may be due to affections of the vasomotor nerves passing to the part affected, as in the case of vascular changes due to peripheral nerve lesions. The peculiar blueness in the fingers after an ulnar or median nerve injury will occur to any one as a good example. They may be due to affections of the sympathetic ganglia connected with the part affected, as in the case of migraine, sudden flushing of one ear, certain cases of polyuria, and hyperthyroidism. They may be due to lesions in the spinal cord affecting the vasomotor centers or compressing the nerve roots on their way to and from the sympathetic ganglia, as is the case in the various forms of myelitis and in Raynaud's disease or symmetrical gangrene, and in meningitis, tumors of the cord, or Pott's disease. They may also be caused by such conditions in the cord as cut off the vasomotor centers from the medullary centers, such as transverse myelitis from compression or traumatism. They may be due to lesions of the medulla oblongata, as is seen in some cases of polyuria and glycosuria, and in cases of universal erythema following acute fevers. They may be due to diseases of the cerebral hemispheres, as is evident from the vasomotor symptoms occurring in hemiplegia and hysteria. Finally, they may be of a reflex origin, dependent on some obscure source of irritation in a part quite distinct from the region in which the symptoms appear.

SYMPTOMS

A vasomotor affection may manifest itself either by a spasm or a paralysis of the vessels. In angiospasm the part affected becomes pale, and irritation no longer causes a vasomotor reflex. It looks shrunken, and if the skin over it is loose it may be thrown into folds or shrivelled, presenting the appearance seen in the hands after long immersion in hot water. The lack of blood in the parts arrests the processes of metabolism which are normally constant, and if the condition continues this may result in such a disturbance of nutrition that ulceration, or even gangrene, may ensue. The local anemia, combined with the cessation of metabolism, produces a fall of temperature in the affected part, which is then more easily affected by the temperature of the air than in a normal state, so that exposure to cold is very liable to cause freezing. These conditions necessarily produce an impairment of function, so that if the affection is located in the extremities, as the fingers, they are soon rendered useless. The term "digiti mortui" has been applied to this state. In the surface of the body angiospasm causes cutis anserina, pallor, numbness, tingling, slight anesthesia, and analgesia. If it occurs in a limb, the finer motions are imperfectly performed, and in time the nutrition of the muscles may be so impaired as to produce atrophy and paresis. Such arterial spasm in the deeper arteries of the leg gives rise to intermittent claudication, in which for a few moments the individual is quite helpless from loss of power in the leg. It may even lead to gangrene. Nothnagel has recorded[6] five cases of sciatica in which the pain produced a reflex spasm of the vessels of the leg, which, persisting, resulted in partial paralysis, atrophy, lowering of temperature, pallor, and sensory disturbances. Ross mentions the sudden appearance of circumscribed patches on the hands and forearms of washerwomen, in which there is a pallor, coldness, and partial anesthesia. These may be limited to the distribution of a single nerve, and may be accompanied by trophic affections.

I believe that such a spasm of the arteries of the brain affords an adequate explanation of those sudden attacks of aphasia, or monoplegia, or hemiplegia, or numbness, or hemianopsia which occur but which soon pass away, leaving no permanent disability.

Spasm of the veins may occur as well as of the arteries,[7] or independently of them. In the latter case the blood will not pass out of the capillaries. The part will then be blue, swollen, edematous, and painful; the temperature will be lowered by increased radiation of heat, and all the sensations and functions be impaired in greater or less degree. If this continues, nutrition may suffer, and in the end gangrene develop, which will take its course and lead to the throwing off of the part. Grainger Stewart has described such a condition occurring in both hands and feet.[8] It may be likened to a severe form of Raynaud's disease.

Angioparalysis is less frequent than angiospasm, and may be due either to paralysis of the vasoconstrictors or to excitement of the vasodilators. It shows itself by a bright-red or mottled appearance of the skin, and increase of local temperature, and more rapid processes of nutrition, together with an increase of secretion if the part is a gland or a mucous membrane, and an increase of sweat if it is the skin. In the latter case an increased sensitiveness to change of temperature, a subjective sensation of heat, and hyperesthesia and hyperalgesia may occur. The hyperesthesia on the paralyzed side which is present in hemiparaplegia spinalis is ascribed to the vasomotor paralysis. But these symptoms soon give place to others. The dilatation of the vessels, which at first caused an increased flow of blood to the part, produces a slowing of the blood current in the part, just as a river runs less rapidly where it becomes wider. The slowing of the current in the skin allows a more complete cooling of the part as the radiation of heat and the evaporation of moisture are increased, and the slowness of the renewal of blood impairs the processes of nutrition, so that to the first stage of redness, heat, and increased metabolism there ensues a stage of blueness, cold, and defective nutrition, and the function of the part may be impaired. In this stage it usually presents a mottled appearance, and may be slightly swollen and edematous, and the continued increase of perspiration gives it a clammy coldness to the touch. In all of these conditions severe pain, sometimes of a burning character, is a very distressing symptom (causalgia). These conditions are seen in peripheral nerve-lesions, and give rise to the appearances which have been so admirably described by Weir Mitchell.[9]

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[5] Virchow's Arch. f. path. Anat., lxviii, 245.

[6] Nothnagel: Arch. f. Psychiat., v. 86.

[7] Weiss: Symmetrische Gangrän, Wiener Klinik, 1882.

[8] Stewart, Grainger: An Introduction to the Study of Nervous Diseases, p. 138.

A peculiar combination of symptoms may be mentioned here, to which Weir Mitchell has given the name of erythromelalgia.[10] This symptom begins with tenderness and pain in the soles of the feet, which are soon followed by a marked distention of the capillary vessels. The congestion is attended by a sensation of burning pain similar to that produced by a blister. The surface is at first of a dull dusky-red color; later it appears purple. The redness is not uniformly distributed over the sole, but occurs in patches of irregular shape, being especially frequent over prominent parts exposed to pressure and friction, and the attacks seem to be brought on by long standing or walking. At first there is a rise of temperature in the affected surface, the arteries pulsate visibly, the veins are swollen, and there may be some edema. Later, the foot is cold and pale. Sensations of touch and temperature are normal, but the part is so extremely tender that walking is impossible. There is no paralysis. One or both feet may be affected, but the patches of redness are rarely symmetrical. The hands are occasionally affected. The condition may occur in paroxysms or may remain for some time. It resists all known methods of treatment, although applications of cold relieve the burning pain to some extent and the tenderness enforces rest.

With angioparalysis may be classed the *taches cérébrales* of Trousseau, no longer considered diagnostic of meningitis, but denoting a weakened condition of vasoconstrictor action in the local ganglia of the vessel-wall, which may occur on local irritation of the skin in any severe disease affecting the nutrition of the general nervous system.

Actual rupture of the capillaries in the course of vasomotor diseases is rarely observed, although the stigmata appearing in hysterical and cataleptic patients may be ascribed to this cause. In this connection tabetic ecchymoses may be mentioned, which appear suddenly without local injury, and resemble an ordinary bruise, running a similar course. They occur only in the course of locomotor ataxia.[11]

In addition to these forms of vasomotor affections, there is a condition of instability of vascular tone which manifests itself by sudden transient changes in the circulation of various organs. This is a functional affection, usually due to malnutrition. It is seen in many cases of neurasthenia and hysteria, and manifests itself by sudden flushes or pallor, alternations of heat and cold, local sweating, attacks of mental confusion, and inability to use any organ continuously from disturbance of the power of the vasodilators to maintain a condition of functional hyperemia.[12] Little is actually known about the causes of this state of the vascular system, although much has been written about it.

Many functional derangements of the internal viscera have been ascribed to such vasomotor instability with more or less probability,[13] but hypothesis of this kind, however plausible, is evidently beyond confirmation. It is especially in affections of this kind that causes of reflex irritation are to be carefully sought. Cutaneous angioneuroses, such as have just been described, may affect any part of the body. They usually appear suddenly, producing much discomfort and an impairment of function in the part if it is an extremity. They disappear as rapidly as they come. The duration of such attacks varies from a few minutes to several days. They are very liable to recur. If it is the vessels under the control of the cervical sympathetic which are affected, the symptoms will be those of migraine or of lesion of the ganglia. If it is the vessels in the extremities which are involved, the condition of digiti mortui or erythromelalgia or symmetrical gangrene may be produced.

A singular epidemic occurred in France in 1828 and 1830, which was termed acrodynia. Many persons were suddenly seized with vomiting and purging, and soon after the onset the extremities became red or mottled in blotches, swollen and edematous, and hot, painful, and tender. The attacks lasted from a few days to two months, and during this time the skin became thick and hard, the muscles weak and subject to spasms, and the general health was impaired. Relapses occurred in many cases, but all the patients finally recovered, and hence the exact nature of the disease was not ascertained.

All are familiar with the phenomena of angioneurotic edema, in which sudden swelling of a limb or a part of the surface of the body may occur, leading to great impairment of function and to much discomfort. When this invades the neck and larynx the disease may even prove fatal. This is an example of a vasomotor neurosis with trophic symptoms.

COURSE OF THE DISEASE

In any case of vasomotor neurosis the course of the disease and its termination will depend chiefly on its cause. If the cause is some permanent lesion of the nervous system, the condition will remain, and in this case the termination will depend on the severity of the symptoms. Angiospasm may be so severe as to lead to gangrene and the separation of the part affected, or may be so slight as to cause only subjective discomfort and a little pallor. Angioparalysis may lead to an extreme degree of congestion, which is attended by heat and pain at first, later by paresthesia and coolness, with increased liability on the part to be affected by changes in the surrounding air. This stage is succeeded by one of less marked dilatation of the vessels and a spontaneous partial recovery, although the more moderate symptoms may continue indefinitely and seriously impair the function of the part. If the cause is a temporary derangement of function in the vascular mechanism, is reflex irritation which can be removed, or is a curable organic disease, the symptoms will subside rapidly or gradually and perfect recovery may follow. If the condition is one of irritability in the vasomotor centers, producing alternations of flushing or pallor, such as is observed in nervous exhaustion, it may recur irregularly for a considerable length of time until the causative condition can be removed.

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[9] Mitchell, Weir: Injuries of Nerves.
[10] Mitchell, Weir: Am. Jour. Med. Sc., July, 1878.
[11] Straus: Arch. de Neurol., i, 536.
[12] Angel: Arch. f. Psychiat., xv, 618.
[13] Fox: The Influence of the Sympathetic System in Disease, London, 1885.

I fear that I have delayed you already too long in the presentation of this rather complex and intricate subject. If I have been able to put before you a summary of the many interesting conditions which we are constantly meeting in practice and affording you an explanation of symptoms not wholly understood, I shall have accomplished the task I set out to perform.

5 West Fifty-fourth Street.

ABSTRACT OF DISCUSSION

Sir James Grant, Ottawa, Canada: I came here from Canada especially because I knew that Dr. Starr was to deliver an address at the opening of this Section of the American Medical Association. About twenty years ago I had the pleasure of addressing this Association at Newport, when no less a man than the great Bancroft, the historian, one of the finest intellects probably that this country ever produced, occupied the place of chairman. In looking around this great meeting to-day I was shocked to realize that many of my dear old friends whom I met on that former occasion had passed away. But in doing so they left a magnificent record scientifically in this great republic.

I have listened with pride and pleasure to the admirable address delivered by Dr. Starr on the nervous system. It is *multum in parvo*. Nothing seems to have escaped him. We know perfectly well that of all the structures of the human body there is none more complex in its organization, more difficult to define, more irregular as regards the distribution of nerve force, and sometimes nothing more latent as regards diseases, that affect it than the nervous system; but suffice it to say that the advances in the study of nervous and mental diseases made within a short time are so characteristic and so definite, and show such satisfactory progress in our profession, that I am sure that with the many masters here on the nervous system to-day it is unnecessary for me to occupy the time or the attention of the audience. But there is one fact that struck me to-day, and that is the reference to congestive action in centers of the nervous system. Coming as I do from a great manufacturing center, where thousands of people are constantly employed in the great lumber trade, I have time and again been amazed at the recoveries of some of these men under injuries to the brain and through the skull. I have seen large portions of the skull and of the brain tissue removed, and still the individual make a splendid recovery, contrary in every way to my experience; and in the investigation of these cases I found that the men who made those recoveries were men who had little or no education, men who perhaps could not write their own names. We know perfectly well that there is nothing that increases the vascularity, that excites the nerve centers to a greater degree, than excessive education. In fact, to-day many persons get their brains so crowded and crammed with information that the practical utility of the brain is in a large measure lessened, just the same as the usefulness in a field that has been overcropt year after year. What we want now is practical information; and let me say this, that the ordinary individual who has no education whatever will stand three or four times the hammering of the skull and taking away of the brain tissue than the ordinary individual who is highly educated will. I merely wish to mention this fact to show what education does as regards storing up latent energy in nerve tissue, and how it guides and directs, in large measure, the development and the progress of disease.

Tonsillectomy.—There is less danger of injuring the deep tonsillar vessels if the pressure is made from inside with the instrument than when it is exerted on the outside. Hard tonsils with much connective tissue are better removed by a cold snare than by a sharp instrument, as less bleeding occurs. An hypertrophied lingual tonsil sometimes causes a heavy, sore feeling at the base of the tongue.—*American Journal of Surgery.*

Original Articles

THE CLINICAL STUDY OF A SERIES OF CASES OF INSANITY *

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Last summer we were enabled to make a systematic study of a series of patients admitted to the hospital from the middle of June to the middle of August. This study was undertaken without preconceived ideas, and included the cases in the regular order of their admission to the hospital. From this number sixty were selected in which we were able to get a fairly full history of the antecedents of the illness, and the conditions connected with its incidence.

After the patients came into the hospital they were placed under practically experimental conditions, as all of our patients are; but in addition we made a systematic study of the blood and stomach contents, as well as the urine, with the object of noting the relation between digestion and metabolism, and the mental condition, not from the laboratory point of view, but from the standpoint of the clinical bearing of this relation. That is, of what nature, and how extensive were these metabolic disturbances, as manifested in the perverted functioning of the vegetative organs, and what was the effect of this perverted functioning in determining the incidence of the mental aberration?

The data included are the family and personal history of the patient, the record of the onset of the mental disturbance, and the clinical study of the individual during the first month of his residence in the hospital. The effort has been made to put this study graphically into a table, including in each case an abstract of the findings, except the urinalysis; which is included under the general head of renal inadequacy. This inadequacy is determined by diminution in the amount of urine, and failure to excrete nitrogenous waste.

In the 60 cases included, 33 patients were men and 27 were women. Sixteen of the patients were under twenty-five years of age; 40 between twenty-five and fifty-five years; while 4 were fifty-five years old and over.

In 38 cases nutrition was seriously impaired; 35 patients suffered from insomnia; 49 were constipated; while in 49 cases there was some degree of renal inadequacy. Nine patients had some acute form of body disease; while 47 had some form and degree of chronic degenerative disease in the vegetative organs.

Of the acute disease conditions, there was 1 case of intestinal infection, 3 of urethritis in women, and 1 of gonorrhea in a man. There was one case of persistent headache, 1 case of typhoid fever, and 2 cases of pulmonary tuberculosis. Of the 27 women, 16 suffered from the effects of puerperal trauma, 11 had leucorrhea, 3 hemorrhoids, 2 chronic pelvic infection, 1 varicose veins, and 2 goiter.

The blood was examined at intervals of a week for the first four weeks of the residence of the patient, with the following general results: In 2 cases there was erythrocythemia, in 1 case hemoglobinemia, in 10 cases relative lymphocytosis, in 5 cases absolute lymphocytosis, and in 1 case lymphocythemia. There was 1 case of eosinophilia, 1 case of leucopenia (a case of typhoid fever), 12 cases of absolute leucocytosis, and 6 cases of relative leucocytosis. We could not determine that there was any significance in the blood findings, except in the cases of acute body disease, and we were astonished to find anemia so infrequently. The nearest approach to a relational condition was in the cases in which vitality was markedly impaired. In these cases there was either a relative or an absolute lymphocytosis.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* Owing to lack of space, the very extensive table which forms part of this article has been omitted from The Journal. It appears in the author's reprints, however, a copy of which will be sent by the author or by The Journal on receipt of a two cent stamp, provided the request is received within six months.

The stomach was emptied in each case the morning after admission, with apomorphin, and at intervals of a week for four weeks. A balanced ration was given instead of the ordinary test meal, so that we might know the functional capacity of the stomach under ordinary conditions.

In thirty-nine cases pepsin was either much diminished or absent, and lab was absent in eight cases. In forty-nine cases there was hypochlorhydria, and in two cases hyperchlorhydria. The acids of fermentation were present in forty-nine cases, usually lactic and butyric acids. Bacteria were present in forty-one cases, commonly the Oppler-Boas bacillus, and next in frequency the *Bacillus lactis aerogenes.* Mucus was increased in ten cases; while in one case all of the normal constituents of the gastric juice were absent, and in one case of delirium, at first, mucopurulent material only was obtained.

It is of interest to note that in the case in which there was complete absence of the constituents of the gastric juice, there was intense depression which had existed for some time, and in all of the cases in which pepsin and lab were absent there was marked depression, with self-depreciation or persecutory ideas. As the stimulus to gastric secretion is primarily emotional, it is not surprising that this function should be so considerably influenced by the mental condition of the individual; nor that the belief in poisoning or obstruction to the entrance of food into the stomach should so commonly be associated with uncomfortable gastric sensations, a foully coated tongue, chronic nasopharyngeal inflammation, and bad teeth. Further proof of the relation between the mental and physical condition was found in the effect of gastric lavage and the necessary medication in dissipating the ideas of poisoning and also relieving the intensity of the depression.

The urinalysis is not included in the table, except as to the statement of the result, and the condition of the kidneys. In all of the cases in which the urine was reduced below 1,000 c.c., the nitrogen output below 15 gm., and chlorids below 5 gm., we believe renal inadequacy to be present. We have not found albumin and casts to have much significance with relation to the functional capacity of the kidneys, except in so far as the presence of albumin might interfere with the osmosis of organic salts, and thus intensify the chronic intoxication. We have noted, also, that there is a definite coincidence between the return of the kidney function to normal and improvement in the mental condition.

We are debarred from information as to neurologic conditions obtained through the cooperation of the patient, so that we are able to note only what information may be obtained by direct observation. It so happened that there was no gross nervous disease present in any of the cases included in this study. There was tremor present in the tongue, facial muscles, or limbs in forty-six cases; the pupils were dilated in forty-eight cases. These, as well as the other phenomena observed, apparently had no special significance, but were dependent on the general physical condition of the patient, and disappeared as he improved. The superficial reflexes were diminished or absent in thirty-one cases, and exaggerated in three cases. The knee-jerk was exaggerated in twenty-five cases, and diminished or absent in fourteen cases. It was of interest to note, as is the rule in our experience, the association of diminished or absent superficial reflexes with exaggerated knee-jerk, but we have not noted the converse of this association.

Some years ago I made the following statement with regard to heredity with relation to insanity, and as further experience has confirmed the conclusions therein expressed, I can not do better than to quote from it here, with the necessary additions to make them applicable to this paper:

> The definition of heredity with relation to insanity is as much involved by difference of opinion as to its significance as is the definition of insanity. The common conception of this relation is that the insanity is not the result of hereditary conditions, unless the immediate progenitors or collateral relatives of the individual have been insane. The equation is not so simple, however.

It is a reasonable assumption that there is no family whose history, if carefully scrutinized for three generations, will not disclose considerable evidence of mental aberration!

> Besides, the parents of the insane individual may be sound mentally, but the victims of some constitutional disease that will affect adversely the development of the child. In consonance with the results of recent discoveries in biologic chemistry, we may believe that there is a limitation of the potentiality in the different parts of the organism in each individual, and that this limitation applies to the capacity of the organism as a whole to meet the conditions in the environment.
>
> We know from observation, both clinical and general, that this potentiality is seldom equal in all parts of the organism. So that, while the individual may have been able to meet the conditions in the environment in which he was born and grew up, he would not be equally capable to meet the conditions in an environment differing materially from his own. If this is true of the apparently normal individual, how much more is it true of the individual who for any reason is not uniformly developed, or whose capacity is limited.

The history of insanity among the immigrant population of the northwest is an excellent illustration of this contention. In recent years there has been a great deal of assisted emigration from northern, eastern and southern Europe, and a large number of these immigrants become insane within a comparatively short time after settling in this country. These people, never very vigorous mentally, have, while living under a paternal government, in the care of a parental church, and with a fixed social status, lived their lives without evidence of mental aberration sufficient to attract attention. In this country, however, under the stimulus of social and industrial competition, with political license and absence of parental religious restraint, they break down mentally, because of their inherent incapacity, and rapidly become demented. Again, when, as is now so frequently done, these people are returned to their native country by the government, they take up their lives where they left off in coming to America, and get along as they did before.

> There is further illustration in the phenomena of senility; the irregular manner in which its processes are usually manifested, and the frequency of its premature appearance, both

physical and mental. It follows, then, that this insanity or limitation of potentiality, which may manifest itself in instability, incapacity, or defect in any part of the organism, must have its origin in an inherent incompleteness that handicaps the individual from the beginning of his existence. Following the law of degenerative processes, those parts of the organism that are latest in the order of development and most complicated in their structure and function will be the first to be limited in their capacity and to show the evidence of lessened potentiality. For this reason, no matter what the nature of the incapacity in the parents, in the offspring the potentiality of the nervous system is, other things being equal, most likely to be limited. The recognition of hereditary influence has, therefore, to take into consideration the transmutation of form in the transmission from one generation to the other of those recessive conditions that are commonly called diathetic. That is, any condition that produces somatic degenerative changes in the organism of the parent may be manifested in brain degeneration or mental aberration in the offspring. Thus the children of the syphilitic, alcoholic, gouty or tuberculous, may be, and commonly are, the victims of degenerative disease in the nervous system and insanity. So that while, as generally understood, the children of the victims of these diathetic conditions who become insane, do not directly inherit the tendency, practically they do, by the transmutation of the diathetic condition between parent and child.

In twenty-four cases no history could be obtained of constitutional conditions present in parents or near relatives, but this does not prove that, in these cases, there was no constitutional disease! To quote Maudsley: "A man may be ever so conscientious and upright, but when it comes to his family history he will lie with perfect equanimity." Besides, a great many of our patients know nothing about their families, nor would they recognize the evidence of instability or defect as such. In 9 cases there was a history of alcoholism, in 8 cases, a history of cancer, in 13 cases, of insanity, in 14 cases, of phthisis, in 2 cases, of rheumatism; while in 8 cases one or both parents were neurotic. In some of the cases there was a history of both insanity and phthisis, and in 1 case insanity, phthisis, and cancer. In 1 case a member of the family in the same generation had cancer; in 10 cases a brother or sister was insane; while in 5 cases the concurrent disease was phthisis. It is worthy of note that there was one more case with an heredity of phthisis than there was with an heredity of insanity; also, that in the majority of those cases in which a brother or sister was insane, the family history was that of tuberculosis rather than of insanity. In 1895 I read a paper before the American Neurological Association in which this relation of insanity with phthisis was treated of in detail. The conclusions then expressed have been amply confirmed by the observations of the past fourteen years.

In 43 cases there was auditory hallucination, in 18 cases visual hallucination. In 10 cases there was gustatory, in 2 olfactory, and in 6 cases tactile hallucination. In 8 of the cases either delirium or dementia prevented us from determining the form of sense perversion. In 1 case there was both visual and tactual hallucination, in 12 cases visual and auditory, in 1 case visual and gustatory, in 1 case visual, gustatory and tactual, and in 1 case visual, auditory, and gustatory hallucination. In 1 case there was auditory, gustatory, and olfactory, in 6 cases auditory and gustatory, and in 2 cases auditory and tactual hallucination.

In 51 cases there was present the belief in persecution, and in 7 cases the ideas were self-depreciatory. In 11 cases religiosity was dominant; in 9 cases there were grandiose ideas; while in 8 cases the dominant condition was confusion. In some of the cases persecutory and depreciatory ideas alternated, and in others persecutory and grandiose ideas; their presence was determined by what the patient saw and heard, and their definition depended on the extent of the confusion present, or the degree of dementia. Religiosity was practically always present to some extent, and in two of the cases religiosity was the only apparent manifestation of aberration. Forty-three of the patients were depressed, and in forty-two cases dementia was sufficiently advanced to destroy the capacity for attention, direction, and control. In all of the cases confusion was so marked as to make the mental processes incoherent. In 5 cases agitation was marked, in 25 cases furtive suspicion was dominant; 6 patients were more or less disturbed, 3 were stupid, 5 were exalted, and 2 delirious. Four patients were imbecile. In the history of the onset of mental aberration in all the cases included in this study, it was evident that confusion was the first manifestation, accompanied by suspicion, dread, and fear. In those cases in which there was marked mental defect or previous loss of mental capacity, there was the furtive suspicion of the animal, with explosive outbreaks of violence, or the disposition toward purposeless flight and seclusion. In our experience these manifestations divide the insane into two general classes. Every insane person either resents actively the supposed attitude of his friends or the community toward him, or else he tries to escape from his untoward surroundings, or to hide away from apprehended danger. Among those of the same intellectual status as our patients, this attitude is natural and universal. It requires a considerable amount of intelligence and degree of cultivation to overcome the inherent suspicion that is a dominant characteristic of human nature. This suspicion is shown in social and business relations, and self-consciousness prompts the individual to attribute to his associates and competitors both motives and intentions which his lack of capacity or confidence make him anticipate; for incapacity is the parent of self-consciousness, suspicion and fear. Again, ordinary social intercourse is made up of personal comment and aspersion, either of the intentions or of the conduct of others. The narrow routine of life, in the small communities from which our patients come, tends to shut out everything but the personal. Even in their reading, outside of melodramatic fiction, and the narration of the personal affairs of the conspicuously wealthy or notorious, they do not go beyond the most personal form of biography; nor do their crude mental processes rise above the simplest ratiocination. Therefore, they are easily confused, fall back on the belief in the occult for relief, or on the anticipation of the supernatural. The victims of mental incapacity, without regard to their intellectual status, will select books that stimulate introspection and minister to their morbid egotism; so that even in their religious reading they are more interested in the lamentations of Jeremiah or the denunciations of Isaiah than they are in the Beatitudes or the Gospel of St. John.

Further, we have found, in the history of these people, that their beliefs with regard to their environment excited neither surprise nor comment in the family, or among the neighbors and friends, until these beliefs were translated into aggressive interference with the convenience or welfare of others, by acts of violence toward person or property, the disposition toward seclusion, inability or refusal to work, or the development of bodily habits that made personal care necessary. All that differentiated these manifestations, in the mind of the community, from ordinary criminal acts, or the incidence of disease, was their persistence without regard to motive, and the absence of apparent physical disorder. The converse of these connotations in the community mind is shown by the frequent commitment to hospitals for the insane of patients ill with typhoid fever, pneumonia, and sometimes acute tuberculosis, because the noise and motion accompanying the delirium have obscured the evidence of the physical condition, or attracted attention away from it.

Among the patients included in this study four were so defective as to be imbecile, and their mental disorder was manifested by incapacity, furtive suspicion, and explosive violence. In three men there was mental reduction and sexual gluttony, and two of these men, who were alcoholics, had the characteristic belief in marital infidelity; also gustatory and olfactory hallucination, dependent on indigestion and constipation, and resulting in ideas of poisoning. In two cases there was aggressive religiosity, the loss of control manifesting itself in attempts to impress on others by violence the militant commands of the Deity. In two cases there was religiosity with exaltation, accompanied by beatific visions, the things seen being suggested by the morbid egotism of the individual, but always in consonance with the conditions in the environment, and the nature of the experiences of those living under similar social conditions, and with like intellectual capacity. In four cases there was religiosity with self-depreciatory ideas, resulting from pietistic comparison, and denunciation by the Deity. These cases were suicidal also. In ten cases the deterioration was so rapid that there was incapacity, suspicion and fear only, without defined or expressed aberration. In thirteen cases the persecutory ideas led to aggressive resentment toward those to whom the voices heard and the acts anticipated were attributed. In twenty-two cases, on the contrary, the voices heard and the things seen prompted seclusion instead. Here, too, those experiences, communal, and individual, that connoted anticipated sources of danger or deprivation, would suggest the manifestations of aberrant mental activity. As our general experience conforms to these special observations, it would appear obvious that the insanity present in these individuals can not be said to have a special form apart from their natural intellectual processes, unless it is implied that the relatives and friends of the individual, without regard to the conditions in the community environment, have a definite form of mental endowment. The history of the individual in these cases, especially from the period of puberty, showed limitation of mental capacity, and the manifestations of mental disorder were determined by the degree and extent of this incapacity, in consonance with the conditions in the community environment. The prime factor in the outbreak was, in each case, mental reduction to the point at which control of the activities manifested in conduct was lost.

The careful study of these cases, clinically, shows that somatic conditions, which interfered with the general physical welfare of the individual, were the determining causes of the deterioration that resulted in the insanity; and the extent and permanence of these changes was the factor on which the result in each case depended. Broadly speaking, so long as the processes of anabolism and katabolism are near their proper relation, the imperfectly developed higher functions of the brain are sufficiently well performed to maintain the relations of the individual with his environment; but with the incidence of the conditions of physical deterioration, the processes of katabolism gradually dominate, and degeneration begins. We are too prone to think of degeneration as a result rather than as a process, and to ignore the fact that this process involves disturbance of the equilibrium between nutrition and waste; also that the process, as affecting nutrition, is primarily quantitative, and that the process may be confined for a long time to deterioration in functional capacity, without morphologic change. To illustrate, the process of arteriosclerosis, with the resulting loss of elasticity in the vessel wall, particularly in the non-anastomosing and poorly supported vessels of the cerebral cortex, interferes very materially with the quantity of blood going to the brain, while this same process in the splanchnic area interferes equally with the functions of the vegetative organs, so that assimilation and elimination are interfered with. It has been our observation, and was very apparent in the history of the cases included in this study, that these somatic changes and the interference with the vegetative functions were always antecedent to the mental disorder. In other words, the brain was not only poorly nourished, but there was chronic intoxication also.

Just as the development of the nervous system is in the direction of the integration of functions that are simple, direct, and unrelated, into the complex, indirect, and correlated, so in its degeneration there is disintegration toward the direct, simple, and unrelated; and this disintegration is primarily functional, and morphologic later only. The result is shown first with relation to vegetative function, is motor incidentally only, and may show no evidence of prehensile or locomotor involvement at all; or at most so far only as coordination is involved, because the functions of direction and control are alone disturbed. So, too, in disintegration in the so-called higher functions of the brain, incoordination comes first, and may be the only manifestation, as confusion; but if the degenerative process goes further, it follows the regular sequence of failure in relation, direction, and control. As the result of the first there is confusion, and of the second, perversion of the special sense function; while the sequence to this confusion and perversion is the failure to correlate the impressions from the environment. That is, there is the inability to adapt internal to external relations.

ABSTRACT OF DISCUSSION

Dr. T. Diller, Pittsburg: This paper recalls to my mind one which I presented to the American Neurological Association a few years ago in which I took the position that we make a mistake in speaking of mental diseases and physical diseases. There is only one kind of disease in my opinion and we should look at it in this way, namely, physical disease. Physical disease expresses itself in manifold ways. There are sensory, motor, and glandular diseases of various sorts and expressions, and among the expressions of physical disease are mental symptoms. Indeed I would venture the broad general assertion that there is no disease of any importance which does not have some mental expression. That is true in fevers and in all the ordinary painful affections; and most of these things of course we do not call insanity. When the mental symptoms are prolonged or profound and pass beyond a certain arbitrary line which each man erects for himself, more or less, we say that the individual is insane; and when the mental symptoms become sufficiently profound we must adopt certain practical measures and the law must step in. While it is not true in the case of most neurologists, yet in the eyes of the general public, and too often of the general practitioner, a broad distinction is made between so-called mental and physical disease. This view should be combated. Dr. Tomlinson has been doing original and splendid work. He has been teaching the doctrine that all disease is physical.

I would like to speak of a thing that I have thought of, and which I have come to believe in more and more firmly as time passes, and that is the necessity of teaching and studying this subject in a concrete way, namely, by psychopathic wards—not at a great distance from the city, not in connection with an ordinary insane asylum, but in intimate association with an ordinary general hospital. I feel sure that there ought to be a psychopathic ward in connection with every great university hospital, and in this ward disease should be studied in exactly the way that Dr. Tomlinson has pointed out. There is a psychopathic ward in Pittsburg, in connection with St. Francis Hospital. In many ways it is not ideal, but we are trying to work along the lines indicated. St. Francis is one, I think, of only two or three similar general hospitals in the United States providing a psychopathic ward.

Dr. H. A. Tomlinson, St. Peter: Since coming to Atlantic City I had the opportunity to discuss with a medical friend a case in which he went into the most minute details of the mental condition of the patient from the standpoint of modern German metaphysics, and he wondered why there had been no improvement in the condition of the patient. I discussed the case from the standpoint described in my paper, and found that there was well-defined evidence, not only in the heredity of the patient, but in the personal history, of the presence of physical conditions sufficient to determine the grafting of mental disturbance on an unstable nervous system; as well as the signs of chronic intoxication, the persistence of which would preclude recovery. I firmly believe that if we are going to deal with insanity successfully, we must give up this futile dallying with metaphysics, and recognize that we are dealing with the general organism.

TRAUMATIC NEUROSIS

WITH REPORT OF CASES *

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Since the days of Erickson there have been repeated efforts to establish traumatic neurosis as a particular type of disease until at present it is fairly generally accepted, although not uniformly interpreted. Erickson failed to separate the organic and functional cases, and it was not until Oppenheim and Strumpell and others studied the question that the organic conditions were eliminated. Traumatic neurosis is a generic term, and, when speaking of a particular case, we should designate hysterical form, neurasthenic form, psychic form, or mixed form. Such a disposition is made of the term dementia præcox with its different forms. It occurs to me that the difficulty in the use of this term arises out of the fact that the name is based on etiology in conflict with a terminology enforced by the clinical symptoms. This difficulty is particularly frequently encountered in the nomenclature of nervous and mental diseases; however indefinite the term may be, whenever it is used, we usually think of a functional disorder and the possibility of a legal aspect of the case as well as a medical. This dual feature of these neuroses has forced them into a position of considerable importance in the practice of law as well as of medicine. Daily physicians are called on to examine such cases, either when litigation is probable or already involved, and it is in relation to the medicolegal aspect that a serious problem exists for a successful solution. Unfortunately, the legal profession and the medical entertain some opposing views concerning such cases. The objective and subjective symptomatology seems to be the ground of contention between the legal minds and the medical. The law insists on recognizing the objective symptoms only, while the physician, recognizing the importance of these, also makes important use of subjective symptoms, real and unreal, in his diagnosis. It seems to me that the error committed here lies in the fact that all subjective symptoms are stricken out of evidence, without regard to the discriminating skill of the physician, simply because of the possibility of all or part of them being assumed. It is true that it is difficult for attorneys to understand how diseases may exist without a gross organic lesion; therefore, they are loath to regard a functional disorder as a real disease and look on them with a great deal of suspicion. Even when the physician maintains that a disease exists, if an organic foundation can not be discovered, the lawyer will look on the assertion with considerable doubt. Indeed, it is this possibility of fraud on the part of the patient, the attorney and the physician that has given such prominence to these traumatic cases. Fraud is exhibited on the part of the patient by malingering for the purpose of gain. Frequently it has occurred that attorneys cautiously aid and abet these endeavors, and also must we admit the fact that physicians are not too careful sometimes and persuade themselves to join or cooperate in these fraudulent attempts. The whole situation, it seems to me, is very much entangled and it too frequently happens that worthy persons fail to be properly compensated, and the unworthy ones recover damages unjustly.

How can this problem be solved so that each case is more surely to receive justice? Can we point to the German regulation of these matters and say that is the solution? I do not believe that the German system of insurance against accident is a perfect solution of the problem involved in this question, and yet it is a great improvement over no system at all, as in America. It seems to me that the great advantage of the German system lies in the fact that it has not the features which invite investigation. The disadvantage in this system is that it does create an inviting field for malingering and also establishes a means for the development of neuroses. It is fairly well recognized that the results of an accident are encouraged to become far more serious and pronounced by the prospect of a recompense or an allowance. Admitting this weakness in the German law, I still maintain that it is far better than the present loose and confusing methods pursued in the United States.

I hope that the three cases I am reporting carry with them sufficient interest and importance to warrant their record. The first is an example of traumatic neurosis (hysterical form), diagnosed as an organic case originally, the patient operated on for brain abscess, and the case later diagnosed as hysteria, which it proved to be. The patient became entirely well after having recovered damages from the city in which her accident occurred.

The second case is one of neurosis (hysterical form) in which is manifest a rather fragmentary dissociation of the personality. Usually when there is trauma there is also shock, psychical or physical or both, and, inasmuch as there is hysteria in cases of dissociated personality, we can expect trauma and its attending effects to be a fruitful cause of such conditions.

The third case represents a psychosis in which the head injury could be reasonably regarded as the cause. Of course, the fact that the patient had dissipated considerably should not be regarded as less than a contributing factor. There are remarkably few cases of insanity, comparatively, in which heredity, severe illness, dissipa-

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tion, worry and other common causes can be eliminated and head injury be assigned as the true cause of the attack.

Case 1.—*History.*—A young woman, aged 19, teacher, American, on Feb. 18, 1906, at 10 a. m., was thrown out of a buggy in a runaway accident. She suffered a concussion of the brain, due to the head striking on the street. The point of injury was in the left temporal region about one inch in front of, and three inches above the ear. The skin was not broken. She was dazed for a moment but went on her way. A severe pain in the head developed and in the evening she became delirious. During the next four days she was conscious but suffered some pain in the head and back of neck. A physician was not called until three days after the accident, at which time she was in a maniacal condition, chattering and laughing continually. She tried to escape from the house, but could not balance herself sufficiently to walk well. Her pupils were greatly dilated and she complained of severe headaches. The entire scalp, posterior part of neck and shoulders, and cervical portion of the spine were extremely hyperesthetic. The head was drawn to the left side. No anesthesia or paresthesias were discovered. She slept very little. There was no effusion about the eyes, and no escape of blood or serum from the nose or ears at that time. This condition lasted about ten days, after which time the patient became quiet, slept well, ate well, and seemed to be in a fair way to recover. She had a continuous frontal headache for nine weeks; for ten weeks had furuncles in both external auditory meati. About two weeks prior to her admission to the hospital, her ears began to discharge.

Course of Disease.—The patient was admitted to the hospital May 7, ten weeks after the accident. She was quiet and affable and did not exhibit any noteworthy symptoms for four weeks, except pain and tenderness about her ears and some discharge from them. Treatment by a specialist soon effected a recovery from the ear conditions.

June 12, 1906: The patient was observed twitching while asleep. She was aroused and the twitching at this time ceased. After that time she was more nervous and her right leg twitched most of the time, especially after any exercise. She stated that both her right arm and right leg were numb, especially in the distal portion, that is, below the elbow and below the knee. Her hand grasp was distinctly weaker on the right than on the left, and in walking she was inclined to drag her right leg to a slight but perceptible extent. At this time the question of diagnosis became a matter of great importance and the attending physicians were somewhat in doubt as to whether they were dealing with an organic condition or one of hysteria.

June 14, 1906: The patient's hand was noted to twitch in an irregular manner. This twitching was not confined to the hand, but extended to the muscles of the forearm and upper arm. It appeared to be worse when the patient was somewhat excited or attention was drawn to the matter. The patient stated that occasionally her right limb twitched also, but this was not noted during the examination. The pupils were equal, moderately dilated and reacted to light. In the past it had been frequently noted that the pupils were considerably dilated. The action of the facial muscles was symmetrical. The tongue protruded in a straight line with good movement of the same in either direction. The hand grasp in the right side was extremely weak, the pressure being very gentle; the power of flexion and extension at the wrist and elbow also extremely weak. The patient could not, while lying in bed, raise the hand directly to the nose, but could do so by sliding the hand along the body. The power in the lower extremity on the right side was also much diminished. The knee-jerk was very much exaggerated, and there was a tendency to the patellar clonus. No ankle clonus was present; no plantar response whatever could be elicited. On the left side the reflexes were normal. There was complete loss of sensation for touch, temperature and pain in the right lower extremity, up to the groin. About one inch above the anterior superior spine of the ilium a pin-prick coulid be felt, but simply as a dull sensation. The same condition prevailed in the upper extremity. A pin-prick could not be felt at all until the lower deltoid region was approached from below. In this deltoid area and between that point and the medium line a pin-prick which was made quite deeply could be felt as if it were the pin-head. Tactile sensation was lost all over the right side for any ordinary touch, although, as stated above, the deep pin-prick could be felt in the region named and over the trunk on the right side as a dull sensation. Both the temperature and pain sense were entirely lost over the whole right side. This anesthesia extended from the median line of the body in an irregular line varying from one to three inches to the left of the median line. Over the left lower extremity, and to some extent over the whole left side of the body, sensation was slightly impaired, touch not being readily perceived, and pin-pricks in places being felt as dull points. This, however, was not constant and was more marked over the left lower extremity than other parts. Motor power on the left side was good. In examining the cranium, especially over the left side where the patient states she received her injury, there appeared to be a slight depression over the posterior portion of the left frontal bone. This depression, however, was slight and may have been congenital. The patient stated that when the head was pressed firmly on each side with the hands, there was a dull ache within. The patient had a temperature of 100 degrees the previous night, but this morning her temperature was normal. Mentally she seemed a little excitable and talked with less reserve than usual. Her conversation was entirely coherent, however, and showed no other abnormality than a little tendency to repeat herself, and to loquaciousness.

June 15, 1906: The following changes in the patient's condition were observed this morning: The patient's tongue was found to protrude decidedly toward the right when extended. There was considerable tremor of the right eyelid when the eyes were firmly closed. There was also some twitching about the mouth, especially when the eyes were closed firmly. There was distinct spasm of the lower limb during regular intervals. No plantar reflex of any sort could be obtained. The previous night, about 12:45, the patient had a localized convulsion, involving the right side during which she was apparently unconscious. She stated that just as she came out of the convulsion she felt the right side of her face twitch. This morning, about 4 o'clock, she had another similar convulsion involving the right side in which she rolled out of bed. During the day she had at least two similar attacks, with large movements involving the right side, and unconsciousness for a few seconds. Motor power was still almost entirely absent on the right side.

June 16, 1906: Consultation with the surgeon, otologist and neurologist was held. The balance of opinion favored a probable abscess in the left side of the brain and operation was recommended and done. The findings were negative.

June 26, 1906: Examination of tendon reflexes of arms showed them to be overprompt and markedly exaggerated; the one most noted was the action of the supinator longus. The condition existed equally in the arms. This morning she failed to protrude her tongue farther than her lips. Her speech was improved slightly, yet was defective, one side seeming to be more affected than the other. Her speech was rather spasmodic or measured with a certain emphasis regularly. She omitted some single words in a sentence occasionally. Sometimes she could not say some words. For example she said: "I seel so feepy." When conscious she was inclined to joke and talk considerably.

June 27, 1906: During the night the patient had many very severe convulsions, characterized by greater excursion of movements than at any previous times. It was noted that she had ten spasms within one hour, from 8 to 9 o'clock. The spasms followed at short intervals. During the intervals between the spasms she seemed to have regained consciousness quite temporarily. From about 1:30, she passed into a stuporous condition and remained there until 5 o'clock. Observations at 10 a. m. revealed that she had not improved as far as the convulsions were concerned, still having them at short intervals, perhaps not quite so severely, and with less range of movement. The convulsions, however, were generally characterized by severe jerkings, also rigidity and opisthotonus; invariably the back and neck were bent. Immediately following a convulsion, the patient would seem to be provoked at herself that she could not remain conscious and prevent the "spells" as she called them. Immediately after a convulsion she would say: "Oh, shoot, if I could get over this, I would be all right." During one of the conscious intervals she remarked that she felt well and enjoyed her breakfast very much. Her loquacious manner at this time did not appear to be quite normal, however. During these periods of apparent slight delirium, she would say and do things that perhaps she would have regretted if she realized them. She would at times, for example, criticize the appearance of her nurse, as well as the nurse's manner toward her, only to feel very badly about it when she accidentally learned that she had made these unkind remarks. She could protrude her tongue quite well. There did not seem to be any increase in the power of her right arm or hand. There was still a marked disturbance of the sensations. There was entire loss to tactile pain and temperature sense on the entire right side of the body, including extremities, face and head. This loss extended slightly beyond the medium line. We noted that this was more at the upper third of the chest where the loss extended to the nipple line. Below this on the chest, the limit was a line midway between the medium line of the chest and the line of the nipple. The only disturbance of sensation on the left side was a delay which amounted to three seconds. This was found to be on the entire left side. There was some amblyopia. The associated movements of the eye were very good. There was a loss of conjunctiva reflex in both eyes. There was a slight difference in the palpebral fissure, the left being greater than the right. She could not open her eyes widely. On looking upward, the eyes deviated equally to the right. There was a weakness of the entire right side of the face. In the movements of her face greater range could be noted on the left side than on the right. The tongue deviated on protrusion slightly to the right side. Her hearing was normal. Speech was improved although there was some defect yet. There was a peculiar measure in her speech and certain emphasis at intervals, and a thickening of the speech.

June 28, 1906: Examination revealed anesthesia of both nostrils, contraction of the visual field, dilated pupils with reaction to light but not to accommodation. Tactile sensation was retarded three seconds and after irritation was removed she would feel it for three seconds. The right half of the patient was still anesthetic; the mouth slightly drawn to the right. There is no improvement in the strength of the right limbs.

July 10, 1906: There was equal loss of tactile sense on the right hand, arm, legs and right side of face, head, neck and body; also on right side of the tongue; loss of sense of pressure to the right arm, hand and leg and right side of body. There was considerable exaggeration of the patellar reflex, yet it was slightly delayed. The tendon reflexes were generally exaggerated. At this time the visual disturbances were particularly noteworthy. At a distance of three feet the patient could not determine a toothpick or street car ticket. She could distinguish them at one foot distance. Three inches from her eyes she again lost the power of vision. Her vision varied from time to time, but at present she could only recognize objects between six and fifteen inches from her eyes. The two eyes were alike in this regard.

After being discharged from the hospital, the patient got along very nicely for several months. She brought suit against the city in which her accident had occurred and received a judgment for $8,000, and then had the following experience.

"January 20, the receiver [at the telephone office] struck my head [on the left side of the head at the seat of the former operation] and made me rather sick in my stomach right at first, and then I had a dreadful headache; didn't feel very well, but I pretended to feel all right, and worked two days. The evening of the second day I didn't feel very well, and began to feel rather queer in the right side; didn't know what was the matter. After awhile, I began to lose feeling on that side; I noticed I couldn't get my hand up very well. I wanted to pick the plug up, and I gradually lost use of my hand; got so I couldn't raise it up, and then I spoke to the chief operator and told her that I had to leave the board, and she helped me get my hat and coat on, and my mouth was drawn crooked all that time; when I got home I sat down and couldn't get up again. Later the doctor was called and gave me some medicine, but I kept getting worse until I couldn't use that side at all. The next day I felt weak and sick at my stomach. At first, I felt rather drowsy. I got so I could get up and walk around and use my foot by dragging it, but I couldn't use my hand for some time. For about three or four weeks I couldn't use my hand, couldn't lift it up. I had to move it around where I wanted it; just had no use of it at all. It seemed to affect my arm and face more than anything else. It affected my leg for some time, but not as long as my hand. I went back to work a week afterwards. When I went back I couldn't use my hand. I expect it was about two months before I got feeling in my hand again so that I could use it, but the sensation wasn't back yet. About the time I got over that the second attack came on, but it only lasted a couple of days. It came on in the same way, but it was very light at that time. It seemed to affect the whole side of my body about the same time. The first thing I noticed I couldn't get my hand up to pick up the plug, but I hadn't tried to walk until I got up to go home; I couldn't walk very well. I walked home, but I didn't go very fast. and they couldn't understand me very well. I could talk, but then part of the time they couldn't understand what I was trying to say, something about like it was last summer. After the second attack I wasn't bothered that way any more."

The patient apparently has recovered and is now in a training school for nurses.

CASE 2.—*History.*—A man, aged 30, machinist, American, fell from a line shaft onto a wheel lathe fourteen feet below, injuring his left shoulder slightly and causing a scalp wound one inch above left ear. He was unconscious for several hours. After a few days he was up and about but experienced what he termed "spells." *Wanderlust* characterized him now where before he was steady and settled. There were periods of lapse of memory during which he would quit his work, start out, and later find himself in some strange place. During these lapses, which were frequent and of varying duration, ranging from a few hours to a few days, he traveled considerably over the western states from Ohio to California, and eventually he landed in Columbus in August, 1906. He was committed to the hospital as a result of his strange behavior.

Attacks Observed in Hospital.—For several days he exhibited nothing noteworthy except the very unusual history of his experiences. A short time after his commitment the patient complained of having a dull throbbing pain low down in the occipital region. He felt very dizzy and after his evening meal was attacked by a spell of vomiting which made him feel very weak. He went to bed early (7:30) and was soon asleep. At 4:30 Thursday morning he was found lying on the bed in a semi-reclining position, with his eyes open, fixed and staring. He was told it was time to get up; he took no notice and made no reply. A few moments later he was again told to get up; he did so and sat on the foot of the bed, saying in an absent-minded manner as if talking to himself, "I am not going to work to-day; the machine will not work and I can not get that piece made." He dressed slowly and when told to wash himself and get ready for breakfast, did so in an offended manner. After he had prepared himself, he walked out on the veranda and sat down, taking no notice of anything around him, and staring off into the distance. He would not answer any questions, but kept saying, "I want my hat." He soon got up and walked into the hall-rack, picked up a hat, tried it on and on being told that it was not his, he laid it down and walked out on the veranda and sat down. He heard a locomotive whistle, which seemed to give him a happy thought. He immediately asked for his hat and walked rapidly down the hall and looked out of the window toward the railroad. Every time he heard a whistle blow, he would ask for his hat and hurry in the direction whence he heard the whistle. At 6:30 he was asked if he wanted any breakfast, and he said, "No," but when told he had better eat something, he went in to breakfast, sat down, drank a glass of water, and in a few minutes left the table hurriedly, and when about to leave the dining-room, said, "Good-bye, people." He went to his room, undressed, and went to bed, pulling the cover up over his head, and at 7 a. m., when asked how he was, he seemed to come to himself and asked about the time. He said he felt so very weak and tired that he did not know what to do. He asked for a drink of water and if he could have a cup of coffee. On being questioned as to his actions during the few hours previous, he said that he did not know a thing that had happened. Within the several weeks spent in the hospital under my observation, he had several attacks characterized chiefly by amnesia, desire to wander, sullenness and irritable disposition. Later he left the hospital apparently in a very much improved condition, and soon afterward enlisted in the army.

Later History.—Several months passed and nothing was heard of him until finally he wrote to me from Fort Leavenworth, telling of trouble he had got into there while on guard duty. He had been arrested for drunkenness and misconduct while on duty. It developed that he had been in one of his peculiar hysterical attacks; he later was discharged from the army. I did not hear anything more about the man for several months, when word came to me again that he was in trouble in some town down in New Mexico. I wrote to the authorities, giving them a history of his case, but have never heard from him since.

Case 3.—*History.*—A man, aged 55, physician, weighing 227, with no hereditary taint, who drank considerable liquor, but had no luetic history, one evening was returning home in his carriage; his horse became unmanageable and he was thrown from the vehicle, rendered unconscious and remained so for forty-eight hours. He sustained a scalp wound along the right parieto-occipital junction. The fracture could not be determined. On return of consciousness he presented the following mental symptoms: Disorientation as to time and place; retrograde amnesia (periodical), disturbed perception, diminished sensibility, emotional weakness, memory fabrication, incoherent and rambling conversation; feeling of well-being. On the admission of this patient to the hospital, he did not realize the nature of the institution at all. When questioned concerning the condition of his health, he would declare he was perfectly well and objected to any treatment other than the physiologic remedies. Concerning the runaway accident he displayed fabrication of memory, describing the acident, why it occurred, and how trifling it was, he not having been injured in the least, telling how he got up from the ground and went about his usual business. With but little provocation he at times would exhibit considerable emotional irritability, while at others he would seem quite indifferent to any external stimuli; even such as are ordinarily regarded irritating. Often would he sit for an hour at a time seriously telling experiences (elaborated) to a demented catatonic who, of course, was not giving him any attention or reply. To his physician his tales of professional experiences were very fanciful and improbable. This patient, after a few weeks in the hospital, began to recover his mental powers and faculties, and recovered after a few months' illness.

ABSTRACT OF DISCUSSION

Dr. A. C. Brush, Brooklyn: I object to the term "traumatic neurosis" as it implies a form of nervous disease due to injury, and does not tell the real story. The use of such a term in medicine is proper, but when we come, as Dr. Gaver has said, to deal with the legal side of the question, it impresses both court and jury with the idea that there is a distinct disease due to trauma, and this leaves the claimants and their counsel at liberty to play on the fancy and increase the severity of the case in the eyes of the jury. In dealing with such cases in court, I absolutely exclude that term and characterize the condition at once as hysteria or neurasthenia. The jury all know what hysteria is, and they all know what nervous prostration is; but they do not know what traumatic neurosis is; and the result is that that term has done more to rob corporations, city railroads and others, than anything else in the world. Again, many writers have too vague a way of stating the prognosis. The prognosis is that of neurasthenia.

Dr. G. T. Harding, Jr., Columbus, O.: I can not agree with the statement that the term traumatic neurosis has done more to rob corporations than any other term used in medicine. Surely this group of medical men should not feel that a disabling neurosis, having its inception in the shock or injury of an accident, partakes of the nature of a fraud because it may be possible to demonstrate that certain mental processes have subsequently contributed to the patient's condition, or help to keep up his symptoms. No other class of medical men, and especially those who deal chiefly with organic disease, seem able properly to appreciate the seriousness of that mental instability that can arise from shock and injury, and that puts its victims in pitiful slavery to suggestions and mental representations. I seriously doubt whether this lack of insight on the part of the profession has resulted in more robbery of corporations than in injustice to a certain class of invalids; and for this reason I feel that neurologists should make an effort to educate their fellow physicians in regard to the true nature of traumatic neuroses.

Dr. E. E. Gaver, Columbus: I did not mean to convey the impression that I believe that there is really such a distinct disease as traumatic neurosis. I think these cases are all hysteria, neurasthenia and a mixture of both, or psychoses.

EXPERIMENTAL PRESSURE ATROPHY OF THE THYROID

WITH BRIEF SUMMARY OF THE PRESENT KNOWLEDGE OF THE GLAND *

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INTRODUCTION

Up to a little over a hundred years ago, very scant attention was paid to pathologic conditions of the thyroid. In fact, endemic strumæ, at least in goitrous territories, were considered quite natural and even beneficial. The sporadic cases were, as a rule, confounded with tuberculous adenitis. Not until 1800, when Fodéré first described the difference between struma and cretinism, did the thyroid begin to attract any special attention.

During the last century such men as Eulenberg, St. Lager, Bircher, Wollfer, Kocher and others devoted much time and labor to study of the gland. Fresh stimulus was infused into the work by the occurrence of the condition now known as "cachexia strumipriva" following complete extirpation of the thyroid; by the discovery of iodin in the gland of Bauman, and by experimental work on the organ by Cyon.

In recent years the medical world has been swept by an epidemic of experimental work on the gland.

Abroad the Kochers, Bauman, Cyon, Oswald, Ewald, and a host of others, and in this country Halsted, Hunt, McCallum, Marine, Mayo and others, have done an enormous amount of excellent work.

I intend briefly to review the literature and to report the results of a year's research on the gland.

ANATOMY (COMPARATIVE)

Owing to the vast amount of work that has been done and is being done on the dog, I deem it to be of some interest to give briefly the anatomy of the gland of that animal. For the human anatomy I refer to text-books.

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* From the Hull Physiological Laboratory, University of Chicago; read before the Chicago Medical Society, April 14, 1909.

* On account of lack of space, this article is here abbreviated. The complete article is presented in the author's reprints, a copy of which will be sent by the author or by The Journal on receipt of a stamped self-addressed envelope, if the request is received within four months.

The dog has, as a rule, two glands situated in the lower and anterior aspect of the neck on each side of the trachea. In only one of fifty dogs did I find an intervening isthmus. Each gland is egg-shaped, brownish-red in color, and of variable size. The consistency is that of a human kidney. It is covered externally by a thin capsule. Posteriorly the gland is attached to the deeper structures by a kind of a mesentery through which runs the vessels, nerves and lymphatics.

The vascular supply is very abundant and probably relatively greater than in any other organ. Generally the gland is supplied by one artery which enters the gland at the superior pole. Sometimes, however, as in the human being, there are two, the superior and the inferior thyroid originating as in man. The veins form large trunks emptying into the internal jugular.

There is especially one prominent tributary which extends halfway around the gland on its external surface. This vessel may be appropriately termed the vena semicircularis and would be the one most easily used for the blood work on the gland.

The lymphatics are numerous, and of great size. The nerves are derived from the sympathetic and the pneumogastric. The important anatomic relations are similar to those in the human being.

CHEMISTRY

An enormous amount of work has been done on the chemical analysis of the gland, but with very opposing results. The following is the composition which is generally believed to exist in the average normal gland:

COMPOSITION

Inorganic—82 per cent. to 84 per cent.
  Water.
  Iodin.
  Phosphorus.
  Iron, etc.
Organic—17 per cent. to 19 per cent.
  Nucleoproteid.
  Thyreoglobulin.
  Albumin.
  Colloid.
  Fatty acids.
  Lactic acid.
  Xanthin.
  Hypoxanthin.
  Inosite.
  Leucin.

PHYSIOLOGY

FUNCTION OF THYROID (HISTORICAL)

The older authors attributed various functions to the thyroid, such as protection from cold (Wharton); protection for the large vessels and nerves (Luscha); some regulating connection with the vocal organs (Santorin Winslow); blood-forming function (Credé, Zesas); moderating the blood supply to the head (Maignien, Guyon); protection of the brain from hyperemia (Simon Waldeyer); taking up blood at night, producing anemia of brain and thus sleep (Fomeris); a means of draining blood from the lung, protecting it from congestion (Kocher); rudimentary lung (Grutzner); some relative function with the genital organs (Guilot, Lawson-Tait, Bennet, etc.).

The first attempts at experimental excision of thyroid were made in the forties by Astley Cooper, Bardeleben and Maignien, with doubtful results.

In 1856 Schiff, after numerous experiments, reported that all the animals died. His paper did not at the time receive any special attention.

When later on in 1882, however, Reverdin, Kocher, Billroth and Weis reported the enormous disturbance in man caused by thyroidectomy, Schiff, having withheld his final report, related his experiences with sixty thyroidectomized dogs, and then received the credit he deserved.

By these experiences with the human and animals, the peculiar condition later termed cachexia strumipriva was produced, and its close resemblance to myxedema noted.

The symptomatic results following thyroidectomy are those of myxedema in man.

To these formerly were added tetany, but that symptom is now definitely attributed to removal of the parathyroids.

ADMINISTRATION OF THE THYROID GLAND AND ITS EXTRACTS

In 1884 Calzi and later Fano and Zanda succeeded in alleviating the symptoms in thyroidectomized dogs by transfusion of blood from normal dogs. A few years later Vassale used an aqueous extract of thyroid intravenously with good results. This was followed by the subcutaneous use of similar extracts by Gley, Murray, Bertsowsky and others. All these experiments were performed on animals.

It was at first, in man, in cases of cachexia strumipriva that the use of the gland per mouth demonstrated such splendid results, showing a gradual disappearance of all the symptoms as long as treatment was continued.

The same results were later obtained in animals by Eisenberg, Lanz and others.

Since Bauman's discovery of iodin in the gland the important relation of iodin to the physiologic activity of the gland has been strongly emphasized by Oswald, Cyon, Magnus Levy and others, and it has been decided by these investigators that the substance known as iodothyrin is the active principle of the gland. Therefore, most experiments on the physiologic action of thyroid have been done with this substance, or the gland itself.

Cyon and Oswald found that on injection of iodothyrin or its mother substance, iodothyreoglobulin, there was a marked augmentation and increased strength of heart action with diminished blood pressure, and, as this occurred after section of both vagi or atropinizing of animal, they concluded that the result was obtained from direct action on the heart.

Kobert, Van Kraus, Friedenthal and Furth and Schwartz found no action of iodothyrin on the heart.

Cyon, from his experiments, finds that the excitability of the vagi is greatly increased by injection of iodothyrin. The stimulation of the central end of the cut nerve before injection caused very slight change, but after injection the same strength of stimulation caused, at times, complete stoppage of heart. Even after atropinizing the animal, there was momentary change in heart action. Furth and Schwartz report negative results from similar experiments.

METABOLISM (A) IN NORMAL MAN OR ANIMALS FOLLOWING ADMINISTRATION OF THYROID OR ITS PRODUCTS

The great metabolic phenomena caused by certain pathologic conditions of the gland or by its removal clearly demonstrate its vast influence on the nutritional changes in the organism.

In order to determine the particular changes taking place, numerous experiments have been made by the administration of thyroid or its products and by the removal of the organ, and the noting the effect on the various metabolic activities.

1. *Effect on Nitrogen Elimination.*—All investigators agree on impossibility of an animal being able to main-

tain nitrogen equilibrium, more nitrogen being eliminated than introduced (Vermehren, Richter, Scholtz, Zinn, Magnus Levy, etc.).

2. *On Gaseous Exchange.*—Voit found that in animals brought near nitrogen equilibrium carbon dioxid rose about 20 per cent. on being fed by gland itself. In starved animals the carbon dioxid output averaged about 16 per cent.; carbon dioxid exhalation rose 6 per cent. in animals fed iodothyrin; the oxygen intake rose to 13 per cent., consequently the respiratory quotient was lowered.

METABOLISM (B) IN HYPOTHYROIDISM

Proteid Metabolism.—In these conditions there is a general lessening of all metabolic activities. In thyroidectomized animals, there is a decreased nitrogen elimination (Dulta and La Monaco).

There is, however, a marked elimination of ammonia in the urine following thyroidectomy, causing it to become alkaline in reaction (Cowendo, Luzzato).

Administration of Thyroid or Its Products.—This is soon followed by increased metabolic activities, increased nitrogen elimination, increased gaseous exchange, etc.

METABOLISM (C) IN HYPERTHYROIDISM

In this condition all the metabolic activities are greatly increased.

Proteid Metabolism.—Lustig was the first to call attention to greatly increased nitrogen elimination with great reduction in weight. This was confirmed later.

Influence of Feeding of Thyroid.—Scholtz and Hirschhoff found no change taking place. David observed an increase of 90 per cent. of nitrogen output in one of his cases. Matthes also observed quite a rise in his cases. The authors just cited and several others also found great increase of acid phosphates in the urine.

TRANSPLANTATION

The occurrence of operative myxedema naturally brought up the subject of transplantation.

The first attempt was made by Schiff, who was closely followed by Eiselberg and Kocher, and later by Hoarsly and Bircher.

The gland was transplanted at first into the neck; later mostly into the abdominal cavity with temporary improvement of the patients, the transplanted glands, as a rule, undergoing gradually atrophy or absorption.

Payr, whose careful experiments were commented on by Kocher, selected the spleen as the site of transplantation, and obtained the most excellent and lasting result by transplanting part of a mother's gland into the spleen of her child born with cachexia thyreopriva.

Through the direction of Kocher, Miss Serman has recently done a series of experiments of transplanting gland into the junction of epiphysis and diaphysis of bones, this area being selected from its great vascularity and still resistant structure, which makes it posssible to form a pocket for the imported gland.

As a rule, the tibia was selected; a cavity was scooped out, and in it was placed a silver bullet. Three or four days later the wound was reopened and the bullet removed. By this time, healthy granulation tissue had formed on the walls of the artificial pocket. A piece was then resected from the animal's thyroid and placed in the cavity and skin closed.

Later complete thyroidectomy was performed without any disturbance to the animal. When still later a part of bone containing transplanted gland was resected, the animal presented all the symptoms of cachexia strumipriva, and shortly died.

So far as I have been able to ascertain from the literature, the excellent and lasting results of Payr's case has not as yet been duplicated.

INTERNAL SECRETION

Haller, in his remarkable medical work (1730), mentions that Ruysch advanced the supposition that the "blood vessel" glands manufactured some substance that was thrown into the blood current.

It was, however, Bernard's work a hundred years later on the glycogenic function of the liver that led to the adoption of the term "internal secretion."

At first in 1880, when Brown-Séquard, who was aging rapidly, began to experiment on himself with testicular extract, hoping thereby to regain vigor and youthfulness, was any special effort made to solve the problem. Since that time, volumes (the result of exhaustive experimental work) have been written on this subject by such men as Howell, Cyon, Oliver, Schafer, Bredle, Renier, Svehla and others.

Karlson has for several years been doing careful and conscientious work trying to isolate the internal secretion of the thyroid. He has strong reasons to believe that it will be found in the lymph discharged from the gland.

I have seen him inject lymph derived from the thyroid of goiter dogs into normal dogs; he invariably produces tachycardia and intense general tremor in the injected animal.

Blood coming from strumous thyroid injected into a normal animal causes no such manifestations.

In spite of the great amount of work done, no material advance has been made in regard to the nature or even presence of an internal secretion of thyroid.

EXPERIMENTAL HYPERTHYROIDISM

Working on the theory of hyperthyroidism in Basedow's disease, a number of investigators have more or less successfully produced Basedow-like symptoms in man and animals by overflooding the system with thyroid products. Thus Emiguez, Canter and Lang worked on dogs and rabbits, Angiolella and Ludke on guinea-pigs, and Edmond on rats.

The most constant symptom recorded by these and other observers was tachycardia, and, next to that, emaciation. Other manifestations mentioned are dyspnea, diarrhea, nervousness, enlargement of the thyroid, widening of the palpebral fissure, exophthalmos,[1] etc.

In man, palpitation of the heart, nervous and metabolic phenomena have been observed.

By experiments, Furth and Schwartz find that outside of a transient tachycardia and very slight loss of weight, overdosing with thyroid causes no other disturbance.

DETOXICATION

Blum, who advanced this theory, believes that in the course of metabolism there is manufactured in the body a toxic globulin, and that this later is detoxicated in the thyroid by the chemical action of iodin.

Hunt supports this theory in reporting a series of highly interesting experiments, showing that mice fed with thyroid preparations withstood much larger doses of acetonitrite than control animals.

This has been confirmed by Karlson and others.

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[1] Observers are not unanimous as to the occurrence of exophthalmos in the lower animals.

Bevan tells me that in one of the trout-tanks in an eastern fishery most of the fishes became affected with cancer of the thyroid, and that this was accompanied by great protuberance of the eyes. This was undoubtedly exophthalmos, although it was thought to be due to metastasis behind the eye.

It is interesting to note in this connection that fishes in other tanks were unaffected.

RELATION OF THE THYROID TO OTHER DUCTLESS GLANDS

For years it was thought that certain ductless glands worked vicariously with each other. This has been supposed to be especially the case between the thyroid and the hypophysis. In cases of atrophy of the thyroid, it was often found that pituitary body had become greatly hypertrophied in a supposed effort to take up its fellow's action.

Oliver and Schafer, through their work, confirmed by many others, have thrown great doubt on this supposed vicarious function. They found that extracts of the two organs produce entirely contrary physiologic effects.

The relation of the parathyroids to the thyroid is not at all settled, but recent researches seem to indicate that probably these organs have no functional relationship.

HEMATOLOGY

By far most of the work on the blood done in connection with the thyroid has been worked out in Basedow's disease, and according to Kocher the hematologic picture is pathognomonic in this condition.

Through Kocher's instigation, Drs. Wageli, Kurt, Steigen and Kollman have carefully examined and tabulated 106 cases.

These men find that the erythrocytes in a great number of cases, especially in young females, are slightly higher in number than normal; somewhat over 5,000,000 per cu. mm. As a rule, throughout the cases, there was no anemia.

It is, however, in the leucocytes that characteristic deviations from the normal are found.

In a great majority of the cases, there was a distinct leukanemia; the leucocytes averaged about 5,000 per cu. mm., but in one case numbered as low as 3,700.

As a rule, this low count affected the polymorphonuclear leucocytes exclusively, these often falling as low as 35 per cent. The lymphocytes, on the contrary, showed an absolute, though more often relative increase in numbers, and it is this condition, according to Kocher, that constitutes the main characteristic of the blood picture of exophthalmic goiter. This lymphocytosis may reach 57 per cent. instead of the ordinary 25 per cent.

This leukanemia with leucopenia of the polymorphonuclear leucocytes and absolute or relative lymphocytosis is, according to Kocher, characteristic of exophthalmic goiter. The condition is most marked at the height of the disease.

Sometimes after excision of the gland there is a marked change toward the normal. This also takes place after ligation of vessels, but in a less degree.

Sometimes the eosinophiles were greatly increased (15 per cent.), but as this does not occur with any constancy this condition is not specially emphasized.

Marine, who has done more histologic work on the thyroid of animals than any other man, finds, in examination of 202 Cleveland dogs, that 90 per cent. have goiters.

He divides the thyroids into three main groups—normal, hyperplastic and colloid.

The hyperplastic corresponds closely to the typical pathologic picture of primary exophthalmic goiter in man. Marine considers hyperplasia a physiologic reaction to a deficiency, probably of iodin. This hyperplasia takes place in remaining portion of resected normal gland (Halsted).

The colloid goiter, he reasons, is in all probability usually preceded by the hyperplasia, and is really a quiescent stage of the same, or an attempt of reversion toward the normal. He bases this conclusion on the fact that hyperplastic dogs fed with iodin invariably undergo this change toward the normal. The pathologic changes, I found in my Chicago dogs, correspond exactly to the splendid description given by Marine.

I wish in addition to emphasize specially the tremendous size of the lymph vessels in these glands. Very often did I find the upper pole of the thyroid, sometimes the entire gland, and in two instances the surrounding muscles, enveloped in a frothy substance which we found to be lymph. I should like to know whether this has been observed in the human being. The above-described condition seems to indicate that the lymph in this region plays an important rôle and should receive careful investigation. Even in other parts of the body may there be excess of lymph.

A colleague recently operated on a patient with unrecognized Graves' disease and found the entire abdomen filled with lymph. Sponging only seemed to increase the excessive flow. A few hours after the operation all the symptoms of Graves' disease appeared in its most aggravated form.

Kocher, in a recent article, very interestingly discusses the similarity of the anatomic picture, and some of the symptoms of lymphatic leukemia, status lymphaticus, Hodgkins' disease and Graves' disease.

In lymphatic leukemia we have lymphocytosis, enlargement of the spleen, the lymph glands and the thymus, loss in weight and strength and excessive water elimination; so also in Graves' disease; in status lymphaticus, the sudden deaths, danger of anesthesia as in Graves' disease, etc.

This certainly gives food for thought, and will surely open up new channels for investigation.

RELATIVE FREQUENCY OF GOITER IN DOGS

In palpating two hundred dogs, I found eighty-six (43 per cent.) with goiter. At the University of Chicago, where all the goiter dogs are segregated by inspection, one-fourth of all dogs are thus found to be goitrous. Of course, should the thyroids of the dogs I palpated be examined histologically, there would be a much higher percentage.

Marine found 90 per cent. of the Cleveland dogs having goiter, but it seems to me that the standard of normal is then probably put a little too high.

MODERN OPERATIVE METHODS

To Kocher, whose name seems indissolubly associated with the term "goiter," we are indebted for most of the modern surgical technic on the thyroid.

The advance under his leadership has been very rapid, and, though certain that his individual operative work will be equalled by only a few, the great mass of operators have certainly gained enormously by his teachings.

He enumerates the modern methods as follows:

1. Excision (Kocher).
2. Enucleation (Porta Socin).
3. Resection (Mikulicz).
4. Combined methods.
5. Exenteration (Kocher).
6. Ligation of arteries (Wolfer).

In order to avoid the parathyroids C. Mayo by his excellent method leaves the posterior capsule of the gland. This procedure is now followed by most surgeons.

Ferguson, in his recently introduced ingenious method, does the entire work intracapsular. The vessels are tied in the gland substance in such a manner that after resection four buttons of thyroid tissue corresponding to the poles are left *in situ,* thus insuring against cachexia strumipriva.

EXPERIMENTAL PRESSURE ATROPHY

Basing my work on the theory of hyperthyroidism in Graves' disease, it seemed plausible that, if by some means one could produce atrophy of the gland and thus a diminished number of secreting cells, there would be a resulting diminution of secretion and consequent alleviation or cure of the hyperthyreosis. By resection of gland, this is at once accomplished; the operation, however, except in the hands of the very expert, is quite dangerous. Therefore, if by some less radical method, one could obtain the same results, this would, of course, materially lessen the operative danger.

Thus I reasoned that by application of a purse-string around the periphery of the gland, as in Figure 1, with subsequent tightening of the same (Fig. 2), or by introduction of multiple ligatures through gland substance, that this would cause atrophy of gland, not only by the resulting diminished blood supply, but also by direct intraglandular pressure.

One of the chief dangers following operations in Graves' disease is the supposed direct absorption of thyroid secretion from lacerated gland tissue.

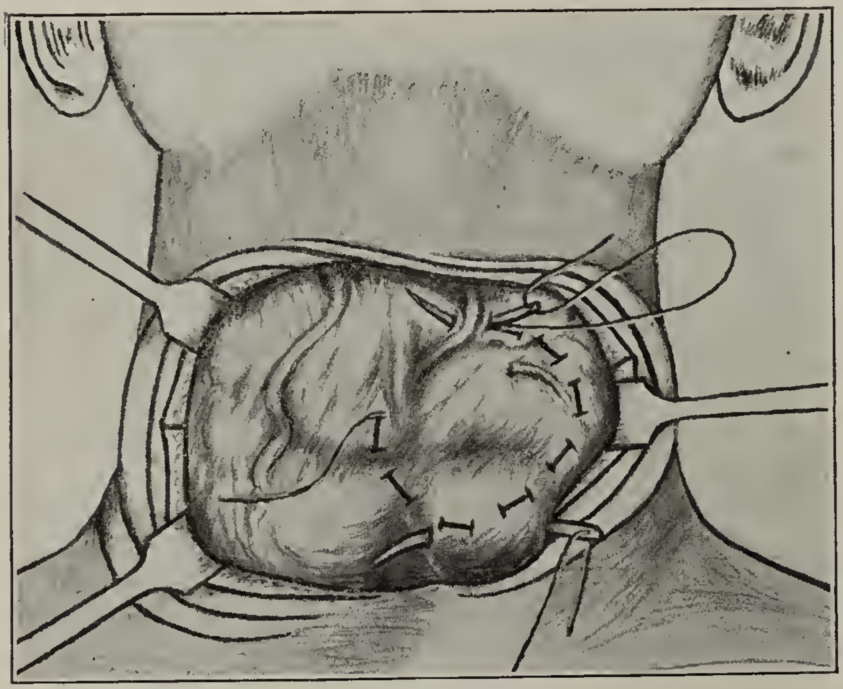

Fig. 1.—Introduction of purse-string suture and tying of inferior thyroid artery through gland substance.

Now, this compression of the organ following tightening of the purse-string would apparently bring about an immediate increased absorption of gland products, but, as one of the main factors of absorption is increased circulation, and in this case the circulation is greatly diminished, I think this danger is almost surely obviated. Working on the above principle, associated with James J. Moorhead, I performed a series of experiments on thirty-five dogs at the physiologic laboratory of the University of Chicago. We operated in groups of three to twenty. The different operations were done as follows:

In the first group (of twenty dogs), tying of the thyroid vessels through gland substance and purse-string compression was done; in the second group, purse-string only; in the third group, purse-string and tying of the superior thyroid; in the fourth group, purse-string and tying of superior vein, and in the fifth group, purse-string and tying of both artery and vein.

OPERATIVE TECHNIC

In dogs I found it preferable to make a vertical median incision. Through this opening, both of the glands may be easily delivered, one at a time. In the one human case, I made the transverse incision and the gland was not moved out of its bed at all. The operation proper consists of the introduction of one or more purse-strings along the periphery of the gland with subsequent tightening of these ligatures. I have used No. 3 chromicized catgut threaded on a curved non-cutting needle.

The preliminary tying of vessels was done, in the majority of cases, through the gland substance, as in Figure 1, taking a suture right through the pole. In the others, the vessels were tied just outside the gland.

In desperate cases, in which only vessels are to be tied, I would suggest that it be done in the manner described above, as the tying of vessels outside of the gland requires quite a handling of the gland, and is said by many experienced operators to be almost as dangerous as a resection.

The purse-string ligature is applied by sewing through the capsule and deep into the parenchyma, carefully avoiding the superficial vessels. Should a vessel be punctured, however, the hemorrhage is very readily checked when the purse-string is tightened.

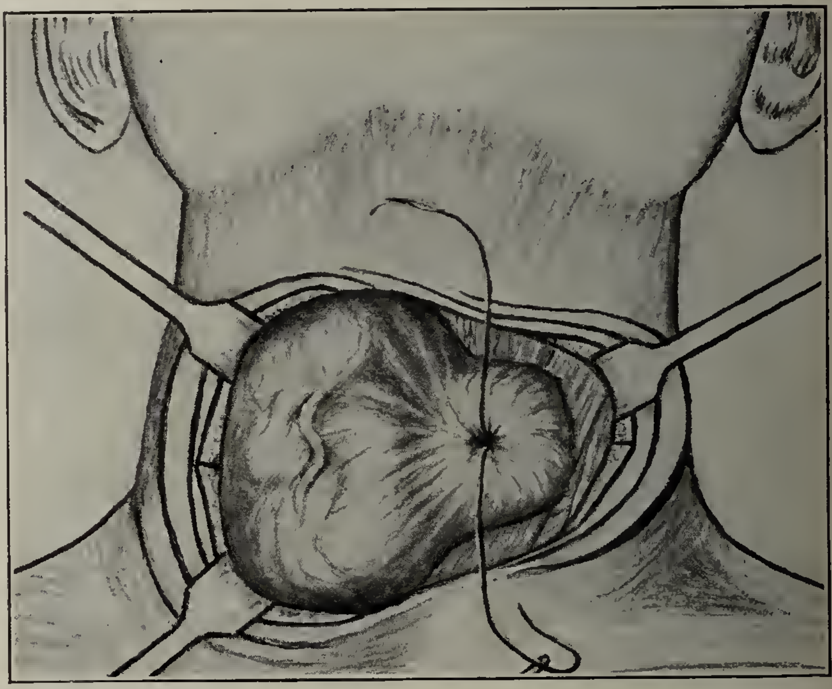

Fig. 2.—Tightened purse-string suture.

The results in all the operations were uniform; the glands sometimes becoming greatly reduced in size and remaining small at least until six months after the operation, that being the longest time we kept dogs for observation. This difference in size of the two glands, those operated on and those not operated on, is shown in Figures 3 and 4; in the latter the glands are shown *in situ*.

In no case did I have gangrene, although I specially tried to produce that condition by excessive tightening of the ligature.

In some of the dogs, there was a more or less marked postoperative lymphatic edema, which gradually disappeared in a few days.

In two dogs, this edema was very excessive, the entire head and neck becoming greatly swollen.

In each case only one gland was operated on; as a rule the larger was selected; the other left for comparison.

The gland on which no operation was done—and this is especially interesting—instead of enlarging, as one would naturally suppose, atrophied in almost all the cases, and in some quite markedly.

In my human case, this reduction in size of the unoperated gland has been most marked and so rapid that two weeks after the operation[3] it can not be definitely palpated, although before the operation it was distinctly seen quite a distance outside of the sternocleidomastoid.

In autopsies on dogs, specimens were taken from both glands and compared.

In most of the cases, there was quite a change; in a few, however, there was no appreciable difference microscopically. In some of the cases the columnar epithelium of the vesicles changed to the cuboidal type and the papillary vesicular ingrowths seemed somewhat decreased in size.

REPORT OF CASE

Patient.—This woman had manifested the ordinary symptoms of Graves' diseases since last September. Before entrance to the hospital her pulse ranged from 120 to 140. The patient had occasional attacks of delirium cordis and her tremor was so intense that she could not at times perform her ordinary housework. After having rested in the hospital for a week the pulse averaged about 100, but came down as low as 90.

Operation.—At the time of the operation the pulse rose to 160, but it was not the rapidity as much as the alarming irregularity that almost made me take the patient off the table without operating. I cut in, however, intending to do a Ferguson operation, but she did so poorly under anesthesia that I changed my mind and rapidly tied the vessels of the right lobe through both poles and followed this by two purse-strings. The gland was not moved out of its bed at all. The time of operation was less than twenty minutes. During operation the patient was stimulated by salt solution administered hypodermically and per rectum and by other measures.

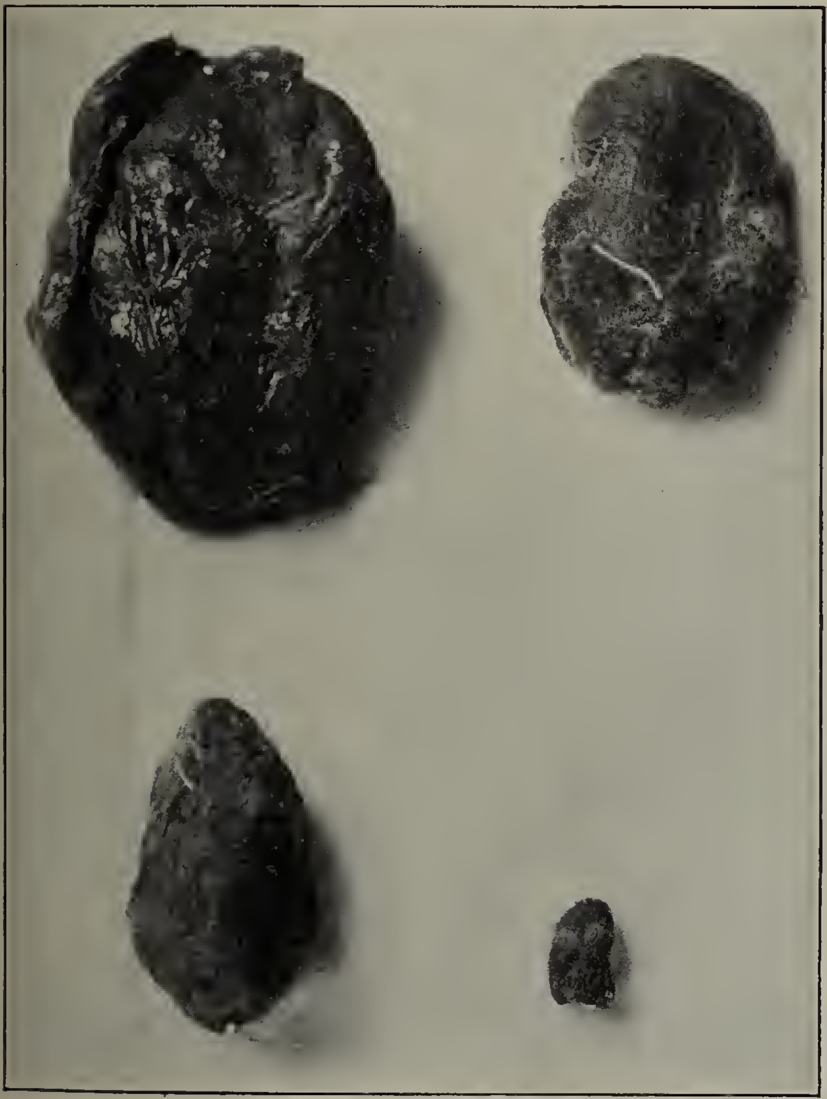

Fig. 3.—Thyroid glands removed from dogs some months after operation, showing difference between glands operated on and those not operated on. The small glands to the right are the ones operated on.

Postoperative History.—The immediate result has been above all expectations. Next day the pulse came down to 90; the maximum rate was 120. On the following day it averaged 110; on the fifth day the pulse at one time came down to 70. From that day the patient was out of bed. Since the fourth there has been no irregularity of the pulse. Two weeks after the operation it ran between 80 and 90, and the patient said she felt generally better than she had done at any time for the last year.

Blood Examination.—In this case the blood findings are very interesting, as, except for a leucocytosis, they correspond closely to Kocher's findings in these cases.

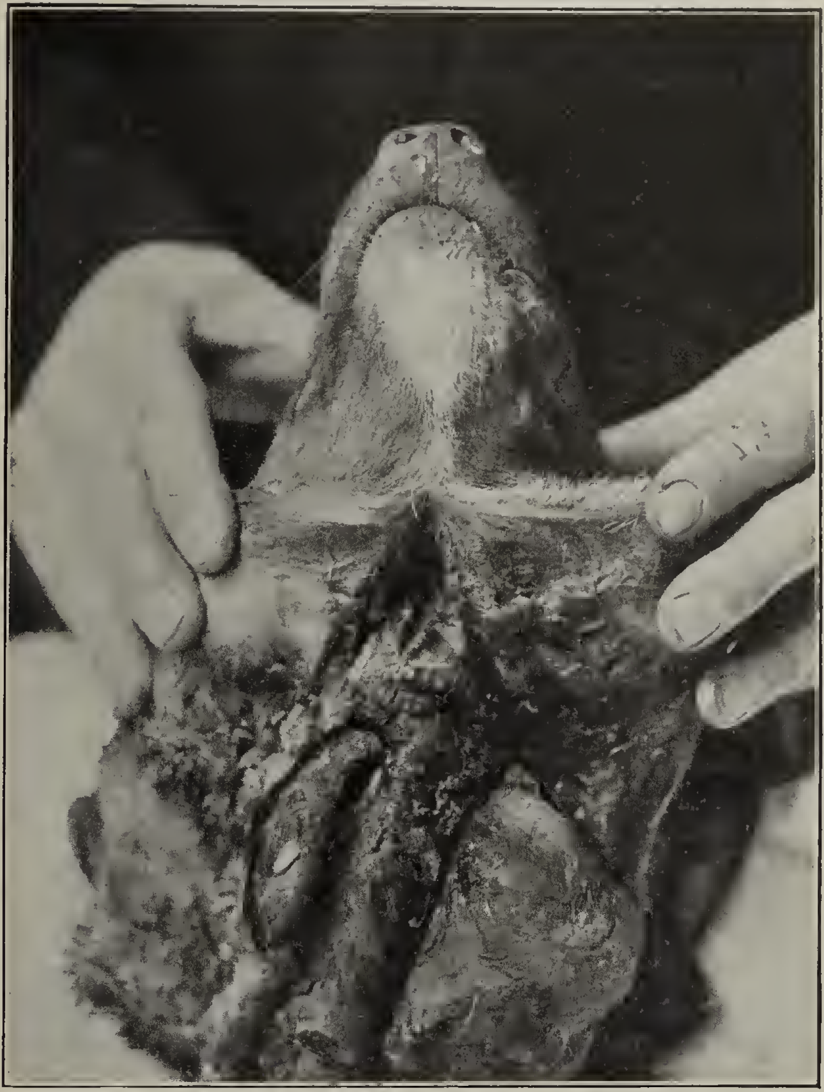

Fig. 4.—Specimen taken six months after operation, showing differences between glands operated on and not operated on.

BEFORE OPERATION

Polymorphonuclear leucocytes	40%
Large mononuclear	10%
Small lymphocytes	45%
Eosinophiles	4%
Myelocytes	1%
	100%

Erythrocytes	4,000,000
Leucocytes	14,000
Hemoglobin	95%
Color index	1 1/6

Some poikilocytes; some macrocytes.

Note the pronounced lymphocytosis (55 per cent.) and the low polymorphonuclear count (40 per cent).

There is also a slight eosinophilia.

AFTER OPERATION

Blood was examined every other day and it was interesting to see a gradual step-like change towards the normal.

Seventh Day—

Polymorphonuclear	63%
Large mononuclear	5%
Small lymphocytes	27%
Eosinophiles	1%
Neutrophiles	1%
Myelocytes	3%
	100%

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[3] The patient was exhibited two weeks after the operation before the Chicago Medical Society.

Erythrocytes	4,200,000
Leucocytes	14,000
Hb	95%

Some malformed erythrocytes.

Fourteenth Day—

Polymorphonuclear	70%
Large mononuclear	5%
Small lymphocytes	20%
Eosinophiles	2%
Neutrophiles	3%
Myelocytes	0%
	100%

Erythrocytes	4,500,000
Leucocytes	9,000
Hb	95%

CONCLUSIONS

A. DRAWN FROM LOOKING OVER THE LITERATURE

1. In spite of the enormous amount of work done on the gland, we are still only in the outer trenches of the thyroid citadel.
2. The whole subject, as it is now presented to us, is a mysterious labyrinth of opposing factors.
3. Thyroid is essential to the well-being of the organism, but not to life.
4. The gland contains iodin.
5. The removal of the gland causes marked metabolic disturbances.
6. Tetany is not due to removal of the thyroid.
7. Iodin seems to have some relation to the physiologic activity of the gland.
8. Iodothyrin may contain the active principle of the gland.
9. There is possibly an internal secretion.
10. The gland may have some action on the cardiovascular system.
11. Thyroid may have a detoxicating function.
12. It may have some relation to other ductless glands.
13. It is seemingly functionally independent of the parathyroid.
14. Graves' disease is probably due to hypersecretion of thyroid.
15. Basedow-like symptoms have been produced by overdosing the system with thyroid products.
16. Transplantation has so far been unsatisfactory.
17. The blood picture in Graves' disease may be pathognomonic and also prognostic.
18. There is probably a distinct pathologic picture in Graves' disease.
19. A great deal of splendid research work is being done in this country.

B. DRAWN FROM MY OWN WORK

1. The thyroid gland of dogs may be caused to atrophy by the method described above.
2. The gland which is not operated on also becomes reduced in size in the majority of cases (probably in all).
3. Goiter lymph in dogs probably has some special importance.
4. Some of the goiter dogs exhibit the pathologic picture of Graves' disease in man, but the symptomatic phenomena of human myxedema.
5. A high percentage of Chicago stray dogs have goiter (43 per cent., probably more).
6. Goiter dogs are very susceptible to anesthesia.
7. The operation may be done in the human being without disturbing the gland in its bed.

So far I make absolutely no claim as to the utility of the operation in the human being, but I can not help but think that, in desperate cases, this quick tying of the vessel with an additional purse-string will pave the way for a more radical operation later, if that should be necessary.

I also take occasion to thank Drs. Moorhead, Karlson, Matthews and Miss Edyth Danielson for valuable assistance.

1144 West Garfield Boulevard.

UNDERDEVELOPED LOWER JAW, WITH LIMITED EXCURSION

REPORT OF TWO CASES WITH OPERATION

VILRAY PAPIN BLAIR, M.D.
Clinical Professor of Surgery in the Medical Department, and Professor of Oral Surgery in the Dental Department of Washington University
ST. LOUIS

My reasons for reporting the two following cases are, first, that one of them is, as far as I know, unique in its pathology, and the other presented a degree of deformity that is extremely rare; and, second, that the procedures resorted to for their relief have, as far as I know, never before been employed or suggested except by myself.

Case 1.—*Patient.*—A young woman, referred to me by Dr. C. Dewitt Lukens, who gave the following history: When five years of age she was crushed under a falling bale of hay, was generally injured, remained unconscious for forty-eight hours, but made a good immediate recovery. Between the ages of 11 and 12 years it was noticed that she could not open her mouth freely, and on examination it was found that the excursion of the lower jaw was limited. From that time on it was noticed that the chin became relatively more receding and the downward excursion of the lower jaw lessened.

When she consulted me the patient was 21 years old, delicate and very thin. The mandible was undeveloped and the downward excursion was limited to the extent that the greatest possible vertical opening between the upper and the lower incisor teeth was one-eighth of an inch. Owing to the receding jaw, the lower incisors were one-fourth inch behind the upper, which with the one-eighth opening gave a possible feeding space. I thought that probably the lack of development was related to the early injury, but this did not explain the limited movement, which presented the following peculiarities: The movement was free until the opening between the incisor teeth was one-eighth of an inch and then stopped suddenly. During this movement the right condyle traveled forward as much as it would do in normal full opening of the mouth. The left remained apparently stationary and the chin moved to the left more than it did downward. A poor *x*-ray taken at the time failed to throw light on this point, but I figured out that some obstruction impinging on the dorsal part of the right ramus of the jaw near the angle could cause just that movement by transferring the center of motion on that side from the center of the ramus to the angle. The indications here were to give a free opening of the mouth, to establish a normal occlusion of the teeth and to improve the profile by carrying the chin forward and holding it there. Granting that my idea of the obstruction was correct, all of these things would be accomplished by the operation for receding jaw which I have described elsewhere.[1]

Operation.—At St. Luke's Hospital, on Nov. 8, 1905, under ether an incision of five-eighths of an inch was made in front of the lobe of each ear, the parotid gland turned back, a curved needle passed under the ramus and out through the cheek and a Gigli saw introduced, the soft structures protected and the ramus cut through on both sides. Owing to an abnormality of the ramus on the left side the mucous membrane of the mouth

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[1] Surg., Gynec. and Obst., January, 1907; Dental Era, April, 1907.

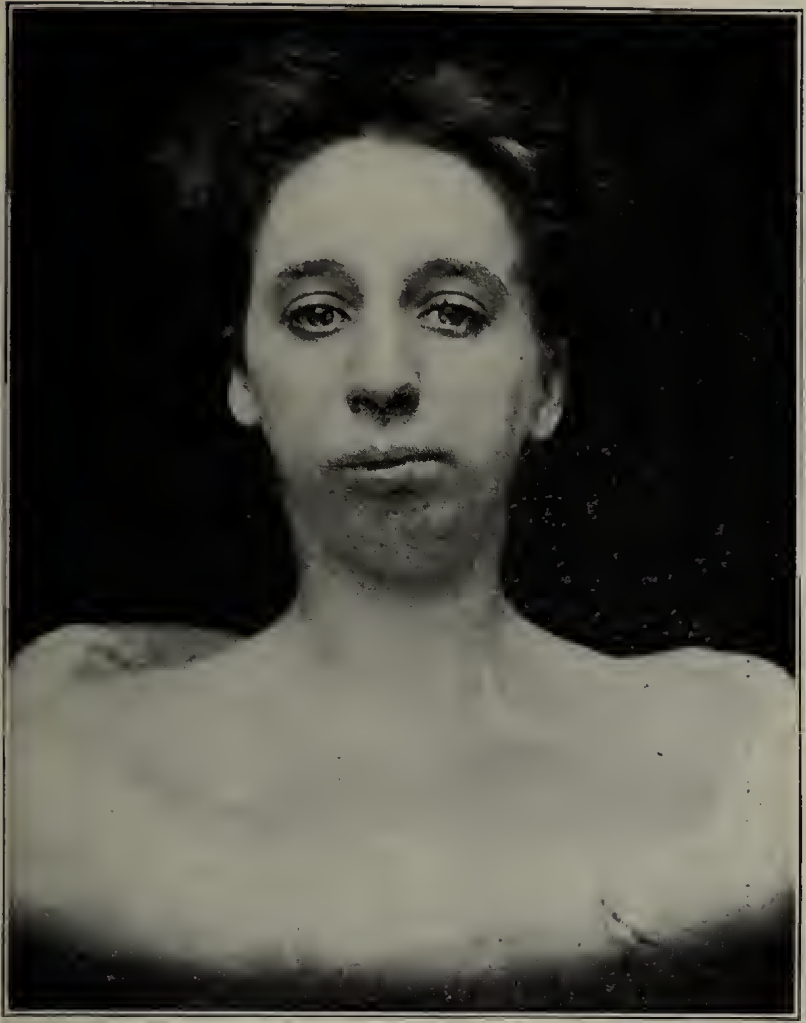

Fig. 1.—Full face of Patient 1 before operation. **Notice the lateral position of the chin.**

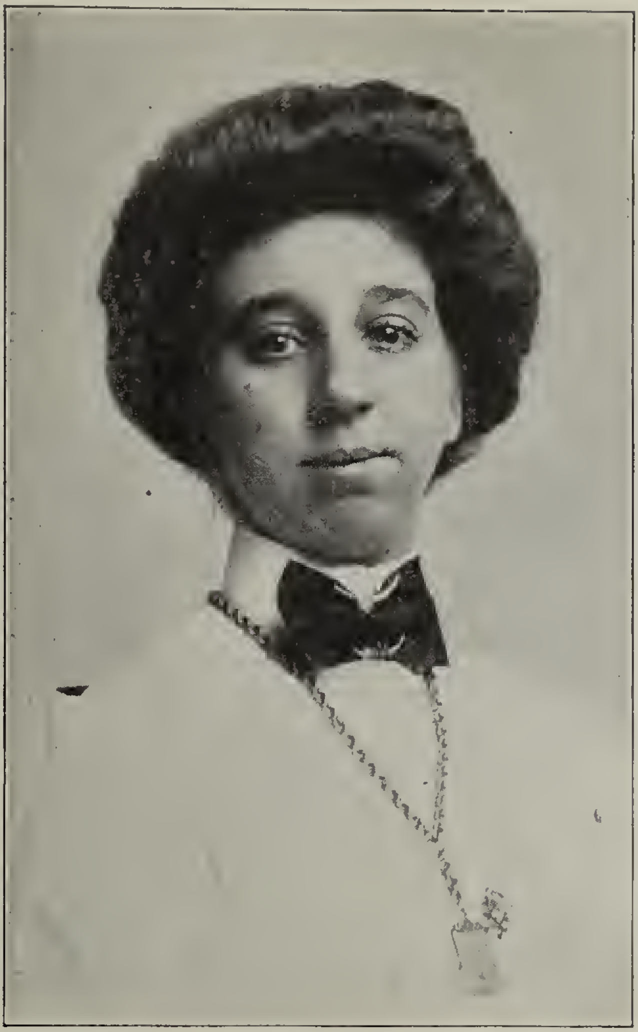

Fig. 3.—Full face of Patient 1 after operation; lateral malposition of chin corrected.

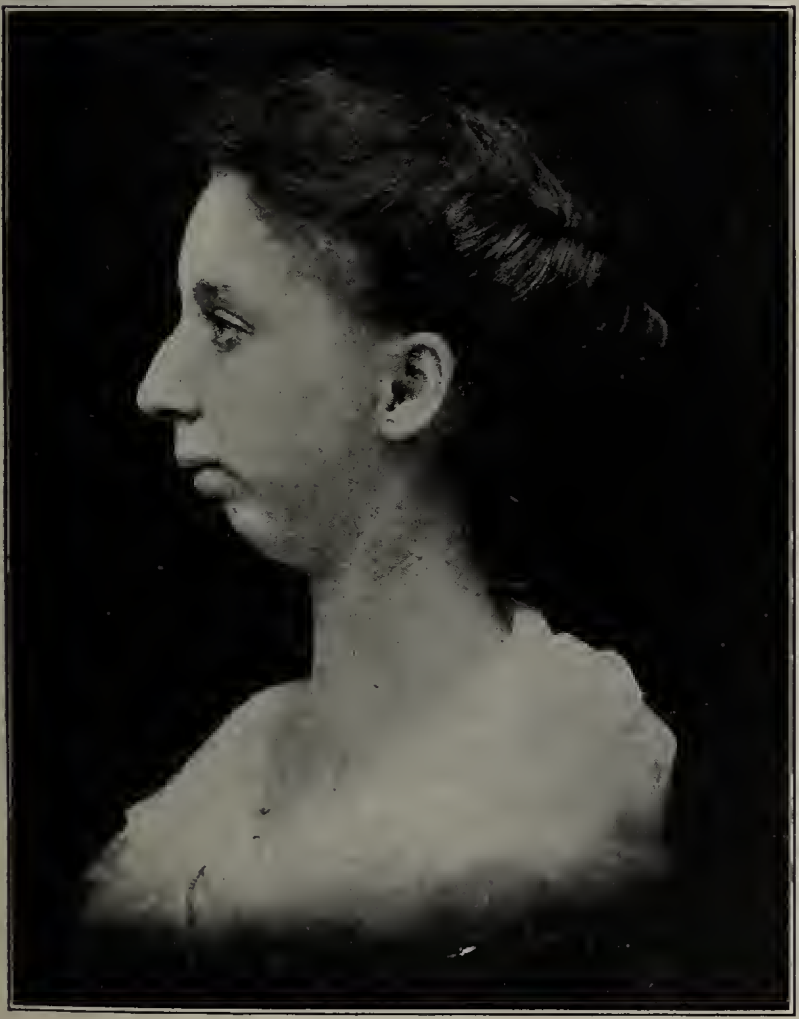

Fig. 2.—Profile of Patient 1 before operation.

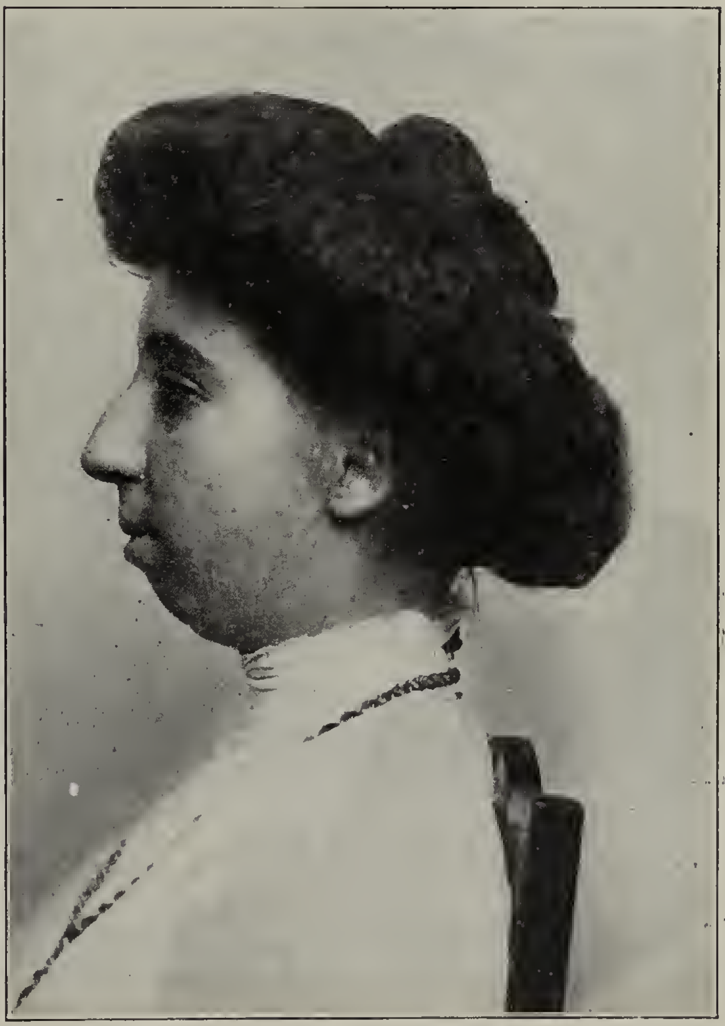

Fig. 4.—Profile of Patient 1 after operation. Notice the change in the relative position of lips resulting from the new position of the body of the lower jaw.

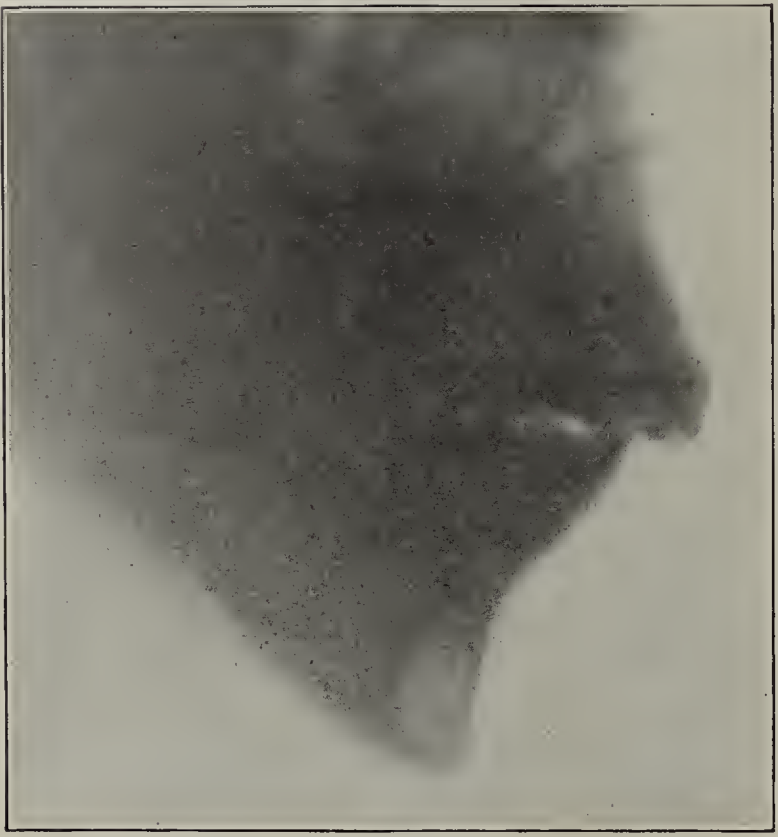

Fig. 5.

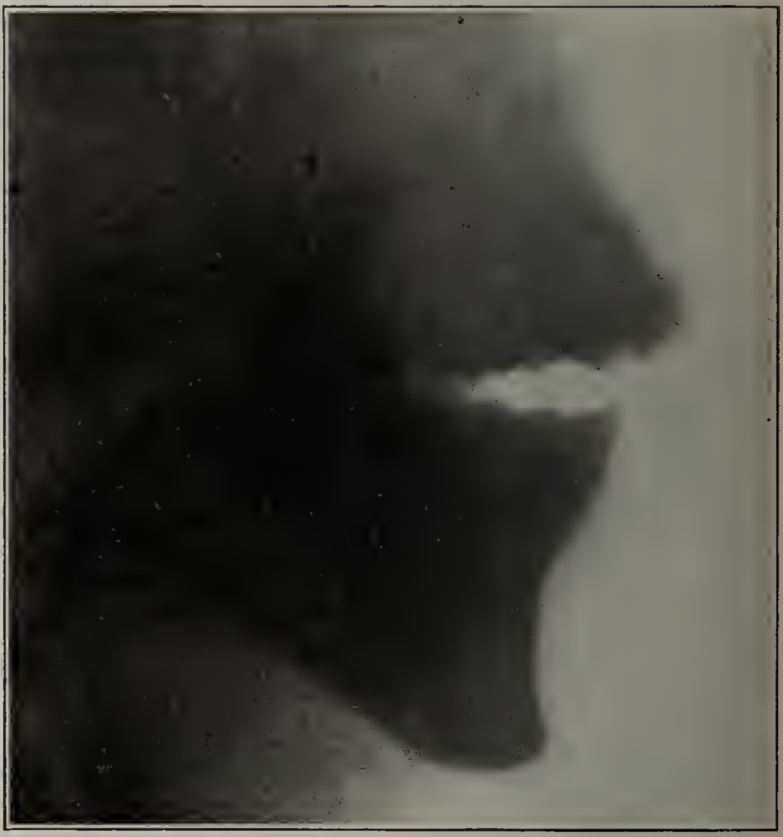

Fig. 7.

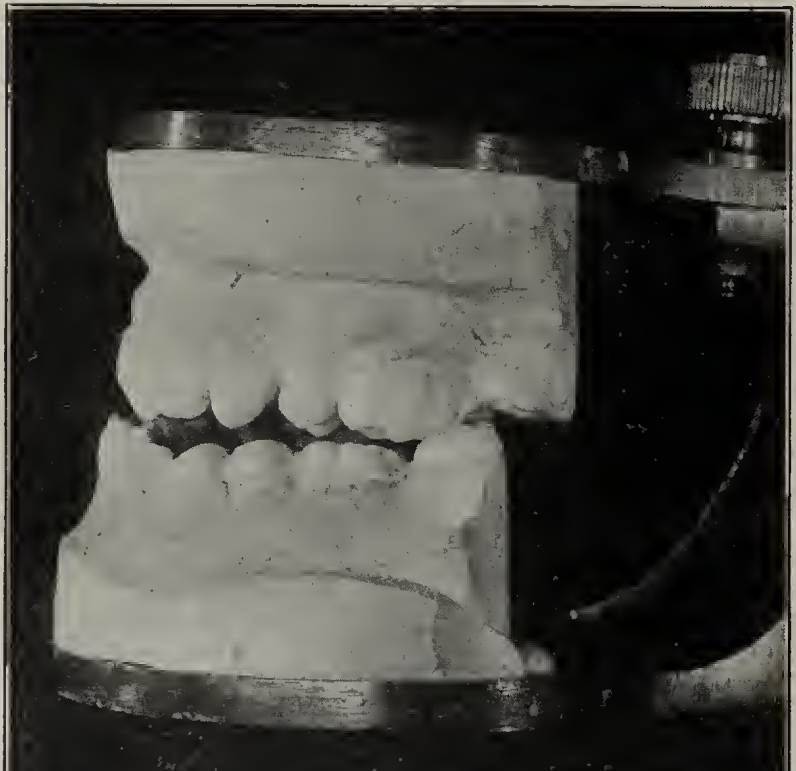

Fig. 6.

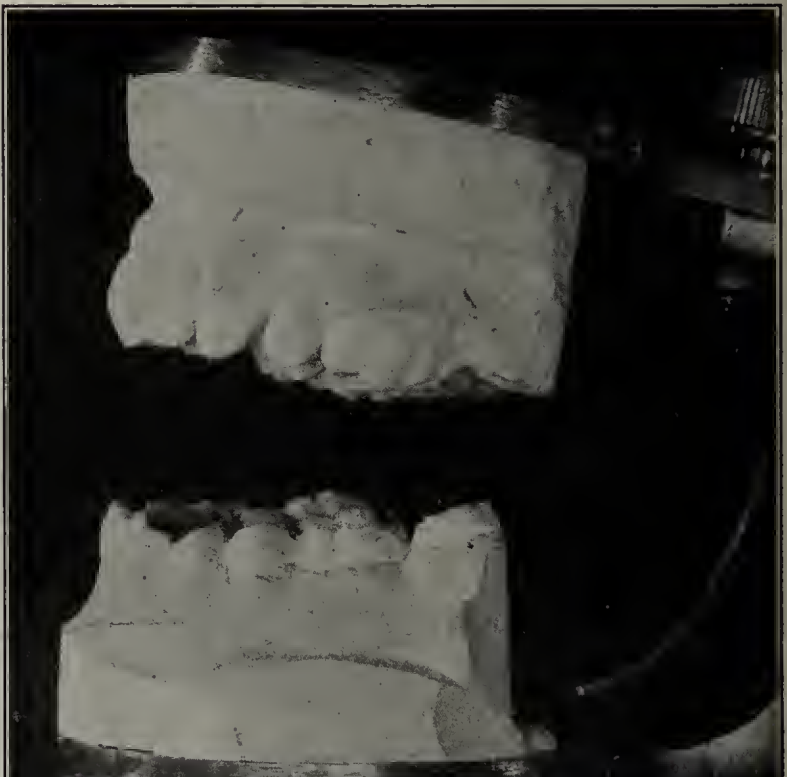

Fig. 8.

Figs. 5, 6, 7, 8.—Closure and possible opening in Case 1 before and after operation. Comparing Figure 5 with 7 it will be appreciated how much the lower jaw has been brought forward. Comparing Figure 6 with 8 the increase in the possible opening can be measured. Before operation the possible opening was one-eighth of an inch; a year after operation it was, as stated, seven-eighths of an inch. Since then there has been a contraction of the bone scars which has reduced the opening to five-eighths of an inch, but it will contract no more. The cast showing the present condition was taken this year by Dr. J. L. Newborn of Memphis, Tenn.

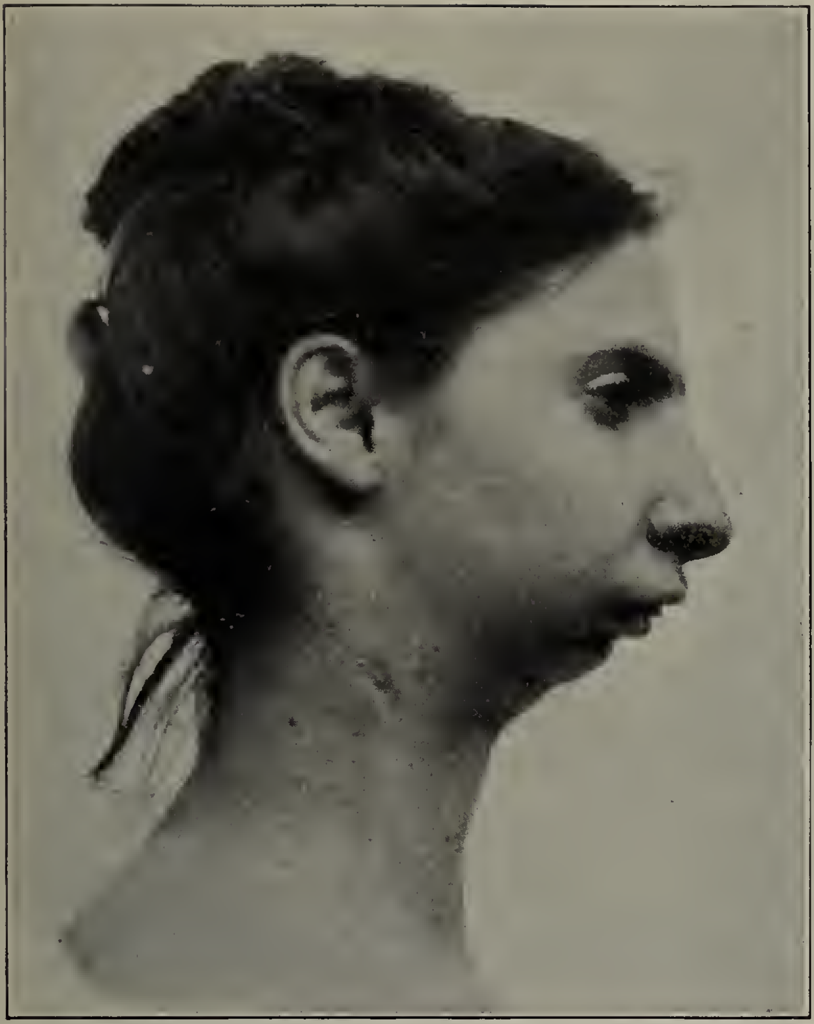

Fig. 9.—Profile of Patient 2 before operation.

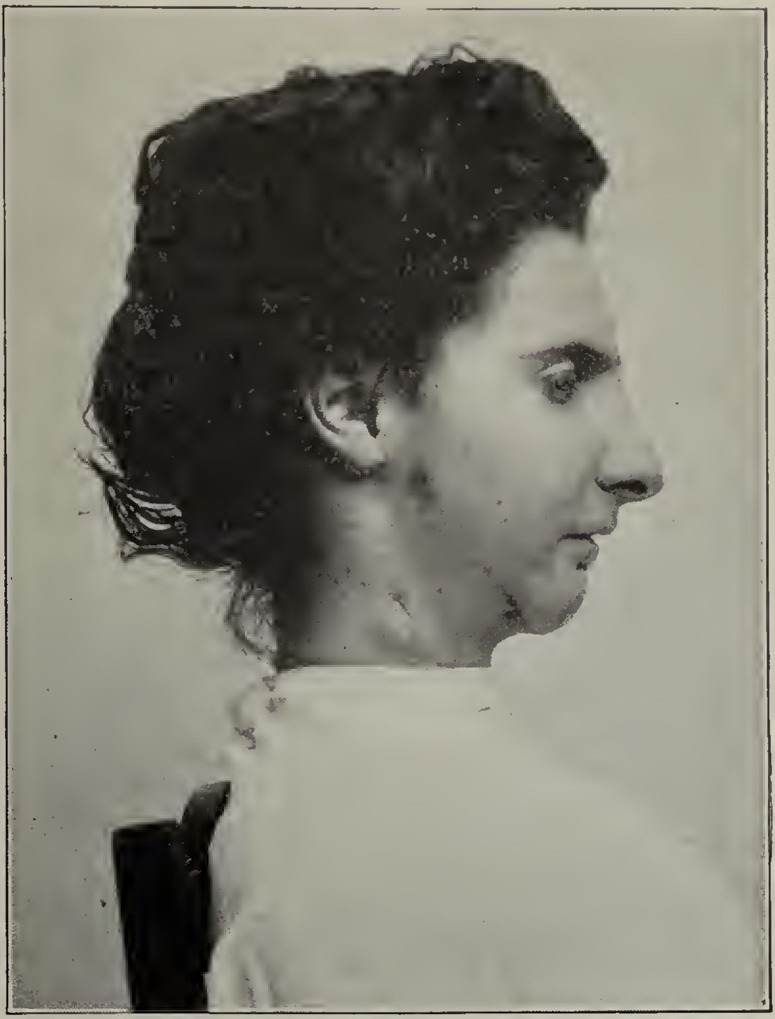

Fig. 11.—Profile of Patient 2 after operation. Owing to their red color at the time of being photographed, the prominence of the scars on the cheek and under the chin is exaggerated by the camera. Later, when the red color fades, the scars will be practically invisible. The change in coiffure in both cases is in conformity with the mode.

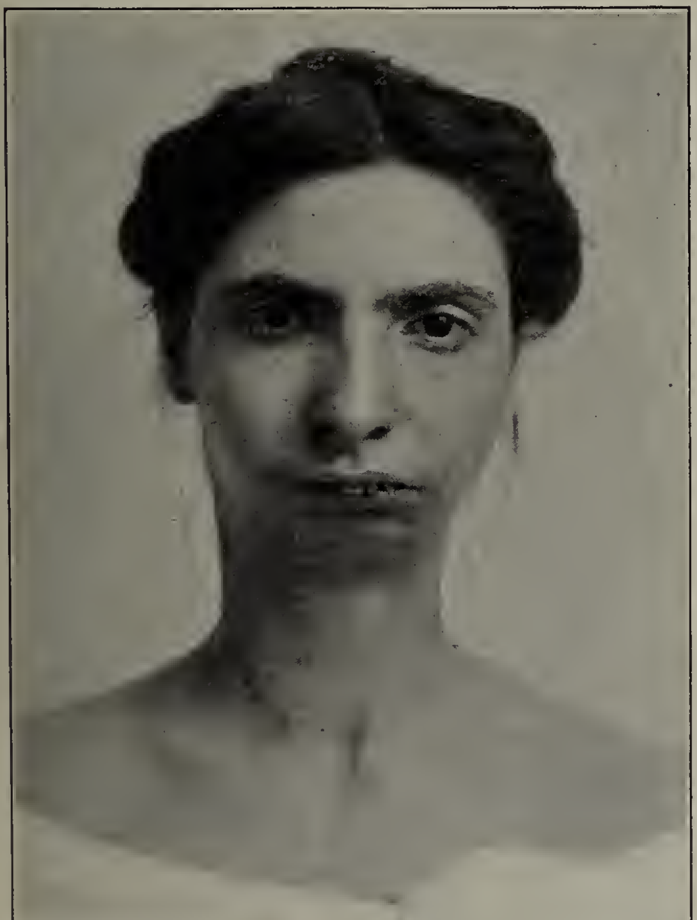

Fig. 10.—Full face of Patient 2 before operation.

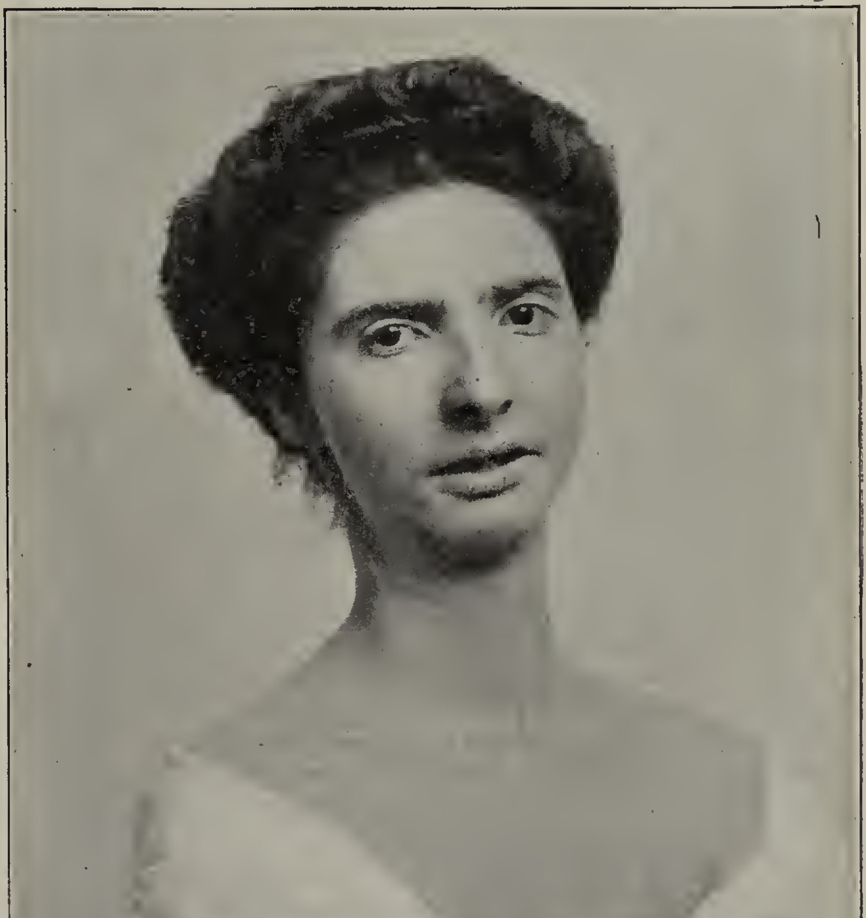

Fig. 12.—Full face of Patient 2 after operation. The happier expression about the eyes is one of the results in this operation.

was pierced by the needle and we had an infected wound on that side which later caused a temporary paralysis of the upper branches of the seventh nerve, but this cleared up in about four weeks. The wounds were packed, the muscles of mastication stretched, the body of jaw brought forward until the lower incisors were a little in front of the uppers and the chin symmetrically placed. It was wired in this position.

Postoperative History.—The packing was removed from the face wounds on the third day. The right one was closed with a suture that had been previously placed and the left dressed open. The paralysis on the left side appeared on the second day, but cleared up as previously stated. The patient left the hospital November 18, ten days after operation. In four weeks the union was examined and found not to be strong, so the teeth were rewired for eight weeks more. Later Dr. Lukens, by orthodontic operations, brought the teeth into more perfect occlusion. In removing the wires from the teeth it was found as expected, but, nevertheless to my relief, that the mouth opened freely one-half inch and that the limit of movement was in the soft structures. When examined a year later it was found that lateral movement was normal and the possible opening between the incisors was seven-eighths of an inch, which is more than is necessary for good function. As mentioned in the articles already referred to, bringing forward the body of an undeveloped mandible does not entirely correct the obliquity of the chin, I proposed, by further operative procedure, to construct a mention eminence, but the patient expressed herself as well satisfied with her results.

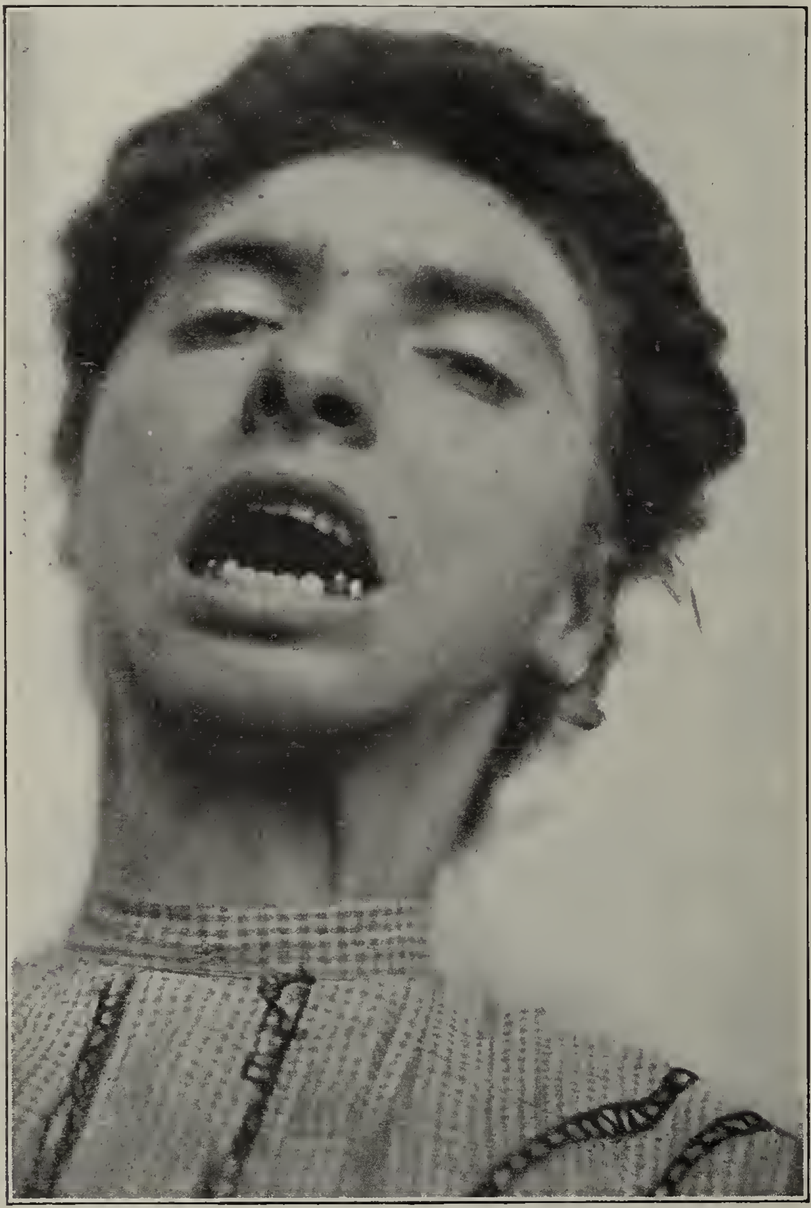

Fig. 13.—Possible opening in Case 2, the artificial dentures, and the crowned bicuspids. The strain of the platysma was the result of the desire to have the mouth open as fully as possible, but it was unnecessary and did not contribute to the result as the mouth opens with perfect freedom till the limit is reached. The artificial incisors are so placed that they do not quite occlude.

The peculiarity of this case was the limit of excursion of the mandible, which was due, as demonstrated later by a good x-ray taken after the operation by Dr. H. P. Wells, to the fact that the styloid process on the right side was the size of my little finger and abutted against the inner side of the angle of the jaw, which corresponds with my original deduction. By moving the body forward a space was obtained between the angle and the styloid process which gave room for the angle to travel backward during normal movement. The other results are a symmetrical chin, an improved profile, good health and mental relief. The patient's own brother did not recognize her when she returned home and within a few months she gained twenty-eight pounds over her previous weight which she has retained. She has been in good health ever since, which was not the case before, and she seems very happy. Removal or fracture of the abnormal styloid would give a freer opening, but the patient does not feel the need. She had been seeking relief for some years before I saw her, and, including the members present at medical and dental associations before which, at the request of her dentist, she had appeared seeking advice, she had been seen by a large number of men of both professions.

The photographs of this patient and the next (Figs. 1 to 4 and 9 to 12) are unretouched and show the exact condition of features, but exaggerate the color of recent scars.

Case 2.—*Patient.*—A girl, aged 23, who came to my clinic at the dental department of the Washington University. She had had scarlet fever at the age of 2, with a suppuration behind each ear, probably mastoid. At 6 the opening of the mouth was noticed to be limited and some attempt at stretching with wedges was made. At 9 the opening was very limited and at 15 some lower incisors were removed to allow her to take solid food.

Examination.—In January, 1908, the patient presented herself at the clinic with this condition: She was rather thin, with suppuration of both middle ears, scars from old cervical abscesses, a fair percentage of sugar in the urine. The facial contour was as shown in Figures 9 and 10. There was absolutely no visible excursion of the lower jaw, which was in an extreme degree of underdevelopment. The canines and remaining incisors of the lower jaw protruded straight forward and held the lower lip in the position shown in Figure 9.

The indications here were to improve the general health, including the ear condition, establish a joint on each side, draw the body of the jaw forward and hold it there. On strict diet, under the care of Dr. Walter Baumgarten, the sugar disappeared from the urine. The same operation on the jaw was indicated as in the previous case, but as here we had also to establish a joint on each side, I proposed to the patient to allow me to transplant the interphalangeal joints of one toe to the spaces I would leave between the cut ends of the bone. Permission to do this was refused and I was afterward glad, as every wound but one that I ever made on her suppurated. The operation was done before the class at the Washington University Hospital on Feb. 11, 1908.

Operation.—After sawing the ramus transversely in this case, and bringing the body forward as far as I could hope to retain it, I found that there was such a great separation between the ends that bony union would not be probable. The jaw was held in its new position by wiring the lower to the upper teeth.

Postoperative Treatment.—In this case, with the large space between the cut bone ends, it seemed to me that the greatest difficulty was going to be in retaining the jaw permanently forward. To meet this I determined to keep the bone wired in its new position for a considerable time and later, if necessary, establish the joints. On April 26, on account of evident illness, the mouth was unwired. I found a considerable degree of opening, sufficient to make out a diphtheria of the pharynx. On recovery the patient returned to the clinic and I found the jaw forward in its new position with an excursion that allowed of an opening of the mouth that was three-sixteenths between the bicuspids and limited by soft structures. Attempts at instrumental dilatation with and without anesthetics were unsuccessful and I hit on the plan of inserting pieces of laminaria uterine tent between the teeth and allowing them to remain over night, which was so successful both in the lack of pain and in the result that I consider it a distinct advance over the methods ordinarily used for this purpose.

Result.—We now had the patient's jaw forward and she could open her mouth sufficiently for function, but, owing to the obliquity of the mental portion, the facial outline was still far from what was desired. The correction of this was a problem about which I had been thinking for some years. Three possible methods presented themselves to me: First, paraffin injection into the soft structures, which I dismissed early in the consideration; second, an osteoplastic resection to tilt forward a piece of the chin bone and fill in the space behind with a paraffin iodoform mixture, or silver frame and blood clot; and, third, the transplantation of cartilage. I finally settled on the latter procedure.

Second Operation.—On September 1, at the Washington University Hospital, under ether given through tubes introduced through the nose into the pharynx after the method of Crile, the mouth was packed and a cloth was sewed across the face below the mouth to prevent contamination from the mouth. The curved part of the eighth costal cartilage with its perichondrium was dissected loose and for temporary protection was left in its original position. Then a transverse cut to the bone was made in the crease under the chin and all the structures covering the front of the mental part of the mandible, including the periosteum, were dissected upward in one flap. The curved piece of cartilage one and a half inches long was laid on the bare bone and, after wiring it there, the flap of soft tissue, including periosteum, was replaced, and a very respectable chin resulted.

Postoperative History.—The whole wound suppurated, but I did not remove the sutures, and for days pus in large quantities poured out between them. Later the suppuration became less, and from local symptoms and appearance I came to the conclusion that the infection had occurred between the perichondrium and bone, which was a dead space, but not between perichondrium and the periosteum. Some sinuses persisted which healed nicely after the wires were removed and the sinuses had been injected with a paste of subiodid and subnitrate of bismuth and petrolatum, which is a slight modification of the plan introduced by Beck of Chicago for chronic sinuses. Later the *x*-ray demonstrated the bismuth in the space between the cartilage and bone. I preserved the perichondrium because it is in normal relation on the one hand with the cartilage and on the other with the soft structures: I thought that the leucocytes would be less likely to regard the covered cartilage as a foreign body, and that the nourishment of the cartilage would be preserved. I turned up the periosteum and buried the cartilage under it, because I thought that if I did loose the cartilage it might stay long enough to hold the periosteum in its new position until it had formed a shell of bone. Here I seem to have calculated badly, for the subsequent *x*-rays show no effort at bone formation on the part of the reflected periosteum. To my mind, the most remarkable thing in the whole procedure is that the cartilage did stay in place after suppuration occurred. The scar is linear and hidden well under the chin. The anatomic operative results in this case are the facial outline shown in Figures 11 and 12, a very fair occlusion of the natural teeth that have been preserved, and false joints that permit an up-and-down excursion of the lower jaw, which is limited by soft structures and which is increasing while a lateral movement is developing. A slight amount of the movement on the right side is in the temporomandibular joint, which seems to have been restored by the dilation with tents.

Dental Operations.—Dr. LeGrand Cox, who is associated with me in that clinic and who assisted me all through with this case, removed the upper incisors to allow the lip to retract and the remaining lower incisors and cuspids on account of their extreme malposition. He also crowned the lower bicuspids to bring them up to occlusion. The prosthetic work which shows in Figure 13 was done by Dr. F. A. Niehoff, who has charge of that laboratory, and it and the casts do great credit to his skill and patience. The treatment extended over a year and the patient's circumstances were such that much of the time she was, by the courtesy of the dean, in the hospital at the expense of the dental department. Since the movement of the jaw has been restored and the teeth have been replaced, on ordinary general diet, the sugar in the urine has disappeared. When the patient first presented herself, and all through the first months of treatment whenever she got out of the hospital and on general diet, it ran very high. This disappearance of sugar is possibly one result of the improved digestion, metabolism and spirits which have followed the operation.

Metropolitan Building.

GALVANOCAUTERY PUNCTURE IN ECTROPION AND ENTROPION *

S. LEWIS ZIEGLER, A.M., M.D.
Attending Surgeon, Wills Eye Hospital, Ophthalmic Surgeon, St. Joseph's Hospital
PHILADELPHIA

Ectropion and entropion, of mild degree, whether from interstitial shrinkage or from moderate cicatricial contracture, are so inefficiently remedied by our present operative measures that I have thought it desirable to present to the profession a simple procedure I have used for many years and from which I have never yet failed to secure the desired results.

There are many conditions which we can relieve by this procedure:

A. Spastic entropion or ectropion.
B. Senile or relaxed ectropion or entropion.
C. Paralytic ectropion.
D. Contraction from lachrymal irritation.
E. Moderate cicatricial contraction.
F. Small cicatricial distortions or dimplings.
G. Cases of distichiasis.

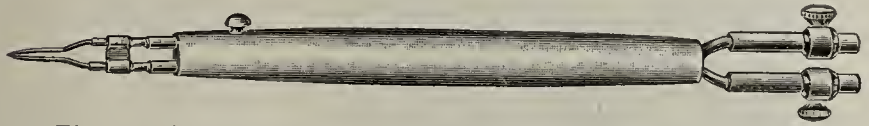

Fig. 1.—Galvanocautery handle and tip for galvanocautery puncture operation in ectropion and entropion (one-third reduction).

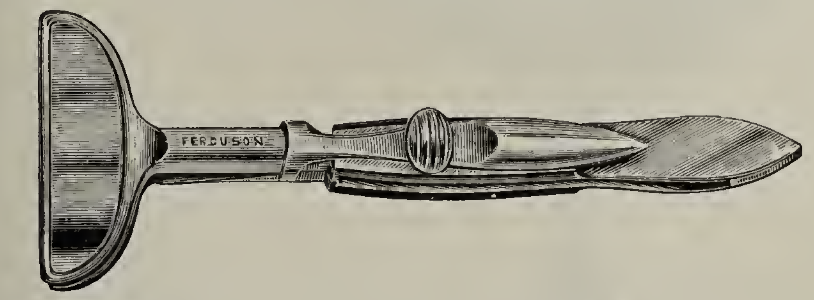

Fig. 2.—Ziegler's lid clamp for use in galvanocautery puncture of the eyelids either on conjunctival or skin surface.

Many varieties of suture operations have been employed to relieve these conditions, but, while successful in some instances, they are quite inefficient in the larger proportion of cases.

The plastic operations often leave a scar, which is more disfiguring than the original lesion, and is, therefore, distasteful alike to both patient and surgeon.

The use of flexible collodion has proved of some value in spastic entropion following operations requiring the use of a compress bandage. A few galvanocautery punctures, however, will prove far more efficient in relieving this class of cases.

INSTRUMENTS

The method I desire to propose requires but two instruments, a short galvanocautery point (Fig. 1), and a lid clamp (Fig. 2). The galvanocautery point should be short, rather thick and sharpened at the point so that it will puncture quickly. This avoids scarring. The lid clamp is a modification of my chalazion clamp, having a straight edge, which is a perfect guide for the row of punctures. It is made with a sliding catch, instead of the Desmarres screw, which facilitates placing it in position. The clamp makes a bloodless operation, and, to a certain degree, benumbs the tissues and so lessens the pain. If no clamp is available, the ordinary Snellen lid spatula may be slipped under the lid and the margin of the lid held flat by the fixation forceps or by a double lid hook, in cases of entropion. The same method may be reversed in ectropion, the lid spatula being placed outside on the skin surface, and the margin drawn away from the eye by the forceps or lid hook, which is then turned back flat over the lid spatula.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

ANESTHESIA

I usually employ nothing but a 4 per cent. solution of cocain on the conjunctival surface, the pressure of the clamp causing some anesthesia. The patient may wince a little because of the glow of the cautery, the slight smoke and the momentary noise of sizzling or frying flesh, but ordinarily very little complaint is made.

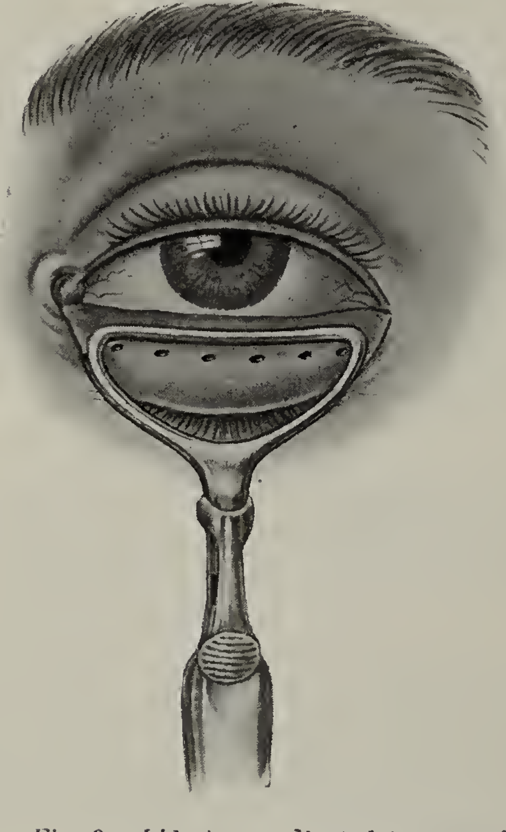

Fig. 3.—Lid clamp adjusted to case of ectropion, showing row of galvanocautery punctures on conjunctival surface.

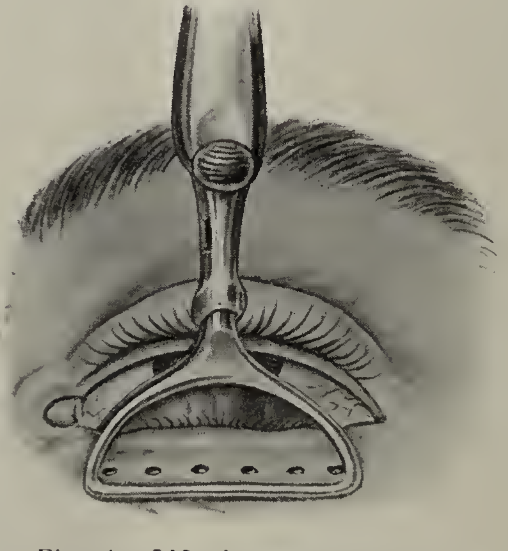

Fig. 4.—Lid clamp adjusted to case of entropion, showing row of galvanocautery punctures on skin surface.

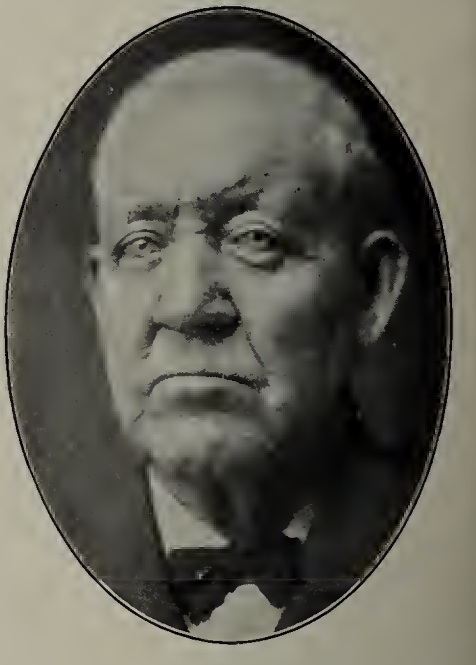

Fig. 5. (Case 3).—Spastic ectropion following cataract extraction.

In nervous, sensitive patients deeper anesthesia is required. Hypodermic injections of cocain under the skin, or conjunctiva will often increase the local anesthesia. In entropion the skin of the lid may be slighty frozen by a spray of ethyl chlorid. In the majority of cases, however, it will be necessary to employ nitrous oxid, bromid of ethyl, chloroform or ether. If ether is used it must be removed before the approach of the hot cautery point or an explosion will naturally occur.

DESCRIPTION OF OPERATION

The lid clamp is adjusted with its straight bar 6 mm. from the lid margin (Figs. 3 and 4). The galvanocautery point is applied to the surface with considerable pressure, the button on the handle is pressed down to turn on the current, while the point is quickly pushed through the cartilage and as quickly withdrawn. The punctures are made 4 mm. from the lid margin, and separated from each other by an equal interval of 4 mm. These should be made on the side on which we wish the contraction to take place, viz., the conjunctival surface in ectropion, and the skin surface in entropion. If necessary, we can repeat the procedure in a few weeks. From one to three sittings will accomplish as much as a plastic operation would do.

This procedure possesses the double advantage of causing vertical contraction of the relaxed lid, and at the same time producing shrinkage and shortening of the redundant length of the lid, thus restoring the lid to its normal position.

POSTOPERATIVE REACTION

I have seldom seen any reaction. If, however, there should be cellulitis and puffing of the lid, the application of continuous ice pads for a day or two will control this condition. I have seen one case (see Case 10) infected by the discharge of a purulent dacryocystitis. I controlled this by wrapping a small wisp of cotton on a wire applicator, dipping it into a 1 per cent. formalin solution, and twirling it around slowly in each puncture. This application was made for three successive days, in addition to the ice padding, when all signs of sloughing disappeared and healing occurred without a scar. Every case, of course, exhibits the charred eschar of the cautery but this causes no disturbance and usually clears off in about a week.

REPETITION OF THE PUNCTURE

If the result is not immediate it may be necessary to repeat the operation two or three times at intervals of from two to four weeks, depending entirely on the amount of incurvation or turning to be overcome. As the procedure is under perfect control, the judgment of the operator can easily determine the number of punctures necessary to attain the desired result. In cases requiring repetition it will be better to make the punctures alternate, locating the second series between the first series.

REPORT OF CASES

I desire to relate briefly a sufficient number of cases properly to illustrate the lesions under consideration and to demonstrate the value of the galvanocautery procedure. The majority of these cases were treated at the Wills Eye Hospital, while a few were seen at the St. Joseph's Hospital or in private. I regret that more photographs of the patients were not taken in order to show more especially the results of the operation.

Case 1. C. S. P., aged 75, suffered from senile or relaxed ectropion of lower lid, O. S., with lachrymal obstruction.

Oct. 9, 1898: Rapid dilatation, O. S.

Dec. 11, 1898: Galvanocautery puncture of conjunctival surface, lower lid, O. S.

Jan. 8, 1899: Galvanocautery puncture, O. S., repeated.

Feb. 1, 1899: Final galvanocautery puncture, O. S., which was followed by prompt and complete recovery.

Case 2. W. T., aged 29, ectropion of lower lid from lachrymal irritation; obstruction of tear duct.

Nov. 1, 1905: Galvanocautery puncture of lower lid, O. D., and rapid dilatation of tear duct.

Dec. 9, 1905: Galvanocautery puncture, O. D., repeated.

Recovery was prompt and complete.

Case 3. J. B., aged 66, developed senile or relaxed ectropion of the lower lid, O. S., after cataract operation. This was spastic in character.

Dec. 9, 1905: Galvanocautery puncture, O. S., followed by rapid recovery which has been permanent. The original condition is well shown in the cut, Figure 5.

Case 4. T. R., aged 42, ectropion of lower lid with lachrymal obstruction, blepharitis and epiphora, O. S.

Jan. 3, 1906: Galvanocautery puncture, O. S., followed by Stilling's operation and insertion of lead style. The recovery was prompt and complete.

Case 5. F. T., aged 46, cicatricial entropion of lower lid, O. S., following burn by acid, which also occluded the tear duct.

Jan. 11, 1906: Stilling's operation with lead style O. S.

Jan. 17, 1906: Galvanocautery, puncture, O. S., which drew the lid out to its normal position, the convalescence being very rapid.

Case 6. W. H. B., aged 48, ectropion of lower lid, O. S., from lachrymal irritation, with occlusion of tear duct.

May 14, 1906: Galvanocautery puncture, O. S.

May 29, 1906: Puncture repeated.

June 25, 1906: Rapid dilatation of the tear duct, O. S. Figure 6 shows the condition before operation, May, 1906, while Figure 7 represents the condition two years later, showing that the result has been complete and permanent.

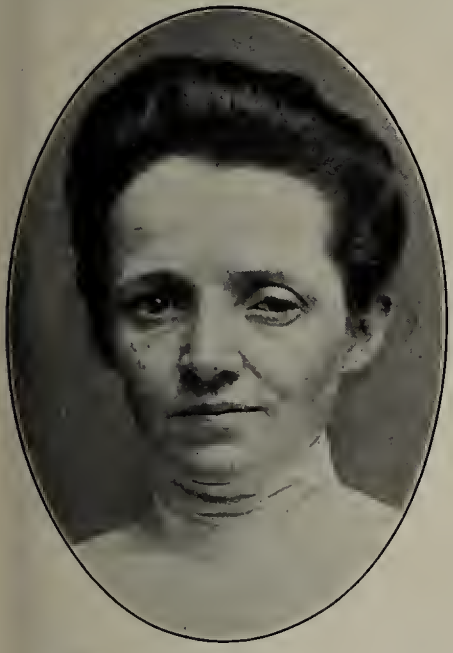

Fig. 8 (Case 13).—Entropion and trichiasis before operation.

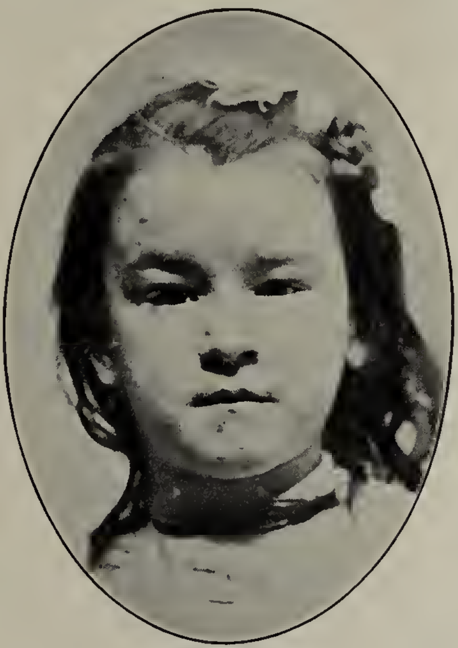

Fig. 9 (Case 14).—Congenital entropion before operation.

Case 7. C. H. A., aged 35, O. D. was injured by molten metal and enucleated. The patient had relaxed ectropion of lower lid, O. D., with shallow socket.

May 27, 1907: Galvanocautery puncture, O. D., conjunctival surface.

Nov. 4, 1907: Galvanocautery puncture repeated, which brought lid into good position for wearing an artificial eye.

Case 8. A. L., aged 33, entropion with trichiasis and lachrymal obstruction.

Nov. 1, 1907: Rapid dilatation, O^2.

Nov. 11, 1907: External canthotomy, O^2.

Nov. 22, 1907: Galvanocautery puncture of skin surface, which relieved the entropion and trichiasis.

Case 9. D. S., aged 75, entropion with trichiasis of both lids, O^2, the sequela of trachoma; lachrymal discharge with pannus, xerosis of conjunctiva.

Nov. 11, 1907: Galvanocautery puncture of skin surface, O^2.

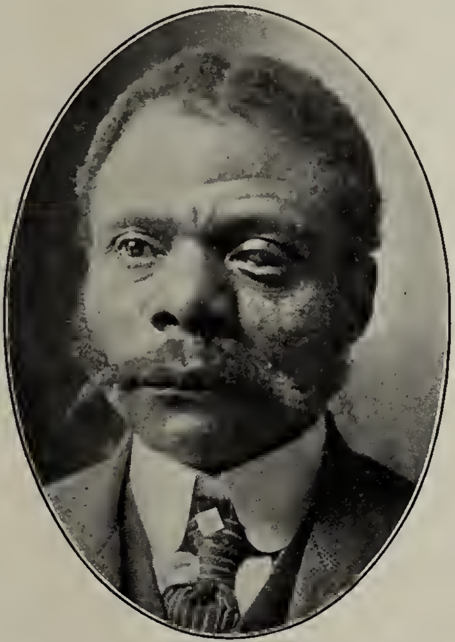

Fig. 6 (Case 6).—Ectropion from lachrymal irritation.

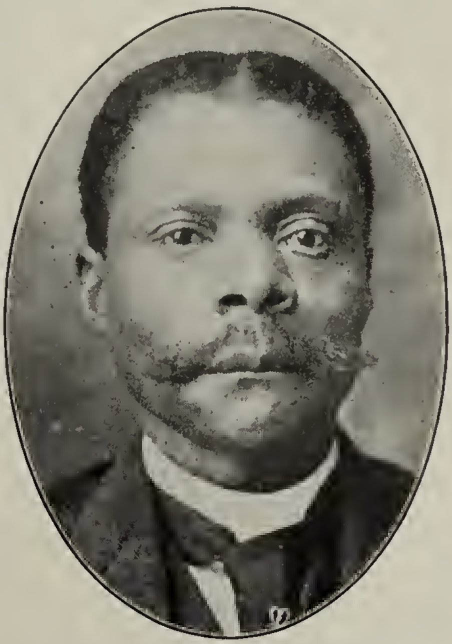

Fig. 7 (Case 6).—The same patient two years after operation.

Dec. 18, 1907: Galvanocautery puncture, O^2, which so completely corrected the entropion and trichiasis that I was able to do a combined cataract extraction in O. S. two months later.

Case 10. T. T., aged 55, had both eyes burned by an explosion thirty years before the time of operation; had entropion, trichiasis, dacryocystitis and pannus in both eyes; also had traumatic pterygium, O^2, with cicatricial bands in O. D., which held the eye in a divergent position.

April 1, 1908: Pterygium excised; Stilling's operation with lead style in both eyes.

April 6, 1908: Galvanocautery of skin surface for entropion of upper lid, O^2.

April 22, 1908: Division of cicatricial bands of upper lid by galvanocautery incision, O. D., which freed the eye from its divergent strabismus.

April 24, 1908: Galvanocautery puncture repeated in both eyes.

May 8, 1908: Galvanocautery puncture repeated, followed by infection from dacryocystitis, which was controlled by applications of 1 per cent. formalin solution, and ice padding. This is the only case of infection I have noted.

The ultimate result of these various procedures was excellent, and the patient was discharged greatly improved in appearance, with better vision and greater comfort than he had enjoyed for many years.

Case 11. S. M., aged 67, has marked senile ectropion of lower lid with blepharospasm, O. D., dating back one year.

April 24, 1908: Galvanocautery puncture, O. D., conjunctival surface.

May 1, 1908: Galvanocautery puncture, O. D., repeated.

May 13, 1908: Galvanocautery puncture, O. D., the final result being a restoration of the lid to its normal position with relief of the blepharospasm.

Case 12. W. W. G., aged 49, spastic entropion of lower lid, O. S., with lachrymal obstruction and ulcerative keratitis.

May 28, 1908: Galvanocautery puncture of lower lid, O. S., with rapid dilatation of the tear duct. The convalescence was prompt and complete.

Case 13. Miss E. G., aged 34, suffering from entropion and trichiasis of upper lid, O. S., for many years.

June 10, 1908: Galvanocautery puncture for entropion of upper lid, O. S.

June 24, 1908: Operation repeated.

Figure 8 shows the condition prior to operation. The result was excellent but, unfortunately, the patient was discharged from the hospital without securing a photograph showing the final condition.

Case 14. Miss R. G., aged 9, congenital entropion of both lids of each eye, with complete inversion of eyelashes; lachrymal obstruction.

Feb. 17, 1908: Rapid dilatation of both tear ducts.

May 25, 1908: Galvanocautery puncture of both lids, O^2.

June 29, 1908: Operation repeated on both eyes. Marked improvement.

July 8, 1908: Final puncture, which was followed by complete relief. Examination of the patient on March 8, 1909, showed that the result was permanent.

Figure 9 represents the condition before operation.

1625 Walnut Street.

ABSTRACT OF DISCUSSION

Dr. S. D. Risley, Philadelphia: Any surgeon who has experienced the difficulties and uncertain results following the adoption of any of the usual surgical procedures for the correction of ectropion or entropion will, I am sure, appreciate the simple method set forth in Dr. Ziegler's paper. The author has courteously afforded me the opportunity to see some of his cases. The admirable results led me to adopt the procedure in a man aged 68, who for a long time had suffered from entropion of both lower eyelids. A 4 per cent. solution of cocain was instilled, the entropion was temporarily corrected by rolling the lashes outward through traction on the skin of the lid and a broad metal spatula was introduced into the conjunctival cul-de-sac. Pressing this forward drew the lid tight and held it firmly. Four galvanocautery punctures were then made as described by Dr. Ziegler. A week later the second eye was operated on in the same manner. The entropion in each eye was immediately and permanently corrected. In each a coating of collodion was spread over the punctures and the man was allowed to return to his home. There was no noticeable reaction and no scar. The immediate and perfect correction of the trouble were not only entirely satisfactory to both patient and surgeon, but afforded a rarely striking and brilliant result from a procedure of great simplicity. The principle involved is the shortening of the lid along the lower border of the cartilage on the outer or skin side in entropion and on the conjunctival side in ectropion. The placing of the punctures in relation to the edge of the lid is therefore important.

Dr. William Zentmayer, Philadelphia: When a new operation such as this is proposed we should have accumulative evidence of its effects as soon as possible; therefore, I wish to report six cases of the Ziegler operation, all done for entropion, four of the spastic type and two with trichiasis. The immediate effect was most gratifying. In two instances, one of the spastic type, it was necessary to repeat the operation and not sufficient time has elapsed since to warrant a statement as to whether the result is now permanent. But as Dr. Ziegler has said, repetition of the operation is to be expected. I have always injected cocain into the lid before the operation and have had little complaint of pain. I do not know whether it is wise or not, but I have not even put a bandage on the eye. This is certainly an admirable procedure, in suitable cases.

Dr. Barton Pitts, St. Joseph, Mo.: In discussing the subject of entropion particularly, we must bear in mind that there are different conditions that bring about the inturning of the upper and lower lids, especially the lower. Twenty years ago, in my experimental stage of evolution, I tried the cautery method quite extensively. In my part of the country we have 50 per cent. more cases of entropion than in the East. Trachoma is exceedingly prevalent, the population being made up of a considerable foreign element. I have obtained satisfaction from the cautery in only a very small class of cases, of spasmodic or senile entropion of the lower lid. In these cases one can cauterize; take out a small strip of skin or paint with collodion and obtain a satisfactory result. Usually external canthotomy will afford permanent relief. There is no cauterization that will relieve entropion of the upper lid due to cicatricial contraction from trachoma, which constitutes 99 per cent. of such cases. In ectropion the operation of removing a V-shaped piece with the apex down at the external angle of the eye, and suturing it with one or two sutures has always proved effectual with me, except in cases with scar tissue due to injury or burns. Each of these cases must stand by itself. The operation for entropion most satisfactory to me is the Hotz operation combined with mucous transplantation from the lower lip.

Dr. S. Lewis Ziegler, Philadelphia: This particular instrument that I am showing was made for me by Luer, in Paris, but I am advised that the Keystone Electric Company, of Philadelphia, now has them ready. The cautery point I use is made very sharp on the end and then spreads out suddenly with quite a belly. One can, therefore, secure a good cautery effect and make the puncture very quickly thus getting heat without destruction of tissue. It should be borne in mind that you must not hold the hot cautery in the tissue too long, or there will be sloughing, as after any other cauterization. The other question, raised by Dr. Pitt I believe, was in relation to entropion after trachoma. Case 13, Figure 8, in my paper, shows a very marked case of entropion from trachoma of fifteen years' standing, that was relieved by this procedure. Unfortunately, no photograph of this patient was taken afterward. This operation is not supposed to take the place of all plastic operations on the lids, but is useful in eversions and inversions of moderate degree in which we do not care to do a plastic operation. It is also valuable in repairing or trimming up other plastic operations; in other words, if there is left some dimpling or distortion we can contract the lid on the inner or outer side, according to where the puncture is made. I do not think there is anything that I can add to the technic. It is very simple, and anyone who can use the galvanocautery can do it. So far as the after-treatment is concerned, I think any mild dressing will give the result. If one is afraid of puffing of the lid, ice pads may be put on for twenty-four hours. One can apply a bandage or leave the eye open. I seldom use any dressing, as the galvanocautery puncture should give no more reaction than the same puncture applied to a wart on the hand. I have illustrated the operation for convenience on the lower lid, but it works as well on either lid. The degree of anesthesia depends entirely on the individual patient and should be controlled by the circumstances.

TENOTOMY OR ADVANCEMENT *

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BUFFALO, N. Y.

When Dieffenbach and his contemporaries began to operate for heterotropia they always divided the tendon of the muscle, or even the muscle itself toward which the eye turned. Naturally many of these eyes soon turned quite as far out of place in the opposite direction. Then operations for advancement were attempted, although at first only in a crude form. During the three-quarters of a century since that time ophthalmologists have differed in their opinions as to when to make tenotomy and when advancement. We have the important fact that thousands of eyes have been satisfactorily straightened by tenotomy, and, on the other hand, we know the unsatisfactory results of this operation which come to even the best operators, and the theoretical reason for advancement—that it is always better to strengthen one muscle than to weaken its opponent. An examination of the literature seems to indicate that when some attractive form of tenotomy has been proposed, ophthalmologic opinion swung toward that operation, or when another for advancement offered it swung toward that. Of late the tendency—in America, at least—seems to be in favor of advancement, in spite of the fact that this is by far the more difficult operation for the surgeon to make and the more uncomfortable for the patient to endure.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

My object here is to recapitulate briefly the reasons for deciding in a given case on a tenotomy or an advancement. As exact definition is necessary to clear thinking, it should be stated that each of these terms is used here in its broadest sense. It is taken for granted that the tenotomy made in a given case is always the form of that operation then indicated, whether that be a partial, a simple, or a complete tenotomy; also that the proper form of advancement is always selected, whether that be advancement of the tendon alone or of the tendon with its capsule, it being far beyond the province of this paper to discuss at all the technic of either operation.

It should be noted also in what follows that the term "strabismus" is avoided, because that is so indefinite as to mean all forms of heterotropia and therefore no one form exactly.

Moreover, even the question of diagnosis here dealt with is presented with some hesitation, as a short chapter on this subject has been given recently in my second volume[1] on the muscles, and there is danger of repetition. But, according to the plan adopted in that book, it was not practicable to arrange the facts in the order which is possible here.

We shall probably all agree at once on the fundamental proposition that the operation selected should be the one which restores most completely the normal condition. Thus if the deviation of an eye is produced by the excessive action of a certain muscle or group of muscles, we are safe in lessening that excessive action by some form of tenotomy. On the other hand, if the deviation is produced by the insufficient action of a certain muscle or group of muscles, advancement is indicated. In other words, the decision in a given case between a tenotomy or an advancement depends on the question whether the deviation is due to an excessive action of the muscle or group of muscles toward which the eye turns, or to the insufficient action of the muscles or group of muscles away from which it turns.

For the sake of clearness we should remember that our cases of heterotropia really divide themselves into three great classes, each class having apparently several subdivisions—more or less well defined. We have long recognized the more obvious examples of each great class and treated them accordingly. Taking them in the order in which we began to separate them from each other, we recall the cases most easily recognized as those of paralysis or paresis or insufficient action (as we wish to call it) of one muscle or group of muscles. Sometimes the paralysis is apparent at a glance; sometimes it is necessary to have the patient look to the right, left, up or down, to assure ourselves that any paresis exists; while in still other patients that diagnosis can be made only after long and patient search. These we may well call cases of actual insufficient muscular action, and for them we agree that advancement would be indicated.

We should remember, however, that an abnormal condition of the opposite kind may also be observed; a spasm or excessive action (as we wish to call it) of one muscle or group of muscles. If the limits of this paper permitted, the diagnosis, frequency, etc., of these cases would be dwelt on, but I have recently tried to give a summary of our knowledge on that subject. It is only necessary here to observe that the largest and most typical group of this class comprise those to which Donders long ago called attention. The hypermetropes whose ciliary muscles were constantly in a state of excessive action, and with that came excessive action of the internal recti. These we may call cases of actual excessive muscular action, and for them most of us also agree that tenotomy would be indicated. Without doubt there are other groups of this class with excessive muscle action which still remain to be separated from the rest and carefully studied. This seems probable, at least in view of the thousands of good results blundered into after so-called tenotomies made in the most careless manner possible.

Between these two classes of deviations due only, on the one hand, to excessive, and, on the other, to insufficient action of a muscle or group of muscles, we have a third class, in which these two conditions exist in the same eye. Thus an esotropia very often results from excessive action of the internus, together with insufficient action of the externus. This is the rule in cases of long standing. My main point is simply this: In order to decide in a given case whether to make tenotomy or advancement we must know first of all the one group of muscles or because of the excessive action of another group, or because of both causes acting at once? If the last, which cause predominates? Minor questions are also involved in this decision, but they may be neglected for the present.

Moreover, for the present let us limit ourselves to deviations of the visual axes which occur in the horizontal plane; that is, to esotropia and exotropia. They will illustrate the principles involved. To be still more definite, let us imagine for a moment that we are dealing with a case of esotropia in a young person. In deciding a question like this it is necessary to obtain all of the evidence possible from different sources. These sources are:

A. The refraction, with the condition of the ciliary muscles.

B. The extent of the arc of rotation and the behavior of the eye, in rotating, as shown by the perimeter or tropometer or both.

C. The exact character of the arc of rotation as shown by photographic tracings.

D. The lifting power of the adductors and abductors as shown by the ophthalmodynamometer.

Let us consider these in order.

A. THE REFRACTION AND THE CONDITION OF THE CILIARY MUSCLES

The part which hypermetropia plays in esotropia has already been referred to and is too well known to require any elaboration here. It is the deviation inward which Galezowski and others have called functional strabismus. This is a good example of the cases in which the deviation inward is due to excessive action of the adductors. The treatment with convex glasses shows that we recognize this. When that is not sufficient, especially when one eye is amblyopic, then most operators are accustomed to make some form of tenotomy of the internus. Good results have followed in so many thousands of such cases that probably tenotomies will always

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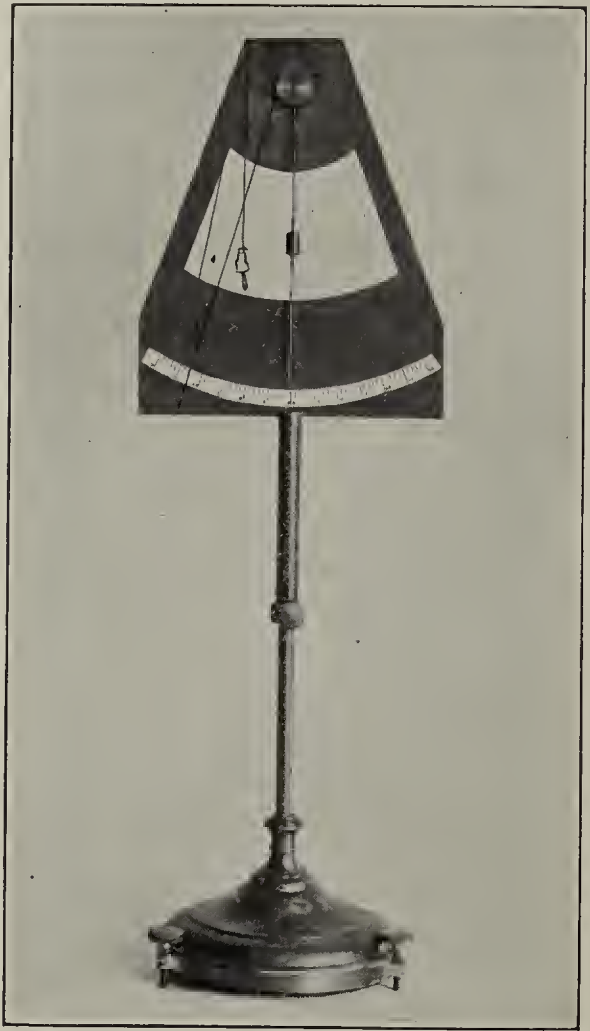
1. Howe: The Muscles of the Eye, New York, 1908, ii, 358.

be made for them, in spite of any theories in favor of advancement.

In a word, the condition of the refraction not only gives us a clue as to the diagnosis but also to the treatment.

B. EXTENT OF ARC OF ROTATION AND BEHAVIOR OF EYE IN ROTATING

Important evidence is furnished by the extent of the arc of rotation in and out, and by the behavior of the eye in moving through that arc. The limits of this paper will not permit a description of the form of perimeter or tropometer best suited for making these measurements. They have been described at length in the first volume on the muscles in the work already referred to. A more complete description of their varieties, and the advantages of different forms, are to be given in a paper now in press, which will be presented at the meeting of the American Ophthalmological Society to be held in July and published in their transactions. At present it must be taken for granted that these forms of the perimeter and tropometer are well known.



Ophthalmic dynamometer for measuring the lifting power of the horizontal recti

It should be mentioned, however, that while the perimeter is very useful for measuring the extent of the arc of rotation outward, it is of no value in measuring that are up or down, because of the obstruction to the axis of vision caused by the projection of the nose, brow or cheek. For the measurements of the arc of rotation in these three directions we must depend on some form of the tropometer. The form which I have described, that is, a tangent scale in the tube of the horizontal microscope, seems to serve the purpose as well as the more complicated instruments.

It should also be observed that the extent of the arc of rotation is by no means the only measure of the amount which the eye can turn in a given direction. I have already called attention to the fact, and must repeat again, that quite as much depends on the character of the rotation as on its extent. To say that an eye rotates outward, for example, 50 or 55 degrees, means but little. We must also know whether that rotation is a steady and uninterrupted swing, to a point at which the eye remains fixed as long as the individual desires, or whether, on the other hand, the eye swings out steadily only to 25 or 30 degrees, then begins to halt or vacillate, as it were, and, after reaching even the same point of rotation, to swing quickly back, in spite of the effort of the individual to hold it in that nature of the deviation. We must ask, does that eye turn out of place because of the insufficient action of position. In making any of those measurements with either the perimeter or tropometer we must, therefore, have a suitable instrument, and the observer must also have a familiarity with the instrument before he is able to obtain constant results. Apparently it is almost as difficult to measure accurately the arc of rotation and to estimate properly the character of the rotation of an eye as it is to learn the manipulation of an ophthalmoscope.

C. EXACT CHARACTER OF ARC OF ROTATION

More exact testimony as to the extent and character of the arc of rotation and its rapidity is shown by photographic tracings of the reflex from the moving cornea, or what have been described as photograms. These are considered next in order only because the testimony furnished by them is similar to that given by the perimeter and the tropometer. They all deal with the arc of rotation. As the photographic plate shows to the astronomer the existence of stars which no eye has ever seen with the largest telescope, so does the plate also record the extent of the arc of rotation of an eye and the variations in its movements more exactly than can be seen by the eye of any observer when using a perimeter or tropometer.

The limits of this paper again make it impossible to elaborate this point, but I have already published the method for making these photograms both by daylight and, still better, by artificial light. They are referred to here, as already stated, because this is a more exact method of measuring the arc of rotation.

It should be understood, of course, that it is not a method of any value for every-day office work. The clinician ordinarily has too much to do otherwise to take time for such details. It should be observed, however, that the fact that he is busy has nothing to do with the question at issue. We are now considering careful, honest work. While it is true that such measurements can never become general, it is true also that they do assist somewhat in deciding in a given case whether to make a tenotomy or an advancement. For this reason, if for no other, it is probable that this method of diagnosis in some form will ultimately come into use, at least in large institutions, just as we resort there to the use of the x-ray or the giant magnet.

D. THE LIFTING POWER OF THE ADDUCTORS AND ABDUCTORS

Finally some light is thrown on the character of a given deviation by the lifting power of the adductors and abductors. Here again a long digression would be necessary to describe the method of making these measurements. The earlier arrangements for that purpose were outlined in the first volume of the work on the muscles already referred to.

Since that was published a decided improvement has been made in the technic. That was described in a paper I presented at the International Congress in Naples in April. It may be stated in explanation that after cocain has been applied, a speculum is introduced, and the rectus muscle which is under examination (the internal, for example) is caught between the teeth of fixation forceps made very light, strong and only two or three centimeters long. A thread extends from the forceps to the upper arm of what is practically a vertical lever. When the person under examination is told to contract the internal rectus muscle by looking in, he draws on the forceps. This makes a pull on the thread and that, drawing on one end of the lever, causes the other end to pass over a graduated scale. If this lever and scale are properly constructed a given amount of motion of the eye indicates that the internal rectus with the other adductors lifts a given number of grams or fractions of a gram. (An illustration of this instrument is here given.)

It is not contended that the data furnished by this appliance are in every way reliable. On the contrary, much still remains to be learned concerning the lifting power of the horizontal recti and the methods of measuring it. But apparently such measurements do furnish at least corroborative evidence of considerable value.

Testimony on this point might also be obtained from one or two other sources, possibly such, for example, as the sound made by the ocular muscles in their contraction, as has been described by Professor Hering, of Leipsic. But these data are apparently of such doubtful value or so very impracticable as to be hardly worthy of mention.

In reviewing, therefore, the different means by which we may learn whether the deviation of an eye in a given case is caused by excessive action of one set of muscles or by insufficient action of another set, it is probable that we must lay most stress on the condition of the refraction, next on the evidence furnished by the perimeter with the tropometer, then the amount of the lifting power, and finally the extent and character of the arc of rotation as shown by the photographic tracings.

But it must be observed that in spite of the most careful tests, frequently repeated, it is practically impossible, in a considerable number of cases, to determine whether an eye deviates in a certain direction because of excessive action of one group of muscles or by insufficient action of the opposing group. It is very certain, however, that the more we study these cases the more do we find to learn concerning them and the more accurate and clear-cut do our ideas become in a given case. It is also certain that there is no inflexible rule for always making tenotomy or for always making advancement. Practice according to such an inflexible rule is hardly less than malpractice. The all-important question is how to select these cases properly; and that can only be done by an expenditure of time and patience. It is to offer some slight suggestions as to how this problem can be solved that I venture to present these few points concerning the decision in a given case.

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ABSTRACT OF DISCUSSION

Dr. Frank C. Todd, Minneapolis: This paper deals with heterotropia and not with heterophoria. The question implied in the title to this paper is one which all will often find difficulty in answering. There are some cases in which it can be definitely answered, while there are others in which at present we can not positively determine the best procedure. As a guide, we have been given some rules which theoretically sound good, but practically do not always work out well. Therefore all study along these lines is of great value, and Dr. Howe has given us valuable contributions, which are helping to solve this and other muscle problems.

I can agree with him that there is no inflexible rule for always making a tenotomy or for always making advancement. There are cases in which one or the other or both operations should be practiced. As a rule, we should tenotomize a too strong or advance a too weak muscle. What we wish to secure, however, is a correction of the defect with binocular single vision if possible and normal rotations, and it sometimes happens after tenotomizing a muscle, which had not shown excessive strength, that is, in which apparently the defect was caused by under action of its opponent, that after operation the opponent develops extra power, while the tenotomized muscle loses none of its former power, successful results being thereby secured and in a case in which according to the rule of strengthening the weak muscle advancement was indicated. This probably occurs because of the constant exercise stimulated by the effort to maintain single binocular vision, but whatever its cause the instructive fact is that it occurs. Generally speaking, the effect of a successful advancement operation is more apt to be lasting than the effect of a tenotomy. Surgically, we may explain this fact on the basis that a tenotomy may result in cicatricial contraction, which may overcome the benefit at first secured, while if such cicatricial contraction takes place following a successful advancement, the effect is thereby increased instead of decreased. Therefore, we may feel more secure as to the ultimate results in an individual case when advancement has been done than following tenotomy. There are so many things to consider in determining the answer to this question that it behooves those who are doing this work to make an elaborate study of each case and also to follow the cases up after operation that valuable deduction may be drawn. Indeed, I believe we may draw more valuable conclusions from the results as shown by the muscle measurements after than before operation, and still more valuable by comparing the measurements made before and after operating.

In those cases in which the vision in each eye is so nearly equal that we may hope to produce single binocular vision, it would seem that the rule suggested in Dr. Howe's paper of tenotomizing a too strong muscle and shortening a too weak muscle, should be followed. In those cases, however, in which incurable and marked amblyopia exists in one eye, and in which, therefore, single binocular vision can not be secured, we have to consider only the cosmetic result. In these cases, whether or not indicated by the above-mentioned rule, I would prefer to confine my operating to the amblyopic eye, and in such cases it will usually be found necessary to combine advancement with limited tenotomy, we thereby avoid disturbing in any way the muscle attachments of the better-seeing eye.

Despite these rules, there are cases in which operators everywhere will be controlled by other considerations than the weakness or strength of the muscles as shown by our present means of measurement, especially in those cases in which measurements do not strongly indicate advancement or tenotomy; for instance, the general condition and temperament of the patient which makes it impossible or very difficult to do an advancement operation under local anesthesia, in which for some reason it may be desirable not to use general anesthesia.

I desire to emphasize Dr. Howe's plea for a careful study of these cases, but not alone previous to operation, for I believe a similar study of muscle conditions after operation will prove still more instructive.

Dr. E. E. Holt, Portland, Maine: All will agree with Dr. Howe on the necessity of careful examinations of each individual case of heterotropia in order to determine how best to correct it, whether we carry out all the details he suggests or not. In some cases, as he says, it is impossible to decide exactly what group of muscles is at fault, and therefore it is difficult to determine, beforehand, just what operation will best accomplish the desired result. It is just thirty-one years ago since I began to practice advancement of a muscle, or Tenon's capsule, for the correction of heterotropia. In 1885 I had performed the operation of advancement twenty-five times, and presented a paper embodying my experience with these cases to the American Ophthalmological Society at its twenty-first annual meeting. So far as I am aware, this was the first series of cases of advancement of a muscle or Tenon's capsule for the correction of heterotropia in this country, and I remember distinctly how unfavorably my paper was received by the society.

Dr. Knapp, in discussing it, said: "I only want to point out the dangers of advancement and would like to take issue with Dr. Holt in the group of cases of excessive convergence. I have mostly been able to correct the highest degrees of strabismus by two operations and stitching the eye to the commissure. In some cases I have been obliged to make a third tenotomy. I should rather make three tenotomies than make one advancement. Personally, I have had no bad luck with it, but I remember that when a student I had a conversation with the assistant of one of the most renowned ophthalmic surgeons of Europe. 'This operation,' said I 'strikes me as being somewhat dangerous, yet the professor has never said anything about failures.' 'No,' replied the assistant, 'he has not, but I have put the artificial eyes in.'"

Dr. Theobald of Baltimore said he could endorse what Dr. Knapp had said, for he never found it necessary to do an advancement.

The next year, 1886, Dr. Knapp read a paper on "Advancement of Tenon's Capsule in Strabismus" before the American Ophthalmological Society, which he began as follows: "When at our meeting of last year Dr. Holt advocated the correction of higher degrees of convergent squint by tenotomy of the contracted muscles and a simultaneous advancement of its antagonist, I opposed this plan because I was—and still am—convinced that the highest degrees of convergence can be corrected by one tenotomy on each internal rectus, and further, because I considered advancement not quite a safe operation in all cases. Visiting the ophthalmic clinics of Berlin and Paris last winter, I was surprised to find that with Schweigger, Hirschberg, Landolt and others, this plan was a subject of ordinary practice. They claim for it that the correction obtainable by it is as certain as with one or two simple tenotomies; moreover, that protrusion of the eyeball and secondary divergence are less likely to occur. Taking further into consideration how pleasant it is to remove the disfigurement in one sitting and not to be obliged to attack the good eye, we can readily appreciate the advantage of this new plan of operation over the old."

As to the results obtained from advancement in the series of cases reported at that time, my paper affirms that: "When it is considered that the operation for advancement of a rectus muscle is employed in the worst cases of strabismus, twenty corrections of the deformity out of twenty-five operations which was the result in this series of cases may be called a success, for it not only brought the eyes parallel and gave binocular fixation, and in some cases binocular vision, but the eyes were left with but little or no staring appearance and with good movements in all directions." In the twenty-four years since 1885, I have operated a good many times, though of late years not so frequently as formerly, because the patients who came to me did not need the operation of advancement for correcting the heterotropia. That the method of advancement of a muscle, or Tenon's capsule, for the correction of certain forms of heterotropia has become a universal practice, is certainly gratifying to one who first advocated the operations in this country.

Dr. Alexander Duane, New York: Dr. Howe has struck the keynote when he says "Practice according to such inflexible rules is hardly less than malpractice." There is, in fact, no rule that covers all cases. Each case must be judged by itself. It has always seemed to me that it is not so much the maximum ability of each eye to rotate by itself as the way in which the two eyes rotate when acting together, that shows us what to do in these cases. I have not found that the determination of the range of excursion of each eye separately with the tropometer or perimeter has helped me so much as the determination of the range of coordinate binocular movements, parallel, convergent and divergent. These I determine by finding: (a) The amount of deviation for distance as compared with that of near. (b) The prism divergence. (c) The convergence near-point. (d) The field of binocular single vision and the ability of the two eyes to rotate when moving together. This shows whether parallel movements are equal in the two eyes, or whether one eye moves excessively or insufficiently as compared with the other. This is best done by examining with the light and the tangent plane; or, if no diplopia can be elicited, by testing the screen deviation in the different directions of the gaze and by noting whether one eye follows the other in all movements or lags somewhere.

After tenotomy—especially of the superior and inferior rectus—the muscle may give way or some other changes take place by which a slight insufficiency is converted into a complete paralysis. This is a very disastrous result and one difficult to remedy. We should, therefore, be careful to avoid complete section of the superior and particularly the inferior rectus. Again, in advancement, months after the operation, the effect may diminish greatly, so that the result of our operation falls much below our expectations. There is an important difference between advancement and tenotomy, which is not generally recognized, and which is seen especially in operations on the elevators and depressors. A thorough-going tenotomy, sufficient to relieve a marked deviation in the primary position, produces a permanent paresis of the muscle. Consequently, it tends to produce diplopia, which increases fast as the eyes are moved in one special direction toward the periphery of the field of fixation. Or, to put the matter in another way, its effect in offsetting a deviation is much more pronounced in the periphery of the field of fixation than in the primary position. Thus tenotomy of the right superior rectus which produces an effect of 6 degrees or 7 degrees in the primary position would produce an effect of 15 degrees or 20 degrees or more in the right upper field, an effect of 7 degrees or 8 degrees in the left upper field, and very little effect in the lower field except near the primary position. An advancement, on the other hand, produces an effect which is often about as pronounced in the primary position as it is in the periphery of the field of fixation, and is pretty equally distributed over the whole field. Moreover, the advancement of a muscle tends to restrict the movement of the antagonist. Hence, advancement of the right superior rectus would produce an effect marked in the primary position, not very much more marked in the upper field, and perhaps actually diminishing in the far upper field; an effect, too, about equal in amount in the right upper and left upper portions of the field. The effect would also be marked in the lower field, and we may even find evidence of an artificial insufficiency of the inferior rectus in a diplopia developing when the eyes are moved far down. It follows that in correcting a paretic hyperphoria a tenotomy often serves better than an advancement, since the latter does not offset the diplopia nearly so well. If I attempt to correct paresis of the right superior rectus by advancing the muscle, I am likely to leave residual diplopia in the outlying upper field (especially the right upper quadrant), and I may hamper the action of the right inferior rectus enough to produce diplopia in the outlying lower field. If, on the other hand, I attempt to relieve it by doing a tenotomy of the left inferior oblique, I may not neutralize the diplopia in the primary position, but I shall equalize the diplopia in the upper field fairly well. In most cases of extensive paretic hyperphoria, advancement of the paretic muscle, combined with tenotomy of its opponent in the same eye or of its associate in the opposite eye, will be found necessary. In hyperphoria not paretic, which is largely the same in all parts of the field of fixation, advancement (preferably of the inferior rectus) will do better than tenotomy, particularly if the deviation is large. In small comitant hyperphorias a guarded tenotomy of the superior rectus seems the best procedure.

Dr. W. R. Broughton, New York: I think the discussion is confused a good deal. I do not believe the strength of the muscle has very much to do with heterophoria. I believe it is due to a mal-attachment of the muscle or to the length of the muscle, because one finds in high degrees of exophoria very strong interni with adducting power over 50. So that I do not believe it is as much the strength of the muscle as a question of regulating the attachment of the muscle. The question of whether we shall advance or tenotomize depends on whether the muscle will stand setting back without getting a limitation of the rotation. We all admit that tenotomy is easier for the patient and the operator, and if the muscle will stand setting back on the eyeball without limiting the field of rotation to the side, tenotomize; if it will not, then advance. As a matter of fact, in extreme cases we usually tenotomize first on each eye and then advance, getting normal rotation when we finish.

Dr. F. Valk, New York: In all cases of heterophoria I do not think that we should consider the near-point, as there may be esophoria at the distance and exophoria in the near. These cases were first noticed by Noyes, and come under the designation of dextrophoria. My contention is that if we have a perfectly normal balance in infinity we need not consider the heterophoria shown at the near-point. We must have a certain standard of motility as well as of vision, and if we have a deviation from that standard, heterophoria, we must adopt such procedures as may restore that standard. Now, I would suggest that we have only one instrument of any real scientific value, outside of the laboratory, for the estimation of this field of vision, and that is the tropometer of Stevens. Now, in the study of heterophoria we must not limit ourselves to the lateral muscles, but granting that, what are the indications for an operation? A tenotomy or an advancement even in the hands of a skillful operator has a certain element of danger, so may we not try a more conservative path? In heterotropia, do we not have an anatomic weakness of the externi which is always shown by the examination of the rotation by the tropometer, and Landolt long ago proved that advancements are always indicated in squint? But advancements are extensive operations, and I have been more than pleased with my results when I have done the operation of shortening on the externi, and then, if necessary, I have performed a guarded tenotomy under cocain on the squinting eye. For the purpose of illustration, let me give you the rotation of the eyes in a recent case of squint corrected by a double shortening:

R.E. 30° up, 50° down, 55° in, 30° out.
L.E. 30° up, 50° down, 60° in, 35° out.

It seems to me that a moment's glance at these figures will give us the necessary information as to the necessary and safe procedure, even in so-called congenital squint.

Spasmodic Contraction of the Pylorus in Infants.—A communication on this subject in the *Zentralblatt für Kinderheilkunde*, May 1, 1909, from von Starck, of Kiel, states that none of the children in his fourteen cases of spastic stenosis of the pylorus was of a specially nervous temperament or had inherited such. All had been born naturally at term and were normally developed; 2 were brothers born within two years. Half of the twelve children given treatment were breast-fed; his treatment consisted merely in giving the breast or other milk with a spoon or from the bottle, allowing only very small amounts at a time. The stomach was rinsed out only in 3 of the cases, including the one in which the child succumbed to convulsions, not connected with the pylorospasm. Saline infusion was necessary in a few cases, and in some cases he gave small doses of opium with valerian or chamomile, or in the form of Dover's powder or injection of a minute dose of morphin. Warmth to the stomach gave evident relief. He did not advocate operative intervention in any instance, and the children all recovered without it, the cure being complete in from six weeks to four months in all but one case in which eight months were required. The disturbances were first noted in the first or second week of life. Half of the children were the first-born in the families, and two-thirds were boys. Irritation of the stomach mucosa by the unaccustomed presence of food is the probable source of the trouble, too large amounts being allowed at first. Ten of the little patients have been seen again, from one year to nearly five years since, and all are exceptionally robust.

NEUROPATHIC KERATITIS AND SOME ALLIED CONDITIONS, WITH SPECIAL REFERENCE TO TREATMENT *

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During the past four years I have given special attention to all cases of eye inflammation that I have had reason to believe were of neuropathic origin. As a result of my observations I have become convinced that lesions of the eye, due to disturbance of innervation, are too often incorrectly diagnosed and treated. Moreover, I feel sure that many cases of keratitis reported in the literature as unusual are really examples of neuropathic keratitis which do not happen to correspond with textbook descriptions. No doubt in some instances the real nature of a case of neuropathic keratitis is overlooked in the attempt to assign to it a bacterial origin.

The only neuropathic conditions of the eyeball due to disturbance of sensory nerves about which anything definite seems to be known are confined to the cornea, iris and conjunctiva. Of these only neuropathic keratitis is at all well recognized. The latter term is not here used synonymously with the so-called neuroparalytic keratitis as is sometimes done, but in the broad sense indicated by its derivation, that is, to designate any lesions of the cornea due to disturbance of its nerve supply.

CONDITIONS EMBRACED IN NEUROPATHIC KERATITIS

The corneal conditions now generally accepted as neuropathic in origin are classified as herpes zoster corneæ, keratitis neuroparalytica, herpes febrilis corneæ and herpes corneæ neuralgicus. This classification, so far as it goes, is relatively satisfactory, if it is understood not to correspond strictly to differences in etiology. There are probably many, however, who still cling to the traumatic theory of neuroparalytic keratitis, but critical analysis made by Wilbrand and Saenger[1] should convince anyone that this is untenable. The simple fact, it seems to me, that neuroparalytic keratitis never presents any features that have not occurred also in the keratitis of herpes zoster is sufficient evidence that the two are produced in the same way.

In addition to these forms of neuropathic keratitis, several other corneal conditions have been described which are, perhaps, not generally accepted as neuropathic, but which I think should be included under this head. These are dendritic keratitis, superficial punctate keratitis, keratitis profunda, keratitis disciformis, and traumatic relapsing erosion of the cornea. My reason for holding this view is that the corneal changes considered characteristic of these conditions are not infrequently encountered in undoubted neuropathic keratitis, such as herpes zoster corneæ and herpes febrilis corneæ, and that typically they are associated with corneal hypesthesia and give the characteristic staining with fluorescein. Thus, dendritic keratitis may occur under the same conditions as herpes febrilis corneæ and is often associated with herpes labialis. The dendritic figure, moreover, may be combined with other features of neuropathic keratitis, such as superficial punctate spots and even vesicles. The malarial keratitis of Kipp[2] is undoubtedly identical with dendritic keratitis and is, therefore, not characteristic of malaria, except probably to the extent that neuropathic keratitis of malarial origin almost always assumes this form.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Wilbrand and Saenger: Die Neurologie des Auges, Wiesbaden, 1901, vol. ii.

Superficial punctate keratitis, Fuchs[3] states, is allied to herpes febrilis corneæ, but he does not expressly state that it is neuropathic in origin. In the cases I have seen the staining with fluorescin has been characteristic and there has been hypesthesia of the cornea. It seems to me probable that the condition is really identical with herpes febrilis corneæ, all the lesions by chance taking the punctate form instead of only a few as is usually the case. It is possible, however, that cases due to bacteria may occur presenting this corneal picture. In fact, it is known that this actually occurs in leprosy, and Herbert[4] has described what he regards as bacilli in the epithelial cells in cases seen in Bombay. The bodies described by Herbert, however, may have been products of cell necrosis.

Keratitis profunda and keratitis disciformis Fuchs considers to be distinct conditions. The only constant difference between them, however, seems to be the presence of a gray border around the disc in the latter form. Fuchs holds the view that disciform keratitis is due to some unknown micro-organism which gains entrance through the abrasions resulting from herpes or trauma. Von Hippel[5] does not discuss the possibility of a neuropathic origin, but thinks that both conditions are due to changes or defects in the endothelium which allow the aqueous humor to infiltrate the cornea, and suggests that if Fuchs' view in regard to infection is correct the infection may come from within. He does not believe that the two conditions can always be sharply differentiated from each other. Peters[6] maintains that keratitis disciformis is due to a disturbed innervation leading to edema and necrosis and that the endothelium is secondarily affected. Meller[7] made a microscopic examination of an eye showing the condition in an advanced stage and concluded that Fuchs' explanation was correct. It does not seem to me, however, that this conclusion was warranted by his findings. The facts that both keratitis profunda and keratitis disciformis occur most commonly after herpes zoster ophthalmicus or trauma, that both may be associated with corneal hypesthesia and show outlying superficial punctate spots, impel me to believe that both conditions are essentially neuropathic, the minor differences between them being dependent on differences in the intensity of the nerve irritation.

The condition known as traumatic corneal erosion, which is undoubtedly an exaggerated form of traumatic keratalgia, has been explained by assuming that the epithelium of the cornea, owing to the injury, does not regenerate normally, and is easily brushed off by the lids, especially after the latter have adhered to it during the night. Wickerkiewicz[8] and others, however, have explained it as due to injury of the corneal nerves, and attribute its absence after more severe injuries to the fact that in the latter case the nerves are actually broken. This view seems to me the correct one, because the keratitis produced may simulate almost any of the forms of neuropathic keratitis just described, and there is hypesthesia of the cornea as well as the characteristic staining with fluorescin. Recently Cuperus[9] has brought forward the view, based on the fluorescin test, that the cornea is not normal between the attacks, which I can confirm by my own observations. I am sure, too, that if this test is always carefully applied, few cases of traumatic keratalgia will be met in which corneal lesions are not seen. The neuropathic theory of relapsing traumatic erosion of the cornea accords also with the fact that a special kind of injury is necessary, such, for instance, as that due to the snap of a twig. The injury to the nerves thus produced, however, does not always lead to actual erosions, but, as already indicated, may produce a condition indistinguishable from keratitis profunda. This condition I have seen in almost all cases of traumatic neuropathic keratitis in which the injury did not act directly upon the cornea but through the lid.

It might be expected that in neuropathic keratitis in which the epithelium is almost always altered if not actually lost for a considerable period of time, infection would be a frequent occurrence. This, as a matter of fact, is not the case, for serious infection occurs in only a small percentage of the cases. Since, however, neuropathic keratitis is relatively common, the small number of infected cases constitute a large percentage of all cases of ulcerative keratitis. In fact, while I have no exact statistics bearing on this point, I believe that they constitute the largest percentage of such cases, exclusive of gonorrheal and phlyctenular disease. Some of the worst cases of ulcus serpens have a neuropathic basis, traumatic or otherwise. In these cases, unless seen at an early stage of the infection, it is difficult to determine the neuropathic element. According to Peters,[6] it is the neuropathic element to which ulcus serpens owes its peculiar characteristics.

PATHOLOGY OF NEUROPATHIC KERATITIS

Knowledge of the pathology of neuropathic keratitis is based almost entirely on postmortem examinations made in cases of herpes zoster and neuroparalytic keratitis. Few observations have been made in connection with the histology of the corneal lesions, on account, no doubt, of the difficulty in obtaining material at a sufficiently early stage and uncomplicated with lagophthalmic keratitis. The work of Head and Campbell[10] on herpes zoster, and the admirable exhaustive review of the whole subject by Wilbrand and Saenger,[1] have, I think, established the fact that neuropathic keratitis is due to an irritative lesion of the fifth nerve or Gasserian ganglion. Head and Campbell maintain that in zoster the most important lesion is in the ganglion, but Wilbrand and Saenger give good reasons for believing that the essential lesion is a neuritis. As to the peripheral changes in the skin and cornea, Head and Campbell do not give any definite explanation, but state that they do not assume the existence of trophic nerves.

Wilbrand and Saenger, on the other hand, think that the peripheral lesions are produced in some obscure way by abnormal impulses from trophic nerves. The existence of trophic nerves, however, has never been demonstrated. I would suggest a theory which, while admitting the possibility, does not necessitate the assumption of trophic nerves, and which seems to explain more definitely the production of the peripheral lesions. It is a well-known physiologic fact that if a nerve of any kind is stimulated, impulses, as shown by the galvanometer, pass along it in both directions.[11] Assuming now that such impulses are produced by some lesion of the fifth nerve, it is self-evident that the efferent impulses must give rise to some changes, however, slight, at the nerve terminals. One of the simplest changes that could be imagined, and one that would seem to be physiologically possible, would be the production of an acid reaction. If these impulses were continued for a considerable period of time, sufficient acid or other irritating substance might be produced as to cause the lesions in both the skin and the cornea.

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[2] Kipp, C. I.: Keratitis from Malarial Fever, Tr. Am. Ophth. Soc., 1880, p. 91.

[3] Fuchs, E.: Lehrbuch der Augenheilkunde, Leipsic, 1907.

[4] Herbert, H.: Ophthal. Rev., 1901, p. 339.

[5] Hippel, E. von: Die Ergebnisse meiner Fluoresceinmethode zum Nachweis von Erkrankungen des Hornhautendothels, Arch. f. Ophth. (Graefe's), 1902, liv, 509.

[6] Peters: Ueber traumatic Hornhauterkrankungen und ihre Beziehungen zum Herpes corneæ, Arch. f. Ophth. (Graefe's), 1904, lvii, 93.

[7] Meller, J.: Die histologischen Veränderungen des Auges bei der Keratitis disciformis, Klin. Monatsbl, f. Augenh., 1905, ii, 335.

[8] Cited by Wilbrand and Saenger: Die Neurologie des Auges, ii, 84.

[9] Cuperus, N. J.: Ueber sogennante recidivirende Erosio corneæ, Arch. f. Augenh., 1908, lxi, 26.

[10] Head and Campbell: The Pathology of Herpes Zoster, Brain, 1900, p. 353.

This theory of neuropathic keratitis harmonizes perfectly with the recent theory of Fischer[12] in regard to the nature and cause of edema. In herpes of the cornea the occurrence of vesicles leaves no doubt that here is a local edema. This, it seems to me, establishes the fact that edema is not dependent essentially on changes in blood vessels—a fact that is not elsewhere easy of demonstration. It might be urged that the vesicles on the cornea were due to a general edema dependent in some way on the vessels around the cornea or within the globe, were it not that the vesicles often occur and remain definitely localized. According to Fischer, the cause of edema in general is an increased affinity of the tissue colloids for water. This increased affinity may be brought about by a variety of chemical changes, the most important of which is probably the occurrence of acid. It is apparent at once how satisfactorily this theory may be applied in the explanation of the lesions of neuropathic keratitis. Thus the irritative lesion, acting on the fifth nerve or Gasserian ganglion, sends impulses to the cornea which produce an acid reaction or other chemical change at the nerve terminals. This in turn acts on the colloids of the corneal lamellæ or epithelium, causing them to become edematous. The edema affecting the epithelium from behind produces vesicles, erosions, or less marked changes. To explain the denser and, to a greater or less degree, permanent opacities which occur in cases of long duration, it is only necessary to assume further that proliferative changes take place. These could be produced by the action of the irritant on the corneal corpuscles leading either directly to proliferation or to necrosis followed by the process of repair.

The variations in the corneal changes in neuropathic keratitis could be readily explained by variations in the intensity of nerve irritation and in the number and distribution of the nerve fibrils involved. The sharp definition of many of the lesions, notably the punctate spots and dendritic figures, may perhaps be simply an expression of the fact that the fibrils in the nerve trunks are collected into bundles. Wilbrand and Saenger have offered an ingenious explanation of the variations that occur in different cases in regard to pain and disturbance of corneal sensibility. This is, briefly, that these variations are dependent on whether the nerve lesion produces impulses in one or both directions, and on the extent to which it blocks off impulses in one direction or the other. It is obvious that this explanation is applicable whether or not the existence of trophic nerves is admitted.

ETIOLOGY OF NEUROPATHIC KERATITIS

As just explained, neuropathic keratitis is almost certainly due to an irritative lesion of the fifth nerve or its ganglion. The character of this lesion otherwise seems to be unimportant, so that similar corneal changes may be produced by various causes, such as trauma, tumors, meningitis, tubercle, syphilis, hemorrhage, or to primary neuritis. In a particular case, therefore, it may be difficult or impossible to determine the etiologic factor. Head and Campbell[10] assert that herpes zoster is a specific infectious disease analogous to acute poliomyelitis. This may be true of the majority of cases, yet a condition indistinguishable from zoster may occur in the course of other infections, such as influenza, or may be produced by trauma or by the action of poisons, especially arsenic. Some observers have even asserted that an atypical form of zoster may be produced by hysteria. In certain cases of herpes corneæ neuralgicus, periodical eruptions of vesicles on the cornea have coincided with the menstrual periods.

Probably the largest number of cases of neuropathic keratitis come under the designation of herpes febrilis corneæ. In most of these there is a history of a recent attack of coryza, bronchitis, pneumonia, malaria, or gastrointestinal disturbance, and most often there is herpes facialis or labialis. Cases are met, however, in which no etiologic factor can be determined, so that the distinction between them and herpes zoster corneæ without skin involvement, the so-called *forme fruste,* is obscured. It is probable also that the conditions which ordinarily produce herpes febrilis may exceptionally give rise to a skin eruption identical with that of zoster.

As already stated, trauma of a certain kind acting on the cornea may produce almost any of the corneal lesions of neuropathic keratitis. This is true also of trauma acting on the nerve trunk or Gasserian ganglion from any cause, such, for instance, as fracture of the skull. The indefiniteness, from an etiologic standpoint, of the distinctions between the various classes of neuropathic keratitis is exemplified also by the so-called neuroparalytic keratitis. This term, as commonly employed, seems to be incapable of an exact definition, and is used in an entirely arbitrary manner. It can not be defined on the basis of etiology, since the same etiologic factor, trauma, for instance, may at one time produce neuroparalytic keratitis and at another a condition indistinguishable from herpes zoster. Probably it is most often applied to cases which can not be included under herpes zoster or herpes febrilis. It is used especially to denote the keratitis due to extirpation of the Gasserian ganglion, syphilis, etc., and that due to general nervous disease, such as tabes.

DIAGNOSIS OF NEUROPATHIC KERATITIS

As already indicated, in the majority of cases that come to the attention of the ophthalmologist, the remote causes underlying the nerve lesion seem to be of relatively little importance and, in fact, not clearly understood. On the other hand, in cases of brain tumor, fractured skull, tubercle, meningitis, tabes, etc., the eye condition may be only an unimportant symptom the remote cause of which is at once sufficiently obvious. In any case the possibility of poisoning, especially with arsenic or lead, should not be lost sight of.

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[11] There is evidence also that even under normal conditions efferent impulses, called antidromic impulses, may pass along sensory nerves. Without regard to this possibility it seems probable that all nerves, both afferent and efferent, may in a sense act as trophic nerves, because it is almost self-evident that there must be some reciprocal relationship between the vital activities of the tissue cells and of the nerve filaments with which they are so closely related anatomically.

[12] Fischer, M. H.: The Nature and Cause of Edema, The Journal A. M. A., Sept. 5, 1908, li, 830.

In making the diagnosis of the keratitis itself the important factors to be considered are the sensibility of the cornea, the appearance of the corneal lesions, especially after staining with fluorescin, the injection of the eye, the intraocular tension, the size of the pupil, the subjective symptoms, and the occurrence of herpetic skin eruptions. The testing of the relative sensibility of the cornea requires care in order that the results may be of any value. When the sensibility is completely abolished the condition is, of course, easily determined, but this occurs in very few cases. I have found a piece of thread, as recommended by Fuchs,[3] the most satisfactory test object. More precise methods have been devised, such as blowing a stream of air on the cornea, but in my opinion these are too delicate to be of any practical value. For clinical purposes it is also not practical to differentiate the senses of touch, pressure, temperature and location. I am sure that any change in the sensibility of the cornea to which it is safe to attach any importance can be determined by the thread test if it can be determined at all. The test should be made with reference both to the lid reflex and the sensations of the patient. The former is the only one which can in many cases be relied on, especially in neurasthenic individuals. Not infrequently the lid reflex may be elicited without the patient being fully aware that the cornea has been touched at all. It is best determined by having the patient keep his eyes open without assistance. Unfortunately, many patients as soon as their eyes are approached put their eyelids into a more or less spastic condition which inhibits the lid reflex. In some cases it is necessary to raise the eyelid with the thumb. This is not so unsatisfactory as might be thought, because here the reflex may be both felt and seen by the observer. The cut end of the thread should not be punched directly into the cornea, but rubbed over the surface, the pressure being increased as found necessary. The same path should never be repeatedly traversed, as this may render the epithelium more sensitive. The unaffected eye should, of course, always be tested as a control.

The sensations of the patient may be ascertained at the same time the test for the lid reflex is made. It is always a surprise to the patient to find that the affected eye is less sensitive than the other, and he may answer incorrectly for psychologic reasons. This fact, however, obviously makes the test more reliable when hypesthesia is found. Many patients are influenced by seeing or feeling the movements of the hand making the test, so that these should be masked as far as possible. I always make several preliminary movements before actually touching the cornea, and not infrequently, without any intention to deceive, the patient states that a sensation is felt. This may happen when the cornea is completely anesthetic, and is probably due to the irritable condition of the cortical centers produced by the constant impulses from the nerve lesion. Too much reliance should not be placed on diminution of sensibility over infiltrated areas, as this might occur in other conditions. Various portions of the cornea should always be tested, since the sensibility may be more impaired in some than in others. The periphery of the cornea is normally less sensitive than the center.

The importance of testing the sensibility of the cornea for the diagnosis of neuropathic keratitis is exceedingly great, for while it may be impaired in other conditions, notably in glaucoma and late stages of syphilitic interstitial keratitis, these as a rule are easily distinguished from neuropathic keratitis. In the early stages of interstitial keratitis I have found the corneal sensibility normal or increased, even over the infiltrated areas. There is considerable variation in the sensibility of the cornea among normal individuals; in old age it is apt to be markedly diminished, but the unaffected eye usually offers a satisfactory control here. Cases of neuropathic keratitis are said to occur in which the sensibility of the cornea is normal or increased, but these are too infrequent to be of much importance.

The most characteristic corneal lesions in neuropathic keratitis consist of erosions, vesicles, filaments (filamentous keratitis), superficial punctate spots, and infiltrates or ulcers of more or less dendritic form, occurring singly or in different combinations. Peters has pointed out that the epithelium may be loosened and movable over the affected areas. In cases of long standing the cornea may show permanent opacities and vascularization. The new vessels may be either deep, superficial or in a pannus formation, and are usually few but of large caliber. They are rarely so deeply seated as those in the interstitial keratitis of syphilis. In many cases the corneal lesions are readily seen, but in others they may be overlooked if the fluorescin test is not used. Simple as this test is, it is seldom properly applied and its full value is not generally appreciated. Usually after instilling a drop of the solution the intense stain, which immediately occurs when erosions are present, is alone looked for, whereas this is relatively unimportant, since erosions as a rule may be seen unstained. More important is the light green staining, which is either superficial or relatively deeply seated, and which is not due to actual erosions. To bring this out the fluorescin solution should be allowed to act one or two minutes, and if there is profuse lachrymation a second drop should be instilled. The conjunctival sac should then be washed practically free from fluorescin with boric acid solution. This is important because the film of fluorescin solution over the surface of the cornea may make opacities of any kind, or facets, appear slightly green, or, on the other hand, may mask the areas in the cornea which are actually stained.

Staining of the cornea with fluorescin, exclusive of erosions, occurs in conditions other than neuropathic, but these are usually easily recognized. It occurs in glaucoma and in lagophthalmic keratitis.[13] Deeply seated staining, according to von Hippel,[5] is always due to injury of the corneal endothelium. In regard to glaucoma I can confirm his observations, for I have found the endothelium altered or absent in a number of eyes enucleated for this condition. In one of these cases I observed deeply seated fluorescin staining forty-eight hours before the enucleation. It does not necessarily follow, however, that the injury to the endothelium was the cause of the staining, because both may have been due to changes within the cornea associated with edema. I have failed to obtain any staining in tuberculous interstitial keratitis except in cases in which the epithelium was affected by an infiltrate lying just beneath it. According to von Hippel, there is a limited class of cases of interstitial keratitis due to congenital syphilis in which the infiltrates are chiefly central, which show deep staining with fluorescein. This staining has also been seen in cases of sympathetic ophthalmitis, in which I have myself observed it. I have seen it also in certain cases of iritis which seemed to be undoubtedly syphilitic. Von Hippel apparently did not consider the possibility of a neuropathic basis in any of his cases. Considering the profound changes that may occur in the epithelium in neuropathic keratitis, it would not seem strange if the endothelium should also sometimes suffer. Possibly some of the cases of iritis described by von Hippel were similar to the cases of neuropathic iritis considered below.

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[13] Fluorescin staining similar to that seen in lagophthalmic keratitis may often be obtained in the normal eyes of rabbits or guinea-pigs, being due no doubt to the infrequency of winking in these animals.

The injection of the eye in neuropathic keratitis is almost always entirely conjunctival, even when there is iritis. The amount of injection seems to bear no relation to the degree or character of the corneal involvement. Thus a marked conjunctival injection associated with chemosis may occur while the cornea shows a few lesions brought out only by the fluorescein test. This condition is apt to be mistaken for an infectious conjunctivitis. On the other hand, the cornea may be cloudy throughout and almost completely denuded of epithelium without any ocular injection. When either of these conditions occurs it obviously assists in the diagnosis. There does seem to be some relation, however, between the amount of injection and the amount of pain, although this is not as close as might be expected. In most cases the injection is no doubt due to a reflex vasomotor dilatation arising from the central irritation produced by the nerve lesion. In the marked cases it does not seem possible that this could be the sole cause, but that it is here due largely to the direct irritation of the nerves supplying the conjunctiva. In this way also may be explained the edema of the eyelids which is sometimes associated with neuropathic keratitis. In cases of infection the injection is increased, but often less than would be expected.

The pupil in neuropathic keratitis is usually somewhat smaller than in the normal eye. In exceptional cases, however, there has been mydriasis due to an associated paralysis of the third nerve. The intraocular tension is apt to be subnormal, but seldom is it decidedly so. In rare cases glaucoma has ensued.

The subjective symptoms, like the ocular injection, bear no constant relation to the amount of corneal involvement. Pain of a neuralgic character, referred to the eye or neighboring parts, may be extremely severe or entirely absent. Often it is present at the onset only, but it may persist throughout the attack. The feeling of foreign body irritation is common, probably due to the presence of erosions. It may be absent, however, with the greater part of the cornea eroded. Not infrequently all that is complained of is dimness of sight. In such cases the corneal infiltrates may be mistaken for old scars if the fluorescin test is not applied.

The presence of an herpetic eruption on the face should, of course, always be looked for. When the eruption is extensive, as in well-marked cases of herpes zoster, it is too obvious to escape notice, but it may be mistaken for erysipelas. Sometimes all that may be found are one or two vesicles on the side of the nose or high up on the forehead. If herpes of the lips is not present at the time of the examination, inquiry will often elicit the fact of the occurrence of a "cold sore."

TREATMENT OF NEUROPATHIC KERATITIS

The local measures usually employed in the treatment of these patients have been the use of the bandage, atropin, ointments, and in severe cases the application of irritating or caustic agents, such as tincture of iodin or the actual cautery. None of these, however, can be said to be entirely satisfactory, although in mild cases an occlusive bandage may be alone sufficient. The use of the actual cautery has recently been strongly recommended by Amman[14] for herpes febrilis corneæ. Cauterization may no doubt in some cases put an end to the process, but only at the sacrifice of more or less corneal tissue, so that the resulting opacity is probably as great, if not greater, than if the case had remained untreated.

Within the past two years I have adopted a method of treatment, founded on what I believed to be a rational basis, which has proved uniformly successful. It occurred to me that since neuropathic keratitis was due to an irritative lesion of a sensory nerve, recovery ought to follow if the nerve terminals were anesthetized by means of a local anesthetic. Even if permanent anesthesia proved impracticable, it seemed that treatment along this line should lead to improvement in the condition. As an anesthetic for this purpose I selected holocain, for several apparently unimportant reasons, one of which was that it was slightly antiseptic and that its solutions remained sterile. My results were so satisfactory that I have not tried any of the other anesthetics, although it is possible that some of the latter might prove still more efficient. The most important reason, however, for continuing with holocain was that by adopting a single method of treatment in a series of cases, which were extremely variable anyway, it would be possible to arrive at more accurate conclusions as to its value than if the treatment was continually being changed.

Owing to its toxicity it did not seem advisable to use holocain in oily solution or in the form of an ointment, and from the beginning I have used a 1 per cent. aqueous solution. After some experimentation in regard to the frequency of the instillations, I concluded that intervals of no more than two hours gave the best results, and that it was no advantage to make them as short as one hour. I also concluded that a bandage was essential, and of this I feel certain. The bandage that has proved most acceptable to the patients has been one of the well-known celluloid eye-shades with an eye-pad placed beneath. This has the advantage of being cooler, easier to remove for the frequent instillations, and of being less unsightly than an ordinary bandage. The elastic cord should be adjusted to give just sufficient pressure to keep the eyelids closed and no more. In one very marked case, in which only a rim of epithelium remained at the periphery of the cornea, I obtained more rapid improvement by bandaging both eyes. Patients in such cases as this and patients badly infected at the outset are the only ones I have not treated as out-patients. In all cases the bandage and instillations were omitted during the night.

As a rule a mydriatic was not prescribed unless there was a well-marked iritis. If the pupillary reaction was not quite normal it was generally sufficient to instill a drop of atropin solution at the time of each visit. At the suggestion of Dr. P. S. Smyth, I have sometimes added scopolamin hydrobromate in the proportion of 1/300 to the holocain solution with satisfactory results, but I can not say that a small amount of atropin would not prove equally satisfactory.

I have now treated over one hundred patients by this method, and have yet to see a patient who did not improve from the time the treatment was begun. In some cases the cornea failed to stain with fluorescin within a week; in others more or less staining was obtained for a number of weeks. Usually this involved only one or two punctate spots which could easily have been overlooked if not carefully searched for. The treatment was continued until not the slightest staining could be obtained. The bandage was then dispensed with unless, as sometimes happened, the patient desired to wear it longer.

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[14] Amman, E.: Neues Heilungsverfahren beim Herpes Corneæ febrilis, Arch. f. Augenh., 1908, lxi, 194.

Local treatment of the eye could not, of course, have any influence on the source of the nerve irritation so that it might be expected that when it was discontinued the keratitis would recur. This did, in fact, sometimes happen, but in some cases, which no doubt would have run a short course anyway, the keratitis did not recur even when the local treatment was discontinued within one week. No doubt in such cases the nerve lesion had within this time undergone partial or complete retrogression. In a number of cases recurrences took place repeatedly so that it became advisable to try some general treatment.

It suggested itself to me that since arsenic seemed to have a special affinity for nerve tissue, as indicated by the well-known fact that it may produce an herpetic skin eruption, it might act in a specific manner on the nerve lesion in neuropathic keratitis. Whether or not this is really the case, my results following the administration of arsenic have been most satisfactory. In cases which over a period of several months had recurred whenever the local treatment was discontinued, the lesions, after several weeks' treatment with arsenic, became permanently healed. Since it is impossible at the outset to determine whether or not a case will assume this chronic type, to save time I now give arsenic in all non-traumatic cases in which some other general treatment is not indicated. My custom has been to order for adults two drops of Fowler's solution three times daily, to be increased one drop each day until ten drops is reached, at which dose it is continued for a month or longer if necessary. The patients are, of course, warned to note the symptoms of arsenic poisoning, such as gastritis and enteritis.

The cases of neuropathic keratitis in which the treatment with arsenic was not indicated have been very few. In two cases in which lead-poisoning was suspected the use of potassium iodid was followed by prompt recovery This was also used at first in a few patients with syphilitic histories, but with apparently no effect, whereas the arsenic treatment was successful. In several patients with histories of repeated malarial attacks, but with no active symptoms of malaria, arsenic was used instead of quinin with satisfactory results.

The use of arsenic in neuropathic conditions is, of course, not entirely new, since it was long ago advocated for herpes zoster of the skin. Its beneficial action here is not so obvious, because it is comparatively slow in manifesting its effect. If administered early, however, it might be expected to prevent the disease from becoming unusually prolonged. Then, too, almost thirty years ago Kipp[2] stated that he had given arsenic, in medium doses, in many cases of malarial keratitis with very beneficial results.

What has been said so far in regard to treatment has applied especially to neuropathic cases uncomplicated by infection. It is noteworthy, however, that I have not had infection occur in a single case after the holocain treatment was begun. On the other hand, I have seen several patients with infected ulcers and hypopyon recover promptly under this treatment alone; in fact, I have found this treatment advantageous in all forms of ulcerative keratitis in which it has been tried, whether on an evident neuropathic basis or not. In cases of ulcus serpens additional measures have been required, such as cauterization and the Saemisch operation. The holocain treatment has proved most efficient also in cases of keratitis from acne rosaceæ.

While I have no doubt of the value of holocain in the treatment of neuropathic keratitis, when used in the manner described, it is possible that its therapeutic effect may be dependent, in part at least, on some principle other than that which led me to employ it. Certainly the anesthesia produced in a normal cornea by one instillation of holocain does not persist two hours, though it is possible that its effect on nerves constantly irritated may be more lasting. The possibility must be considered that its action may be directly on the tissues, especially on the epithelium. As is well known, solutions of any of the local anesthetics, when repeatedly instilled into the eye at short intervals, produce decided pathologic changes in the epithelium, leading even to necrosis.[15] It may be, therefore, that holocain in a 1 per cent. solution, used every two hours, acts as a stimulant to the tissues. I am in a position to state positively, at any rate, that it does not harm the epithelium even when used in this way for several months, and that erosions of the cornea are rapidly repaired under its use.

NEUROPATHIC IRITIS

In cases of neuropathic keratitis the iris is not infrequently involved. Usually the iritis is of a mild type and the synechiæ give way readily, but in exceptional cases it may predominate over the keratitis. It is known also that iritis may occur in herpes zoster ophthalmicus without involvement of the cornea. There can be no doubt, therefore, that iritis may be produced by the same factors that give rise to neuropathic keratitis. This naturally raises the question whether or not neuropathic iritis may occur unassociated with either keratitis or skin eruptions, that is, without any obvious indication of its neuropathic origin.

I have seen several cases in which I believed that this condition might have existed. Of these I have records of four. In three of these the diagnosis was based chiefly on well-marked hypesthesia of the cornea. In one case, although the cornea remained practically clear, at the end of a week the fluorescin test showed an area of faint green staining apparently just beneath the epithelium. In two of the cases slight fluorescin staining was obtained when first seen. In two of the three cases the onset was with intense supraorbital neuralgia. The fourth case was more suggestive still. In this there had been an attack of superficial punctate keratitis six weeks previously which had responded promptly to the holocain treatment. After an interval of about four weeks a herpetic eruption appeared on the lip on the same side. Two weeks later the patient came to see me, complaining of the most intense neuralgia which had come on abruptly in and about the eye. There was much photophobia and marked conjunctival and ciliary injection. The iris was discolored and showed synechiæ, which, however, readily gave way under atropin. There was no hypesthesia of the cornea and the fluorescein test was negative, although the punctate opacities from the previous keratitis were still visible.

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[15] The relative toxicity of various local anesthetics has recently been studied by Guillery (Die Bedeutung der Anästhetica für die Behandlung der durch Aetzgifte entstandenen Hornhauttrübung, Arch. f. Augenh., 1908, lxi, 38). Under the conditions of his experiments holocain, 2 per cent. solution, seemed the most toxic of all. His results, however, are of limited significance from a therapeutic standpoint, since different results might well have been obtained by varying the concentrations of the solutions and the frequency of their instillations. Other factors, also, such as duration and rapidity of action, here require consideration.

While these cases may show that neuropathic keratitis occurs without keratitis, they give no indication of its frequency. It is obvious that should cases occur without hypesthesia and without the circumstantial evidence afforded by the last case, the correct diagnosis would be difficult if not impossible to make. They would naturally be classed as cases of rheumatic iritis, which brings up the question whether many cases so called are not neuropathic in origin. In regard to this I have not sufficient evidence to venture an opinion. In view, however of my satisfactory results in the treatment of patients in intractable cases of neuropathic keratitis with arsenic, it would seem well to try this treatment in any case of iritis of unknown etiology which failed to respond to the usual methods.

NEUROPATHIC CONJUNCTIVITIS

As is well known, in neuralgia of the fifth nerve from any cause there may be hyperemia of the conjunctiva. This is clearly analogous to the conjunctival hyperemia occurring in association with neuropathic keratitis, and no doubt due to the same cause. It may be so marked as to be mistaken for an infectious conjunctivitis, but the neuralgic pain and the lack of purulent secretion usually make the diagnosis easy. In some cases there is hypesthesia of the cornea and conjunctiva. Not much reliance, however, can be placed on a test of the sensibility of the conjunctiva, because normally it is not very sensitive. Other forms of conjunctival hyperemia, such as that due to reflex irritation from the nasopharynx, will not be considered here, since they are not dependent on actual lesions of the fifth nerve. The hypesthesia of the cornea in cases of xerosis suggests a neuropathic basis for this rare condition. This is supported by a pathologic examination made by Circione.[16]

Within the past two years I have come to recognize another condition of the conjunctiva as neuropathic, to which I desire to call especial attention. It is not uncommon and is usually designated by the broad term "episcleritis," under cover of which our ignorance in regard to several ocular affections has frequently been hidden. The condition manifests itself as a localized area of congestion in the center of which the conjunctiva is swollen into a more or less definite nodule. There is also a variable amount of general conjunctival hyperemia. The epithelium over the nodule may be apparently normal, but at some stage it will usually stain with fluorescin. In some cases the surface of the nodule becomes eroded or ulcerated. The nodule may be situated anywhere on the bulbar conjunctiva, not infrequently exactly at the limbus. When in the latter situation the contiguous corneal tissue is apt to be hypesthetic, show localized cloudiness, and stain with fluorescin as in neuropathic keratitis. I have never recognized the condition on the palpebral conjunctiva. The duration is variable, generally from one to six weeks.

My evidence that this is a neuropathic condition, usually analogous to herpes febrilis corneæ, can be presented, perhaps, most briefly by stating the essential features upon which I based the diagnosis in sixteen consecutive cases seen during my last service of four months at the infirmary.

CASES OF HERPES OF BULBAR CONJUNCTIVA

One case: neuralgia and corneal hypesthesia.

One case: corneal hypesthesia, neuropathic keratitis, edema of eyelids, coryza.

One case: herpes labialis, coryza.

One case: neuropathic keratitis in other eye, lead colic.

Three cases: corneal hypesthesia.

Two cases: coryza.

One case: corneal hypesthesia, herpes facialis.

One case: neuralgia, corneal hypesthesia, marginal keratitis.

One case: herpes zoster ophthalmicus, marginal keratitis and hypesthesia.

One case: dendritic keratitis, bronchitis.

One case: marginal keratitis punctata, herpes labialis, coryza.

One case: marginal keratitis, and hypesthesia, bronchitis, herpes labialis.

One case: characteristic conjunctival lesion alone.

The case in the above list in which there was neuropathic keratitis in the other eye, it seems to me, was especially significant. The patient had slept in a freshly-painted room for three weeks and during the third week was taken with severe "cramps in the stomach," apparently lead colic. About one week later when seen by me the left eye presented typical neuropathic keratitis with hyperesthesia, while the right eye showed the conjunctival condition described, situated a short distance from the limbus. Both conditions practically disappeared in three weeks under the administration of potassium iodid.

In the list of cases, by "marginal keratitis" is meant the keratitis localized about the conjunctival nodule at the limbus. I have never seen this extend far into the cornea, probably because of the fact that the cornea and conjunctiva are supplied chiefly by different nerves, the cornea by the ciliary, and the conjunctiva largely by the supraorbital and infraorbital nerves. The conjunctival nerves, however, partly supply also the periphery of the cornea,[17] thus accounting for the extension of the conjunctival lesion into the latter.

As already stated, this condition of herpes of the bulbar conjunctiva is usually diagnosed as "episcleritis" and therefore not clearly differentiated from tuberculous scleritis or sclerokeratitis. It may also be mistaken for a large phlyctenule, especially when ulcerated, and probably it will not always be possible to avoid this error. I have always regarded with suspicion the alleged large solitary phlyctenules situated some distance from the limbus, and I am now inclined to believe that they are invariably of neuropathic origin.

When occurring in well-marked cases of herpes zoster ophthalmicus the neuropathic origin of the condition under consideration is, of course, evident. In this connection it is interesting that Wilbrand and Saenger[1] state that a "true episcleritis" may occur in herpes zoster. Judging by the description, the condition referred to would seem to be identical with that observed by me.

In the treatment of herpes of the bulbar conjunctiva the same measures are evidently indicated as in neuropathic keratitis. Practically, however, I have found that treatment is seldom required except when the cornea is involved. Where the conjunctiva is alone affected and the subjective symptoms are negligible, it seems unnecessary to put the patient to the inconvenience of wearing a bandage, since there is no danger of serious infection and no scarring is to be feared as in the case of keratitis.

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[16] Cited by Wilbrand and Saenger: Die Neurologie des Auges, ii, 51.

[17] This possibly explains why a ring of epithelium is left on the cornea in severe cases of neuropathic keratitis. It suggests also a neuropathic origin for certain marginal ulcers.

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ABSTRACT OF DISCUSSION

Dr. W. Zentmayer, Philadelphia: Dr. Verhoeff's observations have been made with great care and unusual acumen, and on these observations he reasons logically, and to me, in some instances, convincingly, to sustain his views. To those who have found the want of anatomic proof of the existence of trophic nerves a strong objection to the acceptance of the trophic origin of these affections, he has advanced a plausible theory to explain the causation of these lesions through the sensory nerves. While I have nothing to advance in criticism but what Dr. Verhoeff has doubtless carefully considered and rejected, I wish to bring forward such thoughts as have seemed to me as possible objections, but for which I have no doubt Dr. Verhoeff will have satisfactory answers. Regarding neuroparalytic keratitis, the diversified combination of conditions recorded, the different types of corneal lesions found and the differences in the pathologic findings in the few cases which have been examined microscopically, are the material out of which the several theories thus far advanced have received support, and notwithstanding the strong evidence for the neuropathic theory the majority of writers still hold to the traumatic theory or some modification of it. As Dr. Verhoeff has pointed out, this question is thoroughly threshed out in Wildbrand and Saenger, and it would be a waste of time to bring forward the various arguments that have been advanced in support of the different theories to rebut Dr. Verhoeff's position, so that I shall simply mention the bearing of the pathologic studies that have been made and state the results in some recent research work. In two of the three cases in which microscopic examinations have been made (de Schweinitz and Treitle), the findings were those of a purulent keratitis, rather favoring the mycotic theory. In a recent study of a series of 21 cases of extirpation of the Gasserian ganglion for trifacial neuralgia, in 11 of which keratitis developed, Davies and Hall found in all an unknown bacillus whose presence seemed necessary for its production, but dependent on another factor, the eyelids, which was removed if they were kept closed. As Dr. Jackson says: "In the present state of our knowledge a rational view seems to be that disease or injury involving the trunk or the ganglion of the fifth nerve causes or predisposes to corneal disease partly by an obscure irritative influence and partly by favoring traumatism."

As to keratitis disciformis, such evidence as we have, aside from clinical deduction, favors the view of Fuch's that it is due to infection by micro-organisms of less virulence than those of abscess. While it is true that Meller's specimen was so complicated by conditions which supervened on the disciform keratitis that the deductions drawn from it are in a measure impaired, as it is the only specimen thus far examined. and as the findings support Fuch's contention, it is significant. Animal experimentation and clinical observations in which infection was the undoubted cause of lesions similar to keratitis disciformis have been recorded by Schirmer, and Zur Nedden records a case which went on to ulceration, the streptothrix recovered producing in rabbits an ulcerative hypopyon. It would seem to me that such evidence should have weight. If, as Peters states, the neuropathic element is responsible for the characteristics of serpiginous ulcer, and if, as Dr. Verhoeff believes, a large percentage of all cases of ulcerative keratitis be due to infection of lesions of a like origin, one would expect more of these cases to be of the serpiginous type. I have always looked on the large solitary phlyctenule situated some distance from the limbus as an ordinary phlyctenule with unusual infiltration of the loose cellular tissue between the conjunctiva and sclera in a person subject to lymphatic enlargements and rather expected to see it finally classified as tuberculous. Recent evidence furnished by serum diagnosis is indicative of the correctness of this view. The associated conditions which Dr. Verhoeff has found are, however, very suggestive of it having a neuropathic origin where such conditions coexist, but so far as the individual characteristics of the lesions are concerned they do not seem to me to be of value at arriving at this conclusion. I can confirm what Dr. Verhoeff has said as to the value of holocain in the treatment of superficial erosions. It has been my practice, to prescribe holocain in the conditions under consideration, in corneal ulcerations and after the removal of foreign bodies from the cornea, but in so doing I was impelled not by the pathology of the affection, but because of the desire to use an anesthetic which would allay irritation, and while possessed of antiseptic properties would not at the same time act injuriously on the epithelium of the cornea.

Dr. F. H. Verhoeff, Boston: Dr. Zentmayer has taken issue with me on so many points that it would be impossible to attempt to reply to him in the limited time at my disposal. However, I think my paper itself is a sufficient reply. In regard to the question of the infectious origin of certain of these cases, the mere presence of micro-organisms in the eroded areas is of no significance, since they are clearly secondary invaders. I was, of course, familiar with the recent work of the English observers who claim that the neuroparalytic keratitis following extirpation of the Gasserian ganglion is due to bacilli, but I did not consider it worthy of comment. The bacilli they found were evidently the ubiquitous xerosis bacilli, to which have been attributed almost all diseases on earth.

TREATMENT OF OCCUPATION NEUROSES AND NEURITIS IN THE ARMS*

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In this brief paper is given personal experience in treating over forty cases of sensory and motor disabilities of the arms, the basis of which is usually a neuritis, mild or severe. Most prompt and thorough results are obtained by the personal attention of the physician, proceeding on the lines of:

1. Constitutional regulation, uses of drugs, etc., adapted from the interpretations of Dr. Sajous.

2. Relief of psychic hypertension or misdirection by educative persuasion. Relaxation is needed of the whole organism, as well as of the parts damaged. Economies in the expenditure of forces should be judiciously taught.

3. Quieting of the irritated vasomotor subcenters and also improving their nutrition by influencing the reflex vasomotor reactions, through manipulation of the paravertebral tissues; to be achieved by: (a) Determining by touch the degree of irritation or exhaustion shown by tenderness, infiltration or alterations in morphology of the structures lying adjacent to those segments of the cord in which the arms, etc., are innervated; (b) employing the kind and degree of hand pressure by which these subcenters shall be repaired; (c) relieving sensory disturbances by these same carefully distributed pressures; (4) stroking the lymph channels and the affected nerve paths, thereby relieving local stasis, freeing nerve sheaths and other structures from local hyperemia, toxic wastes, etc.; (5) stretching the limb by carefully graduated and increasing force along with torsions (this can be safely done only by the physician, and, when judiciously performed, affords one of the

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

most efficacious means of relieving pain, aches, heaviness and restoring vigor); (6) re-education in co-ordination, which should be carried on for months or years, by personal effort as well as under supervision, to make sure of complete restoration.

No matter what measures may be employed to relieve the pain (special electric currents or other), unless this motor education is wisely pursued the radical cure may be compromised.

PRINCIPLES OF ACTION

In dealing with the problems of arm pains, disabilities both sensory and motor, occupation neuroses, "writer's cramp," and like disorders, success is obtained in proportion to the exact appreciation and correction of the underlying faults, which are both psychic and physical.

My chief object is to offer to practitioners measures which each one can readily apply—principles of action by the use of which prompt and permanent cures can be effected. It is true, indeed, that from the use of elaborate equipments in electricity, or long specialized systems of treatment at spas, in rest-cures, radical changes in lines of occupation, excellent results often follow. These, however, are expensive in time and money. They often fail. It is a common experience to find patients gravely discouraged who have run the gamut of protracted and costly treatments. Several of my cases were of from two, three or many years' duration, wholly unrelieved. Some of the worst conditions were cured in a month.

The factors most forceful in relief were found in the outline given above. Long experience in psychoanalysis and moral orthopedia has taught me the efficacy of persuasion or educative measures. Next in importance is a study of the conditions through a specialized knowledge gained by estimating abnormalities in local tension and sensitiveness. Facility in these can be acquired through practice. It is my opinion, often expressed, that physicians have neglected a most important field of diagnosis and treatment. This lies in the manipulation of structures, in the education of the hands so that they shall perceive and appreciate all those factors which the surgeon utilizes and a good deal more. The surgeon is content to learn the grosser differences which indicate such diseases and derangements as come within the sphere of his interests. The physician should be able to go much further and become an acute percipient of finer distinctions, of divergences from the norm. This is analogous to those more subtle data on which are built the findings of internal medicine.

A long experience in teaching in a postgraduate medical school (the Philadelphia Polyclinic College) has impressed me with the fact that the average well-taught practitioner makes little use of his hands; exhibits, indeed, marked distaste for manipulations; furthermore, that relatively few are equipped with tactile appreciation of morphology, minor differences in resistance, density, temperature, balance, position, tension, relaxation, rigidity, mobility, etc. All these exceedingly significant data, obtainable by means of refined touch, have the most direct bearing on daily problems. They are analogous to the exquisite sense perception usually acquired by the blind, and are within the reach of most, provided one elects to utilize his muscular and touch senses.

Nowadays physicians are losing much of their prestige, and, worse than all, their usefulness, to a group of self-assertive "practitioners" who invade their territories effectively. This is wholly unnecessary. The remedy is to examine every suffering person by touch as well as by stethoscope or laboratory methods.

1. Constitutional Regulation

The underlying conditions of neuritis are due chiefly to agencies which reduce the normal defensive properties of the blood. The phenomena are usually those of hypocatabolism, acidosis, accumulations of uneliminated toxic waste products, autointoxication. There is often a history of gout, syphilis, influenza, malaria, or other disease of a debilitating character, which reacts destructively on the organism, reducing the functional activity of the anterior pituitary body. I follow the teaching of Sajous, which explains and simplifies etiology and pathogenesis and renders precise the therapeutic indications. There is usually evidence of recent exhaustion states, due to overexertion, excessive strain, worries, shock, grief, also the overuse of exogenous poisons, tea, coffee, alcohol, tobacco, etc., which, by lowering vitality, derange all metabolic processes.

Among the commonest exciting causes is cold, especially when one is exhausted; also antecedent infections, e. g., tonsillitis, etc.

Measures are indicated which aid elimination, relieve the causes of neural congestion, of hyperemia, active or passive, in the arterioles of the nerves, the vasa nervorum and their capillaries, including the nervi nervorum; the latter, being swollen, exert a pressure on the surrounding swollen structures, which is the main source of pain; also of the heaviness, loss of power, atrophy, etc. These measures may be summarized as follows:

1. Agents to reduce congestion in the painful areas:

A. Drugs which cause general vasodilatation by depressing directly the general vasomotor center, e. g. sodium bromid, or chloral, or both together, veratrum viride in sthenic cases; the nitrites, etc.

B. Drugs which cause general constriction of the arterioles by stimulating the general sympathetic center, e. g. coal-tar products, morphin, atropin, aconitin, gelsemin, cocain, osmic acid.

C. Local remedies which produce reflex constriction of peripheral nerves by irritating directly the cutaneous sensory terminals, e. g. local application of aconitin, veratrin, ethyl chlorid, menthol, guiacol, cocain, chloral, camphor, galvanism.

D. Measures which provoke direct or indirect depletion of perineural arterioles and, therefore, of the endoneural capillaries, e. g. guiacol to the skin, leeches, venesection, cupping, hydrochloric acid, superheated air, local heat, warm pack to the abdomen, a hot flat-iron to the back, etc., to increase the catabolic activity of the trypsin, as chief agent in activating the auto-antitoxin.

E. Measures which tend to eliminate the causes of the neural congestion. For pain occurring intermittently gross accumulations of toxic materials in the blood should be removed, e. g. by purgatives, the best being castor-oil daily for several days. This increases reflexly the relative proportion of auto-antitoxin in the intestinal juices. One may also employ saline laxatives, careful dietetic regulation, use of physiologic salt solution or "sea-water" to maintain alkalinity of the blood, abundant water-drinking.

F. Drugs to controvert the gouty state by stimulating the adrenal system. Sodium salicylate, strychnin in full or tonic doses, sodium iodid, colchicum, sodium benzoate. A course of desiccated thyroid (small continued doses) will often accomplish most good.

2. Relief of Psychic Hypertension

This subject has been sufficiently presented in the outline above.

3. Treatment of the Irritated Subsidiary Centers by Manual Means

This subject is too large for thorough presentation here; the outline of a few essential points must suffice. When there is active pain in the arms there will usually be found tenderness in the paravertebral tissues adjacent to the vasomotor subcenters from which the part is innervated. If the disability has become chronic and the only pain is the distressing ache which follows use, there will be found infiltration and thickening of the paravertebral tissues; disturbances in the alignment of the vertebræ (apparent, not real, due to divergences in nutrition of the structures involved) and these will return to normal morphology and sensitiveness on judicious hand treatment.

When there is hypersensitiveness in the continuity of the nerve gentle friction along its course will quickly and amply relieve it. If it be exquisitely tender, the procedure should be to quiet the center (a) by gently maintained (distributed) pressure; and (b) by gently maintained distributed pressure at the locality in the nerve; later (c) by frictions along the nerve sheath.

4. Stroking Lymph-Channels and Affected Nerve-Paths

Chronologically this is among the first of the indicated procedures. It should be performed centripetally and slowly, gradually increasing the pressure (time about two minutes) Afterward the tissues should be grasped with thumb and fingers and the entire limb squeezed, from extremity to shoulder, to remove local hyperemia, vitiated lymph and other toxic wastes, etc.

5. Stretching or Traction

The one point in the treatment of arm pains on which I am enthusiastic is the application of judicious and graduated stretchings.

For a long time surgeons treated neuralgic states, such as chronic sciatica, by cutting down on a nerve, lifting it out of the surrounding structures and subjecting it to rather severe tractions. This procedure is now abandoned, but skilful masseurs know well that it is possible to secure the effects of stretchings by many cunning devices of marked efficacy. A large personal experience convinces me that the physician is better fitted to apply this measure than anyone else. His knowledge of the pathologic conditions existing in a given instance enables him to be both cautious and emphatic as his judgment decides. The phenomena of repair involve not only derangements in the nerve itself but adhesions in adjacent structures, muscle sheaths, blood vessels, lymph channels, etc., etc. Moreover, it is a well-attested fact (to be explained by the neuropathologist) that stretching of a peripheral nerve exerts reparative effects on centers both subsidiary and primary. Where a limb retains power and elasticity enough to encourage voluntary effort we know that the centers can be thus made to improve. Passive movements are also habitually employed with more or less effect in proportion to (a) the degree of damage to the center, and (b) the degree of skill and persistence of the operator. As to how this should be performed demonstrations are better than description.

The methods which I use are these: I cause the patient to relax the muscles completely; seize the wrist by clasping the fingers of both hands, and bring the "heels of the fists" firmly together. This prevents a painful drag on the skin of the patient. I exert traction on the part slowly, to the point of discomfort, and no more; relax tension and place the limb in another position and again pull; relax and change repeatedly until the limb is made to stretch in about a dozen different positions, describing various arcs about six inches apart on the periphery, and completing the normal circle of arm positions at full length (time about two minutes). Of greater nicety is to place one hand of the operator firmly on the shoulder (deltoid, near the insertion), press the humerus down in the socket; to seize the elbow, using the humerus as a lever, and repeat the various arcs. During these movements the humerus is moved about in its socket in divers possible positions. Finally I seize the arm near the head of the humerus and cause it to describe circles in two (first obverse, then reverse) directions, so that all the tissues immediately thereabouts are put upon the stretch (time about one and one-half minutes). Next I exert torsions to include the full limits of motion, holding tense a few seconds at the end. By this time any painfulness is usually removed. Finally, I lift the arm again, as at first, to its full limit four or five times, almost raising the body weight (time complete about five minutes).

The degree of force should be gradually increased, until after two or three weeks (on alternate days) a considerable degree of force can be exerted without marked discomfort.

6. Re-education in Coordination

After each passive treatment it is well to direct the patient to extend the arm and fingers with increasing force, and to hold the tension at the end of the act for three or four seconds; to relax, extend, again hold tense, rotate in various directions; again to extend, hold tense, describing all the normal excursuses.

This series of active movements is not only important to insist on; they should be practiced daily, and later, three times a day for months. Since occupation neuroses are the outcome largely of overuse of the arms in positions of flexion long maintained, this training in extension affords the normal physiologic relief. Furthermore, it is necessary for the motor centers to be stimulated by exciting the extensor reflexes systematically.

Also, since most forms of arm neuritis, especially the protracted and chronic ones, are followed by contractures, and as these are in the flexor sphere, it is essential to overcome them by systematic, forceful extensions, carried on persistently for many months. It will prove a relief to the readily recurring arm aches to insist on the practice of these systematic extension exercises.

By the means outlined any deft physician can relieve or cure most of the motor and sensory disabilities of the arms which present.

1504 Pine Street.

Diagnosis of Tuberculosis.—The early diagnosis of pulmonary tuberculosis should not be beyond the capacity of any physician; furthermore, the responsibility of its early discovery rests on the shoulders of every general practitioner. It is estimated that the patient's chances of recovery are five times greater if the disease is recognized in its incipiency.—C. N. Haskell in *New York Medical Journal.*

ISOLATED AND COMPLETE PARALYSIS OF THE THIRD NERVE OF TRAUMATIC ORIGIN

REPORT OF A CASE *

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Alexander Duane[1] makes the following classification of innervational paralysis of the ocular muscles:

1. Extracranial (orbital or peripheral).
2. Intracranial, comprising:
    - A. Basal and foraminal paralysis.
    - B. Nuclear and fascicular paralysis.
    - C. Supranuclear and cortical paralysis.

We are concerned with Group A, namely, basal and foraminal paralysis.

By basal paralysis we understand one due to lesion of the nerve trunk after its emergence from the brain and before its exit from the skull; by foraminal paralysis, one due to lesion of the nerve as it passes through the sphenoidal fissure.

It is to foraminal paralysis that I wish to direct attention by means of the following case:

AUTHOR'S CASE

For the patient who furnishes the text of this paper I am indebted to Dr. J. W. Putnam of Buffalo, who referred her to me on Oct. 14, 1906.. The record is as follows:

History.—Miss E. W. was 17 years old. Her father had died sixteen years before from some malignant disease of the throat. Her mother was living and well. Two older brothers and one older sister were all in splendid health. There was no neurotic strain in the family so far as known. The patient had had no diseases of childhood except measles when quite young; her menstrual history was normal. She had always been in good health with the exception of a suppurating appendix which necessitated surgical interference eighteen months before the present illness. Her convalescence was rapid and complete. Rheumatic tendencies and attacks, sore throat and recent exposures to cold were entirely absent. There was no history of nervous, gastric or intestinal disturbance; no migraine, no headaches, except after prolonged near use of the eyes. Vision had always been acute.

Present Illness.—Three evenings before the examination, while preparing to attend a reception at a neighboring house, the patient "bumped" her head against a half-open door as she passed from one room to another. The point of injury was at the outer angle of the left supraorbital margin. The force of the blow was not enough to cause more than a passing sting, nor enough to abrade the skin. Disfigurement from possible swelling being feared, a few cold cloths were applied. The patient stated positively that she was neither nauseated, dizzy nor made uncomfortable in any other way, and was equally sure there was no nasal hemorrhage. In fact, the injury was regarded as negligible. Within a relatively short time the patient left the house and attended the reception. A few moments after her arrival a companion asked her why she did not open her left eye. This, the patient thought was about forty-five minutes, and certainly not more than an hour after her injury. The question of her friend was the first intimation of trouble, and it was not until then that the patient discovered her absolute inability to raise the left upper lid. More cold applications were used. The next morning, the ptosis still persisting, the family physician was called, who immediately sent the patient to Dr. Putnam. Putnam's diagnosis was third nerve paralysis; he sent the patient to me for further study, with the assurance that hysteria could be eliminated as a possible etiologic factor, he having gone over the case with this in mind, and also that there were no symptoms of fracture of the skull.

First Examination.—The patient was a well-nourished girl, brunette, and in apparent good health; not of the nervous type. There were no evidences of either congenital or acquired syphilis.

Right Eye: Vision 6/7.5. Upper lid moved freely. Excursions of the globe perfect in all directions. Pupil normal in size (3 millimeters), reacting readily to light and distance. Accommodation normal. The patient read Jaeger No. 1 readily. Field limits (taken roughly), normal. Fundus negative.

Left Eye: No sign of injury about the orbit. No swelling of the lids or evidence of orbital inflammation or infiltration. Complete ptosis of the upper lid. Globe turned outward and slightly downward. Pupil dilated (6.5 millimeters) and immotile.

Accommodation: Paralyzed. Candle test showed diplopia in all fields except downward and outward to the left. Neither the external rectus nor the superior oblique were involved. Vision 6/45 (plus lenses' aid). Field limits (taken roughly) normal. No scotomata. Fundus negative.

Examination of the nose and accessory sinuses, negative. Hearing normal. Urine examination negative.

A diagnosis of isolated and complete paralysis of the left third nerve was made. The patient's hygiene was regulated, and the faradic current applied three minutes daily.

Course of Disease.—Oct. 20, 1906: Ptosis disappearing. Pupil reacted feebly and was less dilated. Some return of motion. Accommodation returning.

Nov. 5, 1906: Ptosis hardly noticeable. Left pupil less dilated (4.5 millimeters). Divergence much less. Accommodation much improved. At this time the visual fields were taken on the perimeter and both were found to be normal for white and colors. (There was no color inversion.)

Nov. 6, 1906: Refraction under homatropin:

O. D. V.=6/7.5 + 1.25 sp. c. + 0.25 Cy. axis 90 V.=6/5.
O. S. V.=6/15 + 2.75 sp. + 0.25 Cy. axis 90 V.=6/6.

Retinoscope checks.

Dec. 15, 1906: Ptosis had disappeared. Pupil normal size, responding readily to all reflexes. Accommodation normal. (The patient read Jaeger No. 1 at fifteen inches without effort.) No diplopia except when patient was very tired, at which time the left lid also drooped. Maddox rod showed 15 degrees exophoria.

April 24, 1908: The patient returned complaining of headache, especially on the left side. These headaches were directly associated with near use of eyes. The patient had become a student of stenography.

Second Examination.—No ptosis, pupils normal in size, equal, responding readily to all reflexes. Accommodation normal. Maddox rod showed 10 degrees exophoria. Refraction under homatropin:

O. D. + 1.25 sp. + 0.25 cy. axis 90 V. = 6/5.
O. S. + 2.00 sp. + 1.00 cy. axis 45 V. = 6/6.

Checked by retinoscope and ophthalmometer.

April 25, 1908. Headaches had disappeared under lenses ordered.

March 14, 1909: The patient returned at my request for examination. She said she had been very well; had had no diplopia, but complained of left headaches which she thought came from her eyes.

Third Examination.—No ptosis. Pupils equal, normal in size and responded readily to all reflexes. Accommodation normal. Maddox rod showed 8 degrees exophoria in distance and 11 near. Candle tests revealed no paralysis or paresis of ocular muscles.

Refraction under homatropin:

O. D. + 1.25 sp. + 0.25 cy. axis 90 V. = 6/5.
O. S. + 2.25 sp. + 0.25 cy. axis 45 V. = 6/6.

Checked by retinoscope and ophthalmometer.

Fundus negative.

March 16, 1909: Fields taken on perimeter were normal for white and colors.

March 18, 1909: Patient telephoned that headaches had ceased under new correction.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Chapter 5, Posey and Spiller's The Eye and the Nervous System, Philadelphia, 1906.

At no time during the course of these diseases were there violent headaches or other symptoms of a deep-seated lesion.

In passing, it is interesting to note the refraction change which took place in the left eye. The first cylinder was at axis 90 and was + 0.25. Six months later 1 diopter of astigmatism axis 45 degrees had appeared which in turn diminished to a + 0.25 axis 45 one year later.

As to the location of the lesion in this case, it seems to me that one may eliminate with great certainty the question of fracture of the base. The patient was studied carefully with that hypothesis in mind, without the discovery of a single sign or symptom leading to that diagnosis, unless it was, indeed, the palsy of the third nerve. The patient was also carefully looked over with the view of eliminating the hysterical element. Both Dr. Putnam and myself kept this possibility in mind, but in the face of most thoughtful consideration such a diagnosis was discarded. There was nothing in the patient's history or condition to warrant a possible diagnosis of lues. With equal assurance one may eliminate trouble in the orbit, both on account of the absence of physical signs of damage there and because the branching of the nerve in the orbit renders traumatism producing complete paralysis practically impossible. Therefore the injury must have been either intracranial or at the point where the nerve passes through the sphenoidal fissure. In the absence of any symptoms pointing to intracranial trouble, we must select, by exclusion, the sphenoidal fissure as the point of injury. The nature of the process might be either a bruising of the nerve trunk or a subperiosteal hemorrhage of sufficient size to encroach on the nerve but not large enough to injure the other structures, gaining entrance into the orbit through this opening. It must be assumed that the branching at the nerve took place at or near the fissure. In point of the former hypothesis I quote from M. Allen Starr's[2] text-book the following: "Severe falls and blows on the head have been known to cause bruising of the nerve against the sharp edge of the sphenoidal fissure." Fracture of the wing of the sphenoid at the fissure must also be considered. From the viewpoint of the symptomatology it seems that the subperiosteal hemorrhage hypothesis is most attractive. The fairly sudden onset and gradual clearing up of the symptoms might easily correspond to the absorption of a blood clot.

CASES IN LITERATURE

A systematic and thorough canvass of the literature since 1870, extending through the *Index Medicus*, Index-Catalogue of the Surgeon-General's Library at Washington, current ophthalmologic journals, many text-books, both ophthalmologic and neurologic, and a careful search of Nagel's *Jahresbericht der Ophthalmologie* for the past thirty-nine years, convince one that isolated and complete traumatic paralysis of the third nerve of neither intracranial or orbital origin is rare. I have been able to find the following nine cases, which I have briefly abstracted:

Case 1.—M. Fleury de Clermont[3] in 1862 reports a case of paralysis of the third nerve following a fall on the head.

A farmer, 24 years old, fell from a wagon, striking his left temple on the ground. Complete and isolated paralysis of the left third nerve followed. Recovery was rapid under no other treatment than blistering. There was no evidence of fracture of the skull. (This case is quoted from Chevallereau[4].)

The following six cases are reported from Girardot:[5]

Case 2.—Reported by Desgouttes and Mueller.[6] Antoine C., aged 41, fell, striking on the right parietal eminence. Total isolated paralysis of both third nerves resulted. There was no evidence of fracture of the skull. Recovery took place in one month.

Case 3.—Reported by Desgouttes and Mueller. Julian G., 18 years old, fell on the head, striking on the right occipital region. Loss of consciousness and complete isolated paralysis of both third nerves followed. There were no signs of fractured skull. Recovery took place in three weeks.

Case 4.—Reported by Durand and G. Gayet.[7] Augustine P., 8½ years old, fell on the head. Loss of consciousness followed and complete bilateral and isolated paralysis of third nerve appearing in one and a half hours. There was no fracture of the skull. Recovery took place in sixteen days.

Case 5.—Reported by M. Ferron.[8] M. G., age not given, veterinary surgeon, fell from a horse. Bilateral paralysis of third nerve followed, but disappeared rapidly except slight diplopia and lowered accommodation persisted. There were no evidences of fracture of skull.

Case 6.—Reported by Rothe.[9] Miss D., aged 17, fell from a horse. Loss of consciousness and complete and isolated paralysis of third nerve ensued. There was no fracture of the skull. Complete recovery took place after four months.

Case 7.—Reported by M. Ferron[8]. William F., aged 43, fell on his head. Loss of consciousness followed. There was no evidence of fracture of skull. Complete and isolated third nerve paralysis resulted. Recovery was complete after three months.

Case 8.—J. E. Weeks[10] reports the instance of a young man who was struck one-half inch below the inner canthus on the right eye by a fencing foil, which had pierced his mask. The wound was slight. There was no loss of consciousness. On the following day there was complete paralysis of all structures supplied by the right third nerve. In his remarks concerning the pathology of this case Dr. Weeks says that he thinks it very probable that there was a subperiosteal hemorrhage at the place where the nerve passes through the sphenoidal fissure. Whether there was a fracture of the wing of the sphenoid at this point or whether a rupture of a subperiosteal vessel he does not attempt to decide. Recovery took place in about fifty days.

Case 9.—M. Allen Starr[2] speaks of a patient in his own observation who had a sudden third nerve paralysis following a fall on the head while alighting from a carriage. After six months' duration recovery was complete.

In all the cases quoted above, with the exception of Case 9, in which no detailed history is given, the individuals were in good health with no luetic histories.

DOUBTFUL BUT POSSIBLE CASES IN LITERATURE

In addition to the nine cases quoted I have found in the literature the following five cases, which are possibly to be grouped as true cases, but which present features making one suspect etiologic factors other than foraminal paralysis. That of Goldschmidt[11] was placed by Girardot on his list, but seems to me to be doubtful on account of the difficulty of eliminating basal fracture with certainty.

Case 1.—Reported by Goldschmidt.[11] A young man, aged 21, suffered a gunshot wound in the mouth. Several hours later complete and total paralysis of the third nerve presented itself. Goldschmidt does not speak of the result or say whether there were symptoms of basal fracture. (Classed with doubtful cases on this account.)

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[2] Organic Nervous Diseases, Philadelphia, 1907, p. 647.

[3] Fleury de Clermont: Bull. Soc. de chir., séance du 31 Dec., 1862.

[4] Chevallereau, Armand: Recherches sur les paralysies oculaires consécutives a des traumatismes cérébraux, Paris, 1879.

[5] Girardot, Charles: Paralysies traumatiques isolées et complètes du nerf moteur oculaire commun, Lyons, 1903.

[6] Revue gén. d'ophth., April, 1903, p. 152.

[7] Arch. prov. de chir., March 3, 1901, p. 325.

[8] Thesis, Lyons, 1901.

[9] Memorabilien, 1876, xxi, 411.

[10] A Case of Injury to the Motor Oculi Nerve Followed by Paralysis, New York Ophth. Rec., 1897, vi, 174.

[11] Wien. med. Wchnschr., 1893, xliii, No. 7.

CASE 2.—Reported by F. Denti.[12] A man, 38 years old, while intoxicated, fell from steps and sustained a total paralysis of the right ocular motor. (There was no report as to whether there was involvement of other nerves or as to whether there was fracture of the skull.)

CASE 3.—Reported by Gaupillat and Regnault.[13] A young soldier, while fencing, was struck in the inner angle of the eye by a bayonet, making a very slight tearing of the conjunctiva. The patient was much depressed, fearing loss of sight. The eye was immovable; the pupil dilated; accommodation absent; light perception only. All unfavorable symptoms passed away and the question as to hysteria as the factor arose. (The loss of vision makes a diagnosis of hysteria possible, especially when taken with the patient's mental depression.)

CASE 4.—Reported by Prof. J. Komoto.[14] A boy 4 years old was injured twenty-five days previous to having been seen. He was struck on the upper left side of the forehead by a falling wall-clock. There was no loss of consciousness or vomiting. There was a left ptosis. The eye turned out and down. The pupils were normal. Recovery, except slight ptosis, took place. On account of the non-involvement of the pupil the diagnosis of nuclear paralysis is probable. It is possible that had the case been seen immediately after the injury, paralysis of the contractor fibers of the iris would have been noted.

CASE 5.—Devoe[15] reports a case of double third nerve paralysis following an accident. Devoe believed that the cause was hysterical. Recovery. (The details of this case are so meager that it is impossible to class it definitely. Fracture of the skull is not eliminated or paralysis of other ocular nerves.)

In conclusion I can do no better than translate verbatim the conclusions of Dr. Girardot's admirable thesis on this subject:

1. Traumatic paralysis of the motor oculi are rare, especially when one takes into consideration the frequency of palsies of the ocular muscles.
2. The anatomic relations of the motor oculi with the base of the brain are such as to make laceration or compression by bone lesions easy. Indeed, it is not uncommon to see paralysis of the motor oculi associated with those of the facial, or patheticus or abducent and following fractures of the skull, but the isolated paralysis of the third nerve are independent of fractures. They are, probably, due to a hematoma located about the nerve or in its sheath.
3. From the standpoint of the symptomatology there is nothing of special interest, except that they are isolated and complete.
4. Admitting compression by hematoma it does not seem that surgical interference is justifiable, for though the process be a slow one, recovery occurs spontaneously in about two months.

482 Delaware Avenue.

ABSTRACT OF DISCUSSION

DR. WENDELL REBER, Philadelphia: I think this Section is indebted to Dr. Francis for a very careful study of a rare and interesting condition. The fascination in this kind of case is to find the site of the lesion. We see many isolated third nerve palsies, but isolated traumatic ones are rare indeed. Isolated palsies of the sixth or fourth nerve are common enough, such palsies of the fourth being most frequent after operation on the frontal sinus and of the sixth being an accompaniment of even minor fractures at the base. In diagnosing this case it is extremely important to exclude hysteria, and I think this has been done. Tuberculosis and syphilis have also been excluded. Hysteria, however, because of the suddenness of the phenomena, was the likeliest complication. This was hardly a hemiplegia, because there were no symptoms to account for it. There were no intracranial symptoms of any moment, and there were no basal symptoms, so that by exclusion we are practically forced to assume that it was a fracture at the sphenoidal fissure with a simple hematoma. The one weak point in this diagnosis is that the hematoma should be so perfectly and beautifully limited as to impinge on to only the third nerve, and yet by exclusion it seems to me we are justified in making that diagnosis.

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[12] Paralisi completa, periferica, traumatica del ter 20 pago del nervi cranici di destra, Ann. di Ottal., xii, 562.
[13] Clin. Ophth., Feb. 25, 1908.
[14] Nippon Gankwa Gakukwai Zasshi, viii, No. 1.
[15] Semaine méd., 1890.

PRACTICAL IMPORTANCE OF HYPERPHORIA IN PRESCRIBING LENSES FOR USE AT PARTICULAR DISTANCES AND IN DIFFERENT DIRECTIONS *

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Hyperphoria, when the head is in the primary position and the test object on the line of intersection of the extended median and horizontal fixed planes of the head (Savage), has received considerable attention by many able investigators. This paper will deal more particularly with hyperphoria at the reading distance and at the reading angle. The prescribing of prisms to correct hyperphoria is of great importance. The correction of 1 degree of hyperphoria, constant at a series of examinations, will give in the average case better results than the prism correction of a very much greater degree of exophoria or esophoria. Normal eye muscles have difficulty in overcoming a 3.5 degree prism base up or down, while adducting power of 50 degrees is often found. Normal eyes have vertical equilibrium. If a series of examinations shows 0.5 degree of hyperphoria, decentering of the lens or the introduction of a prism is usually advisable.

The degree of hyperphoria is often extremely variable at different examinations and even at the same examination. Sufficient time should be given for the patient's eyes to be disassociated, as those who have a strong fusion faculty may at first attempt to combine the two images, even if they are unlike, as the light and streak with the Maddox rod. In some cases the eyes are very loth to disassociate themselves and to rotate independently. A first hurried examination may show no heterophoria but later examinations an increasing amount. The screen, parallax and other tests are sometimes necessary. Cycloplegics by their effect on accommodation, and I think, by direct action on the external muscles, sometimes seem to aid in unmasking latent heterophorias.

After determining the proper lens for each eye separately and after repeated examinations of the hyperphoria have shown a nearly constant amount, the prism is tested in the properly placed and centered trial frame while the patient looks at the distant test chart. Patients will frequently at first reject a much-needed prism placed for only a short time in the trial frame. It is necessary to take sufficient time, that the eyes may adjust themselves to the new conditions. When needed the patient will prefer to retain the prism, as its removal necessitates quite an effort for adjustment. It is often helpful to learn in which part of the test, putting on or taking off the prism, the patient experiences greater difficulty or requires more time to make the adjustment of his eyes. If it takes longer to adjust the eyes on removing the prism it is very likely that a prism is required.

If the hyperphoria found is less than 2 degrees, I usually prescribe the equivalent in degrees by decenter-

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

ing or prisms. When more than 2 degrees is present, I depend on comfort tests of prisms in the trial frames and do not, like many, always undercorrect. However, a 2.5 degree prism is usually selected for 3 degrees of hyperphoria and a 3 degree prism for 4 degrees of hyperphoria. There can be no fixed rule; each patient must be carefully tested. Hyperphoria of over 6 or 7 degrees, which is usually non-comitant or changeable (Duane), can seldom be comfortably corrected by prisms. Low degrees often occasion more discomfort and fatigue than high degrees because no attempt is made to overcome the latter. My operative experience has not been sufficient to enable me to determine definite policies in these cases. Prism exercises are sometimes helpful.

Many observers, recognizing the close relationship between accommodation and convergence, have studied exophoria and esophoria not only at the distance but in accommodation. It has been found that the excess or insufficiency of convergence (so-called), especially that found when fusion is entirely prevented, accommodation alone being active, varies greatly from the degree of esophoria or exophoria for the distance. A separate test is advisable before prescribing lenses for the reading or any special distance. Likewise hyperphoria for the near may vary from that at the distance as illustrated in a case by Theobald. Clinically it is more difficult to overcome a certain degree of hyperphoria for near than the same amount for distance. Not only is hyperphoria sometimes found to be variable at different distances, but the degree may also vary if the head be tilted up or down so that the eyes in looking at a distant fixed light are compelled to rotate in a different plane. Many of these cases are partial paralyses of the vertically acting muscles. Duane believes that many cases of hyperphoria are the result of paralysis. He classifies heterophoria as non-comitant, changeable, and comitant, also as periodic or continuous for near and far; Maddox classifies it as paretic and simple or con-comitant. In a considerable number of cases the hyperphoria varies, sometimes several degrees, depending on whether the eyes are in the primary plane or looking upward or downward. If hyperphoria at the distance sometimes varies in different planes, it would seem not unreasonable to suppose that a variation could also occur at the reading distance.

I have had an instrument made by the DeZeng Standard Co. of Philadelphia. to test the hyperphoria for near at various angles indicated on the instrument. The area of light through ground glass is controlled by a rotating disc with holes of various sizes. The light can be moved to any desired distance from the eyes. The Stevens phorometer in connection with the Maddox rod is employed so that the amount of heterophoria is easily indicated. If an amount in excess of that registered on the instrument is present, a clip is provided in which an extra prism from the trial case may be placed. The instrument may be used for distant muscle testing by using a distant light, it being unnecessary to remove the small lamp which, however, can be easily done. The convergence near point for a light may also be easily tested by this instrument on which the meter angles of convergence are also indicated. The lamp may be removed from the shaft of the instrument and used to examine the field of projection when the media are not clear, e. g., in cataract cases.

At the distance the primary horizontal plane is the most important. The best plane for near testing corresponds with that in which the patient usually directs his eyes in near work. This varies, generally in making an angle of about 30 degrees with the horizontal plane. In quite a number of cases the hyperphoria at this angle, more or less constant in several examinations, varies several degrees from that found in the horizontal plane in near or distant tests. As would be expected in paresis, the hyperphoria sometimes changes if the instrument is moved from side to side. Some patients with orthophoria at the distance show two, three or four degrees of hyperphoria at the reading angle. Right hyperphoria at one angle sometimes becomes left hyperphoria at another. Patients will often suffer discomfort if they do not have prisms of different strength in their lenses for distance and for reading. Many such can not wear bifocals (unless perfection with appropriate prisms) because the hyperphoria is not the same for the distance as for near. Some with their hyperphoria properly corrected in separate lenses for near and far are greatly benefited.

It is also important to consider the prismatic effect of lenses when the eyes look through them in different directions. Duane states that he has found hyperphoria present in 15 per cent. of low cases of anisometropia, and in 32 per cent. of high cases. Bruner has found hyperphoria in 30 per cent. of cases of anisometropia. Imagine a patient with anisometropia with a nearly plane lens before one eye and a strong sphere or a strong cylinder at axis 180 before the other. In such a case without hyperphoria in the primary plane, if the patient moves his eyes behind the lenses from the primary to the reading plane or *vice versa*, he has to overcome in all positions but one, a large degree of what may be termed artificial lens hyperphoria, which is often very distressing and one of the common reasons why it is difficult to give these patients relief. Separate distant and reading lenses or half grab-backs or grab-fronts with correct centering for a particular plane should more often be prescribed in anisometropia and antimetropia. If the lenses are strong great care should be used to see that they are properly centered. It is often easy to bend the frames up on one side and down on the other to center the lenses better for distant objects. In cases of anisometropia with proper lenses and frames before the eyes, I teach the patient by having him tilt his head up and down, that there is only one easy position in which to hold his head in order best to see distant objects. He is directed to hold his head so that it will be easiest for his eye muscles. The person receiving reading lenses of different strength is taught that there is not only a proper distance for his close work but also that it should be held at a particular angle. An anisometropic patient whose lenses are quite different must learn how to hold the head and the best position for the object looked at if he is to derive the greatest benefit.

Many who use bifocals, since they are often compelled to look through their lenses at a strong angle, are made uncomfortable, not only by the changed astigmatism, but also because the hyperphoria, artificial or true, at that angle is not considered. I now test all patients at primary and reading angles without lenses and with them, and as a result sometimes prescribe two pairs or perfection bifocals containing different prisms where I used to prescribe unsatisfactory cement bifocals. Since hyperphoria is changeable, its degree should be retested at intervals, especially if there is any discomfort in using the lenses.

Before this Section, it is unnecessary to be specific in outlining a policy in these varied and changing conditions. Each case must be a law unto itself, but this changing true or artificial hyperphoria with or without lenses deserves more attention.

Everett Building.

ABSTRACT OF DISCUSSION

Dr. Alexander Duane, New York: As Dr. Stevenson states, the detection of hyperphoria frequently requires repeated examinations. Genuine hyperphoria may escape notice because it is slight or because it is latent. On the other hand, at the first examination a hyperphoria may be simulated when none exists. In the one case a true hyperphoria is concealed and in the other a false hyperphoria is produced by temporary spasmodic action of the muscles. It may then require repeated tests to show whether the habitual condition is one of orthophoria or the reverse. In cases of doubt, the use of experimental prisms, as suggested and followed by G. T. Stevens, may clear up the diagnosis. Thus suppose two patients present themselves, each with a hyperphoria of ½°. In one this minute amount may represent a real deviation of 1° or 2°, the hyperphoria being nearly all latent. In the other the ½° may represent all the deviation that there is, or there may be no real deviation at all, the hyperphoria being spurious. In the first patient the finding is of much significance, in the second none. If each patient is made to wear a 1° prism for a day or two, the first patient will not only feel comfortable with the correction but after wearing it will show hyperphoria in excess of the prism prescribed. The second patient will find the prism annoying and a re-examination will show no more hyperphoria than at first, *i. e.*, the prism will be overcorrect. A trial prism of this sort may be made up in the office in a spectacle frame, or be added as a "grab front" to the patient's sphero-cylindrical glasses. Still more important than detection of hyperphoria and the evaluation of its amount is the determination of its cause. A hyperphoria due to insufficiency of a depressor causes much more trouble than one due to insufficiency of an elevator or than one which is completely comitant. I have recently collected a large number of cases of very slight insufficiency of the inferior rectus, in which the symptoms, asthenopia, and less often vertigo, were very marked and persistent, the patient frequently being unable to use the eyes for near work in spite of the most painstaking correction of the refraction, and yet for distance the eyes could be used without discomfort. In such cases and, indeed, in all kinds of hyperphoria, the determination of the distribution and the amount of the diplopia in the outlying portions of the field of fixation afford invaluable aid. Such a determination ought to be made in every case of hyperphoria and in fact whenever the muscles are examined at all, for it often happens that in these very cases there is no hyperphoria whatever in the primary position.

Treatment comprises: (a) General corroborative measures. These are required in the hyperphoria of the hysterico-neurasthenic subject. In these cases the hyperphoria varies in amount from time to time. The field of double vision, too, is often very different in area on different examinations and is often disproportionately large considering the fact that the actual separation of the double images is very small. These patients require rest from eyework, proper bodily exercise, and such other general and local treatment as their condition may suggest. (b) Prisms. In comitant hyperphoria these are especially useful and well borne. In hyperphoria due to insufficiency of the inferior rectus, a prism may be incorporated in the reading glass only; or it may be added to the distance glass in the form of a "grab front" (to be used only in reading) or in the form of a "paster." In the latter case the shape and position of the paster should be carefully adjusted to correspond to the field of double vision—the paster in general occupying the outer and lower portion of the glass. I have in this way corrected an insufficiency of both inferior recti, a "paster," each consisting of a prism of 1°, base down, being placed at the outer lower portions of each glass, in this way correcting a condition in which there was right hyperphoria in looking down and to the right and a left hyperphoria in looking down and to the left. One great objection to the "pasters" is that unless ground to a knife-edge they produce a very bad break at their upper margins and consequent monocular diplopia. (c) Operation. Of this I need not speak except to say that in general we resort to operation only when other remedies have failed and when the condition presents persistent symptoms serious enough to warrant such interference. We address ourselves to the muscle at fault—to the superior rectus or inferior oblique if the elevators are affected and to the inferior rectus if the depressors are affected. In comitant hyperphoria tenotomy of the inferior rectus should be avoided, advancement of the inferior or tenotomy of the superior rectus being performed instead.

Dr. G. C. Savage, Nashville: Any test of the ocular muscles to determine the existence of hyperphoria or other phorias, that is binocular in character, is unreliable, so far as the recti muscles are concerned. The binocular test is certain to excite one or more of the volitional centers into action, and each of these acts on a pair of ocular muscles, one belonging to each eye. The motor centers, both volitional and fusional, should be absolutely quiet throughout the test for hyperphoria. So far as the recti muscles are concerned, one can not do that with the Stevens' phorometer, or any other binocular instrument. It can be done with any instrument of the monocular variety. The only one, so far as I know, is mine. I want to say, however, that the monocular test in the distance, and not in the near, is the test for hyperphoria. There is only one excuse for testing in the near, and that is to determine the normality or abnormality of accommodation and convergence. There is only one excuse for testing to the right or left, or up or down or obliquely with the phorometer. I wish I had time to make myself absolutely clear, but I want to impress on you the importance of rest of all the volitional and fusional centers—absolute rest of the centers of every muscle that moves the eyeball. We can do that by having the monocular phorometer before one eye only, being sure that the image in that eye is displaced far beyond the possibility of fusion. Throw it out of the fusion area. Therefore, the displacing prism should be sufficiently strong to throw the displaced image absolutely beyond that area, and all the centers will have been put at rest—the centers of fusion as well as the centers of volition. The volitional centers are set at rest by looking straight ahead with the other eye; the fusion centers are set at rest by throwing the image, in the eye under test, so far out of the area of fusion that they do not enter into the calculation. By doing this, all the muscles of the eye are going to get into a state of tonicity only, for it takes an impulse of some kind to make a muscle contract. If there is no neuricity coming from the fusion centers, no muscle will be affected. Now, if there is heterophoria, it is going to show itself, and one can measure it. The measuring device of the instrument and the displacing device should be before only the one eye, while the other eye should be free. It is just as easy to tell whether it is paretic or tonicity hyperphoria, as it is to drink a glass of cool water when thirsty. Take a candle and tell the patient to fix his head, and without anything in front of either of the eyes, to follow the candle up and then down. If there is no doubling either above or below anywhere, there is no paresis, and the hyperphoria is one of tonicity.

Dr. W. H. Roberts, Pasadena: I am very glad Dr. Stevenson has brought this subject to our attention, because it is just as necessary to examine the external muscular balance in every case of refraction as it is to examine the fundi. I can speak from bitter experience, because I suffered from uncorrected hyperphoria for years and know what it means.

The necessity of carefully measuring the amount of hyperphoria for near, is well shown in the following case, a brief report of which follows:

July 8, 1904.—Mrs. W. C. B., aged 45, had been suffering from nervous prostration for some months. She had been unable to use her eyes for near for years, and more recently had to stop riding in her automobile, shopping, theater going, and the like, as such expeditions always produced a violent headache. At the first examination I found:

O.D.V. 6/7.5 ?? 1½ esophoria.
O.S.V. 6/7.5 ??? 1° B.U.R. or B.D.L.

Ophthalmoscopic examination, normal.

After repeated examinations, I ordered:

℞ O.D. + sph. 1.25 ⊂ + cyl.0.25 ax 90 ⊂ 1° B.U.R. = 6/5++
O.S. + sph. 1.00 ⊂ + cyl.0.50 ax 75 = 6/5++
With + sph. 1.75 added to each for near.

She returned Oct. 8, 1904, saying that her eyes had felt much more comfortable until recently. I found that her hyperphoria had increased to 2½°. In three months more, this had increased a degree and a half for both distance and near, and with this corrected, she was more comfortable than she had been for years.

Two years later she returned complaining of the same troubles which brought her to me originally, and I found the following:

O.D. + sph.1.50 ⊂ + cyl. 0.50 ax 90 = 6/5) 5° B.U.R. or B.D.L.
O.S. + sph.1.25 ⊂ + cyl. 0.50 ax 75 = 6/5) 2° exophoria.
with + sph. 2.00 added for near.

She was given prism exercises which developed her interni and all exophoria disappeared. For the next year she was comfortable, as long as she did not attempt to use her eyes for near. In February, 1908, her hyperphoria for distance was 5½° and I then made the discovery that her hyperphoria for near was but 4°. Thinking that this discrepancy of 1½° might be the cause of her discomfort when using her eyes, I had made for her reading glasses with 4° of her hyperphoria corrected and she at once became perfectly comfortable and has remained so ever since. She uses her eyes now all she wishes and never has a headache. She has entirely recovered her general health too. I had difficulty in solving the bifocal problem, as I did not wish to use the perfection bifocal. I finally got my optician to grind a flake segment consisting of a + sph. 2.00 ⊂ 1½° prism, base down, which was cemented on her right distance lens which contained a 3° prism, base up. These bifocals she has worn for over a year with entire satisfaction.

Dr. W. C. Posey, Philadelphia: I am in hearty accord with Dr. Stevenson as to the desirability of carefully detecting and frequently correcting hyperphoria, as I am convinced that the correction of the ametropia alone in many cases in which hyperphoria is present, though even in but slight degree, will not relieve the symptoms or remove the source of the difficulty. Careful observation and a statistical study of a large number of patients who had worn vertical prisms for many years has shown me that the incorporation of the prism into the correcting lens has not made higher degrees of hyperphoria manifest themselves than in cases of similar degree in which prisms had not been ordered, while the marked relief which the prisms afforded in many instances have made them indispensable to me. It has always been my practice to determine the amount of hyperphoria at the reading point as well as at 6 meters, and I have frequently noted a discrepancy between the two distances and this is especially true of course in paralytic cases. Like many others perhaps, I have not infrequently given prisms of higher degree for reading than distance, when the hyperphoria was excessive, but the degree of the prisms ordered is generally based on the objective finding rather than on the subjective sensation of the patient.

Like Dr. Stevenson, I have found hyperphoria in anisometropia in all cases in which the difference in refraction between the eyes is at all marked, even when associated with a moderate degree of esophoria or exophoria. Where there is orthophoria in the horizontal plane, or but little difference in refraction between the eyes, hyperphoria is rarely present.

Based on a clinical study of 287 cases of hyperphoria which I made ten years ago, the results of which were communicated before the Section on Ophthalmology of the College of Physicians of Philadelphia (Nov. 15, 1898) I found that of the symptoms evoked by hyperphoria, headache was the most frequent, that of the supraorbital variety predominating. In a small proportion of the cases it was unilateral, usually on the same side as the eye with poorest vision. Typical attacks of migraine occurred in about 5 per cent. of the cases. A symptom of frequent occurrence and of great value in directing attention to the existence of hyperphoria was found to consist in an associated reflex in the supply of the facial nerve. This may manifest itself either in a unilateral twitching of the lids, as in nictitation, or more rarely, by a pronounced blepharospasm.

Dr. William Zentmayer, Philadelphia: I am sorry that I can not agree with Dr. Posey as to the effect of vertical prisms of hyperphorias. I am certain that they frequently render manifest, latent hyperphoria, and in Ball's book I expressed the opinion that they might be used for this purpose in the higher degrees in order to render manifest the total error before operating. In the last ten years, I have prescribed vertical prisms in low degrees, under 2°, only very exceptionally. I believe that the cause for frequent ordering of them lies in the improper use of cycloplegics. If thorough cycloplegia is obtained and the error thus found almost fully corrected the occasion for the use of vertical prisms will be only rare.

Dr. E. E. Holt, Portland, Me.: Ever since the phorometer came out I have used it continuously. I practiced using prisms or decentering lenses to a certain extent for years. Now, however, I find myself not using them and very little like the last speaker I correct all the ametropia and get along with that practice. Dr. Savage said that it is useless to use the binocular test for hyperphoria. I have an idea that I have discovered some constitutional diseases, particularly diabetes, by the use of that test for hyperphoria, and if I did not get anything more than that out of it I should consider it worth using.

Dr. Mark D. Stevenson, Akron, Ohio: I was glad to learn from Dr. Roberts yesterday that a flake cement segment could be put on in these cases. My optician refused to make a cement segment and said that the only way to make a difference in the prismatic effect of bifocals was by making perfection bifocals. There is not a man on earth who satisfies all his patients, no matter how carefully his refraction work is done. I feel certain that those men who do not use prisms,, especially for hyperphoria, will be surprised at the results derived from them in proper cases. Some dissatisfied patients, if hyperphoria is present, will obtain complete relief and be pleased if a prism is added to the correction they already have and some displeased anisometropes will be satisfied by attention to a few of the details pointed out in this paper. I have many patients who were temporarily relieved by lenses without prisms in whom hyperphoria developed and who could later be relieved only by the introduction of a prism. In some of these cases, as a matter of experiment, I have tried the same lens but without prisms and the patients were dissatisfied. The introduction of prisms again gave satisfaction. It is well to keep in mind the different causes of hyperphoria. Hyperphoria is real or latent, of which latter at first only a part may be discovered and more may uncover itself later. A certain number of cases are spasmodic. I have found variations in the degree within a few days, and a few months later with improvement of the general health the hyperphoria sometimes disappears, depending on its cause. I have frequently found that hyperphoria varies for the distance and for near, and that it sometimes varies at different angles.

Lack of Influence of Physical and Moral Trauma on Pregnancy.—The prevalent idea that emotional and physical shocks are liable to affect a pregnancy is shaken somewhat when we learn that at the time of the earthquake at Messina, pregnancy continued to normal term in twenty-five women several months pregnant. Notwithstanding the horrors of that time, the pregnancy continued unmolested to term, with delivery of normal children in all but one case, in which the woman had been felled by a beam across the abdomen and held captive for three days. Another woman was delivered prematurely, but not until six weeks after the catastrophe, and an existing endometritis was probably responsible for this. Rebaudi in making a report on these cases, quoted in the *Semaine Médicale*, May 26, states that the contrast between the shock, privations, lack of food, traumas and frequent fractures and the obstetric results is all the more striking as some of the women were of an extremely nervous temperament and some had aborted in previous pregnancies.

LOCALIZED FACIAL SWEATING, FOLLOWING CERTAIN OLFACTORY STIMULI *

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AND

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The three following cases are instances of a peculiar sweat reflex which does not seem to have been recorded in the literature. The fact that the last two were brought to notice shortly after the first was seen, however, would argue that the condition is not as uncommon as would appear from the lack of records.

In all three cases the sweating is confined to certain definite facial areas and follows, rather quickly, the ingestion, or even the smelling, of certain pungent articles of diet. The reflex involved apparently includes, on the afferent side, the olfactory nerves (possibly, also, to a lesser extent, the gustatory) and, on the efferent side, the secretory fibers of the sweat glands of the face, which are distributed with the seventh cranial nerve.

Why the sweating should be so sharply localized and invariably confined to the same areas, and why certain stimuli and those only, in any given case, should cause this reflex, has not been determined. Heredity is undoubtedly a factor, since, in one case, the condition has appeared in one or more members of the family during four generations, at least, and in the other two cases it has been traced through two generations. In all instances, the individuals thus affected are of a distinct nervous type and have a sensitive skin and mucous membranes. There seems to be, however, no neurotic element present.

Experiments with a variety of other pungent substances, in an endeavor to obtain the reflex, have been negative.

The following is a brief outline of the case histories:

CASE 1.—Perspiration of the face, following ingestion of tomatoes, strong cheese, roast beef and pickles.

Patient.—M. L. W., aged 54, married; the second of three children. His mother died of old age at 78; his father died at 56, of yellow fever; one sister died of heart disease at 57. The patient and one sister suffered for years from pronounced hypersensitiveness, involving numerous functional derangements and marked caprices relating to strong odors. The patient has written his own personal history, as well as his idea of the condition of the other members of the family.

History.—"For most of my life, certainly during all the adult period, I have been peculiarly affected by tomatoes, especially by those stewed. Always after eating them a perspiration would break out on my face, especially on the nasal surface, and to a less extent on the upper lip and temples. This generally occurs in one or two minutes, or less. Persons seated with me at the table have often commented on the fact, sometimes noticing it before I was aware of it myself. On the removal of the lid of a covered dish of stewed tomatoes, set directly before me, the inhalation of the fumes sometimes produces the same result, though in less degree. The same is true of strong cheese (as Roquefort) or pickles. My sister writes me: 'We certainly have inherited from our mother a peculiarly sensitive and irritable skin. I do not remember her ever having any actual skin disease, except aggravated eczema, once or twice, on her hands. I can not remember that anything she ate ever brought out perspiration. You must recall how much trouble she had with her nose.' Mother occasionally had a hair tonic applied and always declared that, in a few minutes, she distinctly tasted the quinin, which was one of the ingredients. She was very sensitive to all kinds of drugs, and, on calling in a new doctor, had to urge him to give her less than ordinary doses. My sister continues: 'As for myself, I have had eczema three or four times on my hands, and have suffered terribly each time; as to the perspiration after eating, you are quite right about the cheese.' This in answer to my inquiry as to my recollection of having seen her eat sago cheese and noting the perspiration on her nose, which, when wiped off, showed green on the handkerchief. 'Green cheese always affects me in that way, but not often any other kind. I do not know that our sister ever had any trouble in that way; but she had eczema of the legs. My children have never been troubled by perspiration arising from certain foods.' "

Examination.—The patient was tall, well made and fairly muscular; hair light; complexion fair; complained that his skin was always very sensitive to the bites of insects, even to the attack of a single mosquito. When first seen, he was suffering from an eczema of both legs, which made its appearance without apparent cause. The urine was normal. The patient was otherwise in good health. Closely questioned on all points relating to the hypersecretion of sweat due to food, it was his opinion that it followed the use of Roquefort cheese, tomatoes, especially stewed, and, in a less degree, pickles. Lately he had noticed that hot roast beef, especially the odor, induced the same phenomenon.

Demonstration.—March 28, at our request, the patient demonstrated this peculiar influence of the food on the sweat glands. He first partook of cheese and in less than two minutes sweat was noted on his nose and forehead; in less than another minute his entire face was bathed in perspiration. There was neither redness nor flushing, but the skin presented a shiny appearance, due to a sebaceous flow. The cheese was then discontinued and removed from the table. After a delay of ten minutes, his face was wiped a number of times, until free from moisture. He then partook of stewed tomatoes, and in less than one minute the facial sweating became profuse and was much more marked than that following the ingestion of cheese, thus confirming his previous observations. Apparently there was no hypersecretion on other parts of the body, he having carefully examined the region of the axillæ. A series of experiments with garlic, asafetida, valerianate of ammonia and acetic acid gave negative results.

CASE 2.—Perspiration of the infraorbital region, following ingestion of onions. The subject was a well-nourished man, aged 40 years, of nervous temperament and sensitive mucous membranes, but otherwise normal.

Family History.—The patient's paternal grandmother, who died at the age of 100, was the first member of the family in whom this peculiarity was noted. His father, who died at the age of 78, suffered from this condition to a marked degree, the sweat literally streaming from the region below the eyes whenever he ate or smelled onions. Two living sisters were affected in like manner, the older, aged 33, being more distinctly influenced than the younger, who was 30. In all of these instances the infraorbital regions alone were affected and onions were the only stimulating agents which would produce the effect.

Demonstration.—On April 18, under the observation of one of us, the patient ate three small green onions. Within thirty seconds he spoke of a sensation of cold under both eyes, followed, in a few seconds, by noticeable beads of sweat, the sweating becoming more pronounced and reaching its maximum in about five minutes, at which time it was so profuse that it was necessary to wipe it away. An attempt was made to stimulate the olfactory region electrically, but without success, because of the sensitiveness of the nasal mucous membrane, which would not tolerate the introduction of electrodes.

CASE 3.—*Family History.*—The earliest record of the condition in this family relates to the grandfather, who died at the age of 80. The father in the case under discussion, who is alive and well at the age of 70, has, as long as he can remember, under the influence of certain foods, perspired about the eyes and upper lip. A brother and a sister, both older than the patient, were never subject to the affection. One brother, aged 43, has been thus affected since childhood, while a younger brother has been exempt.

Patient.—The subject of this record was a man of 42, a blonde, of nervous temperament. He had been aware of this condition for fifteen years. His son, now 13, began to show similar symptoms a year ago. The sweat reflex, in himself and in the other instances in this family, cited above, is established through the use of pungent or peppery foods, as well as acids and condiments. The sweating occurs about the eyes, forehead and upper lip. One of us observed the patient, during the ingestion of lobster salad. At the end of one minute profuse perspiration occurred about the eyes, forehead and upper lip, lasting about five minutes and accompanied by a slight erythema. In this case, as in the second one recorded, the sweating was preceded by a sensation of coolness in the skin areas affected.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

CONCLUSIONS

1. Heredity is a decided factor in all these cases; in one, the condition was traced through four generations.
2. The condition is not congenital, since it has not appeared in any of the cases before puberty.
3. Localization of the sweating is identical in all members of the same family.
4. The same stimuli produce the condition in all members of the family.

Clinical Notes

A DIVIDED SHEET FOR GYNECOLOGIC EXAMINATION *

CURRAN POPE, M.D.
Professor of Physio-Therapy, University of Louisville, Medical Department; Consulting Neurologist, Louisville City Hospital; Superintendent, The Pope Sanatorium
LOUISVILLE, KY.

I present a new modification of the ordinary sheet used in gynecologic examination and treatment. This sheet has proved so satisfactory in my hands that I have discarded the older sheet and now use the new device altogether. It is simple and can be easily made in a few moments by any woman with needle and thread or machine.

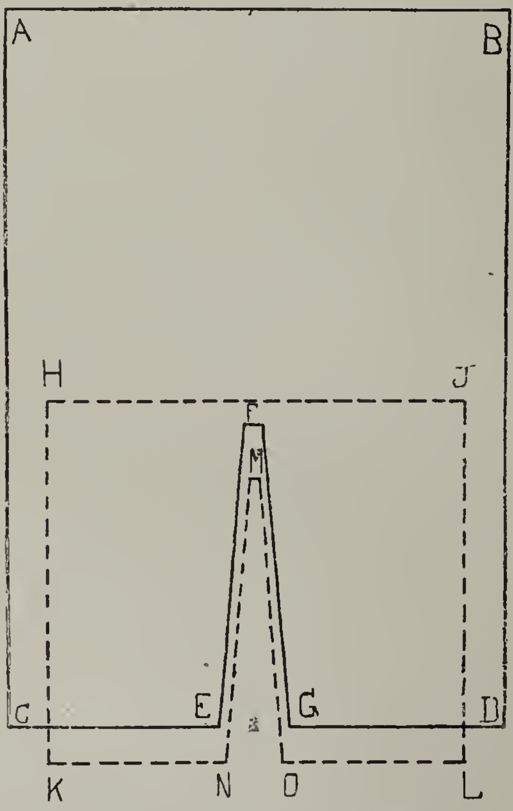

Diagram to show method of making a sheet for gynecologic examination.

To make the sheet take any ordinary sheet of sufficient size (7 by 5½ feet) such as is used in ordinary gynecologic examinations and spread it on the floor; at one of the long ends (CD) mark a dot to show the center. From this central point on the edge measure toward the center of the sheet 3 feet (F); from the dot in the center of the end, measure 2 inches on each side; then cut out the triangle (EFG). The edges of this triangle should be hemmed or bound with tape. Take a piece of cotton 5¼ feet square (HJKL) and spread it on the floor. Mark the center of one edge and a point 2¼ feet distant from the first point, on a line perpendicular to the edge. Take the scissors and cut the sheet at this point, hemming or binding the edges. This second sheet (HJKL) is sewed to the large sheet (ABCD) 8 inches above the bifurcation on the large sheet at F. It is an excellent plan to bind securely with silk or thread the edges of the bifurcations at F and M. It will thus be seen that this is a double bifurcated sheet in which a smaller sheet is superimposed on a larger one.

In use the nurse places the patient in the ordinary dorsal gynecologic position, wrapping the left leg with the flap (FGD) of the large sheet and the right limb with the flap (FEC), thus perfectly protecting the lower limbs. The two flaps (KNM and LOM) of the smaller sheet, hanging down in front, are tucked neatly under the buttocks.

It will be readily seen by those who have had any gynecologic experience that examinations, both digital and instrumental, can be made with the slightest possible exposure—very much less than with the ordinary sheet. I have found it especially nice when using specula, as it enables the physician to introduce them, tuck the sheet snugly around and thus secure absolute protection. From the time when I first began to use the sheet, a number of months ago, patients at once commented on the facts herein noted.

115 West Chestnut Street.

MOTOR APHASIA AS A SEQUELA TO SCARLET FEVER

REPORT OF A CASE

NICHOLAS LAWREY, M.D.
BROOKLYN

A child, aged 6, well nourished, had a chronic discharge from the ears, and an attack of measles three months previous to present illness. The scarlet fever started with nausea, headache, vomiting and high fever (105 F.). Cerebral symptoms, as restlessness, delirium and mental apathy, were predominant. The patient could be aroused for medicine and nourishment, but soon sank again into a mental stupor. On the fifth day of the disease his ears began to discharge, the temperature remaining high with remissions, till the seventh day, when improvement began and amelioration of all the symptoms. By the middle of the second week paraplegia of the left side was noticed with motor aphasia. The patient seemed to understand words, and retained full power of hearing, but the power of articulate speech and of producing complicated movements in the region of speech muscles was wanting. The tongue could not be protruded well and deviated to the left. The paralysis lasted a few weeks, and the patient is gradually regaining his power of speech three months after illness.

283 South Second Street.

Autografting.—Marion S. Souchon, M.D., House Surgeon Hôtel Dieu, New Orleans, La.: The following method, though not evolving a new principle, is original in the application of the Reverdin and Thiersch methods of grafting. At the skin edges of a granulating surface are found the proliferating new cells which are particularly active. This new tender membrane is easily removable and may be used as a neograft. One may either make pin grafts, or detach a strip at one end only, and spread it in the shape of a peninsula. The method is so simple and the results so unfailing as to make further description unnecessary.

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* Exhibited before the Louisville Society of Medicine

Therapeutics

HAY FEVER

It is now time for the annual discussion of the treatment of this disease. The highest aim is prevention, and before the periodic attack occurs, long before if possible, the patient's nose should be thoroughly examined for localized irritations and hyperesthetic areas, and these should be cauterized or removed as deemed best by the nasal specialist.

If, in spite of the building up of the general health and the local preventive measures, the attack of hay fever recurs, then before the date of the beginning of the disease the patient should, if possible, go to a region where he has found that he is more or less immune. As the disease seems to be caused by the pollen or irritants in the atmosphere, produced or blown from various flowers and weeds, the ideal spot for these patients is one where there is little vegetation. Some patients do well in the mountains, some at the seashore, some on island resorts, some on sea trips. There generally can be found a region in which a patient is fairly immune, and to that he must resort annually.

If the attack develops, sedative measures, cleansing measures and general systemic treatment must all be inaugurated. Simple cleansing alkaline sprays give some relief. Many patients are made better with weak solutions of suprarenal, perhaps 1 part to 10,000 of the active principle of suprarenal in physiologic salt solution, or in an alkaline solution such as the liquor antisepticus alkalinus, diluted with an equal part of water, or in Seiler's tablet solution, each tablet being dissolved in 30 c.c. (2 fluidounces) of water. Such a suprarenal solution may be used repeatedly. It causes no habit and will generally give temporary relief. In a few instances the reaction from its use causes more or less congestion, and in such cases of idiosyncrasy it should not be used. Sometimes an ointment of adrenalin chlorid in a pure white vaselin or petroleum (1 to a 1,000) is efficient in causing temporary relief. A drop or two of this is put into the nostril and the contraction of the mucous membrane from the absorption of the adrenalin is sometimes as great as when adrenalin spray is used and often more lasting. Adrenalin chlorid tablets, containing 0.002 gram, allowed to dissolve on the tongue, relieve the congestion, especially in asthmatic cases, and will also relieve the asthma in these cases. Thin oil sprays containing adrenalin chlorid are also at times of value.

There is no justification for the use of cocain as a spray or application if it is to be used frequently in hay fever or in any other nasal condition. The danger of forming the habit is too great.

Antipyrin, quinin and various other local sprays have been recommended and used, but rarely are they of any aid in hay fever.

The local application of various pollen preparations and pollen serums have not been of sufficient advantage to warrant their recommendation as specifics, although occasionally a patient may be benefited by such treatment.

Internally, the following drugs, although failing as many times as they benefit, should be tried in each case that is otherwise incurable, viz.: quinin, atropin, strychnin, antipyrin, iodids and thyroid.

Quinin is sometimes of benefit in large doses, rarely in small doses. Its action when helpful is similar to that in certain cases of urticaria, perhaps as an antitoxin

Atropin to be of value must ordinarily be given to the point of slight physiologic effect, such as dryness of the throat, increased rapidity of the heart, and flushing of the face. In susceptible individuals the pupils may also be dilated. The atropin treatment is certainly unpleasant, and minute doses are generally of little value. Occasionally a patient is benefited by 1/300 or 1/400 of a grain three or four times a day. Such treatment should be tried until it is found valueless.

Sometimes strychnin given in ordinary doses is of benefit. This is especially true in patients who are much weakened, and have a good deal of passive congestion or sluggish circulation in the mucous membranes.

Antipyrin can only be of value when given in sufficient dose to act as an antispasmodic, much as it acts in whooping cough. It may possibly act as an antitoxin to the irritant from the pollen, and may be of benefit when there are asthmatic symptoms. The dose for an adult, to be of value, must be 0.50 gram (7½ grains) three or four times in twenty-four hours. It is well to combine with this treatment the coincident administration of digitalis. If the condition is tedious and prolonged it would rarely be wise to give the antipyrin through the whole period of the disease. If patients suffering from this disease have weak acting hearts, digitalis may benefit them, unless they have some arteriosclerosis, in which case it is ordinarily better not to use it.

In some patients iodids in small doses act for good in causing increased secretion and preventing some of the intense swelling of the mucous membranes. In other patients the condition is made rapidly worse. Sometimes a very small dose of an iodid, as 0.05 gram (or 1 grain) three times a day, after meals, or a small dose of thyroid as 0.05 gram (or 1 grain) of the official thyroid powder three times a day will increase the secretion, dilate other blood vessels and relieve the local congestion. This is especially true in asthma and hay fever after fifty, and where there is gout.

As in asthma, the diet should be very simple. Any extra gastrointestinal irritation will certainly intensify the hay fever symptoms. For the same reason the bowels should be thoroughly moved daily, perhaps best by a gentle saline, as phosphate of soda.

Sometimes the hay fever manifestations are improved by treatment similar to that of uricacidemia, i. e., by a vegetable diet, one as free as possible from purin bases, and the administration of alkalies. The alkali may be potassium citrate or a similar drug. The benzoate of soda may be of value, and often small doses of effervescing Rochelle salt, as 1.00 gram (15 grains) three or four times a day, are of benefit.

A Herniotomy in Africa.—Two young physicians, Mr. and Mrs. William Cammack, who are at work in Chisamba, West Africa, performed their first hernia operation on a schoolroom table. The sheets, towels, and sponges were sterilized by boiling in a galvanized tub, which was the only thing available as a sterilizer; and they had to be used wet, as they could not be dried without danger of soiling them again. The native helper, who speaks a little English, stood by during the performance and helped carry the patient, still unconscious, to his room and bed. In describing the scene afterwards to a group of astonished listeners he said, "I saw—I saw—I saw him die. When we carried him home he was still dead and I never thought he would live again." Dr. Cammack said that people came from far and near to look at the man, who was as much a walking miracle to them as the man the Saviour restored to his mother from a funeral bier was to the people of his day and age.

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[*For other information see second page following reading matter*]

SATURDAY, JULY 17, 1909

THE TREATMENT OF THYROIDISM BY A SPECIFIC CYTOTOXIC SERUM

The fundamental premise of Rogers and Beebe[1] in the treatment of thyroidism by an active antiserum is that the symptoms of the disease have their origin in a condition of hyperactivity of the thyroid. The serum is designed to neutralize, by its antitoxic property, the effects of the thyroid proteid in the circulation, and to inhibit by its cytotoxic property the secretory activity of the gland. It is prepared by the inoculation of animals with pure proteids from human thyroid glands. These authors find that if the pulp of an organ be injected into an alien species, antibodies to all the proteids so introduced are formed. Certain of these antibodies are specific for the organ used in producing them, while others are common to all the proteids of the species from which the organ is taken. By using nucleoproteid of organs that are as nearly blood-free as possible, instead of the whole organ pulp, relatively more of the specific factor and less of the common element is obtained in the serum. Rogers and Beebe believe that the serum produced by nucleoproteid of the thyroid is more cytotoxic, and that produced by thyroid globulin is more antitoxic in its action.

It is of first importance in the intelligent treatment of any case of thyroidism to recognize the type to which it belongs. There is often a progression from a typical thyroidism, through a mixed, indefinite type, to a characteristic condition of myxedema. This clinical progression is accompanied by changes in the pathologic structure of the thyroid which shows a transition from a condition of hyperemia with increased colloid, seen in the early stages, to a state of hyperplasia and diminishing colloid, followed by degenerative changes which result in atrophy of the cells, fibrosis and sclerosis of the vessels with hemorrhages and cysts.

Rogers and Beebe divide their cases clinically into two general classes: (1) those favorable for serum treatment; (2) those that may require combined treatment. The cases favorable for serum treatment are those in which the gland is probably hyperemic or hyperplastic. This first class includes the early, typical cases of exophthalmic goiter in its incipient, mild or severe form, and typical exophthalmic goiter which may have existed for some time in a subacute form with occasional exacerbations, but without marked secondary changes. Their most striking results are obtained in cases of this class, probably because the disease is uncomplicated. They find that serum treatment in such cases promptly arrests the course of the disease. In the severe, rapidly developing type of exophthalmic goiter, which has many of the characteristics of an acute infection, a very marked improvement results from small amounts of serum, an effect comparable to that seen in diphtheria following antitoxin. This type has the most marked toxemia, and furnishes the most convincing clinical evidence of the antitoxic action of the serum.

The severity of the disease and of the reaction, both local and general, to the serum determines the size of the dose and the frequency of administration; the serum is not forced in the face of marked reaction. The majority of patients belonging to the first class progress very favorably, and many recover entirely, with doses of about 0.5 c.c. of active antiserum given, at first, as often as the reaction permits, and later at intervals of from 5 to 7 days. Exophthalmos and goiter are the last signs to disappear, and so long as the latter persists there is some danger of a recrudescence of symptoms under mental or physical strain.

In dealing with the second class of cases, which require combined treatment, pure proteid of sheep's thyroid is given hypodermatically during the course of serotherapy. In such cases hypothyroidism and hyperthyroidism may coexist, and the treatment consists in giving sheep-thyroid proteid to answer physiologic needs, while the abnormal products of the patient's own gland are neutralized by the serum. It seems certain that the serum does not neutralize the physiologic action of the sheep-thyroid proteid given at the same time, and that clinically some patients improve with the combined treatment. No precise rules for the administration of serum and the sheep-thyroid proteid have been formulated. Each case, they state, must be studied in order to determine whether the condition of hypothyroidism or hyperthyroidism predominates, and the authors give a table of the signs and symptoms characteristic of the two conditions which aid in the determination.

Of 246 cases reported by Rogers and Beebe, 227 were of the class favorable for serum treatment. The results show about 30 per cent. of patients cured of subjective symptoms, with objectively nothing more than a gland discoverable on deep palpation. About 50 per cent. of the patients improved; a small goiter usually persisted, but most of the subjective symptoms were relieved. About 20 per cent. of those treated failed to show beneficial effect, and of these about 10 per cent. have died.

THE SEWAGE PROBLEM OF CHICAGO AND VICINITY

Throughout the country attention has been directed in the past in a noticeable degree to the Chicago problem of sewage disposal. During the period when a large part of the city sewage was poured directly into Lake Michigan not far from the drinking-water intakes the excessive prevalence of typhoid fever in Chicago was frequently noted and widely deplored. Later the undertaking of a huge drainage canal to divert the sewage away from the lakes and into the Mississippi valley, and its construction on a scale of almost unprecedented magnitude and at enormous expense aroused much interest both among engineers and the general public. The famous suit between the City of St. Louis and the Sanitary District of Chicago relative to the possible pollution of the St. Louis water supply was another factor that attracted general notice to the local situation.

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[1] Arch. Int. Med., Nov. 15, 1908.

From recent developments it is apparent that some difficult questions still remain to be solved. It may not be generally known that by no means all the sewage of Chicago now passes into the drainage canal. That part of the city lying south of Eighty-seventh street and known as the Calumet District was thinly settled when the drainage canal was projected and was not at first included in the Sanitary District of Chicago, but, owing to its increase in population, it was incorporated in the district in 1903. At present the sewage of this region, estimated as having at least 120,000 population, passes in large part into the Calumet river and thence into Lake Michigan. One of the Chicago water intakes, situated at Sixty-eighth street, is exposed to pollution from this source, and the conditions prevailing in that part of the lake have been compared to those existing near the mouth of the Chicago river before the opening of the main drainage canal.

Further complications have arisen through the rapid growth of other towns all along the southern end of Lake Michigan in the state of Indiana. The sewage of these towns is discharged for the most part either into the Calumet River or directly into Lake Michigan. Since most of these communities obtain their drinking-water from the lake, it is not surprising that typhoid fever is said to be prevalent.

It is evident that the situation is one that does not admit of indefinite delay; neither, on the other hand, does it justify a snap judgment. The plan that has been longest before the public and for various reasons most fully discussed has been the construction of a tributary canal about six miles in length connecting the Calumet River with the main drainage channel, the cost of the whole project being estimated at about $15,000,000. The construction of such a canal, however, has been forbidden by the United States Government on the ground that the diversion of water from the Great Lakes would be so great as to lower permanently the lake level and interfere with navigation. This is in accordance with the report of the International Waterways Commission which recommended that the government should prohibit the diversion of more than the 10,000 cubic feet per second at present used for Chicago drainage. It is estimated that the proposed Calumet canal would increase this amount by 4,000 cubic feet per second. As is well known, the Sanitary District of Chicago has refused to recognize the authority of the government to prohibit this increase, and the case is now pending in the United States courts, where a decision on the point is looked for this summer.

Meanwhile other objections have arisen to the completion of the dilution project. The most serious relates to the capacity of the main drainage channel to care for the increased flow. If the flow of the proposed Calumet canal is added to that of the present drainage basin the main channel will be greatly overtaxed in times of flood. Indeed, it has been recently stated by the President of the Board of Trustees of the Sanitary District of Chicago that "under present conditions the maximum flood, irrespective of what the Calumet canal brings in, will take the total capacity of the main drainage channel." An error in the calculations of the engineers leading to too low an estimate of the flood waters of the Des Plaines River seems to be in large part responsible for this situation.

For the time being, at all events, a setback has been given to the project of a Calumet canal emptying into the main channel. As a direct consequence renewed interest has been aroused in methods of sewage disposal that do not involve direct dilution of the crude sewage. A report on this subject was made about two years ago by Rudolph Hering, the distinguished hydraulic engineer, and contains some suggestions and computations of value. The urgency of the problem, its intricacy and the magnitude of the interests involved have induced the Sanitary District to undertake its study on a broader scale than heretofore. We are informed that an experiment station will shortly be established for the purpose of investigating certain modern methods of sewage disposal, for determining the character of the sewage to be treated and ultimately, it is hoped, for devising ways and means of dealing with the specific Calumet problem. There can be no doubt as to the wisdom of such a step, and much information, of value not only to local officials but to sanitarians everywhere, may be confidently expected.

SECRECY VERSUS LACK OF KNOWLEDGE IN MEDICINE

The *Midland Druggist and Pharmaceutical Review* seems disposed to give members of the medical profession some kind and disinterested advice, and it is pained to see that we adhere to the benighted notion that secrecy in medicine is to be condemned. To quote:

"As to secrecy of composition, does the physician know the inner nature of the antitoxins and serums which he prescribes, or has he fathomed the chemical mysteries of digitalis, ergot, and dozens of other articles of materia medica which are yet largely sealed books to the chemist? He uses these articles solely because experience has taught their value in the treatment of certain pathologic conditions, and he would in the highest degree be negligent and false to the trust reposed in him by his patient should he refuse to prescribe a known valuable remedy simply because its composition happens to be unknown to him. The patient calls his physician not merely to prescribe the treatment that has received the approval of some official body, but because he believes he will prescribe the remedies which experience has demonstrated to be useful in the affection from which the patient suffers."

True, the physician, or the physiologic chemist, has not "fathomed the chemical mysteries of digitalis, ergot," and several other drugs. Neither has he learned all there is to know about quinin or mercury. He does know, however, that quinin will produce certain well-defined effects in malaria and that mercury may be relied on in syphilis. On the other hand, he does not know what result will be obtained by using "Blank's Malaria Cure" or "Slow's Sure Specific." Moreover, even if he finds out what either of these nostrums does to-day, he has no assurance that it will do the same to-morrow. The argument of the *Midland Druggist* amounts to this: You don't know *everything* about any one drug; therefore, it is unnecessary for you to know *anything* about any empirical combination of drugs, said combination being likely to vary, both in individual content and in content proportions. Truly a logical proposition. There is an essential difference between secrecy that is unavoidable and that which is contrived for purposes of gain or deceit. The fact that we are not able to fathom the mysteries of many remedies with which Nature has supplied us is no reason why we should use those made by man in which the element of mystery is purely artificial and exists only for the purpose of commercial gain. When the physician consents to prescribe remedies whose composition is known only to the manufacturer, he is abdicating his office as physician and assuming the function of the prescribing druggist who recommends "patent medicines," about which he knows little, for diseases of which he knows less. In such cases the use of secret remedies is a fault which disgraces the members of a profession. The unknown composition of natural remedies is a hindrance to the advance of pharmacy and medicine, but the use of secret remedies on the part of the physician is a dereliction of duty. The first will be removed by the advance of science; the second can be removed only by raising the ideals of the two professions, and we are sorry to see a representative of pharmacy not only disregarding the highest ideals of his own profession, but endeavoring to lower those of the medical profession as well. There are, however, we are glad to say, pharmaceutical journals which, recognizing the viciousness of secrecy in medicine, would never lend their pages to furthering the cause of nostrum prescribing as is done in this case.

THE DATE OF THE NEXT SESSION

The sixty-first annual session of the American Medical Association will be held in St. Louis, Missouri, June 7 to 10, 1910. The date has just been fixed by a conference between the Trustees of the Association and the local Committee of Arrangements in St. Louis. The preparations for the meeting are well under way, as the St. Louis profession intends that nothing shall interfere with the success of the meeting because of any delay in contracting for halls or in obtaining a prior right to the hospitality of the city during the week selected. The medical profession of St. Louis and vicinity are possessed with the ambition to make the attendance at the St. Louis Session surpass that at the Chicago Session, which now holds the record. The central location is expected to aid in securing a large assembly. Not only this, but they expect to have the session unusually brilliant in every other respect.

Medical News

CALIFORNIA

Commencement Exercises.—The College of Physicians and Surgeons, Los Angeles, held its fifth annual commencement exercises, June 24, when diplomas were awarded to a class of four by Dr. Charles W. Bryson, dean of the faculty. The doctorate address was delivered by Hon. Curtis D. Wilbur.——Oakland College of Medicine and Surgery held its annual graduation exercises May 27. The opening address was delivered by Dr. Haywood G. Thomas, president of the college, and the doctorate address was delivered by Hon. Henry A. Melvin. A class of four was graduated.

State Board of Health Election.—At the meeting for reorganization of the State Board of Health, held in Sacramento, June 26, Dr. Martin Regensburger, San Francisco, was reelected president for the third term; Dr. William F. Snow, Stanford University, was elected secretary to fill the vacancy caused by the resignation of Dr. Newell K. Foster, and Dr. W. LeMoyne Wills, Los Angeles, was chosen vice-president, vice Dr. Wallace A. Briggs, Sacramento.——Dr. James H. Parkinson, Sacramento, has been appointed a member of the State Board of Health, vice Dr. Aden C. Hart, Sacramento.

Personal.—Drs. Fitch C. E. Mattison, Pasadena, John H. Martindale and Wesley W. Beckett, Los Angeles, and Francis M. Pottenger, Monrovia, have gone to Europe.——Dr. and Mrs. Walter Lindley, Los Angeles, have returned from Europe.——Dr. Ray L. Wilbur, Palo Alto, leaves in a short time for Europe.——Vacancy in the position of university physician and head of the board of directors of Peninsula Hospital, Palo Alto, will be filled by the appointment of Dr. Thomas M. Williams.——Dr. George Watt, Willows, has been appointed physician of Glenn county.——Dr. John I. Clark, Santa Ana, has been appointed a member of the board of managers of the Southern California State Hospital, Patton.——Dr. Newell K. Foster has been appointed medical inspector of the schools of Oakland.

ILLINOIS

Pure Food Regulation.—The city council of Rock Island, on June 21, passed an ordinance regulating the sale of ice cream, and fixing a license fee of $5 for the sale of it.

News About Hospitals.—The new Graham Hospital, Canton, erected at a cost of $30,000 is completed and ready to receive patients.——The cornerstone of St. Mary's Hospital, Centralia, was laid by Rt.-Rev. W. C. Lucc, vicar general of the diocese of Belleville.

Awarded Damages.—In the case of Dr. Ernest Mammen, Bloomington, against whom suit was brought for $5,000 by Mrs. Carrie Smith, who charged that the defendant had performed an operation on her at the Brockay Hospital and had left a sponge in the abdominal cavity, the jury is said to have returned a verdict in favor of the plaintiff, awarding damages at $1,500.

Personal.—Dr. Albert S. Green and family, Rockford, have returned after five months abroad.——Drs. Joseph Robbins, Levin H. A. Nickerson, Kirk Shawgo, Clarence A. Wells, Ernest Zimmerman, Robert J. Christic and Robert J. Christie, Jr., William W. Williams, Charles D. Center, William S. Knapheide, Frederick M. Pendleton, Thomas B. Knox, Alfred A.

Whipple, John H. Rice, Edmund B. Montgomery and Melinda C. K. Germann have been appointed to the medical staff of Blessing Hospital, Quincy.

Not Guilty.—The indictment of murder against Dr. Cora L. Reed, Rock Island, was dismissed in the circuit court on motion of the state's attorney, June 21. The indictment was based on the charge of the performance of a criminal abortion.——The suit brought by the State Board of Health, on complaint of Kendall county physicians, against John Church, a medicine peddler, is said to have been decided in favor of the defendants at Oswego, June 27.——Dr. Charles W. Johnson, Litchfield, charged with performing an operation for criminal abortion, was found not guilty of the charge, June 27.

Chicago

Increase Directors.—The German Hospital, Chicago, announces an increase of directors from ten to fifteen.

New Hospital.—Plans are being completed for an addition to the Norwegian-Lutheran Deaconesses' Home and Hospital, to cost $75,000.

Personal.—Dr. Jabez D. Hammond fell while descending the stairs from his office, July 8, and fractured his left leg at the ankle.——Drs. John Guerin and Jeremiah H. Walsh have been appointed school trustees.——Dr. E. Lyman Denison had his knee dislocated and two ribs fractured in a street car accident July 8.——Dr. Wesley H. Peck sailed for Europe July 7.——Dr. Albert H. Hoy and family returned from Europe July 5.

Clean Milk for Children.—The milk commission of Chicago has issued a leaflet entitled, "How to Take Care of the Baby." The commission has as its object to give to the children of the congested districts, pure clean wholesome milk at prices below cost in order to bring it within the reach of those for whose benefit it is produced, and to furnish information, instruction and advice to mothers in reference to the care and feeding of their young children.

The Babies' Crusade.—The finance committee of the city council has sanctioned the expenditure of $10,000 by the Department of Health for the summer care of infants. The city has been divided into districts, each having one or more doctors or nurses, and house-to-house visiting is to be carried on, the aim being to instruct mothers, and supply medical aid and actual nursing when absolutely necessary. Card calendar reports are to be filed daily with the Department of Health, which is to be the clearing-house for the city.——Three new fresh-air stations for sick babies of Chicago were opened by the United Charities, July 1, the first on a roof in the congested district of South Chicago, another at Henry Booth House, and the third on the roof of the Northwestern University Settlement.——Camp Good Will, Evanston, opened for the season July 10.——The Gads Hill Camp, north of Lake Bluff, is now in active operation with about 300 in attendance.——The *Daily News* Sanitarium began the work of its twenty-third season, June 28. On the same day, the Chicago *Tribune* Summer Hospital at Algonquin was opened for the season.

INDIANA

Personal.—Dr. David C. Peyton, Jeffersonville, who has been appointed general superintendent of the Indiana Reformatory, has resigned as secretary of the Clark County Board of Health. Dr. W. Marshall Varble has been named as Dr. Peyton's successor.——Dr. William H. Wagoner has been appointed a member of the board of health of Peru.

Society Election.—At the closing session of the Grant County Medical Society for the year, held June 24, Dr. James A. Mattison, National Military Home, was elected president; Dr. John M. Toney, Van Buren, vice-president; Dr. Marshall T. Shively, Marion, treasurer; Dr. Otis W. McQuown, Marion, secretary, and Dr. Charles J. Overman, Marion, censor.

Hospital News.—The contract for the erection of the proposed state tuberculosis sanatorium, on the site near Rockville, has been awarded to a Terre Haute company for $79,841.72.——The State College Hospital, Indianapolis, connected with the Indiana University School of Medicine, may be closed, as it is said not to be needed for clinical purposes and as it has not been paying expenses for some time.——Drs. Charles C. Morris, Rockville; Robert F. Hester, Bloomingdale; E. Albert Evans, Rosedale; Alvin A. Williamson, Marshall, and A. Birch Lockridge and Raymond E. Swope, Rockville, make up the Parke County Hospital Committee.——Nearly $5,000 has thus far been secured by the committee soliciting funds for St. Joseph Hospital, Logansport.——The Frankfort Tuberculosis Sanatorium has been incorporated with a capital stock of $10,000. Drs. Charles Chittick, Albert H. Coble, and James W. Hadley are among the incorporators.

IOWA

Hospital Notes.—Ground has been broken at the State Sanatorium for the Treatment of Tuberculosis at Oakdale, for eight new cottages for patients, and a large dormitory for help. The building will cost $50,000 when completed and the capacity of the institution will be increased to 150.

Sanatorium Report.—The State Tuberculosis Sanatorium near Iowa City has completed its first year of work. During the year 236 patients were received for treatment, 106 of whom were from twenty to thirty years of age, and of these, 30, or 14 per cent. were in the incipient stage. Of those remaining over two months, 80 per cent. were discharged apparently cured. Of the more or less advanced cases, there were 203, and those who remained in the institution more than two months, left greatly improved in condition. Dr. H. E. Kirschner, the superintendent, hopes to have the capacity of the institution increased to 125. The contract for the new buildings at the sanatorium have been let to a Marshalltown firm for $36,775.90. The improvements include a large two-story building for employés, a cottage for the superintendent, a kitchen cottage, a medical cottage, and a one-story patient's cottage. With the balance of more than $10,000 remaining from the appropriation, five additional one-story patient's cottages will be added, thereby nearly doubling the capacity of the institution.

KANSAS

Personal.—The new board of health of Wichita is composed of Dr. Frederick H. Slayton, city physician, police surgeon, and secretary, and Drs. Jacob Z. Hoffman and James W. Cave.——Dr. Robert H. Smith, Oberlin, has been appointed coroner of Decatur county.

Sanitation and Hygiene Taught.—Dr. Samuel C. Emley, Lawrence, has been granted a leave of absence for two years by the University of Kansas, and will undertake a propaganda for sanitation and hygiene throughout the state, lecturing and showing a sanitary exhibit at all towns which make application.

State Medical Boards.—At a meeting of the State Board of Medical Examiners, held in Kansas City, June 12, Dr. Henry A Dykes, Lebanon, was elected president, and Dr. Franklin P. Hatfield, Olathe, secretary.——At the meeting of the State Board of Health, in Topeka, June 2, Dr. Charles H. Lerrigo, Topeka, was re-elected president; and Dr. Samuel J. Crumbine, secretary.

Hospital Notes.—The trustees of Bethany Hospital have selected a site for the new building near Twelfth street and Central avenue, Kansas City, on which they expect to erect a hospital to cost $150,000, $35,000 of which has already been secured.——It is announced that $14,100 of the $15,000 required for the erection of the new Episcopal Hospital, Selma, has been secured.——The opening reception of the Sterling Hospital was held July 2.

MARYLAND

Hospital Notes.—The Government Naval Hospital, Annapolis, is to be enlarged by the erection of a modern dwelling to be occupied by the surgeon in charge; by two other dwellings for the junior medical officers, by quarters for the trained nurses, and a stable for the ambulance horses. There are also now under construction two wings to the main structure and a sun parlor.——The Children's Country Hospital at Catonsville, near Baltimore, for the treatment of crippled children, will be enlarged and incorporated, and pay as well as charity patients will be admitted. Dr. William S. Baer, Baltimore, is the physician in charge.

Personal.—Drs. W. Preston Miller, Hagerstown; H. Barton Jacobs, Baltimore, and Prof. J. Mark Baldwin, of the department of psychology, Johns Hopkins University, have sailed for Europe.——Dr. Bernard Brown, Jr., Annapolis, was operated on for appendicitis at University Hospital, Baltimore, June 30.——Dr. Robert P. Bay, superintendent of University Hospital, Baltimore, has been appointed a captain and assistant surgeon for the medical corps of the National Guard of Maryland, and assigned to duty with the Fifty Infantry, vice Dr. Gordon Wilson.——Dr. Thomas J. O'Donnell has been appointed police surgeon of Baltimore, vice Dr. Ransom R. Norris.——Dr. Joseph W. Holland, demonstrator of anatomy in the University of Maryland, has been appointed associate professor of anatomy.

Violation of the Food Laws.—In an interview, Dr. Marshall L. Price, Baltimore, secretary of the State Board of Health, says that preserves, catsups, peppers, mustards, and other spices, and many kinds of drugs are put up here and sold here, which could not cross the state line without violating the federal food and drugs act. Without proper legislation and means of enforcing such legislation, the homes of Maryland are helpless. The act of 1890 gives the board power to prevent adulteration and misbranding of foodstuffs, but only allows $2,500 to carry out the law. Ten thousand dollars would be needed annually for effective work, or else a provision to turn fines into the treasury of the board for its expenses. Only two inspectors can now be employed. There are 71 abattoirs alone in Baltimore. He says that cotton-seed oil comes into the state properly labeled, is here relabeled as pure olive oil and sold as such. There is no adulteration of canned vegetables.

Baltimore

Personal.—Dr. Charles D. Snyder has been appointed associate in physiology, Dr. Leonard G. Roundtree, instructor in experimental therapeutics, Dr. Arthur H. Koelker in chemistry, Dr. Herbert M. Evans in anatomy, and Dr. Milton G. Winternitz in pathology in Johns Hopkins Medical School.——Drs. William W. Ford and Ridgeley B. Warfield have gone to Europe.——Dr. DeWitte B. Casler, resident gynecologist at Johns Hopkins Hospital, has resigned.

University Appointments.—The following faculty appointments have been made at the University of Maryland School of Medicine: Dr. Samuel C. Chew, emeritus professor of medicine; Dr. Charles W. Mitchell, professor of medicine and diseases of children; Dr. Arthur M. Shipley, professor of therapeutics and surgical pathology; Dr. Harry Adler, clinical professor of medicine; Dr. Joseph W. Holland, associate professor and demonstrator of anatomy, and lecturer on clinical surgery; Dr. Howard J. Maldeis, lecturer on histology and embryology; Dr. William D. Scott, instructor in genitourinary surgery; Dr. J. Dawson Reeder, instructor in proctology; Dr. John F. Hawkins, instructor in neurology, and Dr. Frank S. Lynn, assistant demonstrator of anatomy, all of Baltimore.

MASSACHUSETTS

Personal.—Dr. Milton J. Rosenau, Washington, D. C., has been elected professor of hygiene and preventive medicine at Harvard Medical School.

A New Field in Tuberculosis Work.—Alexander M. Wilson, who succeeded Edward P. Bicknell as superintendent of the Chicago Bureau of Charities last fall, has resigned to undertake in Boston an open-air boarding house in which convalescent consumptives may attend to business while still living the outdoor life of the shack dweller.

Traced Fever to Milkman.—Investigation by the board of health of a number of cases of typhoid fever at Campello has traced their origin to the employé of a milk dealer who worked on the farm of the dealer for a week before being stricken with the disease. Dr. Frederick J. Ripley, Brockton, of the board, says that there is no epidemic, and that of the seven cases traced to the farm employé the last was reported June 20. There is no evidence of any further spread of the disease from this source.

MICHIGAN

Receives Loving Cup.—Dr. William D. Scott, Ithaca, was the guest of honor at a banquet tendered by the Gratiot County Medical Society, May 28, at which a silver loving cup was presented to Dr. Scott on behalf of the society, by Dr. Stiles Kennedy.

Laboratory Opened.—One of the most complete general laboratories in the country for original research work was opened June 16, at the Woman's Hospital and Infants' Home, Detroit. The laboratory is the gift of Mrs. Grace Whitney Hoff, who gave $1,000 for the installment of the laboratory, and who has provided an endowment of $500 a year for five years for its maintenance. Dr. Carl S. Oakman is to be pathologist in charge of the laboratory, Dr. Willard H. Hutchings is bacteriologist, and Dr. Joseph Sill, consulting bacteriologist.

MISSOURI

Asylum Superintendent Removed.—It is announced that Dr. William F. Kuhn, superintendent of State Hospital No. 2, St. Joseph, was summarily removed from his position by the board of managers, July 1, and that Dr. Frederick A. Patterson has been appointed acting superintendent to fill the temporary vacancy.

Personal.—Dr. Franklin H. Broyles, Bethany, has been appointed a member of the pension board and local surgeon to the Burlington System.——Dr. Robert E. Keaney, De Soto, has been elected superintendent of State Hospital for the Insane No. 4, Farmington, and Drs. Henry Lloyd and Frank S. Weber, St. Louis, have been appointed assistant physicians.——Dr. and Mrs. James E. Logan, Kansas City, sail for Europe July 20.

Public Health Legislation Favored by Senate.—Dr. William S. Allee, Olean, chairman of the Committee on Eleemosynary Institutions and Public Health in the State Senate, calls attention to an error in the news from Missouri in the issue of May 1. It was there stated that "House Bill 456, to eliminate hospitals and poor houses as sources of supply for anatomic material, thereby reducing the latter four-fifths, has passed the senate and is now in the hands of the House Committee on Public Health and Legislation." Dr. Allee states that the bill passed the House, was sent to the Senate, referred to the committee of which he was chairman, which reported the bill adversely, and it was not voted on in the Senate. A companion bill introduced in the Senate was killed by an adverse report from the same committee.

St. Louis

Date of Next Annual Session.—The next annual session of the American Medical Association will be held in St. Louis, June 7 to 10, 1910.

New Medical Buildings.—The work on the new buildings for the medical department of Washington University will begin in a short time and the buildings will be ready for occupancy in the fall of 1910. They will be occupied by the classes of the first and second years.

Personal.—Dr. Cleveland H. Shutt has been reappointed assistant superintendent at the City Hospital.——Dr. Frederick G. A. Bardenheier has returned from Europe.——Drs. Bransford Lewis and Charles H. Hughes have gone to Europe.

NEBRASKA

State Board of Health Organized.—The new State Board of Health organized at Lincoln, July 3, and elected the following officers: President, Dr. Clifford P. Fall, Beatrice; vice-president, Dr. Herschell B. Cummins, Seward; secretary, Dr. E. Arthur Carr, Lincoln, and treasurer, Dr. Archibald L. Muirhead, Omaha.

NEW JERSEY

Rooms Endowed at Seashore Home.—Two rooms have just been endowed at the Children's Seashore Home, Atlantic City, one by Robert L. Montgomery to be known as the Hope Montgomery Room, the other by Mrs. J. Campbell Harris, in memory of her father, the late Thomas H. Powers.

State Board Election.—At the annual meeting of the State Board of Medical Examiners, held at Newark, July 6, the following officers were elected: President, Dr. Charles A. Groves, East Orange; secretary, Dr. Edmund L. B. Godfrey, Camden, and treasurer, Dr. Armin Uebelacker, Morristown.

Day Camp for Tuberculosis to Be Opened.—Orange Camp for tubercular patients, located near Orange Memorial Hospital, is to be opened this month. For the present two tents will be used. Dr. Ralph H. Hunt is to be at the head of the medical staff and the visiting nurse for the Anti-Tuberculosis Society of the Oranges will devote her entire time to the camp, which will accommodate from six to eight patients.

NEW YORK

Personal.—Dr. Henry L. Elsner, Syracuse, has gone to Europe.

Research Laboratory.—Plans have been filed for a laboratory for private physiologic research to be erected on the roof of the north wing of the College of Physicians and Surgeons. There will be a dozen rooms for the various branches of research work and two rooms for operating experiments.

Summer Resorts Inspected.—Inspectors of the state department of health have begun their annual inspection of the various summer resorts in the state for the purpose of gathering information relative to the sanitary condition of those places. When insanitary conditions are reported notice is served on the owners and necessary changes are ordered.

Tuberculosis Hospital Has Financial Troubles.—The Fiscal Supervisor of State Charities, sent to Raybrook to investigate the alleged shortage of accounts at the State Tuberculosis Hospital, is said to have reported that the books show alterations aggregating $9,856. Attention was first called to laxity of management last January and a report was sent to the governor at that time.

More Money for Hospitals.—The will of the late Mrs. Maria Tailer, just filed for probate, bequeaths $25,000 to the New York University and Bellevue Hospital College, to be used for the dispensary, in memory of William H. Tailer. The Children's Aid Society and the New York Orthopedic Dispensary and Hospital each receive $5,000. The Home for Incurables also receives $7,500 for the endowment of a bed in perpetuity to be known as the William Watson bed, in memory of the father of the testatrix.

Few Children Have Sound Teeth.—The Health Department has just completed the examination of 500 children between the ages of fourteen and sixteen years who have received their "mercantile papers." Of these 486 were found to have unsound teeth. There were 2,808 unsound teeth discovered, of which 2,551 might, with proper treatment, be saved. Only 25 of the 500 children had ever had dental treatment. The Children's Aid Society has on foot a movement to establish dental clinics in the public schools. Physical examinations of school children were carried on by the Health Department from September 1, 1908, to March 31, 1909, and during this time 386,744 children were examined. Of this number 290,167 were found to be in need of treatment of a general character, and 206,290 had defective teeth.

New York City

Off for Europe.—Dr. and Mrs. Albert H. Ely, Dr. and Mrs. Daniel A. Harrison, Dr. William B. Coley, Dr. and Mrs. LeGrand N. Denslow, Drs. Louis L. Seaman, Meyer L. Rhein, Edward A. Bogue and Charles G. Kerley have sailed for Europe.

High Mortality from Sunstroke.—There were 32 deaths from sunstroke during the week ended July 3, more than during the last week in June for any other recent year. The death rate for the above mentioned week was 16.48 against 15.70 for the corresponding week of last year. There was a slight increase in the number of deaths from heart disease, pneumonia, tuberculosis, Bright's disease, diphtheria, measles and typhoid fever.

West Side Ambulance Service.—Property at 364 and 366 West Fiftieth street has been purchased and will be remodeled into a house of relief for ambulance service for the upper West Side under control of Bellevue and the Allied Hospitals. This step has been made possible by the appropriation of $32,300 by the Board of Estimate and Apportionment. Two automobile ambulances, a staff of physicians, and six or eight beds will complete the relief station.

OHIO

New Tuberculosis Hospital.—The commissioners of Warren county have purchased the Rudy farm of 86 acres for $6,500 as a site for a county tuberculosis hospital.

Hospital Staff Election.—The medical and surgical staff of St. Luke's Hospital, Cleveland, met for organization June 22, and elected the following officers: President, Dr. Joseph F. Hobson; vice-president, Dr. Maurice D. Stepp; secretary, Dr. Edward S. Lauder; executive committee, Drs. Milton J. Lichty, Samuel W. Kelley and Joseph F. Hobson, and examining committee, Drs. Roland E. Skeel and John N. Lenker.

PENNSYLVANIA

Philadelphia

Home for Infants Donated.—Mr. and Mrs. Harry Miller have donated a house and lot 25x140 feet to be used as an infants' ward and nursery to the Hebrew Sheltering Home and Day Nursery. The building is to be known as the Mrs. Harry Miller ward.

Mortality Decrease.—The report of the Department of Public Health of the first six months of this year shows that 13,264 deaths were reported, a decrease of 677 from the corresponding period of last year. The death rate for the first six months of 1908 was 18.19 per 1,000 of population, but for the same period of this year the death rate was 16.94 per 1,000.

Personal.—Drs. M. H. Cryer, Wendell Reber, J. H. Musser, Edward Martin, F. H. Dercum, Theodore H. Weisenburg, Charles P. Grayson, George C. Stout, Arthur V. Meigs, Melvin M. Franklin and Charles F. W. Plass are among those who will spend part of the summer in Europe.——The University of Pennsylvania has conferred the degree of LL.D. on Dr. Charles B. Penrose.

Hospital Secures Property.—The officials of the Children's Hospital have secured a half a block of land with a frontage of more than 200 feet on Bainbridge and Fitzwater streets and nearly 350 feet on Eighteenth street. The authorities plan to erect as soon as possible a modern steel and concrete fireproof building, but until funds are available for this purpose the lot will be converted into a playground for the benefit of the children in the southwestern part of the city. Since the foundation of the Children's Hospital in 1855 the institution has moved three times, in each instance obtaining or constructing a larger building.

WISCONSIN

Personal.—Dr. George V. I. Brown, Milwaukee, has gone to Europe.——Dr. William H. Ellis has been elected health officer of Barron.

Decision Against Medical Board.—Raymond Puddicombe, a "chiropractor" of Beloit, charged with practicing medicine, surgery, and osteopathic manipulation, was acquitted by the jury, May 27, and discharged. The action was brought by the State Board of Medical Examiners. The case will probably be appealed.

District Election.—At the annual meeting of the Ninth Councilor District Medical Society, held in Stevens Point, Dr. David T. Jones, Wausau, was elected president; Dr. J. Willis Rockwell, Grand Rapids, secretary; and Dr. Ole T. Hougen, Grand Rapids, councilor.

Antituberculosis Association Organized.—On June 1, the Madison Antituberculosis Association was organized to establish a hospital or sanatorium for tuberculosis, to better hygienic conditions, to promote the recovery of tuberculosis persons, and to assist in educating the public. Dr. Charles H. Hall was elected treasurer of the association.

State Society Elects.—At the sixty-third annual meeting of the Wisconsin State Medical Society, held in Madison, June 29 to July 2, the following officers were elected: President, Dr. Edward Evans, LaCrosse; vice-presidents, Drs. John S. Walbridge, Berlin; George V. Mears, Fond du Lac, and Truman E. Loupe, Eureka; secretary, Dr. Charles S. Sheldon, Madison (re-elected); treasurer, Dr. Sidney S. Hall, Ripon; delegate to the American Medical Association, Dr. Lewis F. Bennett, Beloit; alternate, Dr. Frank S. Wiley, Fond du Lac; committee to name members for State Board of Health, Drs. Warren B. Hill, Milwaukee; Thomas H. Hay, Stevens Point, and Charles R. Bardeen, Madison; committee on tuberculosis, Dr. Cornelius A. Harper and Mazyck P. Ravenel, Madison, and Drs. Gilbert E. Seaman, J. M. Bethel, and Charles H. Stoddard, Milwaukee; delegate to the Council on Medical Education of the American Medical Association, Dr. Warren B. Hill, Milwaukee, and delegate to the National Legislative Council of the American Medical Association, Dr. Byron M. Caples, Waukesha. By unanimous vote, the society refused to sanction the vasectomy of confirmed criminals in the state.

GENERAL NEWS AND COMMENT

Philippine Medical Association Committees.—President Benito Valdez of the Philippine Medical Association has appointed the following committees: Scientific work—Drs. William E. Musgrave, U. S. P. H. and M.-H. Service, Manila, and Edwin D. Kilbourn, U. S. Army; public policy and legislation—Drs. A. J. McLaughlin, Henry D. Kneedler, Manila, and Fernando Calderon, Manila; publications—Drs. Philip E. Garrison, U. S. Navy, and James M. Phalen, U. S. Army; and medical education—Drs. Paul C. Freer, Philip K. Gilman and Manuel Guerrero.

The McCosh Memorial.—The *Andrew J. McCosh*, a yawl fitted with auxiliary engines, given by Princeton men throughout the world as a memorial to the late Dr. Andrew J. McCosh, New York City, as a gift to the Labrador Medical Mission, of which Dr. Wilfred T. Grenfell is superintendent, sailed for its new destination June 29.

Health of San Juan.—The report of the bureau of health of San Juan, Porto Rico, for the fiscal year 1907-1908, by Dr. Tomas Vazquez, director of health, urges strongly the creation of the position of sanitary engineer. He calls attention to the fact that no money has been appropriated for the work of emergencies, such as epidemics. The sanitary condition of the island is unsatisfactory, owing in a great measure to the habitual indifference of authorities and individuals so far as hygiene is concerned, this being due to ignorance, and to be remedied only by the hygienic education of the people. The death rate per 1,000 for the fiscal year was 22.97 as opposed to 26.17 for the previous year. The mortality among children below one year of age was 48.18 per cent., and of children below the age of two, 34.10 per cent. This enormous mortality is due chiefly to artificial nursing and to the adulteration of milk. Duringthe year, there were admitted to the sanatorium of the Antituberculosis League of Porto Rico at Seboruco, near San Juan, 68 patients, of whom 9 were discharged cured and 35 improved, and 14 died, 10 remaining in the hospital at the close of the year.

Conference on Infant Mortality.—A conference on the prevention of infant mortality will be held in New Haven, November 11 and 12, under the auspices of the American Academy of Medicine. The session on medical prevention will be presided over by Dr. J. H. Mason Knox, Jr., Baltimore, with Dr. Richard A. Urquhart as secretary. The session on philanthropic prevention will have Dr. John T. Devine, New York City, as chairman, and Miss Lilian Brandt, secretary. Mr. Homer Folks, secretary of the New York State Charities' Aid Association, will be chairman and Miss Mary Vida Clark, New York City, secretary of the session on institutional prevention, and Prof. C. E. A. Winslow will preside over the session on educational prevention, with Henry I. Bowditch, Boston, as secretary. The American Academy of Medicine has decided to raise a fund for the publicity and promotion of the conference, and intends to agitate and exploit the project by both the medical and lay press, in order that the conference may be aided to do its work effectively, that the activities may continue by the promotion of a national society, composed of both professional men and laymen.

LONDON LETTER

(From Our Regular Correspondent)

London, July 3, 1909.

The Financial Prospects of Medicine

For many years the physicians of this country have had to lament the fact that the practice of medicine is by no means as lucrative as it used to be and that the incomes now earned are inadequate. Many causes—overcrowding of the profession, improved hygienic conditions, and the springing up in the large towns and cities of a class of cheap physicians ("dispensary doctors") who run "cash practices" at ridiculously low fees, prescribing chemists, and the competition of the hospitals, to which there is an increasing tendency on the part of the public to resort—have been assigned for this. The *British Medical Journal* has recently published a remarkable investigation which for the first time gives accurate statistics on the question of the overcrowding of the profession. As has been reported from time to time in The Journal the annual increase of the profession has shown in the last few years a continuous fall. But no information was forthcoming as to whether the proportion of physicians to the general population was increasing at the same time, and it was impossible to say whether the overcrowding was on the increase. By taking the estimated population of the country from year to year, calculated by logarithms on the basis of the decennial increase ascertained by the census, and by taking the number of physicians in practice at the middle of each year as a mean between the numbers on the Medical Directory (which is issued at the beginning of each year) the *British Medical Journal* has furnished a reliable calculation on the point. The results are most instructive. They show that in 1881 the population of England and Wales was 26,000,000, and the number of physicians in practice was 15,308, a ratio of population to physicians of 1,700 to 1. In the following years this ratio shows a gradual fall, reaching 1,516 in 1891 and 1,381 in 1901. Then a gradual rise commenced, the figures being in the last seven years (1902-1908) 1,384, 1,389, 1,393, 1,393, 1,396, 1,401, 1,407. The increase in these years may be explained by the fact that in 1890 the length of the medical curriculum was increased from four to five years, thus becoming more arduous and more expensive. But the increasing pressure of overcrowding must also be a factor. It is unfortunate that the *British Medical Journal* did not push the inquiry a stage farther and instead of stopping at the number of possible patients per medico, investigate the question of the number of illnesses to each physician. As a whole the profession is in much inferior financial position to what it was twenty years ago. It has been calculated that the average annual income of the physician does not exceed $1,000.

Health of the Navy

The health of the British navy has shown a steady improvement from year to year, which is due largely to improved hygiene. Not only general sanitation, but food and cookery have been greatly improved. In 1907, the report for which has recently been issued, there were only 3 deaths from heat stroke, and malaria declined 50 per cent. The tracing of Malta fever to the milk of the goat by the commission presided over by Colonel Bruce of the Royal Army Medical Corps has eliminated a prolific cause of illness in the Mediterranean. Venereal diseases still take a great toll. The total number of days' service lost from this amounted in 1907 to 329,326, and the average daily number of men rendered ineffective amounted to 1,000. The total death rate was lower than it has ever been before. In 1858 the death rate from all causes amounted to 25.8, and from disease alone to 22 per 1,000 men; in 1907 it had declined to 3.35 from all causes and 2.26 from disease.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 1, 1909.

Professor Pozzi's Report on the Hospitals and Surgeons of the United States

Dr. Pozzi, professor of clinical gynecology in the College of Medicine of Paris, who recently went to America to represent France at the centenary of ovariotomy in the United States (The Journal, April 24, 1909, lii, 1344) has just made to the *Société de l'internat des hôpitaux de Paris* a report of his impressions gathered in visiting the hospitals of the American cities. He says that American surgeons do not know France well enough and that French surgeons do not know America well enough. The former go to Germany to finish their studies; the French do not go to America, not only because of the long voyage, but also because of the prejudice that American surgeons are very rash charlatans. Pozzi declares that he has been struck by the science and skill of his transatlantic colleagues.

He regretted that all European architects, and in particular French architects, do not go to America to study hospital construction. Among other useful hints they would be able especially to take lessons on the art, almost unknown among us, of methodical and permanent ventilation of the rooms, large or small, thanks to which an equable temperature and a very great purity of atmosphere are maintained everywhere. After a number of other improvements that he noticed in American hospitals, Pozzi mentioned particularly the autonomy of these hospitals, which he considers their most distinctive trait. In Paris the hospital is a mere dependency of an immense administration, while in the United States almost all the hospitals are private foundations, sometimes made possible by a religious or a philanthropic association, sometimes by private donation so that each hospital belongs to a group of citizens who take pride in having model establishments. There is much more interest taken in hospitals in America than in France. Among us the excessive administrative centralization and the development of the powers of the paternalistic state have accustomed us to hand over to the government the care of all the public services, among which we include charity. That is why donations to hospitals, so frequent in America, are so rare in France.

Professor Pozzi is especially enthusiastic over the personnel of the nursing staffs of the American hospitals. Neither in Germany or in England—and still less in France—is there anything to compare with the work done by the American nurses and the orderlies. This is because of the social environment from which the nurses are recruited; while in France the *surveillante* comes from the inferior classes, in the United States the nurse is a lady. She is conscious of her value; she is on an equality with every one, the director, the physicians, the patients. An American nurse has a pecuniary situation three or four times better than that of the *surveillantes* in our hospitals since in Paris a *surveillante en chef* (head nurse) earns only 80 francs (16 dollars) a month.

Professor Pozzi criticizes some things in the organization of American hospitals, especially the arrangement in regard to paying patients. He was astonished to see the largest space in the hospitals given over to rooms for paying patients. Certain hospitals are entirely devoted to paying patients. This criticism seems to me unjustified; for, although this condition is an anomaly among us, since our hospitals belong to the public charities, it is perfectly natural in the United States, since American hospitals are most of them of private foundation.

Professor Pozzi then discussed the question whether American surgeons are on the same level with European surgeons. I give his opinion without inquiring whether his short stay in America entitled him to it. "The average American surgeons are not equal to our surgeons, owing to the imperfect course of study which the former follow, and the ease with which they obtain diplomas, but above these there is a very respectable class. At the summit of the profession are surgeons who yield in no respect to the *élite* in England, Germany and France."

What Pozzi criticizes especially is the fact that physicians and surgeons are chosen by the managing boards of hospitals, composed of excellent people, but scarcely competent to make such selections. Social and family connections have great influence in the choice of physicians and surgeons. Pozzi therefore declares that he prefers our system of the *concours* in spite of the recent criticism on it.

He then spoke of the "reprehensible audacity" and the "charlatanism" of American surgeons, and the extravagant articles on surgeons published by American journals. But Pozzi appears to me to ignore the fact that this shameless charlatanism is severely reprobated by the better part of the medical profession of the United States, a fact which is sufficiently indicated by the systematic and vigorous campaign that The Journal is carrying on against every class of charlatans. For my part, I could wish most earnestly that there were in France a medical journal performing the same meritorious task as energetically.

Last, Pozzi spoke of the surgical work of the brothers Mayo. In Pozzi's view the great surgical center is not New York, Chicago, or Baltimore, or any other great city of this immense territory, but Rochester, Minn. "I have nowhere had," said he, "a more intense realization of American energy than in that little peaceful town of Rochester. Rochester is indeed a surgical factory of immense output, comparable with the great American industrial manufactories."

Election of Dr. Capitan to the Academy of Medicine

In its session of June 29, the Academy of Medicine elected Dr. Capitan to membership to replace Dr. Blache, who died last December. Dr. Capitan has for a long time specialized in the study of prehistoric anthropology. He has been since 1898 professor at the School of Anthropology, where he succeeded Dr. Gabriel de Mortilet. Last year he was given the newly created chair for the study of American antiquities at the College of France.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, June 26, 1909.

Personals

At the end of this semester Professor Schmidt-Rimpler, the well-known director of the eye clinic at Halle, will resign his position. His successor is Prof. E. v. Hippel of Heidelberg.

A department of animal chemistry has been lately established in the physiologic institute of the agricultural college of this city, whose director is the noted physiologist, Professor Zuntz. Professor Neuberg, hitherto assistant of Professor Salkowski in the chemical department of our pathologic institute, has assumed the direction of the new department.

Dr. Langerhans died a few days ago in Berlin at the age of 89. The deceased was a friend of Virchow and was closely associated with him in political and municipal activity. He was for many years a member of the Reichstag and of the Prussian house of delegates (Abgeordnetenhaus). In 1848 in connection with many noted men, especially Carl Schurz, who later reached so high a position among you, he took part in the struggle for liberty. Langerhans was also from 1893 to 1907 the president of the Berlin city council. He was the successor of Dr. Stryck, who was also a physician. His services to this city were recognized by the granting of the freedom of the city, an honor which few men besides him have reached (Bismarck, Robert Koch, etc.).

A New Municipal Hospital

At Buch, a manorial estate belonging to the city, situated in a suburb of Berlin, a hospital for old people was opened a few weeks ago. Already on the estate are a large insane asylum of about 2,000 beds and a home for pulmonary invalids. The new hospital has about 1,500 beds. The cost of building was about $1,560,000 (6,500,000 marks). There are in the city of Berlin altogether 2,286 beds for invalids which cost annually $271,680 (1,132,000 marks). The insane asylum at Buch (the third in the city) is to have a second addition of a ward for 75 patients. According to the plans the cost will be about $2,300 (9,400 marks) per head. The great expense is occasioned chiefly by the large air space of 1,600 cubic feet (50 cbm.) for each patient.

First German Congress for the Care of Infants

The first German congress for the care of infants convened in Dresden in the middle of June. Three subjects were taken up: 1. The present status of measures for reduction of infantile mortality and promotion of infantile hygiene (*Säuglingsfürsorge*). 2. A report on maternity institutes and homes for puerperæ and infants, as a means of reducing infantile mortality. 3. Report on the measures for encouragement of lactation. On the first subject I have frequently written so that I may omit it. In the second report the first speaker, Privy Counselor Dietrich of the ministry of education (*Kultusministerium*), emphasized the necessity of greater protection to pregnant and lying-in women. Most of the lying-in hospitals discharge the mother and child frequently only six days after delivery and in consequence invalidism of the mother as well as the death of the child is often occasioned. It is therefore necessary to increase the number of homes for lying-in women and infant asylums. The mother and child should remain in the asylum at least four weeks after delivery. The second speaker Professor Salge of Göttingen advocated among other things a nurses' protective law. A mother should not be allowed to undertake service as a wet nurse before the expiration of three months after delivery. The third speaker, Prof. v. Franqué of Giessen, reported that 63,000 children in Germany die before birth and 80,000 die in the first fifteen days of life. The large number of still births which is greater in Germany than in many other countries is attributable mainly to lack of care during pregnancy and imperfect hygiene during delivery. It is recognized that lack of care of the pregnant woman leads to imperfect development of the child; such children often weigh a pound (500 gms.) less than normal. About 10,000 women in Germany die annually in childbed; 50,000 suffer from puerperal fever and are thereby prevented from suckling their children. Sixty thousand infants are in this way deprived of their natural nourishment by injury at birth. For this reason the extension of institutional care to all who need it should be demanded. The indications for receiving these persons into institutions are both social and medical. Among the first is to be reckoned illegitimacy as well as the delivery of all mothers who have at their disposal only one room. In a medical way the admission is indicated not only for cases which require operative treatment, but because the timely reception will often avoid the necessity of operation. From this point of view the institutions would need to provide for about 210,000 births, i. e., the number of institutions at present available for this purpose would need to be multiplied fivefold. The lying-in hospital has also the greatest significance for the infants. About 1.4 per cent. of infants die from infection of the umbilicus; while in all of Giessen 3.4 per cent. of infants died from this infection, the mortality in the Giessen maternity was only half as great. Professor v. Franqué demands that the unmarried mother shall remain in the lying-in home three months, for a three months' nursing is requisite, if the mortality of infants is to be reduced. In Germany there are only ten institutions which keep the mothers long enough before and after delivery. In the third report the importance of suckling for diminishing the mortality of infants was again thoroughly discussed. The introduction of nursing premiums and the insurance of motherhood were recommended. I have repeatedly referred to these matters.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, June 26, 1909.

Increase in Consumption of Meat

In Vienna the general consumption of meat is steadily increasing, although last year fruit and vegetables were to be had nearly for the asking. According to the statistical report of the market supervision board, the average yearly consumption of meat was in 1908 76.4 kilos (170 pounds) per head; in 1905 it was 74.6 kilos (166 pounds); in 1900 it was 72 kilos (160 pounds); and in 1895 it was only 70 kilos (156 pounds). The chief kind of meat used was pork and beef. The increase of meat consumption is due to two factors: increase of national wealth and increase of the working part of the population. No definite influence of the increased meat consumption on health could be ascertained unless the fall in mortality be ascribed to it.

Passing of the Phosphorus Bill

The phosphorus bill prohibiting the use of the poisonous kind of phosphorus in the manufacture of matches (noticed in The Journal, April 24, 1909, lii, 1345) has been passed and will soon become law in Austria. In 1911 the same law will be valid for both parts of Austria-Hungary. The passing of the bill is due mainly to the incessant work of medical men. The only drawback of the bill is the fact that a certain period, estimated at two years, will be permitted to the factories to adapt their manufacturing process to the new requirements.

The Boycotting of Medical Appointments by Medical Organizations

The increasing influence of medical organizations in this country has been attested recently by municipal decisions which have tried to annul the resolution of the *Reichsverband der Oesterreichischen Aerztcorganisationen* (Union of Austrian Medical Organizations) on the ground that by boycotting a medical appointment the union exceeded its rights. The union then explained its attitude in a memorandum addressed to the local authorities, and to the ministry of justice and stated the conditions under which it would declare a boycott. A boycott is merely an appeal to all medical men to abstain from accepting a certain post; it is an appeal from colleagues to colleagues, and would be issued only under three conditions: (1) when a practitioner had been dismissed from his appointment without sufficient reason; (2) when practitioners have been dismissed or have given up an appointment on account of a dispute as regards rate of payment; (3) when there were differences of opinion between doctors and corporations on the ground of ethics and principles. In several instances the union has declared boycotts and in two instances the boycotted corporations have gone to law against the union. The superior court finally declared that a boycott could not be declared, as the union had no power to bind any one of its members or any practitioner at all. But a request could not be stopped, and thus in future the boycott might be disguised under the shape of an urgent request. The union has accepted the hint and the *Aerztekammern* (Medical Councils) have unanimously declared their approval of the attitude of the union, and have resolved to become members of the union corporatively. Thus the attack on medical concord has ended with a signal victory by the practitioners against official narrow-mindedness. The union now comprises about 80 per cent. of all practitioners of Austria, and as agitation is very vigorous we may soon have all national and racial differences covered, in this body at least, by a common interest.

Pharmacology

Fluoroform

To the Editor:—Please give the following information regarding fluoroform: 1, The chemical composition; 2, strength of the solution and dosage used in the treatment of whooping cough; 3, results as compared with bromoform; 4, name of the manufacturer; 5, references to any recent literature in regard to its use in a large number of cases. W. E. H.

ANSWER.—1. Fluoroform is a substance analogous to chloroform in which three atoms of fluorin have replaced the three atoms of chlorin; formula CHF_3.

2. It is on the market in the form of an aqueous solution of the gas purporting to contain 2.8 per cent. by volume, which amounts to 0.00715 per cent. by weight. The dosage of this solution is said to be from 5 to 10 gm. and with adults as high as 30 gm. per diem given in teaspoonful doses.

3. It is claimed by some to give better results than bromoform.

4. German patents for the preparation are held by Valentiner & Schwarz, and the solution is marketed in this country under the name of fluoroformol, under the agency of C. Bischoff & Co., New York.

5. The treatment of pertussis by fluoroform is described by Paul T. Tissier (International Clinics, Vol. III, Eighteenth Series, 1908). At the meeting of the chemical society of France, May 27, 1908, V. Auger (*Bull. de la Soc. chim. de France*, 5, 7 to 11) claimed that the fluoroform water manufactured by Valentiner & Schwarz, as found in the market, contained no fluoroform, but that the gas, approximately 2.24 per cent. by volume, consisted essentially of air. He states that of the two patents, which the manufacturers hold, the first (which has expired) will produce fluoroform if the materials are absolutely dry. These materials are silver fluorid, iodoform and sand. There are, however, considerable difficulties in managing the reaction if large quantities of the substance are to be prepared. On the other hand, the second method which employs a watery solution of silver fluorid acting on iodoform in a specially constructed apparatus, according to Meslan's experiments, produces no fluoroform, but gives off a mixture of 95 per cent. carbon monoxid (CO) and 5 per cent. of carbon dioxid (CO_2). This patent is still in force. It would appear from these experiments that the manufacturers have given up the first—and efficient—process, and resorted to the second, which supplies to the patient a harmless liquid consisting of aërated water. Valentiner & Schwarz contend that the existence of carbon monoxid and carbon dioxid in their fluoroform water is impossible because the gas given off is washed in soda lye, baryta water and solution of cuprous chlorid before dissolving it in water. They say that the construction of their apparatus excludes the presence of air. They admit that in partially filled bottles traces of carbonic acid might form in the course of time.

In consideration of the uncertainty as to the method and results of manufacture of this remedy, it is evident that no certain conclusions can be drawn from clinical use at the present time. Tissier especially emphasizes the non-toxic and palatable character of the preparation which he used, which he might well do, if, as appears from analysis of the product on the market, he was giving practically nothing but water.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

PIN-WORMS (OXYURIS VERMICULARIS) IN THE APPENDIX

To the Editor:—I wish to place on record the finding of pin-worms *(Oxyuris vermicularis)* in the appendix of a female child, aged 11 years. The patient had some pain, tenderness, rigidity of rectus, temperature of 103° and pulse 120. Operation was done in twenty-four hours from onset and the appendix removed. There were no gross changes beyond marked congestion of distal end. When the appendix was opened, a ball of twelve pin-worms was found with fecal matter. Recovery was perfect; usual treatment for pin-worms failed to reveal any more during her ten days' stay in hospital. M. ALLEN, M.D., St. Johnsbury, Vt.

COMMENT:—Other similar cases recently reported are:

Hall, E. A.: *Oxyuris vermicularis* in the Appendix, *Dominion Med. Month.*, May, 1903.

Wagener, O.: *Oxyuris vermicularis* in the Intestinal Wall, *Deutsch. Arch. f. klin. Med.*, lxxxi, Nos. 3-4, 1904. Id. *Virchow's Arch.*, clxxxii, No. 1, 1906.

Hippius, A. and Lewinson, J.: *Oxyuris* and Appendix, *Deutsch. med. Wchnschr.*, Oct. 24, 1907.

Wakefield, R. W.; *Oxyuris vermicularis* Found in the Vermiform Appendix, THE JOURNAL A. M. A., June 6, 1908, p. 1904.

Thrush, M. C.: Appendicitis Due to Presence of *Oxyuris vermicularis, Med. Rec.*, New York, Dec. 28, 1908.

OPERATIONS ON THE AGED—DATA REQUESTED

To the Editor:—Having lately operated on a patient eighty years old for an ovarian cyst holding about three gallons of fluid I am anxious to know if any patient older than this one has been successfully operated on. I should be glad to have reports from any who have operated on a patient 70 years of age and over. Report age of patient, married or single, number of children, age of youngest, age at menopause, and results of operation.

R. R. KIME, M.D.,
714 English-American Bldg., Atlanta, Ga.

The Public Service

Navy Changes

Changes for the week ended July 10, 1909:

Gatewood, J. D., medical inspector, detached from the Naval Medical School, Washington, D. C., July 15, and ordered to duty on board the *Tennessee* as fleet surgeon of the Pacific Fleet.

Byrnes, J. C., medical inspector, detached from duty on board the *Tennessee* as fleet surgeon of the Pacific Fleet and ordered home to await orders.

Law, H. L., surgeon, retired, detached from the Naval Recruiting Station, Boston, Mass., and ordered home.

Payne, J. H., Jr., P. A. surgeon, ordered to the Naval Recruiting Station, Boston, Mass.

Rogan, F. M., surgeon, commissioned surgeon from Sept. 2, 1908.

Butler, C. St. J., surgeon, commissioned surgeon from Sept. 19,1908.

Grayson, C. T., P. A. surgeon, detached from the Naval Medical School, Washington, D. C., and ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Bass, J. A., acting asst.-surgeon, detached from duty at the Naval Hospital, Philadelphia, Pa., and ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Bucher, W. H., surgeon, transferred to the retired list from June 11, 1909, in conformity with the provisions of Section 1453, Revised Statutes.

French, G. R. W., acting asst.-surgeon, ordered to the Naval Hospital, Narragansett Bay, R. I.

Heneberger, L. G., medical director, detached from command of the Naval Hospital, Newport, R. I., July 15, ordered home and granted sick leave for two months.

Leach, P., medical inspector, detached from the Marine Recruiting Station, New York, N. Y., and ordered to command the Naval Hospital, Newport, R. I.

Bucher, W. H., surgeon, retired, ordered home when discharged from treatment at the Naval Hospital, Mare Island, Cal.

Peck, A. E., P. A. surgeon, unexpired portion of leave revoked, ordered to the Marine Recruiting Station, New York, N. Y.

Garrison, P. E., asst.-surgeon, detached from duty as medical zoologist for the Bureau of Science, Philippine Islands, and ordered to Washington, via the *Buffalo*, for examination for promotion.

Curl, H. C., surgeon, detached from the *Buffalo* and ordered to the Naval Hospital, Canacao, P. I.

Hoyt, R. E., P. A. surgeon, detached from the *Chattanooga* and ordered to the Naval Hospital, Mare Island, Cal., for treatment.

Downey, J. O., asst.-surgeon, detached from the Naval Hospital, Canacao, P. I., and ordered to the *Chattanooga*.

Allen, D. G., asst.-surgeon, detached from the *Buffalo* and ordered to the *Chattanooga*, temporarily.

Public Health and Marine-Hospital Service

List of changes for the week ended July 7:

Kerr, J. W., asst. surgeon-general, granted 21 days' leave of absence from July 12, 1909.

McIntosh, W. P., surgeon, granted 2 days' leave of absence from July 5, 1909. Paragraph 189, Service Regulations.

Clark, T., P. A. surgeon, granted 7 days' leave of absence from June 11, 1909. Paragraph 191, Service Regulations.

Foster, M. H., P. A. surgeon, granted 1 day's leave of absence, June 23, 1909. Paragraph 191 Service Regulations.

Ramus, Carl, P. A. surgeon, granted 1 day's leave of absence, June 10, 1909. Paragraph 191, Service Regulations.

Holt, John M., P. A. surgeon, leave of absence granted May 21, 1909 for one month from July 5, 1909, amended to read, one month from July 26, 1909.

Hart, Lasher, asst.-surgeon, granted 7 days' leave of absence from July 1, 1909.

Preble, Paul, asst.-surgeon, directed to report at Bureau on special temporary duty.

Dynan, N. J., acting asst.-surgeon, granted 1 day's leave of absence, June 30, 1909. Paragraph 210, Service Regulations.

Goldsborough, B. W., acting asst.-surgeon, granted 2 days' leave of absence from June 28, 1909.

MacCaffry, W. B., acting asst.-surgeon, granted 1 day's leave of absence in June, 1909. Paragraph 210, Service Regulations.

Rodman, John C., acting asst.-surgeon, granted 7 days' extension of leave of absence from June 17, 1909, on account of sickness.

Walker, T. Dyson, acting asst.-surgeon, granted 4 days' leave of absence from July 6, 1909.

Ward, J. La Bruce, acting asst.-surgeon, granted 10 days, extension of leave of absence from June 15, 1909, on account of sickness.

Wetmore, W. O., acting asst.-surgeon, granted 1 day's leave of absence, June 10, 1909, and 5 days' leave of absence from June 25, 1909. Paragraph 210, Service Regulations.

Wilson, J. G., acting asst.-surgeon, granted 5 days' leave of absence from July 1, 1909. Paragraph 210, Service Regulations.

RESIGNATION

Assistant Surgeon Lasher Hart, resignation accepted by the President to take effect July 7, 1909.

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the the week ended July 9, 1909:

SMALLPOX—UNITED STATES

Georgia: Macon, June 20-27, 2 cases.

Illinois: Chicago, June 19-26, 2 cases; Danville, June 20-27, 3 cases.

Indiana: Indianapolis, June 13-20, 1 case; Muncie, June 19-26, 1 case; South Bend, 2 cases.

Kansas: Kansas City, June 19-26, 5 cases.

Kentucky: Covington, June 19-26, 2 cases; Lexington, 5 cases; Paducah, 2 cases.

Louisiana: New Orleans, June 19-26, 1 case.

Michigan: Grand Rapids, June 19-26, 1 case.

Minnesota: Duluth, June 18-25, 2 cases.

Missouri: Kansas City, June 19-26, 1 case; St. Joseph, May 29-June 5, 3 cases, June 7-14, 1 case.

Montana: Butte, June 18-24, 2 cases.

Tennessee: Knoxville, June 19-26, 4 cases.

Texas: Galveston, June 18-25, 1 case.

Virginia: Lynchburg, June 19-26, 1 case, imported.

Washington: Spokane, June 12-19, 3 cases; Tacoma, June 13-20, 2 cases.

SMALLPOX—INSULAR

Philippine Islands: Manila, May 8-22, 9 cases, 2 deaths.

Canada: Halifax, June 12-19, 2 cases.

Chile: Santiago, June 7, present.

China: Amoy, May 1-15, present; Hankau, May 1-8, present; Shanghai, May 8-15, 1 death; Tientsin, April 24-May 1, 1 case.

Egypt: Cairo, May 21-27, 2 cases, 1 death.

France: Paris, June 5-12, 5 cases.

India: Bombay, May 25-June 1, 15 deaths; Madras, May 22-28, 1 death; Rangoon, May 15-22, 4 deaths.

Italy: June 6-13, 8 cases; Naples, 25 cases, 4 deaths.

Japan: Yokohama, June 1-7, 1 case.

Java: Batavia, May 8-22, 4 cases.

Mexico: Veracruz, June 15, 1 case.

Portugal: Lisbon, June 5-19, 9 cases.

Russia: Moscow, May 29-June 5, 29 cases, 13 deaths; Odessa, June 5-12, 4 cases; Riga, 7 cases; St. Petersburg, May 22-29, 19 cases, 3 deaths.

Switzerland: Geneva, May 29-June 5, 10 cases.

Turkey: Constantinople, May 30-June 6, 4 deaths.

YELLOW FEVER

Barbados: St. Joseph parish, June 5-20, 3 cases.

Brazil: Manaos, May 22-29, 2 deaths; Para, May 29-June 12, 5 deaths.

Ecuador: Guayaquil, May 22-29, 7 deaths.

CHOLERA—INSULAR

Philippine Islands: Provinces, May 8-22, 49 cases, 32 deaths.

CHOLERA—FOREIGN

India: Bombay, May 25-June 1, 3 deaths; Rangoon, May 15-22, 1 case.

Russia: St. Petersburg, June 14-17, 106 cases, 24 deaths.

Straits Settlements: Singapore, May 8-15, 6 deaths.

PLAGUE

Chile: Antofagasta, May 29, 5 cases in the lazaretto; Iquique, May 30, 10 cases in the lazaretto.

China: Amoy, May 1-22, present; Chinchow, May 22, epidemic.

Ecuador: Guayaquil, May 22-29, 3 deaths.

Egypt: May 28-June 3, 19 cases, 18 deaths; Alexandria, May 29-June 5, 1 case; Port Said, June 9, 1 case.

India: General, May 15-29, 6,920 cases, 6,033 deaths; Bombay, May 25-June 1, 125 deaths; Rangoon, May 15-22, 6 deaths.

Japan: Kobe, May 28-June 5, 3 cases, 1 death; Yokohama, June 1-7, 5 cases, 4 deaths.

Peru: May 22-June 5, 13 cases, 7 deaths; Callao, 1 case, 1 death.

Venezuela: Caracas, to June 13, 10 cases, 4 deaths; June 14-21, 3 cases, 1 death.

Book Notices

A SYSTEM OF SYPHILIS. In six volumes. Edited by D'Arcy Power, M.B., F.R.C.S., and J. Keogh Murphy, M.D., M.C., F.R.C.S. With an introduction by Jonathan Hutchinson, F.R.S. Vol. I. Cloth. Pp. 380, with illustrations. Price, $13.50. New York: Oxford University Press, 1908.

The volume before us is the first of a six-volume system devoted to the subject of syphilis. It is a large octavo of over 400 pages, so that the entire work will contain approximately 2,500 pages. The appearance of such a system is in itself noteworthy and represents an undertaking which on the face of it is commendable. It means, first, that there is behind it an understanding of the extent, as well as of the importance, of the subject of syphilis and, second, that there is a spirit in the enterprise that does not hesitate at a great undertaking. The work bids fair, judging from this volume and the list of contributions to future volumes, to be a monument to scientific enthusiasm and British scholarship. It is distinctly a British work; except Metchnikoff and Iwan Bloch, all of the contributors belong to the English school. The work is appearing at an opportune time, for there is no longer room to doubt that the discovery by Metchnikoff and Roux of the inoculability of apes and monkeys with syphilis, the more recent discovery by Schaudinn and Hoffmann of the *Spirochæta pallida* in syphilis, and the application by Wassermann and others of the serum complement reaction in the diagnosis of syphilis mark the greatest epoch in our knowledge of syphilis since its sudden appearance in Europe in the last years of the fifteenth century. These events, indeed, almost mark an epoch in the history of medicine.

Most appropriately for a British work, the system begins with an introduction by Jonathan Hutchinson, the greatest syphilographer and one of the greatest clinicians that Great Britain has produced, a very Sydenham of an observer and a figure that, with Fournier, stands out above all the students of syphilis of the latter half of the nineteenth century. Hutchinson's introduction, like most of his recent writings, consists of disjointed paragraphs on various topics in syphilis; they are frankly intended to be, not systematic or complete, but suggestive. They constitute a highly interesting presentation of many problems of syphilis as they occur to a thoughtful and original mind that has given a large part of a long lifetime of study to syphilis. His introduction is extremely suggestive and is worthy any one's study.

In addition to Hutchinson's introduction the following subjects are considered in Volume I: "History of Syphilis," by Iwan Bloch, Berlin; "Microbiology of Syphilis," by Elie Metchnikoff, of the Pasteur Institute, Paris; "General Pathology," by F. W. Andrewes, Pathologist to St. Bartholomew's Hospital, London; "Primary Lesions and Early Secondary Symptoms," as seen in the male, by Colonel F. J. Lambkin of the British Army; the same lesions, as seen in the female, by Arthur Schillitoe, of the London Lock Hospital; "Congenital Syphilis," by G. F. Still, Professor of Diseases of Children, King's College, London.

Bloch's larger work in German on the history of syphilis proves his fitness for this topic. He gives to the subject four short chapters of 40 pages, and he has written as would be expected of him. The history of syphilis with its sudden appearance in Europe, its devastating spread, and the enigma of its origin is one of the most dramatic subjects in medicine, and Bloch treats it well. He believes, and in our opinion leaves little room for doubt, that it came from America. He emphasizes the findings of Spanish authorities that the disease can be traced back in authentic documents directly to sailors from Columbus' fleet who were treated by Spanish physicians and whose disease was recognized and recorded as new.

The chapters on the microbiology of syphilis by Metchnikoff are eminently satisfactory. He covers the field so well that his work may be considered practically up to date, even in the present stage of rapid development of this subject. In a short historical survey he reviews the work in this field by various observers prior to Schaudinn and Hoffmann's discovery. Of Siegel's *Cytorrhyctes luis*, which is still maintained as the cause of syphilis by its fond discoverer—and by no one else, as far as we know—he says: "The description and photographs . . . showed nothing which could in the slightest degree carry conviction. . . ." Then, before taking up Schaudinn's discovery, he describes how, from the resemblance of syphilis to dourine of horses, which is due to a spirillum, and because of the spirilla found in syphilis by Bordet and Gengou, he and Roux made a bacteriologic study of syphilis with the definite hope of finding a pathogenic spirillum, and after a fruitless search, "expressed the opinion that the disease could not be attributed to any form of spirillum"—this in the *Annales de l'Institut. Pasteur* in 1904 on the very eve of the discovery of the spirillum of syphilis. As to the rôle of the *Spirochæta pallida* in syphilis, he says: "We can say, speaking generally, that this organism can be shown in every possible lesion which is definitely syphilitic."

Andrewes' chapters on the pathology of syphilis do not suffer even by following Metchnikoff's. He divides his subject into three parts: the general pathology of syphilis; the general histology of syphilis; and the problems of immunity in syphilis. His plan of treating the subject is to give a running account of the clinical or experimental facts which he is at the moment considering and to follow this by the pathologic explanations. This treatment of the subject is, of course, scientific, and it adds much to the interest. The result is a particularly happy and philosophical exposition of the pathology of syphilis.

The chapters on the symptoms of the primary and secondary periods of syphilis are complete, but they are not particularly noteworthy. In the first place, the division of the subject into the symptomatology in the male and the symptomatology in the female is unnatural and is not justified by practical distinctions in the manifestations of the disease in the two sexes; further, it results in unavoidable repetition. In the chapters on the symptoms in the male there are several curious lapses in the Latin of the prescriptions. But, after all this is said, these chapters may be profitably consulted for facts on almost any point in syphilis of which they might be expected to treat.

The chapters by Still give a thoughtful, detailed, analytical account of congenital syphilis. Over eighty pages are given to the subject and they constitute a good monograph, whose value is increased from the fact that the disease is considered from the standpoint of the internist. The account of the cutaneous symptoms in congenital syphilis is sketchy and shows the lack of expert knowledge of dermatology.

The book-making has some unusual features. The paper is unglazed, and the type is large, so that reading is made unusually easy. Although, on account of the thickness of the paper, the volume is rather large, it is of light weight, so that that usual abomination of large volumes—difficulty of holding with ease while reading—is avoided. The illustrations are all printed on inserts. The clinical illustrations, which are with few exceptions colored, are mounted on heavy gray sheets, and this method of presenting them adds very much to their attractiveness. Altogether, they constitute a good atlas of the clinical manifestations of primary and secondary syphilis and of congenital syphilis. The microscopic illustrations, most of them in black and white, some of them colored, are beautifully reproduced. No expense or pains has been spared to make them as perfect as possible.

Altogether, the volume comes up to the high standard that is to be expected of it, and the system promises to be a noteworthy encyclopedia of syphilis.

MENDEL'S PRINCIPLES OF HEREDITY. By W. Bateson, M.A., F.R.S., V.M.H., Fellow of St. John's College. Cloth. Pp. 396, with illustrations. Price, $3.50. Cambridge: The University Press, 1909.

Bateson is the occupant of a newly founded chair in the University of Cambridge, founded and endowed for five years with the purpose of special study and inquiry into heredity and variations, or genetics, the more modern term.

This book, which is clearly written and well illustrated, aims to give a succinct account of the discoveries and developments in the field of heredity resulting from the application of Mendel's now well-known methods of research. In the first part Bateson deals with introductory matters and with Mendel's discovery; he then discusses the material investigated by himself and his associates and the numerical consequences and recombinations. Several chapters are devoted to heredity of color, heredity and sex, and double flowers. Chapter XII is devoted to a discussion of the evidences of Mendelian inheritance in man; and various examples of hereditary diseases and malformations are cited and illustrated with diagrams of heredity. The next four chapters deal with intermediates between varieties and "pure lines," miscellaneous, exceptional and unconformable phenomena, biologic conceptions in the light of Mendel's discoveries, and practical applications of Mendel's principles.

The second part contains an interesting biographical notice of Mendel and translations of epochal papers on hybridization and on *Hieracium*. There are also two portraits of Mendel. The book may be strongly recommended to physicians and to medical teachers who are interested in following the developments of the new science of genetics.

A full bibliography is given and there is a separate index to subjects and authors.

THE INFLUENCE OF HEREDITY ON DISEASE, with Special Reference to Tuberculosis, Cancer and Diseases of the Nervous System. A Discussion opened by Sir William S. Church, Bt. K.C.B., M.D., President of the Royal Society of Medicine, Sir William R. Gowers, M.D., F.R.S., Arthur Latham, M.D., and E. F. Bashford, M.D. [From the Proceedings of the Royal Society of Medicine, 1909, Vol. II.] Cloth. Pp. 142, with illustrations. Price, $1.50. New York: Longmans, Green & Co., 1909.

This discussion is the first held by the Royal Society of Medicine in accordance with its intention to hold from time to time, in addition to the meetings of its sections, meetings of the society as a whole to discuss questions of general medical interest. In view of the importance of determining exactly, if possible, the influence of heredity as an etiologic factor in disease, it was thought proper to publish as a separate volume the discussion of this subject at four different meetings in the latter part of 1908. While the discussion does not settle the question, yet the Royal Society may well be congratulated on the outcome of the attempt, because the discussion as presented in the volume before us unquestionably is the most weighty contribution to the great problem of heredity and disease since the introduction of the modern methods of study of inheritance in general.

The most valuable concrete results of the discussion would seem to be (1) the conclusion that true heredity plays little or no part in causing tuberculosis and cancer, and that from the evidence in hand no really trustworthy conclusions may be drawn as to the influence of heredity on insanity and functional nervous disorders, and (2) the forcible demonstration of the urgent necessity of the collection of complete pedigrees of human beings with special reference to disease. Even in the case of clearly inheritable diseases there are very few good pedigrees for the study of the applicability of Mendelian and other laws of heredity; and practically all the statistics accumulated on insanity are valueless for any practical or scientific purpose, representing in so far a gigantic waste of time and labor, because they do not give numerical records of the sane members of the families of the insane and of the insane members of the families of the sane. Lack of completeness vitiates most of the statistics bearing on heredity in relation to human diseases.

Heredity from the standpoint of Mendelism is well represented by Professor Bateson and Mr. Mudge; while Professor Pearson upholds ably the value of the biometric method in the study of heredity. The introduction of the president, Sir William E. Church, is eloquent and illuminating, and throughout the discussion clearness and ability are noteworthy. All who are at all interested in heredity and disease are urgently recommended to study this noteworthy discussion. This book and Bateson's on "Mendel's Principle on Heredity" should lead to great increase in the interest among medical men in the accurate study of heredity.

DIE BEHANDLUNG DER GEBURTEN BEI ENGEN BECKEN. Von Dr. E. Scipiades, Assistenten der zweiten Frauenklinik der konigl. ung. Universität in Budapest. Paper. Pp. 246. Price, 7 marks. Berlin: S. Karger, 1909.

This monograph is a translation from a Hungarian work published by Scipiades in 1906. Scipiades discusses in detail the advantages, disadvantages and indications for the various methods in the treatment of contracted pelvis and gives especial attention to the methods of pubiotomy.

COMMON DISORDERS AND DISEASES OF CHILDHOOD. By George Frederick Still, M.A., M.D., F.R.C.P., Professor of Diseases of Children, King's College, London. Cloth. Pp. 731, with illustrations. Price, $5.50. New York: Oxford University Press, 1909.

This modest little book of 700 pages comes to us as another of those refreshing and most admirable works that represent the mature ideas and interests of one of the great English pediatricians. In many ways it reminds one of that other excellent little treatise by the great Edinburgh clinician, Thompson ("The Examination and Treatment of Sick Children"), which was recently reviewed in these columns. Yet each has its individuality so strongly marked that one reads them both as one would go to two clinics on the same subject by two different authorities. Dr. Still emphasizes the fact that he has not written a text-book, but has been "selective and discursive" as "suited his bent." This gives the book a more direct personal appeal to the reader that adds much to its worth. It would be hard indeed to find anywhere another book that is so prolific in answers to the innumerable questions that come to us in our daily observation of children. There are, for example, 7 most comprehensive pages on "Disorders of Dentition," 8 on "Dental Caries," 3 on "Teeth-Grinding," 6 on "Head-Rolling, Head-Banging and Body-Rocking," 11 on "Head-Nodding with Nystagmus in Infancy," 11 on "Mongolian Idiocy," and 24 very practical pages on "Fever of Obscure Origin," in which Dr. Still gives a deserved prominence to acute primary pyelitis. One misses the profusion of peculiarly illustrative pictures in Thompson's book, but the smaller number here are well chosen. Dr. Still's ideas on infant-feeding fundamentally are those of the English school, and yet he brings so much individuality and originality to the subject that one reads it with renewed interest. On the whole, this little book can not be too highly commended to any one interested in infants and children, and any physician, especially one who has been in practice for a number of years and has collected a large number of questions to which he would like to find satisfactory answers, will find here a veritable mine of information.

ORTHOPEDIC SURGERY FOR PRACTITIONERS. By Henry Ling Taylor, M.D., Professor of Orthopedic Surgery and Attending Orthopedic Surgeon, New York Post-Graduate Medical School and Hospital. Assisted by Charles Ogilvy, M.D., Adjunct Professor of Orthopedic Surgery New York Post-Graduate Medical School and Hospital, and Fred H. Albee, M.D., Instructor in Orthopedic Surgery, New York Post-Graduate Medical School and Hospital. Cloth. Pp. 503, with illustrations. Price, $5.00. New York: D. Appleton & Co., 1909.

The book is dedicated to Dr. Charles Fayette Taylor, the father of the author, and one of the pioneers in this country in orthopedic surgery. It is divided into general, special and technical parts, and an effort has been made to present such methods as are at the command of any intelligent practitioner, and to eliminate irrelevant and useless matter. The result is the most readable book that has so far been written on orthopedic surgery. For the student and for the busy practitioner the division of the work into three parts may be confusing and unsatisfactory. A student more readily masters a subject when all that is to be said about it can be found in one place, and the practitioner who wishes to arrive at a differential diagnosis in an obscure case, and to learn at once how best to treat the patient may become impatient when he has to follow his subject through three separate and distinct divisions of the book. There have appeared in English only two books on orthopedic surgery that may be considered in a class with this, namely, that of Bradford and Lovett, and that of Whitman. This book is more concise and contains much less irrelevant matter than the former, and does not constantly repeat itself as does the latter.

Throughout the book Dr. Taylor makes use of the term "ichor pockets" as a technical term to replace the term "tuberculous abscesses," or "cold abscesses," holding that abscess suggests pus, and that the term "tuberculous pus" is not only inaccurate but misleading, since the liquid contents of tuberculous abscesses are in no way pus at all in the sense of modern pathology, and since the use of any term suggesting that this liquid is a form of pus often leads to surgical procedures that are right enough when true pus is present, but absolutely wrong if it is only "ichor" or tuberculous pus. We hope the use of these words in the technical sense will obtain.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: San Francisco, August 3. Sec., Dr. Charles L. Tisdale, Butler Bldg.
GEORGIA: Regular, Capitol Bldg., Atlanta, August 3-4. Sec., Dr. E. R. Anthony, Griffin.
ILLINOIS: Coliseum Annex, Chicago, July 20-22. Sec., Dr. J. A. Egan, Springfield.
NEBRASKA: State Capitol, Lincoln, August 4-5. Dr. A. L. Muirhead, 4248 Burdette St., Omaha.

Arkansas January and April Reports

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examinations held at Little Rock, Jan. 12 and April 13, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75.

At the examination held in January, the total number of candidates examined was 60, of whom 21 passed, including 11 non-graduates, and 39 failed, including 37 non-graduates. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Illinois Medical College	(1906)	80.
Hospital College of Med., Louisville (1895) 80.5;	(1908)	81.2
Tulane University of Louisiana	(1903)	79.4
University Medical College, Kansas City	(1908)	77.
Vanderbilt University (1892) 78.7;	(1908)	87.2
University of Tennessee	(1891)	75.
University of Nashville	(1908)	85.8
University of the South	(1908)	88.1
FAILED		
University of Georgia	(1908)	65.
Meharry Medical College	(1908)	57.1

LICENSED WITHOUT EXAMINATION

There were also licensed at this examination seven old practitioners including one non-graduate, who were granted license by reason of having been registered under the old law. The following colleges were represented:

College	Year of Grad.
University of Arkansas	(1891)
Barnes Medical College	(1899)
Bellevue Hospital Medical College	(1885)
Memphis Hospital Medical College	(1903)
Meharry Medical College	(1882)
University of Tennessee	(1872)

At the examination held in April, the total number of candidates examined was 68, of whom 34 passed, including 22 non-graduates, and 34 failed, including 25 non-graduates.

College	Year Grad.	Per Cent.
PASSED		
University of Arkansas	(1908)	76.8
Howard University	(1906)	82.1
Hospital College of Medicine, Louisville	(1901)	88.1
Tulane University of Louisiana	(1901)	77.4
Flint Medical College	(1904)	75.
Missouri Medical College	(1888)	75.
Vanderbilt University	(1901)	84.4
Memphis Hospital Medical College (1899) 83.;	(1908)	79.8
University of the South	(1908)	82.8
Fort Worth University	(1883)	76.2
Meharry Medical College	(1909)	82.5
FAILED		
University of Georgia	(1908)	62.
Kentucky School of Medicine	(1902)	64.1
University of West Tennessee	(1907)	41.
Meharry Medical College, (1899) 65.1; (1907) 38.; (1908) 64, 65.4, 73.2; (1909) 55.7.		

LICENSED WITHOUT EXAMINATION

There were also licensed at this examination five old practitioners, including two non-graduates, who were granted license by reason of having been registered under the old law. The following colleges were representd:

College	Year of Grad.
University of Arkansas	(1888)
University of Iowa	(1887)
St. Louis College of Physicians and Surgeons	(1889)

Nebraska May Report

Dr. E. J. C. Sward, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, May 25-27, 1909. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 6, of whom 3 passed and 3 failed. Twenty-six reciprocal licenses were issued. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Central Medical College, St. Joseph	(1900)	90.
Creighton Medical College	(1908)	83.5
Jefferson Medical College	(1902)	76.5

FAILED

College	Year Grad.	Per Cent.
Sioux City College of Medicine	(1908)	62.1
Creighton Medical College	(1908)	71.
Nebraska College of Medicine	(1908)	64.2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
American Medical Missionary College	(1901)	Illinois
National Medical University	(1905)	Illinois
Bennett College of Eclectic Medicine and Surgery.	(1897)	Wisconsin
(1900) Wyoming.		
Rush Medical College	(1894)	Iowa
Northwestern University Medical School	(1908	Illinois
University of Iowa	(1884), (1904), (1908)	Iowa
Keokuk Medical College, Col. of Phys. and Surgs.,	(1902)	Illinois
University of Kansas	(1907)	Kansas
University of Maryland	(1891)	Iowa
Johns Hopkins Medical School	(1900)	U. S. Army
University of Maryland	(1902)	Maryland
Central Medical College, St. Joseph	(1903)	Missouri
Barnes Medical College	(1899)	Missouri
Washington University, St. Louis	(1906)	Illinois
Ensworth Medical College, St. Joseph, (1886) Ia.;	(1907)	Kansas
Missouri Medical College	(1895)	Missouri
Creighton Medical College	(1908)	Illinois
Cleveland College of Physicians and Surgeons	(1896)	Ohio
Eclectic Medical Institute, Cincinnati	(1906)	Illinois
Miami Medical College	(1875)	Iowa
University of Virginia	(1878)	U. S. Army
Milwaukee Medical College	(1897)	Wisconsin

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Business Partnerships in the Medical Profession

In a recent number of the *Boston Medical and Surgical Journal*, Dr. G. C. Shattuck of Boston, in some interesting "Random Medical Notes of Travel," makes reference to the practice, common in China among physicians, of associating themselves in partnership—usually one physician, one surgeon, and one or more specialists. In Shanghai and Hong Kong, practically all English physicians are thus associated. In an association of four, each would thus be given the opportunity once in four years of going on vacation, and at the same time of strengthening his professional weak points and gaining new ideas. The others divide the work of the absentee so that his practice is not lost and he receives his share of the profits from the firm.

The fees charged in Shanghai are so much a year for every member of a family without regard to the number of calls made. The only extra charges are for operations. The patient may choose any physician he wants, and having chosen, may call the other members of the firm either in consultation or when his own medical attendant is away. The physician is responsible for his patients under all circumstances. It does not matter what may be needed or what difficult operation may be required, he must perform it to the best of his ability himself.

From the patient's point of view the system is a success because a medical man can be found at any time, and because in case of sickness doctor's bills do not increase. The physicians like it because they get an assured income, and because it enables them to take vacations without losing their practice. Very good all-round men are developed by this system, but it must sometimes happen that a physician is called on to do work for which he is not fitted. This difficulty is obviated to some extent by the fact that most Shanghai people go to England every few years, and while there have their eyes examined and can have operations performed if necessary.

In Hong Kong, as in Shanghai, the profits of physicians' firms are divided, but fees are charged for every visit instead of for the year's attendance, and an attempt is made to divide the different kinds of practice among the members of a firm, instead of insisting that every man shall do everything. Specialism had not appeared in Shanghai at all when Shattuck was there, but he thinks it is beginning to come in outside the firms at Hong Kong. However well the firm system may work in small communities, he thinks that if the foreign cities continue to grow, it must break down or limit its scope before long in China. In that case the general practitioners would be able to make a living without undertaking everything, and they would probably part willingly with some of the responsibilities which rest on them under the old system. Shattuck thinks that in a city where there are already nine or ten recognized specialists, and where medicine and surgery are being still further subdivided, the practical difficulties of managing a firm to undertake all kinds of practice would be prohibitive.

Proposed International System of Postgraduate Courses

The German system of a central organization of free postgraduate courses of lectures and exhibitions throughout the country has been in operation for about six years. It has its own central building, the Empress Friedrich House at Berlin, and it publishes a monthly organ, edited by R. Kutner, the *Zeitschrift für aerztliche Fortbildung*. Waldyer and Kutner have been appointed delegates from the committee in charge to attend the approaching international medical congress at Budapest and interest the profession in forming an international organization for postgraduate medical work along the same lines as this national organization.

A long anonymous communication in the *Münchener medizinische Wochenschrift*, April 20, denounces the entire system of these free courses, as the lecturers charge nothing for the lectures—directly—but, the writer says, they expect to profit from them indirectly in the long run. The recent tipping scandal written up in our Berlin Letters is cited as an indication of the way in which the profession is drifting on the rocks, and it is demanded that this free postgraduate system of instruction be abandoned. One of the reasons for the demand is the principle taught by the *Leipziger Verband* that the medical laborer is worthy of his hire and is entitled to payment for every medical service. Another reason given is that the free postgraduate courses cut into the receipts of the pay courses offered by privat docents, whose meager salaries need this aid.

To this communication Kutner responds with great indignation in his *Zeitschrift*, denouncing, among other things, the mentioning in the same breath of the tipping scandal and the unselfish devotion of the many eminent men who have participated in the organized postgraduate courses throughout the country from the highest altruistic motives.

Marriages

KARL A. DANELL, M.D., to Miss Mathilda Z. Eliason, both of Chicago, June 24.

FRANK NEE, M.D., to Miss Elizabeth King, both of Spring Green, Wis., June 22.

CECIL GARRENTON, M.D., to Miss Isabel N. Dunn, both of Philadelphia, June 30.

EMANUEL FRIEDMAN, M.D., Denver, to Miss Rebecca Schugar of Pittsburg, Pa., July 4.

JOHN B. EGAN, M.D., Excelsior, Wis., to Miss Margaret Meier of Fennimore, Wis., June 15.

FELIX VILELLA, M.D., Porto Rico, to Miss Rita Boswell, at Ellicott City, Md., January 23.

J. ELMER SAALMAN, M.D., Indianapolis, to Miss Elsie C. Staup of Freeport, Pa., June 14.

CHARLES E. SCULLIN, M.D., Peoria, Ill., to Miss Grace Barracks, at Franklin, Ind., June 22.

JOHN ROBERT ABERCOMBIE, M.D., to ANNA DEBRING SCHULTZE, M.D., both of Baltimore, June 30.

ALGERNON R. FIKE, M.D., Spartanburg, S. C., to Miss Rose Wingo of Asheville, N. C., June 30.

CHESTER L. JONES, M.D., Philadelphia, to Miss Caroline F. Schock of Mount Joy, Pa., July 1.

MICHAEL F. BURKE, M.D., Natick, Mass., to Miss Alice B. Madden of Haverhill, Mass., June 29.

JOHN FRANCIS FORD, M.D., to Miss Marguerite A. McKenna, both of Roslindale, Boston, recently.

Joseph V. Grahek, M.D., Calumet, Mich., to Miss Alice Belhumer of Champion, Mich., June 22.

Alfred Henry Noehren, M.D., Buffalo, N. Y., to Miss Juliet Egelhoff of Milwaukee, Wis., June 22.

Walter C. Gilday, M.D., New York City, to Miss Lillian Randolph Bailey of Baltimore, June 30.

Leonard Davis Frescoln, M.D., Philadelphia, to Miss Ethel May Cordes of Millington, N. J., June 30.

Charles W. Pollard, M.D., Omaha, to Miss Helen R. Cole of Peru, Neb., at Des Moines, Iowa, June 26.

Harry L. Gilchrist, M.D., U. S. Army, to Miss Mayme L. Morganthaler of Cleveland, Ohio, June 30.

Marion S. Jordan, M.D., Grand Mound, Iowa, to Miss Charlotte E. Clarke of Maquoketa, Iowa, June 16.

Robert Hance Casperson, M.D., Camden, N. J., to Miss Susan May Naudain, at New York City, June 30.

Francis E. Lister, M.D., Brookston, Ind., to Mrs. Gertrude B. Delzell of Chicago, at Morgan Park, Ill., June 22.

Thomas Franklin Dodd, M.D., Stuart's Draft, Va., to Miss Katharine Louise Smith, at Alexandria, Va., June 30.

Lewis Henry Marks, M.D., Poughkeepsie, N. Y., to Miss Maud Willis Lawrence, at Tusculum, Tenn., June 30.

Robert Elliott Graves, M.D., Chicago, to Miss Angeline Loesch of Chicago, at her summer home, Spring Lake, Mich., June 30.

Deaths

Lewis Sloat Paddock, M.D. New York Medical College, New York City, 1854; for more than fifty years a practitioner of Norwich, Conn.; a member of the Connecticut State Medical Society; and for many years a member of the American Medical Association; once president of New London County Medical Society; consulting physician to the Baccus Hospital, Norwich, since its foundation; for many years medical examiner of New London county; died at the Baccus Hospital, June 24, from disease of the bladder, aged 79.

William Josiah Fairfield, M.D. Bellevue Hospital Medical College, New York City, 1878; formerly of Anderson, Ind.; secretary of the Anderson Board of Health; and surgeon to the Chicago and Southeastern Railroad; a member of the American Medical Association, American Academy of Railway Surgeons and American Public Health Association; who moved to Delta, Colo., in 1908; was drowned in the Gunnison river, at his ranch near Delta, while swimming, June 27, aged 56.

William H. Whitehead, M.D. University of Maryland, Baltimore, 1870; of Rocky Mount, N. C.; a member and once president of the Medical Society of the State of North Carolina; a member of the board of directors of the Central Hospital, Raleigh; once a member of the State Board of Medical Examiners, and for several years division surgeon for the Atlantic Coast Line Railway; died in Raleigh, June 24, from paresis, aged 57.

Edwin Howard Vose, M.D. Medical School of Maine, Brunswick, 1864; formerly a member of the Maine Medical Association and New Brunswick Medical Society; acting assistant surgeon in the Navy during the Civil War; a member of the Calais, Maine, U. S. Pension Examining Board from 1873 to 1908; and city physician in 1872 and from 1876 to 1892; died at his home in Calais, June 27, aged 74.

Hugh R. C. Manning, M.D. Louisville (Ky.) Medical College, 1898; Hospital College of Medicine, Louisville, 1899; a member of the American Medical Association and Louisville Academy of Medicine; formerly assistant professor of theory and practice of medicine in the Hospital College of Medicine and chief of clinic; died at the family home in Manchester, Ky., July 1, from nephritis, aged 35.

Frank Huron Wallace, M.D. Dartmouth Medical School, Hanover, N. H., 1886; of Boston, Mass.; a member of the American Medical Association; formerly lecturer on materia medica and therapeutics in the College of Physicians and Surgeons, Boston; died June 27, in the Massachusetts Eye and Ear Infirmary, Boston, from acute nephritis, while awaiting operation, aged 49.

Charles Duff Jackson, M.D. Western Pennsylvania Medical College, Pittsburg, 1904; of Denver, Colo.; a member of the Colorado State Medical Society; died in Mercy Hospital, Denver, June 28, from injuries received in a collision between his motorcycle and an electric car, in which he sustained a fracture of the shoulder and concussion of the brain, aged 30.

John Woolf Burton, M.D. University of Maryland, Baltimore, 1865; Washington University, Baltimore, 1872; for many years a member of the Medical Society of the State of North Carolina; committed suicide at his home in High Point, June 30, by hanging himself in his stable, while mentally irresponsible from ill health and despondency, aged 65.

James Madison Kelley, M.D. Bellevue Hospital Medical College, New York City, 1878; a member of the Medical Association of Georgia; physician and surgeon to the Griffin (Ga.) Hospital; major and surgeon Second Infantry N. G. Ga.; for several years a member of the city council; died at his home in Griffin June 29, from paralysis, aged 55.

Thomas B. Campbell, M.D. Bellevue Hospital Medical College, New York City, 1871; a member of the Indiana State Medical Association and president of the Fountain-Warren Medical Society; for forty-five years a practitioner of Indiana; died at his home in West Lebanon, May 30, from lobar pneumonia, aged 66.

Charles Forester Millar, M.D. University of California, San Francisco, 1899; of San Francisco; member of the American Medical Association; chief of the Emergency Hospital service after the earthquake and fire in 1906; at one time a member of the surgical staff of the Southern Pacific Railroad; died at a hospital in Seattle, Wash., June 22, from tuberculosis.

Nicholas F. Howard, M.D. Medical College of Georgia, Augusta, 1851; surgeon of the Fifty-second Georgia Infantry, C. S. A., during the Civil War; a representative of the legislature from Lumpkin county in 1856; and for several years vice-president of the North Georgia College; died at his home in Dahlonega, Ga., June 23, aged 87.

Edward Zina Cole, M.D. Hahnemann Medical College, Chicago, 1879; founder and president of St. Luke's Hospital, and professor of gynecology in the Atlantic Medical College, Baltimore; died at his home in that city, June 29, from heart disease following heat prostration in Detroit, four days before, aged 55.

James Russell Curnow, M.D. Bellevue Hospital Medical College, New York City, 1882; for many years a member of the Medical Society of the State of California; a specialist on nervous and mental diseases, of San Jose, Cal.; died in the State Hospital for the Insane, Agnews, June 29, aged 56.

Aaron G. Chase, M.D. Cincinnati, 1859; for forty-two years a practitioner of Easton, Kan.; a surgeon in the volunteer service during the Civil War; and for several years editor of the *Kansas Farmer*, died at his home in Easton, Dec. 31, 1908, from heart disease, aged 69.

Sebern J. Layman (license, Ill., years of practice, 1878); assistant surgeon of the Eighteenth Illinois Volunteer Infantry during the Civil War; local surgeon at Tamoroa for the Illinois Central Railroad for many years; died at his home, June 27, aged 72.

Frederick Charles Robinson, M.D. New York University, New York City, 1876; a member of the American Medical Association; and a veteran of the Civil War; for two years a trustee of the public schools; died at his home in New York City, July 4, aged 63.

Robert James Hess, M.D. University of Pennsylvania, Philadelphia, 1871; a member of the American Medical Association; from 1874-1880 a member of the staff of the State Insane Hospital, Harrisburg; died at his home in Philadelphia, June 20, from pneumonia, aged 63.

John W. Whidden, M.D. Hahnemann Medical College, Chicago, 1879; of Portland, Maine; formerly president of the Maine State Homeopathic Society; died at Highland Lake, Maine, June 29, from cerebral hemorrhage, aged 53.

Henry Watrous Post, M.D. University of Vermont, Burlington, 1876; died at his home in New York City, June 25, from the effects of a self-inflicted gunshot wound of the head, while irresponsible on account of heat prostration, aged 54.

John Dooley, M.D. Physio-Eclectic Medical College, Cincinnati, 1876; American Eclectic Medical College, Cincinnati, 1890; at one time surgeon in the Kansas National Guard; died at his home in St. Louis, June 12, aged 77.

Raphael Asselta, M.D. University of Naples, Italy, 1884; said to have been the first Italian practitioner in New York City; died in New York Hospital, July 6, while undergoing operation for disease of the throat, aged 52.

Amanda Jane Evans, M.D. University of Michigan, Homeopathic College, Ann Arbor, 1880; for more than twenty years a practitioner of Grand Rapids, Mich.; died at the home of her daughter in that city, July 2, aged 65.

James Augustus Bennett, M.D. New York University, New York City, 1860; surgeon of the Thirteenth Volunteer Heavy Artillery during the Civil War; died at his home in Prattsburg, N. Y., January 14, aged 77.

Ezekiel Lawson, M.D. University of Pennsylvania, Philadelphia, 1853; surgeon of the Third Delaware Volunteer Infantry during the Civil War; died at his home in Baltimore, June 27, from senile debility, aged 78.

Daniel Royer Good, M.D. Jefferson Medical College, Philadelphia, 1858; a surgeon in the Federal service during the Civil War; died at his home in Osceola Mills, Pa., June 26, from senile debility, aged 80.

Harry C. Stickney, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1868; of Los Angeles, Cal.; died in the Los Angeles County Hospital, Oct. 24, 1908, from paralysis agitans, aged 64.

George R. Thomas, M.D. Memphis (Tenn.) Hospital Medical College, 1886; a member of the Tennessee State Medical Association; died at his home at Jones' Station, June 25, from dysentery.

John Evans Tuttle, M.D. Rush Medical College, Chicago, 1868; formerly a practitioner of Myersville, Ill.; died at his home in Danville, Ill., Nov. 20, 1908, from angina pectoris, aged 68.

Robert Henry Davis, M.D., surgeon in the Confederate service during the Civil War; died at the home of his daughter in Brooklyn, N. Y., Dec. 15, 1908, from lobar pneumonia, aged 81.

Richard Benbury Creecy Lamb, M.D. University of Maryland, Baltimore, 1904; of Yslita, Texas; died in Providence Hospital, El Paso, Texas, June 22, from typhoid fever, aged 26.

Matthias Gau (license, exemption certificate, Minn., 1883); formerly of Freeport, Minn.; for forty-five years a practitioner of that state; died in November last in California.

Andrew G. Grubbs (license, Allegheny county, Pa., 1891); of McKeesport, Pa.; died suddenly in a hospital in Pittsburg, January 3, from cerebral hemorrhage, aged 79.

James L. White, M.D. Jefferson Medical College, Philadelphia, 1855; a member of the Medical Society of Virginia; died at his home in Farmville, Va., June 26, aged 75.

James Griffin Coleman, M.D. Western Reserve University, Cleveland, 1847; died at his home in Chagrin Falls, Ohio, May 31, from senile debility, aged 90.

L. H. Ingraham (license, Ark., 1903); for many years a practitioner of Lavaca and Fort Smith; died at his home near the latter city, June 22, aged 64.

Seneca D. F. Gurney, M.D. Memphis (Tenn.) Medical College, 1854; was shot and killed by his insane son, at his home in Quincy, Ill., June 27, aged 79.

Erastus Coffin, M.D. American Eclectic Medical College, Cincinnati, 1890; died suddenly from heart disease at his home in Cincinnati, June 26, aged 68.

Arza O. Osborn, M.D. Michigan College of Medicine and Surgery, Detroit, 1897; died at his home in Trenton, Mich., July 1, from erysipelas, aged 30.

Quincy Adams Bridges, M.D. Medical School of Maine, Brunswick, 1890; of Guilford, Maine; died in Berlin, N. H., May 17, from nephritis, aged 45.

William Alexander Brownfield, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1895; died at his home in Thayer, Kan., June 22, aged 69.

Byron Holmes, M.D. Rush Medical College, Chicago, 1868; of Fond du Lac, Wis.; died in the Fond du Lac County Hospital, June 28, aged 64.

James M. Ritchie (license, Texas, 1907); of Boyd, Texas; died in St. Joseph Infirmary, Fort Worth, Texas, May 20, from tetanus, aged 35.

John P. Starr, M.D. Atlanta (Ga.) Medical College, 1879; died suddenly at his home in Sunnyside, Ga., June 25, from heart disease, aged 59.

John S. Lindabury, M.D. New York University, New York City, 1862; died at his home in Bloomsbury, N. J., June 23, from paralysis, aged 83.

Albert Prentiss Ryall, M.D. University of Pennsylvania, Philadelphia, 1866; died at his home near Shelbyville, Tenn., June 20, aged 69.

William W. Rumsey, M.D. Keokuk (Iowa) Medical College, 1901; of Napa, Cal.; died in Pacific Grove, Cal., June 27, from anemia, aged 47.

Frederick Richard Loeber, Jr., M.D. Tulane University, New Orleans, 1899; died at his home in New Orleans, June 30, from general debility.

Calixto H. Dumas, M.D. Minneapolis (Minn.) College of Physicians and Surgeons, 1896; died at his home in Minneapolis, Dec. 21, 1908.

Simon Jumper (license, Ill., years of practice, 1877); died at his home in Marshall, Ill., Nov. 9, 1908, from heart disease, aged 82.

John W. Stone (license, Ill., years of practice, 1877); died at his home in Springerton, Ill., January 11, from paralysis, aged 68.

John Samuel McAdow, M.D. St. Louis, 1855; died at his home in Barnard, Mo., June 1, from disease of the bladder, aged 76.

Samuel Hall Morris, M.D. Albany (N. Y.) Medical College, 1881; died at his home in Rochester, N. Y., June 30, aged 76.

John R. Smith, M.D. Eclectic Medical Institute, Cincinnati, 1881; died at his home in North Carmi, Ill., June 27, aged 59.

Sidney L. Fuller, M.D. Chicago Medical College, 1861; died at his home in Chicago, June 16, from uremia, aged 71.

Nelson P. Walters, M.D. National Medical University, Chicago, 1905; died at his home in Evanston, Ill., June 24.

John S. Marshall, M.D. Miami Medical College, Cincinnati, 1877; died at Redlands, Cal., Nov. 18, 1908, aged 64.

B. F. Darby (license, years of practice, Ill., 1878); died at his home in Paris, Ill., March 4, from paralysis, aged 82.

Hugh Ross (license, Wash., registration, 1889); of Seattle; died at his home, May 7, aged 64.

Society Proceedings

COMING MEETINGS

British Columbia Med. Assn., Seattle, Wash., July 19.
Idaho State Medical Association, Seattle, Wash., July 19.
Oregon State Medical Association, Seattle, Wash., July 19.
Washington State Medical Association, Seattle, July 20.

AMERICAN ACADEMY OF MEDICINE

Thirty-fourth Annual Meeting, Hotel Dennis, Atlantic City, N. J., June 5-7, 1909

(Continued from page 71)

President's Address: American Characteristics and Professional Responsibility

Dr. Helen C. Putnam, Providence, R. I.: The variations between American traits noted by Tocqueville and other critics of the 40's and by those at the end of the century show many to be transitory; others more permanent or increasing. These last need the patriot's study. The census and other statistical reports show that we have grown from an infant among nations to a leader or rival in value of exports; suicides and insanity; inventions; murders without convictions; multimillionaires; fatalities and other accidents of transportation and industries; national wealth; infant mortality; developed natural resources; wastefulness of timbers, waters, mines and animal life; vastness of business combinations; increase of vice, social diseases, divorce; school population and educational institutions; vagaries in religion, psychology, economics and medicine; manufactures more than one-third of all the world; two million children under sixteen wage earning; tramps—distinctly an American product; unemployed and unemployable; numbers and excellence of sociologic movements for social betterment. Our mistakes are chiefly due to ignorance of and indifference to life including as a result greed and indifference to law. The medical profession is logically responsible for removing this fundamental obstacle to worthier ambitions —ignorance of biologic facts, phenomena and laws; ignorance more profound since we are so rapidly to become a nation of city dwellers. What a few public school instructors are beginning to do wisely the profession should give its utmost support to forwarding. The advance of physicians themselves depends, at this stage, more on a better preparatory foundation than on alterations in medical courses much as the latter are needed.

Division of the Fee and Commission to Physicians

Dr. Augustus A. Eshner, Philadelphia: In commerce sales usually yield profits. Medicine is neither trade nor business. The living expenses of the physician are proportionately larger than those of the layman. The medical man can not delegate his work to others, but must attend to it himself. His leisure is restricted by the constant demands on his time. He does much work without pecuniary compensation. The physician's fee varies with the requirements of the individual case and with the skill and experience of the practitioner. The service should be adequately compensated, and equally so if a second physician is called into the case. There can be no honorable division of the physician's fee. To make such a division, or for a medical man to pay or receive compensations would be compromising and demoralizing to both donor and recipient, and at the same time disadvantageous to the patient. Nor should commissions be accepted by physicians for articles purchased by patients from druggists, instrument makers and other tradesmen.

Payment of Commissions by Specialist to General Practitioner

By Dr. E. Gard Edwards, La Junta, Col. (Read by Dr. Henry B. Hemenway, Evanston, Ill.): From the practice of many leading surgeons the custom of fee splitting has spread to almost every specialty, even in minor referred cases. Seemingly, it is a general practice, even among men of high reputation, especially surgeons, and is said to be more common in the West than in the East. The time has arrived for the profession in general to be sure where the leaders, both general practitioners and specialists, stand. The existence of this custom is rarely mentioned in medical literature, almost never in medical societies and is discussed among the profession with bated breath. The horde of embryo specialists abroad in the land is partly responsible for this condition by increasing the already keen competition. Fee splitting is justifiable when a general practitioner has charge of the case before and after an operation and then only when the patient, physician and consultant have a full understanding as to the gross amount of the fee to be paid from beginning to end. No amount of regulating by societies will control it.

DISCUSSION

Dr. Casey A. Wood, Chicago: The mainspring of this difficulty perhaps lies in the failure of the family practitioner to send a bill for services and collect just as the specialist or consultant does. In my opinion, this practice of paying commissions is not so universal as we are given to believe. I would like to know the proportion (not from experience, but from hearsay) in which it is believed to be carried on. In my judgment there is no better way of dealing with this matter than is set forth in the papers. One can not improve on the good old plan of each man collecting his own bill. The general practitioner, whether it be his own fault or not, often gets the worst of the arrangement when he brings a patient to a consultant.

Dr. John B. Roberts, Philadelphia: I have found that some men used to practice this thing and have become convinced that it is wrong. I can not see how any honorable upright person, whether physician, preacher, lawyer or business man, could ever believe that such a thing was a possible thing to do with professional propriety. It is possible that one reason for the existence of the evil is that a great many men go into medicine without any professional training in the office of a preceptor, and we who are beyond fifty or sixty must remember that we have acquired our ideas of right by absorption of the atmosphere of our preceptor's office. I think the question comes down to the point that it must not be the societies, but the colleges that must teach these men the right.

Dr. F. T. Rogers, Providence: When the average practitioner of medicine appreciates the fact that when he devotes time to an unusual case he should charge more than the usual fee the question of fee splitting will be settled.

Dr. W. A. Kickland, Fort Collins, Colo.: I come from the same state as Dr. Edwards and understand his position and I must admit that the custom of fee splitting in my section is very prevalent. I do in a little way some referred work in surgery but there are a very few men who allow me to charge my own fee, the proportion being sent me. The cases from which I get my larger fees are from my own general practice.

Dr. A. Eshner, Philadelphia: It seems to me that the single solution is that the patient must understand that he is to pay for the services rendered to him, whether by the general practitioner, the specialist or the consultant and that this must be a common understanding among the three. Therefore, there need be no division of the fee. It seems to me that the obligation to split a fee must be compared with the temptation to which a good many, particularly the younger men are subjected, when women come to them and ask to be relieved of the product of conception. If he declines they probably tell him that some other physician will do it. Do we think that sufficient reason to acquiesce?

A Celebrated Malpractice Suit, 1821-1826

Dr. James A. Spalding, Portland, Me.: The lawsuit of Lowell of Lubec, Maine, vs. Dr. Faxon and Hawkes of Lubec and Eastport, Maine, respectively, probably gave rise to more discussion and literature than any other ever before the public and the medical profession of New England. Lowell was thrown from horseback and injured by the horse falling back on him in 1821, suffered from an alleged hipjoint dislocation, was maltreated and neglected as he claimed by the above physicians, consulted Dr. John Collins Warren of Boston, was operated on by him and the staff of the Massachusetts General Hospital, and obtained from those physicians under legal threats affidavits inculpating the Maine physicians. After three extended trials the case was thrown out of court and for four years afterwards publications concerning both sides were widely distributed. This case seems unique in that long afterward a postmortem examination was made, something so far undiscovered as other malpractice suits have been investigated. It is also interesting from this examination to discover that no one of the many physicians involved seems to have made an absolutely correct diagnosis.

DISCUSSION

Dr. Gay, Boston: I do not think that in the experience of the Boston City Hospital, the largest hospital in New England, and one which cares for 10,000 patients a year in its wards, they have had a dislocation of this sort, with one exception. I think Dr. Spalding deserves the thanks of the profession for the great pains he has taken to clear up this case.

Dr. J. A. Spalding: I should like to know if anybody ever heard of a postmortem being held in a malpractice suit. I should also like to say that I hope we shall sometime have before this Academy a discussion on the desirability of insurance against malpractice suits.

(To be continued)

MASSACHUSETTS MEDICAL SOCIETY

One Hundred and Twentieth Annual Meeting, held at Boston, June 15-16, 1909

Officers Elected and Committee Reports

The officers elected were given in The Journal, July 3, page 36. Dr. Frederick H. Gerrish, Portland, Me., was elected Shattuck lecturer for 1910.

Dr. Harold C. Ernst, chairman of the Committee on Medical Education, reported his attendance at the meeting of the Council on Medical Education of the American Medical Association ,and the results as recommended for a desirable medical curriculum. He recommended that the Massachusetts Medical Society endorse the action of the Massachusetts State Examining Board in its pioneer work of causing practical work to be a part of the examination for registration.

Dr. George W. Gay reported for the Committee on Legislation that up to that time no measure opposed by the committee had been enacted by the Massachusetts Legislature.

Dr. Frank G. Wheatley, for the society's Committee on Revision of the U. S. Pharmacopeia, reported that circulars were to be sent to each member of the society asking that all useful drugs in the U. S. P., and all new ones worthy of admission be named. The committee felt this will answer a useful end.

The result of the last meeting of the Legislative Council of the American Medical Association in Washington, D. C., was reported. It was found that advertising quacks and vendors of medicine had been driven from Kentucky and that the work of the physicians in this particular had been ably supported by the Louisville papers, also that no advertising quacks are remaining in North Dakota.

The model vital statistics and pure food laws of the American Medical Association were commended. It was reported that there were two classes of chemists in the United States, one class acting in the interests of the people and the other in the interest of the manufacturers.

Surgical Antiseptics

Dr. Daniel E. Keefe, Springfield: Antiseptics have not always been used in the past with the same intelligence as is possible at present. It can hardly be doubted that irrigation with potassium permanganate or hydrogen peroxid may have been causative of unfortunate results following operations and the lethal result unjustly charged to the surgical procedure. Iodoform is rightly considered as having dangerous features and is less used than formerly. During surgical shock saline infusion is contraindicated, as it still further overloads the already overburdened heart. Overfilling the vessels can do no good until the nerves recover their function. It is most clearly indicated in postpartum hemorrhage or uremia. Strychnin in large doses given frequently—0.002 to 0.006 every three hours—is a fad, and is a reprehensible practice. Laboratory work is aiding us rapidly in passing from darkness to light in all methods of treatment.

Diagnosis of Duodenal Ulcer

Dr. Ernest A. Codman, Boston: This paper is founded on forty-nine proved cases of duodenal ulcer. This lesion is becoming increasingly common, and is more common than gastric ulcer and nearly as common as appendicitis. Perforation and hemorrhage are rightly considered not common symptoms but accidental accompaniments. The diagnosis is rarely made before operation, and is confused with dyspepsia, appendicitis and gastric neuroses. Even with the hand on the stomach cancer of pylorus and cancer of pancreas may be suspected. Males from 20 to 50 years are mostly affected and occupation seems not to be important. It is a disease of hard-working men. Cardinal symptoms are often present, yet may be entirely absent. The ulcer may exist without pain, hemorrhage, perforation or vomiting. One feature is fairly constant, *i, e.*, pain, and diagnosis may often be made from it alone. Pain two hours after meals or attacks before meals, with vomiting, may warrant a provisional diagnosis. Often a patient improves under rest and treatment. Then resumption of work, especially to excess, or the indulgence in alcohol, causes the chain of symptoms again. Relying on, or waiting for, the symptom of hemorrhage is often the cause of failure of diagnosis, but when present and accompanied with hunger pain, is certain. Tenderness is often present and is usually slightly to the right of the ensiform cartilage. Belching is of little value and is a symptom common to other disturbances. Diarrhea and constipation are not important symptoms. Jaundice may occur due to inflammation around duodenum. Vomiting occurs when the pylorus is contracted by stricture, and improves when the stomach is resting. Vomiting comes at the height of the pain. Chemical analysis is of little help, as shown by experience. "Sour stomach" and "heart burn" are of some value in diagnosis and are often present and with pain we can make provisional diagnosis. Autopsy at Massachusetts General Hospital shows 1 per cent of all examinations. In differential diagnosis, gallstones and gastric ulcer must be considered.

Localization of Pain, Tenderness and Hyperalgesia in Diagnosis of Common Abdominal Diseases

Dr. Garry de N. Hough, New Bedford: The local symptoms only are considered in this paper. Clear cases of abdominal trouble are fairly well understood, but there are many obscure ones. In appendicitis, pain, tenderness and rigidity are the usual symptoms. But pain may be on the left side all through the attack, and if the organ is elongated the pain may vary considerable in position. Areas of hyperalgesia in various abdominal diseases are of value but they vary in their presence. Absence is of no value, but presence is positive evidence of certain diseases. These areas may be elicited by using a sharp needle on the abdomen, covering the point with the palmar surface of finger pulp. There are six plain areas of nerve distribution showing the hyperalgesia and corresponding to disturbances of gall bladder, cecum and appendix, ovary and tube, stomach, kidney and ureter. Occasionally one finds atypical areas. In all obscure abdominal lesions one should seek areas of hyperalgesia, which when found do not lead astray.

Acute Dilatation of the Stomach Following Surgical Operation

Dr. Homer B. Smith, Boston: Acute dilatation is not a disease but a complication, and may be concurrent with any medical or surgical disease. Death may be directly due to it. Dilatation occurs most frequently following abdominal operation under general anesthesia. Operations on the biliary apparatus are frequent causative factors, but it may occur after appendix operation. My conclusions, based in part on six personal cases, are that the condition is not always recognized, and treatment, to be effective, must be prompt. The vomitus is usually bile-stained but not fecal, due to the paralysis occurring distal to papilla in duodenum but not much beyond. It is a paralysis of the stomach and upper part of the duodenum and is not mechanical. It can not be stated that the inhibition is central or peripheral. The condition is probably not often caused by trauma. Kelly has blamed the anesthesia. It is not a local but a general paralysis. Paralysis of the vomiting apparatus and a portion of the bowel accompanying it. There is usually no return of paralysis after treatment. Mesenteric ileus may be a secondary effect and due to mechanical defects. Diagnosis is not difficult. Vomiting usually comes on ten or twelve hours after operation, and a leaking or welling up of fluid from the stomach is very suggestive. The stomach tube should be passed early and as often as necessary. Prognosis with early treatment is good. If not treated the mortality reaches 60 per cent. The rectal tube is of value. Operative proceedings are not indicated. This disease is comparatively frequent.

(To be continued)

AMERICAN NEUROLOGICAL ASSOCIATION

Thirty-fifth Annual Meeting, held in New York City, May 27-29, 1909

The President, **Dr. S. Weir Mitchell**, Philadelphia, in the Chair

The officers elected were noted in The Journal, July 10, page 125.

President's Address: Nature of Nerve Force and the Deep Reflexes

Dr. S. Weir Mitchell, Philadelphia: There is a comparative rarity in the proceedings of this body and of other associations of matters of therapeutic interest. The present is the trimphant hour of diagnosis which is the parent of logical, legitimate therapeutics. The physiology and pathology of the negro should receive more attention from neurologists. There is a rarity in the negro of this country of such diseases as chorea, tabes, migraine and exophthalmic goiter. Considering the relation of the black skin to heat and light rays, there must be in the negro some automatic compensatory mechanism for regulating the body temperature other than that which we possess. Therefore, we need for the negro a new and complete study of the blood in order that we may get clearer ideas as to his immunity from such diseases as yellow fever and malaria and help to solve the problems of protection from such diseases by immunizing serum.

The physiology of persons who have lost large parts of the body by multiple amputations is a subject worthy of investigation. Long ago I studied diseases of stumps and the psychics of lost limbs, but the subject in recent years has been neglected.

I will next take up neural energy, its nature and modes of transmission. I use the term neural energy without committing myself to any special theory. The rate of transmission of nerve energy in the ameba and lowest forms of animal life in which it is a general diffusion is only about three feet per second, whereas, in the higher vertebrates, where it moves along chosen pathways, it reaches as high as 150 feet per second. There is an enormous output of energy relative to the small size of the productive sources of supply, as shown by Dr. H. H. Donaldson's contributions. In the adult human brain of 1,360 grams the weight of all the nerve-cell bodies is less than 27 grams. There are nine thousand two hundred million nerve-cell bodies in the new-born babe and the same number in the adult. These occupy one and thirty-seven hundredths of the volume of the cortex; 2 per cent. represents the proportional volume of the cortical cell bodies, including all the dendrons. Many agencies affect the delicately responsive neural conductors and their related centers, those which are most common being related to variations in atmospheric pressure and storm conditions.

These living wires, the nerves, eat, drink and eject and are fed and do work and must therefore undergo chemical changes through loss and for repair. Certain excito-contractile impulses are found in plants and these are probably identical with those observed in animals, as is evidenced by observations on the mimosa. I could well imagine a neurotic crusade against cruelty to plants after watching experiments on the mimosa. The analogue of the irrito-contractile muscle of animal life is in the plant cell walls, which, contracting, expel fluid and thus cause in the leaves mechanical changes of position. Numerous observations and experiments have been made on plants, especially the mimosa, with a view to determining the analogies between the movements of such plants and those occurring in the living animal.

As regards the reinforcement of reflexes the researches of Mitchell and Lewis, Bowditch, Howells and other American contributors to this subject show that not only the hand grasp and other coarse movements tend to increase the muscle-muscle and the skin-muscle response but that nearly every distinct sensation increases them. Sudden light or sound, remotely applied heat, abrupt cold, a pinch, the pull on a single hair add to the response. The explanation of these reinforced phenomena appears to be that the afflux of energy giving increase of the reflex is due to the liberation of energy far in excess of the functional needs of the active organ, that is, an overflow of energy as is shown by observations and investigations. Speaking of the practical applications of this study of overflow, is it not conceivable that there are acquired conditions of the body, neurasthenic and hysteric, in which these endless normal overflows may be mischievously felt and may account for suddenly visible symptoms of nervous excitement? An interesting clinical phenomenon which I believe illustrates the subject of overflow is to be seen in the case of violent facial neuralgia in which talking, laughing or chewing evokes maddening pain. Is this not an example of reinforcement from overflow of related motor centers affecting a sensory ganglion excitably ready to call forth the phenomenon called pain?

Errors in the Diagnosis of General Paresis

DR. E. E. SOUTHARD, Boston: Two hundred and forty-seven cases of mental disease passed through the daily clinics of the Danvers Insane Hospital and later came to autopsy during the years 1904-1908. Sixty-one of these were diagnosed clinically with more or less certainty as cases of general paresis, and 41 of the 61 as absolutely certain. In 35 of the 41 the diagnosis was confirmed at postmortem, and 2 more appeared at autopsy, although unsuspected during life. These 2 unsuspected cases and the 6 erroneously diagnosed cases have been specially studied. Tabes and cerebellar arteriosclerosis, in the presence of mental symptoms, are shown to be two main causes of error in the positive diagnosis.

DISCUSSION

DR. J. K. MITCHELL, Philadelphia: Have any of these cases presented undoubted combination of tabes with general paresis?

DR. E. E. SOUTHARD: Only one of the cases showed a combination of tabes and general paresis, but there were a number in which there was a lesion in the spinal cord plus characteristic changes of general paresis. I think there is a pure tabes associated with paresis.

Sensory Functions (Especially Stereognosis) of the Pre-Rolandic Area

DR. HERMAN H. HOPPE, Cincinnati: The object of this paper is to show how often astereognosis occurs in lesions of the motor zone and whether the loss of stereognosis is in any way distinguishable from the loss of this function due to lesions of the parietal lobe. My first case was one of loss of stereognostic sense combined with loss of muscle sense and sense of position. Autopsy showed a non-infiltrating tumor the size of a hen's egg situated subcortically in the superior parietal convolution. My second case was one of subcortical solitary tubercle involving the arm center in the ascending frontal convolution and the neighboring frontal lobe, demonstrated at operation. Prior to operation there was some astereognosis in the right hand, and after operation, which involved the tumor site, astereognosis in the right hand was marked. My third case was one of left brachial monoplegia following Jacksonian seizures without any loss of sensation prior to operation. At operation no gross lesion was found, but, after locating the center for flexion and extension of the hand, this center was excised. Following operation there was complete paralysis of the left arm with complete astereognosis, all other qualities of sensation being intact. The question which arises is whether astereognosis unassociated with loss of tactile and muscle sense would indicate a lesion of the motor zone and astereognosis with loss of tactile sense, muscle sense and sense of position indicate a lesion of the parietal lobe. This question can not be decided by a study of recorded cases, although many cases would seem to answer in the affirmative.

DISCUSSION

DR. MORTON PRINCE, Boston: The whole question of stereognosis is a matter of fact and not of induction. If there is a disturbance of muscle or tactile sense, it is impossible for anyone to determine what an object is. There are a number of cases on record of asymbolia and stereognosis, meaning by asymbolia loss of power to recognize objects when there has been no loss of tactile sense. The important thing is to determine whether or not there is loss of the sense of position, localization, and so on. Very accurate and careful tests must be made and they must be made by precise methods.

DR. C. K. MILLS, Philadelphia: There are several interesting points in Dr. Hoppe's communication. A number of things in the paper seem to contradict the views which some others as well as myself hold personally. In such cases we have to take information on various points before deciding as to their absolute value. The operative points can not be absolutely depended on with regard to the exact extent of the absolute section and also with regard to the extent of the influence of that section. We have to take into consideration the physiologic reaction along certain anatomic-functional lines. Undoubtedly, the motor region is connected by associated fibers with the stereognostic region if it exists, and also doubtless with sensory regions in the postcentral convolution. We have in these cases the abeyance or the loss of such a sense as stereognosis exists without impairment of the muscle sense or sense of position. To a certain extent it proves not that there is no astereognostic center in the parietal lobe but that by the destruction of entering tracts astereognosis may be produced.

DR. WILLIAM G. SPILLER, Philadelphia: Dr. Hoppe has said that these disturbances of stereognosis with pain were present only for a short time after operation. They were not persistent. There are other things to be considered in judging of results from operation. Dr. Hoppe has considered the results carefully. We must be careful after operation on the brain in reaching conclusions. Not only is there disturbance of associated areas, but there is also disturbance from handling the brain; there is disturbance in function of that part, and, what is more serious, in excising any portion of a brain it is necessary to tie the veins supplying that portion. As a result of this tying, the circulation is disturbed in adjoining areas of the brain, and softening may occur from this, even if no great number of vessels are tied.

DR. F. W. LANGDON, Cincinnati: As bearing on the existence or non-existence of a special stereognostic center I wish to place on record an observation made ten or twelve years ago. A man was struck by a stone, resulting in a puncture fracture over the parietal region corresponding, presumably, to the arm or hand center. In ordinary tests he could not even feel objects in his hands, but when I put into his affected hand a silver dollar he would say: "That is a half moon." If it was put into the other hand he would say: "That is a dollar." He was illiterate and did not possess sufficient education to speak of a half circle but translated the impression he received from the dollar as "half moon." That would not have corresponded to loss of tactile sense in one finger. It might be called a partial lesion of the stereognostic centers.

Dr. B. Sachs, New York City: An experience I have recently had may throw a little light on this subject. A young woman had the general symptoms of brain tumor with very slight involvement of the upper extremity. Aphasia was complete and there was not only asymbolia, but absolute loss of all sense of the muscular movements. In this case the aphasia was by all means the most pronounced symptom. The paresis was so slight that except for detailed examination it might have escaped altogether. The aphasia was the one single symptom. Basing the location on that fact, I suggested that the surgeon go in over the arm center, but that he keep as far posteriorly as possible. There was found a tumor which extended to the central fissure and invaded a considerable portion of the cortex into the parietal region. Within twenty-four hours of the time of operation the aphasia disappeared entirely. The paresis, however, remained exactly the same as before the operation and is practically the same to this day.

(*To be continued*)

ARIZONA MEDICAL ASSOCIATION

Annual Meeting, held at Prescott, May 19-20, 1909

The officers elected were noted in The Journal, June 5, page 1843.

The Physician's Duty to the Public

Dr. John W. Foss, Phoenix: The physician is granted certain privileges and certain public exemptions. It should be his duty to teach the youth so that they understand the nutritive and sexual functions and in this way prevent many of the mistakes which are made during adolescent life. Young men and young women should be thoroughly instructed in all the functions necessary for them to understand the exactions devloving on them as parents. The physician should be conversant with all public questions, as the confidence reposed in him as a family physician gives his opinion much weight with those with whom he comes in contact.

Surgical Technic

Dr. John B. McNally, Prescott: The surgeon should exercise extreme care not to vitiate aseptic measures by carelessness. Steam under pressure is the best method of sterilization. Open steam fractional method is also recommended. An antiseptic conscience is developed by antiseptic practice.

DISCUSSION

Dr. Willard Smith, Phoenix: The surgeon should have as few assistants as possible and as little paraphernalia as convenient. This limits the danger of infection. In my experience more infections occur when strong antiseptics have been used instead of weaker solutions. We should endeavor not to destroy the natural bactericidal qualities of the tissues.

Dr. Stanley Stillman, San Francisco: I think the use of rubber gloves in septic cases very essential.

Anterior Poliomyelitis

Dr. A. J. Rosenberry, Jerome: One-third of the patients applying for treatment of deformity at institutions are suffering from this disease. It is epidemic during the summer, it is contagious, and there is early acute congestion of cord. Structures supplied by the anterior spinal artery are inflamed. In muscles which respond to faradism there is a possibility of recovery. Massage and electricity give the greatest relief.

DISCUSSION

Dr. S. Stillman, San Francisco: Three months is too short a time in which to give up hope. I have seen positive improvement after eight or nine months' treatment.

Dr. Barlow: It is very important to give the family the prognosis early, otherwise the surgeon is often blamed. With the reaction of degeneration prognosis may be given hopeful but slow.

Infant Surgery

Dr. Stanley Stillman, San Francisco: Infants stand surgical operations as well as or better than adults. It is astonishing during the first few weeks of life how much violence the infant can stand. The same immunity does not extend after three or four months. Nevus and harelip are best operated on as soon as discovered. Within three months from birth infants suffer less from shock than afterward, but at any time they resist shock as well as adults. All operations should be done with as small blood loss as possible. There should be no more apprehension of anesthesia in infants than adults. I advocate chloroform. Surgeons should have a skilled anesthetizer for either infants or adults, if possible. Infants do not well stand deprivation of food or reduction of temperature; the operating room should be warm. Repair is rapid, sutures should be removed early. Infants' lives should not be sacrificed by ultraconservatism.

Trachoma

Dr. Daniel W. White, U. S. Indian School, Phoenix: Trachoma causes serious damage to vision and is caused by a micro-organism not yet isolated. Hygienic and sanitary measures are most important in prophylaxis. Trachoma is easily transmitted by hands, the family is the primary vidus of infection. Indians would not be more susceptible than whites if they lived in the same hygienic conditions. Trachoma is found under all climatic conditions. Until the cornea is involved the seriousness of this disease is usually not realized. Prophylaxis is the all-important goal. Copper sulphate stands first as a remedy. In operative treatment expression followed by copper sulphate is best. The period of treatment is from three to eight years. Thoroughness of expression of the follicles is essential. The physician should not wait, but begin treatment at once.

Infections of the Conjunctiva

Dr. Ancil Martin, Phoenix: Pneumococcus infection is one of the most common in conjunctivitis. Infections of the conjunctival sack are most dangerous in the abnormal conditions of the eye. Microscopic examinations of the conjunctival secretions is very essential to determine the safety of operative treatment.

Immunity and Tuberculosis

Dr. W. Warner Watkins, Phoenix: There is relative immunity to tuberculosis. It is possible in a healthy organism to produce immunity. An attack of tuberculosis positively cured, produces a positive immunity to tuberculosis. It also produces immunity in the offspring.

Immunity and Serotherapy in Tuberculosis

Dr. John W. Flinn, Prescott: There is a high degree of immunity in cattle to the human tubercle bacilli. The use of living human bacilli to produce immunity is unsafe. The degree of immunity is proportionate to the degree of virulence of the material inoculated.

Rabies, With Report of Cases from Skunk Bites

Dr. C. E. Yount, Prescott: After careful investigation, I am of the opinion that the skunk is not more the cause of hydrophobia than the dog. It seems that while it is possible for one to have hydrophobia after being bitten by a skunk, the idea has gained ground to such an extent in the Southwest that all skunks are called hydrophobia skunks. This is based on a simple psychical impression and not based on fact.

Differentiation of Reflex Dyspepsias from Primary Organic Diseases of the Stomach

Dr. Dudley Fulton, Los Angeles: Many dyspepsias are due to other diseases of the body. They are functional rather than organic. It is important to determine whether dyspepsia is functional or organic. Dyspepsia is but little influenced by diet. Pain is exceedingly rare in functional dyspepsia.

Education of the Public

A resolution was passed advising all county societies to inaugurate a series of public lectures for the education of the people in matters pertaining to hygiene and sanitation.

IOWA STATE MEDICAL SOCIETY

Fifty-Eighth Annual Session, held at Dubuque, May 19-21, 1909

(Continued from page 139)

Early Diagnosis of Children's Diseases That Lead to Deformities

DR. FREDERICK MUELLER, Chicago: The prevention of the deformities in children's diseases that lead to malformations is just as important for the ultimate good result as the application of the orthopedic surgical methods later, because best results can only be expected in patients who reach the orthopedic surgeon in not too neglected a condition. An early diagnosis of such troubles on the part of the general practitioner is indispensable, and it is he who should administer the first aid in all such cases.

DISCUSSION

DR. C. S. GRANT, Iowa City: One of the more common conditions, which unfortunately in this state is not considered common, is rickets. I have seen it in both the breast-fed and the bottle-fed children. In one locality I found a great many cases in families in which the mothers worked in the field. Examination of the milk showed a deficient amount of fat, and my conclusion was that its lack was primarily the cause of rickets. In bottle-fed children, unfortunately, the more common foods are the artificial ones, from which the child receives a great deal of maltose or sugar in some form and very little of the fat or protein. In the case of breast-fed children, when it was impossible to increase the supply of fat through the ordinary methods of feeding and hygiene, I have sometimes attempted feeding by a modification of cow's milk. There is no question but we have neglected the scientific modification of milk too long. Some two or three years ago my attention was called to the use of citrate of soda, with the claim that the alkaline citrates in the milk assisted in the absorption of the rest of the salts. I believe it a much better alkaloid to use than either bicarbonate of soda or lime.

SYMPOSIUM ON TUBERCULOSIS

The Movement Against Tuberculosis in Iowa

DR. J. W. KIME, Fort Dodge: An educated medical profession is the first essential in our efforts to stamp out this most universal disease. With this accomplished, 4,000 centers of information, 4,000 teachers of the public are at once installed to spread this knowledge throughout the state. The board of control, which is entrusted with the conduct of the educational campaign against tuberculosis in Iowa, is keenly alive to the importance of prevention, early diagnosis and modern treatment, and has sought to stimulate discussion in the various county medical societies on these subjects. I have visited practically every county in the state during the past year, and in my discussion with the medical men on early tuberculosis and its recognition, I have found them well abreast with the times. The board has asked me to meet with the societies the coming year for the purpose of discussing with them the modern treatment of tuberculosis, and I anticipate an even more enthusiastic reception for this subject. The state veterinarian and the State Agricultural College at Ames are rendering excellent service in educating the masses on the subject of animal tuberculosis. The State Board of Health has done great good by its recommendation that all cows be tested with tuberculin before milk may be sold from them; also by urging the passage of antispitting ordinances. I believe that the question of animal tuberculosis, and especially of tuberculosis in dairy herds, has been altogether too lightly considered, and that this disease will continue to spread until we become wise enough to secure milk from cows that are known to be free from disease. During the coming year the work in Iowa will be prosecuted with greater vigor than ever before.

Tuberculin in Treatment of Tuberculosis

DR. FRED ALBERT, Mason City: There is no longer any question that large doses of tuberculin, followed by marked reactions, are harmful and dangerous. It is equally true that very small doses, in properly selected cases, when carefully observed, can do no harm, and usually are followed with distinct benefit, irrespective of the kind of tuberculin used and the method of administration followed. We should ever hold in mind that tuberculin therapy is an adjunct and not a substitute for the general hygienic-dietetic treatment. If the patient does well under general treatment and improves rapidly, we can content ourselves without using tuberculin. It was its indiscriminate use on all patients alike when it was first introduced that brought it into such general disfavor. It should be employed (1) in incipient cases, where no ulceration with secondary infection has taken place; (2) in chronic fibroid cases, which run little or no increased temperature; (3) in all localized cases. Some authorities claim it can be used in advanced and incurable cases to great advantage, relieving distressing symptoms. Bacterial vaccines are expected to produce good results in many incipient and chronic cases of pulmonary tuberculosis, and in most localized cases. It will do good in those cases in which there is little absorption of toxins by the system and constitutional disturbances are absent. Tuberculin filtrate is especially indicated in many incipient cases in which there is a mild toxemia. The toxins having been neutralized, the local disease is influenced secondarily by the increased resistance produced by general treatment. Initial doses must be small. When the filtrate is administered to produce toxic immunity, the initial dose is usually 1/1,000 mg. A jump is never made from, say, 1/1,000 mg. to 1/100 mg., but it would require ten doses to pass from one to the other. The interval between injections is usually three or four days, and when the larger doses are reached a week or ten days. If symptoms of intolerance are manifested, the doses must be lessened and given farther apart until these symptoms disappear. The least number of injections which should be required in passing from minimum to maximum dose is about fifty—extending over five or six months; and in many cases it is better that ten or twelve months be covered.

Early Diagnosis of Tuberculosis

DR. R. E. CONNIFF, Sioux City: Too much emphasis can not be placed on the importance of early diagnosis in tuberculosis, particularly of the lungs. Indifference on the part of the patient and carelessness on the part of the physician are the principal factors in our failure to detect early evidences of infection. More time, closer study and greater care must be observed in making examinations, as well as a broader application of the knowledge thus obtained. Tuberculosis is a disease closely associated with disturbances of nutrition. Every evidence of lessened vitality, either local or general, should receive most careful consideration and make us mistrustful of possible foci of infection. Physical signs are rarely found in incipient cases. The microscope, once thought necessary to a positive diagnosis, is useless in the early stage of tuberculosis. There is no typical or diagnostic symptom in this stage of the disease, but a careful consideration of the "symptom complex" will reveal enough evidence to make the diagnosis positive in most cases, if the physician will insist on repeated examinations and compare carefully the findings at each sitting, bearing in mind always the slow development and the non-irritating character of unmixed tuberculous infection. The tuberculin test as a diagnostic is rapidly growing in favor, a large number of physicians finding it more helpful each succeeding year in clearing up doubtful cases. It should be carefully and intelligently used, in connection with other methods of arriving at positive knowledge, which will aid us, after weighing carefully all the evidences offered, in making the earliest possible diagnosis.

Pathology of Tuberculosis

DR. E. W. MEIS, Sioux City, discussed the early pathologic changes in tuberculosis, beginning at the entrance of the bacillus and following the tissue changes to the point of beginning cavitation; also the favorable changes which take place when arrest occurs, and treated of the various methods of repair. He described the route of infection and morphology and nature of the tubercle bacillus, and touched on the body resistance to the disease.

Discussion on Tuberculosis

Dr. A. L. Wright, Carroll: There are 10,000 people in Iowa to-day suffering from tuberculosis, and the death rate is estimated, I believe, at 2,500 *per annum.* It is estimated by statisticians that of those now living in the United States 5,000,000 will die with tuberculosis. I present these figures simply to emphasize the frightful mortality accompanying tuberculosis, which all the essayists have touched on. I think diagnosis must be based on the more general use of tuberculin at a period when there are no physical signs. Then we can expect to accomplish a cure in most cases; not when the lung is beginning to show evidence of invasion.

Dr. Pauline Myers-Townsend, Marshalltown: In America it seems to me we need to call much more attention to industrial insurance. Germany has led so far in the placing of responsibility on the industries where the conditions are such as to favor tuberculosis. Our physicians should be a potent factor in educating the American people on employers' liability acts and general industrial insurance.

Dr. Edward Hornibrook, Cherokee: In an old treatise on consumption, published in the last century (I think by Thompson), is mentioned one symptom, which is stated by the author as pathognomonic in the early stages of consumption, and nowhere else have I seen it. I have tested it in almost every case of consumption or suspected consumption that has come under my notice for nearly half a century, and I am anxious that my professional brethren also give it a test. The author says that if you take a consumptive patient and one that is not consumptive, count their pulses in report, and then set them both to take active exercise, the person who has not consumption will have a much greater increase in the pulse rate than the patient who has consumption. The usual rate of increase that I have found in women not too robust in walking three or four times across my office, going down stairs and coming up again pretty rapidly, is about thirty beats a minute. In the consumptive, if not too much debilitated, as they are not in the early stages, the increase will not be over ten beats. Another sign that not much stress is laid on in the modern text-books is prolonged expiration. I have always found it—not exactly in the first stage, but before the disease is very far advanced. In my opinion, it is an error to put off the diagnosis until one can demonstrate by physical signs or by instruments of precision. If suspicious, the physician should tell the patient candidly that he is in doubt, but that the treatment he is going to give will prevent consumption if it can be prevented. Put the patient on the best hygienic treatment, and he will recover whether he has consumption or not.

Dr. W. H. Dewey, Moville: It is not a difficult thing for the country physician to get people to cooperate with him heartily in providing open rooms adjoining the house for the accommodation of their afflicted ones. Of course the sanatorium gives these patients many conveniences that can not be provided for at home, but patients away from home are often homesick, and there are so many things that militate against the advantages to be found at the sanatorium that sometimes they are almost entirely overcome.

Fallacies in Preventive Medicine

Dr. B. L. Eiker, Leon: Educate the masses of the people so that they understand the dangers incident to the common infectious diseases. This has been accomplished with tuberculosis, and in like manner can be accomplished with other diseases of the same class. Petty jealousies and local prejudice among the physicians of the state have done much to retard the progress of preventive medicine. The cause of much trouble and endless loss of life is frequently brought about by hasty diagnosis made when no man, however skilled, can tell to a certainty the true nature of the malady. Local boards of health are negligent in their duty as sanitarians, and labor under the impression that a dollar saved to the town treasury is worth more than the lives of their neighbors' children. Laws, rules and ordinances are not needed in Iowa so badly as a campaign of education along the lines of preventive medicine. Educate the people and they will formulate their own rules and observe them.

SYMPOSIUM ON OPHTHALMIA NEONATORUM IN IOWA TO-DAY, WITH A CONSIDERATION OF PROPHYLAXIS.

Ophthalmia Neonatorum: Cause, Prevalence and Prophylaxis

Dr. L. W. Dean, Iowa City: Blennorrhea neonatorum is an infectious conjunctivitis developing usually on or before the third day after birth, never after the fifth. Most cases are the result of infection in the eyes of the child by the secretion from the diseased genitals of the mother, the micro-organisms gaining entrance into the conjunctival sac as soon as the child opens its eyes. Generally the gonococcus infections are most severe, but the severity of the infection is never an absolute indication as to the germ concerned. In 1906, 183,012 births were registered in the state of New York, this disease appearing in one out of every 200 births. One-quarter of all the blind children in all the blind schools of this country are blind because of this disease. In 1881 Professor Credé of Leipsic announced the important discovery that a single drop of a 2 per cent. solution of nitrate of silver dropped into each eye of a new-born infant, would destroy the germs of ophthalmia neonatorum where they existed, and would not injure the sight of healthy eyes. The value of this discovery is now accepted by all physicians of standing, who use nitrate of silver, or derivatives of the silver salts as part of their routine practice in confinement cases. Prophylactic measures at the time of birth are so simple and so devoid of danger in using that neglect to carry out this procedure seems almost a crime.

The Cost of Ophthalmia Neonatorum in Iowa To-day

Dr. A. R. Amos, Des Moines: There is no doubt that the chief concern of the state and community in the blindness of ophthalmia in the new-born is an economic one. The public asks the question, how much does it cost us to maintain these persons? Notwithstanding, there is a moral cost to the community outside the family of the blind, not to be overlooked. Of all cares of the state the education of its blind children is both the most hopeless and most expensive. If we shall look, however, to the economic loss nearer home, it will be found that the cost of blindness to families is very great. The man groping his way about, or staring with bent brows to see his work, is seriously handicapped. The woman, still more unfortunate, may find her fortune seriously marred by the ugly scar of infancy, as her character is sullied by its unsightly appearance.

The Practical Aspects of Prevention of Ophthalmia Neonatorum

Dr. R. M. Lapsley, Keokuk: A line should be required on each birth certificate, stating condition of eyes at birth, and also what prophylactic, if any, had been used. All cases of ophthalmia neonatorum should be at once reported to the authorities, and if the case has been handled by any one other than a physician, the case should be put under treatment of a physician. Such a law is now on the Iowa statutes, but has not been enforced, and some penalty should be devised for disregarding it. The people in general need to know that the baby may acquire a disease in its earliest infancy that will endanger its eyesight. A record of number of births and number of cases should be kept by the State Board of Health; and it would be well to have a report of all unfavorable results when the disease was healed. The extra expense would be small, and is well justified, because a permanent check on the usefulness of the system would always be at hand.

Résumé of Ophthalmia Neonatorum

Dr. E. R. Lewis, Dubuque: Agitation presupposes at least two things on the part of the agitators: dissatisfaction with existing conditions, and belief in their ability to better them. We are appearing as agitators sincerely. The prevention of this disease requires no expensive armamentarium, no costly drugs, no time-consuming special attention, no special technical skill. It is the plain duty of the state to maintain supervision over conditions influencing the health of its citizens and to prevent all possible disease. If state prophylaxis of ophthalmia neonatorum is to be instituted, it would fall naturally into the hands of the State Board of Health. From this board must come the regulations concerning the use of prophylactics, and to it must be left the enforcement of such regulations. The existence of a dead-letter law is a reproach to the citizens of a state. Let such laws as are passed carry with them penalties sufficiently severe to insure their strict observance. The experience of Massachusetts and New York in this matter is sufficient justification for this demand. Last year the Iowa State Medical Society, in common with most other state medical societies, appointed a committee to take up the matter of the prevention of ophthalmia neonatorum in the state. It has seemed to this committee advisable to recommend taking steps to secure accurate and complete data in regard to this disease in Iowa, for the obvious reason that up to the present we have had no means of ascertaining anything definite regarding it. The means of securing these data is already in our hands, in the birth certificates, to which it would be necessary to add only a few lines. Revocation of license to practice should be the penalty for repeated neglect to use prophylaxis or for false entries on the birth certificate. Prophylactics deteriorate with age and exposure to light. It seems advisable, therefore, that the state should furnish free to physicians, midwives and nurses small containers of fresh prophylactic. The cost of providing silver nitrate in special light-proof ampoules for the whole state of New York does not exceed $3,000 annually. Inasmuch as many births are attended by midwives or maternity nurses, provisions should be made for their special supervision, including the issuance by the State Board of Health of a circular of instructions in regard to the care of the eyes of the new-born. Attendants should be required to report ophthalmia neonatorum as a communicable disease, and provision should be made for bacteriologic examination of suspected secretions on application to the local health physician.

Medicolegal

"Abortion" and "Miscarriage" Synonymous

The Supreme Court of Colorado says that it was argued in Marmaduke vs. People, where the party named was held to answer the charge "of attempt to procure an abortion," that such charge was not a criminal offense, as under the statute of that state there can be no crime for attempt to procure a miscarriage or abortion unless it appears that the attempt was on a woman with child. It is quite true that such facts are essential elements to constitute the offense; yet the word "abortion" has a distinct and definite meaning when used in judicial proceedings that necessarily implies all such essential elements. While the statute referred to does not use the word "abortion," yet it does use its synonym, "miscarriage." "The word 'abortion' is synonymous and equivalent to 'miscarriage' in its primary meaning." Mills vs. Commonwealth, 13 Pa. 631, 633. "'Procuring an abortion,' in common language, means substantially the same as procuring a miscarriage." State vs. Crook, 16 Utah, 212. Bouvier in defining "miscarriage" says: "The expulsion of the ovum or embryo from the uterus within the first six weeks after conception. Between that time, and before the expiration of the sixth month, when the child may possibly live, it is termed abortion. When the delivery takes place soon after the sixth month, it is denominated premature labor. But the criminal act of destroying the fetus at any time before birth is termed, in law, procuring miscarriage. Chitty, Med. Jur., 410; 2 Dungl. Hum. Phys. 364." Therefore, it is clearly evident that "abortion" is "miscarriage," and the two words in law are synonymous.

In the case before the court the words used not only implied a criminal offense, but were the ordinary and usual designation of such crime even by the courts and text-writers. While it is true that many abortions might be attempted or even procured without the commission of any crime or offense whatever, yet a certain kind of attempted abortion is a criminal offense and punishable as such, and, a recognizance or bond requiring the principal to appear and answer unto the people for an attempt to procure an abortion, it must be understood that he was charged with the criminal offense.

From time immemorial abortion has been a crime, and by the judicial law of Moses, if mischief followed, the act was punishable with death. Exodus, c. xxi, vs. 22, 23. Under the common law, and likewise under the Colorado criminal procedure and practice, "abortion" is the technical and common name for a particular crime, as much so as rape or seduction are for others.

Hospital for Insane in Residence Neighborhood not Necessarily a Nuisance

The First Appellate Division of the Supreme Court of New York says that the complaint in the case of Heaton, et al., vs. Packer, et al., alleged that the plaintiffs owned and occupied lands suitable and valuable for residence purposes only, in a high-class residential portion of the city of New York, adjoining property owned by the defendants; that the defendants had purchased their lands referred to for the purpose of establishing, and were erecting and altering the buildings thereon for the purpose of using them for a hospital for the insane, and the housing, keeping and caring for a large number of insane persons. The complaint further set forth a large number of dangerous and disagreeable things which would occur from the establishing and maintaining of such a hospital for the insane, among others, that it would greatly depreciate the value of the plaintiff's property for residental purposes, and destroy the neighborhood as a residental section, and make it dangerous for women and children to go on the streets adjacent to the hospital, and make the residents nervous and ill from seeing unseemly sights and hearing unseemly noises. The relief asked was, not that the defendants should be restrained from the further erection and alteration of buildings, but that they should be restrained from using them for the purposes of maintaining a hospital for the insane. The defendants demurred to the complaint on the ground that it failed to state a cause of action. The court is of the opinion that the demurrer should have been sustained.

Hospitals and insane asylums are necessities, and, while they may be so conducted in certain localities as to become nuisances, they are not nuisances in and of themselves. If all should actually happen which the plaintiffs imagined would happen, possibly they might have good cause for complaint. The defendants' institution, however, might be so constructed and so managed that none of the evils which the plaintiffs apprehended would ever occur. While the establishment of a lunatic asylum in the plaintiffs' neighborhood might not be a desirable thing, still the evils apprehended did not necessarily arise from its maintenance, and were not inherent to it, like those coming from a slaughter house, for example.

The rule sanctioned by the authorities and the text-books with respect to the restraining of an apprehended nuisance by temporary or permanent injunction is that an injunction will not be granted unless it is apparent or inevitable that the proposed use of the property will actually result in a nuisance.

Evidence Where Insanity Is Defense

The Supreme Court of Florida says, in Johnson vs. State, that all persons are presumed to be sane; and when insanity at the time of committing an alleged offense is relied on as a defense, and the evidence for the state does not raise a reasonable doubt as to the sanity of the defendant when the offense was committed, it is incumbent on the defendant to submit evidence sufficient to raise a reasonable doubt of his guilt.

The Florida statute authorizing the examination of persons to be committed to the State Hospital for the Insane does not contemplate an inquiry into the responsibility of persons for crimes committed, and an adjudication of insanity preparatory to commitment to the hospital is not a proper matter for consideration in a trial for a crime.

Likewise, a certificate of the superintendent and physician of the State Hospital for the Insane that the defendant was in 1908 "discharged from the hospital by order of the examining board, he not being insane," was not admissible in evidence on the issue of insanity at the commission of the alleged offense in 1900.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

July 3

1 *The Tuberculo-Opsonic Index in its Relation to the Temperature Curve in Active Tuberculosis and its Value in Diagnosis in Suspected or Arrested Cases. H. M. King, Liberty, N. Y.
2 *Aneurism of the Thoracic Aorta. A. Abrams, San Francisco.
3 *Atresia of the Vagina. O. C. Smith and P. H. Waterman, Hartford, Conn.
4 Habitual Constipation. D. Roberts, Brooklyn, N. Y.
5 Science and Medicine with Special Reference to the Treatment of Syphilis and Gonorrhea. F. Baumann, Chicago.

1. **Tuberculo-Opsonic Index and Temperature Curve.**—King records observations and experiments on the relation of the temperature to the opsonic index in suspected or arrested tuberculosis and mixed infection. He asserts that the rises of temperature in tuberculosis indicate repeated autoinoculations of the patient. Rest inhibits these inoculations. Alternating negative and positive phases can be demonstrated corresponding inversely to the temperature rise and fall, and the temperature curve and index curve plotted out will give a diamond chart. The opsonic index has a most decided value in diagnosis of incipient tuberculosis, and as an indication for treatment in long-standing quiescent cases.

2. **Aneurism of Thoracic Aorta.**—Abrams repeats that the manipulation of definite vertebræ corresponds to the elicitation of definite reflexes. Indiscriminate handling may give opposite effects from those desired. Concussion of the four last dorsal vertebræ in succession by a series of sharp, vigorous blows will cause dilatation of the thoracic aorta in normal persons. Concussion of the spine of the seventh cervical vertebra will cause contraction of the thoracic aorta. If diminished resonance or dulness over the aorta, elicited by concussion of the vertebræ, exceeds the normal, the vessel either is dilated or is the site of an aneurism. A dull area in the upper thoracic region or back, if caused by aneurism of the thoracic aorta, will show a diminished area of dulness when the spine of the seventh vertebræ is concussed. Treatment by concussion of the vertebræ in aneurism has been found of value. A vibrator giving a percussion stroke is used. Concussion is made over layers of cotton attached by adhesive plaster.

3. **Atresia of the Vagina.**—Smith and Waterman record a case of atresia of the vagina in which there was an imperforate hymen, with no vagina except a fibrous cord, while the other genital organs were normal. The retained menstrual blood was contained in the dilated cervical canal. Operation was done by opening the abdomen to relieve the blood cyst, and later an attempt was made to prepare the way for the formation of an artificial vagina. This was probably a case of acquired atresia as a result of some intrauterine inflammation.

Boston Medical and Surgical Journal

June 24

6 *Fundamental Conceptions which should Govern Modern Obstetric Practice. E. Reynolds, Boston.
7 When to Interfere in Pregnancy and Labor. F. S. Newell, Boston.
8 Dangers to the Child in Operative Deliveries. S. A. Houghton, Brookline, Mass.
9 *Symptom-Complex of a Series of Exanthematous Diseases, or Is there a New Contagious Exanthem (concluded)? J. W. Watson, South Braintree, Mass.

July 1

10 Dental Hygiene: Its Real Significance. W. R. Woodbury, Boston.
11 *Resuscitation After Relative Death. A Physiologic and Clinical Review with Reports of Four Unsuccessful Attempts. C. R. Metcalf, Boston.
12 Semmelweis and his Work on Puerperal Sepsis. E. B. Young, Boston.
13 Principles of Therapeutics by Sense Culture. P. W. Goldsbury, Boston.
14 The Guaiac Test for Blood. R. W. King, Las Animas, Colo.
15 Schistosomiasis (Japonicum) in Hunan Province, China. O. T. Logan, Changteh, Hunan, China.
16 Analogies Between Malaria and Syphilis. W. H. Deaderick, Marianna, Ark.

6. **Modern Obstetric Practice.**—Reynolds is emphatic in asserting that most women are the better off for some sort of care in labor, but we must differentiate between the different classes of assistance. He estimates that 75 per cent. of all women are definitely the better for trained attendance in labor in minor ways: the care of the perineum, the hurrying of labor by proper management of the membranes, the occasional use of anesthesia, and the many small attentions which are the common property of the profession to-day. At least 60 per cent. of primiparæ have more favorable, less exhausting labors, and better convalescences, if the head is lifted over the perineum by the low application of forceps, and everybody knows that the percentage of stillbirths is less in cases treated in this way than after long perineal stages. It is also probable that from 10 to 15 per cent. or more of multiparæ are the better for having a short perineal stage under the use of low forceps. On the other hand, it is difficult, if not impossible, to estimate the percentage of all cases in which modern obstetrics advocates the use of high extractions, but the number of even these cases will certainly be much larger than the old-fashioned 5 per cent. pathologic labors which needed some attention. Much, he says, must depend on the operative ability of the obstetrician and on his capacity for planning out the campaign tentatively beforehand. When the consultant is called in after progress has failed, he is confronted by difficulties and dangers which ought never to have been allowed to arise, and whenever there is reasonable anticipation of difficulty and of a necessity for a consultant, he has a right to ask, and the patient has a right to demand, that he should be called in not after trouble is already present, but before the patient ever goes into labor. This does not mean that the general practitioner must yield up his obstetric practice. It does mean that when he has beforehand the instinct that the given case may not improbably prove a difficult one, he should not wait for blind luck in labor and the unfortunate results which are sure to attend it in a large percentage of such cases, but should avail himself of that mere suspicion to avoid the greater proportion of his difficulties and dangers by sufficiently careful examination beforehand, either by himself, if he feels equipped for it, or by a consultant, and further, that he should cultivate that instinct of coming danger by careful study of his pregnant cases. The use of a consultant during pregnancy should not, however, mean that the general practitioner necessarily turns over the case, but usually that he will enter on its care himself, fortified by consultation and with a better plan of management than he individually might have obtained for himself. It means, in other words, that he should treat his obstetric practice as he treats the rest of his business, availing himself of advice in all cases which he thinks may promise difficulty, and turning over to the specialist, or working in conjunction with him, only in those cases which he sees reason to believe will be the better for exceptional skill, and which it is not advisable for him to attend alone.

9. **New Contagious Exanthem.**—Watson discusses fully the clinical history of seventy-five cases of an exanthematous disease which he believes to be neither measles nor scarlet fever, but a possible "fifth disease." It has an incubation period of from 17 to 21 days. It is not contagious at all until peeling takes place; the desquamate is sometimes very profuse, but its germ is short lived. Patients are much more comfortably sick than they are with scarlet fever. Sickness does not usually last longer than three days when complications are absent. It has complications and sequelæ. Patient should be kept quiet for two weeks to prevent them. There is no chance of mixed infection in any of the cases. Some of the severest cases sprang from an initial mild case. Opinions of health officials (both state, town and nearby towns) vary as to the disease. It was generally regarded as very mild. Result: lax quarantine and spread of the disease. Several patients had already had scarlet fever, measles and German measles, but were not immune to this disease. The bacteriology, still incomplete, shows that the germs present have little vitality. It has no long-continued bad after-effects like scarlet fever. In the cases discussed there were no fatalities from the disease. The disease should be rigidly quarantined until desquamation ceases. It is not necessary to quarantine other members of the family, as the disease does not appear to be transmissible through the agency of a third person, nor is it necessary to quarantine so long as in scarlet fever.

11. **Resuscitation After Relative Death.**—Since Neihaus first employed cardiac massage on a patient in 1880, 39 other cases have been reported in which this or a similar measure has been tried. Metcalf adds 4 to this number. Of these 44 cases, 33 have been instances of syncope from anesthesia: 24 times chloroform, 6 times ether, once a mixture; 2 times the anesthetic has not been mentioned. Aside from the accidents of anesthesia, massage has been practiced 11 times, as follows: Pulmonary embolism, 1; suicide by hanging, 1; incision of postpharyngeal abscess, 1; diphtheria, 1; acute dilatation of the heart, 1; tracheal asphyxia, 2; traumatic injury of brain, 2; electric shock, 2. Of the 44 cases, 9 have met with complete success in that permanent recovery has been secured after relative death; 8 have been partly successful; the remaining 27 have been failures. Of the 9 recoveries, 4 have followed death from ether, 3 from chloroform, 2 from an anesthetic not specifically mentioned. Of the 8 temporary recoveries, 5 have followed death from chloroform, 1 from tracheal asphyxia, 2 from injury to the brain. It seems reasonable to conclude that in cases of relative death from an anesthetic, from asphyxia, from drowning or from electrocution, we should employ more than ordinary methods in attempting resuscitation. It is probable that Crile's method of thoracic pressure and intra-arterial infusion offers the greatest chance of success.

New York Medical Journal

July 3

17 *Complications of Malarial Fever. J. M. Swan, Philadelphia.
18 Is Seven Day Fever of Indian Ports only Sporadic Dengue? L. Rogers, Calcutta, India.
19 *Histologic Changes of the Spinal Cord in Pernicious Anemia Apropos of a Case with Diffuse Degeneration. A. Gordon, Philadelphia.
20 *Solid Carbon Dioxid in Lupus Erythematosus: A New and Successful Method of Treatment. W. S. Gottheil, New York.
21 *Treatment of High Dorsal Pott's Disease. W. E. Gallie, Toronto, Canada.
22 Bandages and Spectacles in Diseases of the Eye. N. B. Jenkins, New York.
23 Treatment of Diabetes as an Infectious Disease. A. King, Portland, Me.
24 Vaccine Therapy in Genitourinary Infection. E. G. Ballenger, Atlanta, Ga.

17. Abstracted in The Journal, May 1, 1908, p. 1448.

19. **Pernicious Anemia.**—The salient features from Gordon's case from a clinical standpoint are: The anemia, which developed after a profuse bleeding; the spinal cord symptoms, which gradually made their appearance two years later; finally the incidental influenza, which was followed by pulmonary tuberculosis. The prominent anatomic changes are a diffuse degeneration of the spinal cord, affecting not only the posterior columns, but also the lateral motor and sensory tracts and the anterior portions of the white substance of the cord.

When a comparison is drawn between the present case and those recorded by other observers similar and dissimilar points can be traced. Clinically, in the majority of cases the symptoms referable to a disease of the cord are slight. In a number of instances the histologic changes were found accidentally in patients who died from anemia. The clinical symptoms are therefore often overlooked. In Gordon's case the manifestations during life were marked. The cord symptoms developed gradually and began to make their appearance two years later after the onset of the profound anemia. The evolution of the symptoms was decidedly progressive. The relation between the pernicious anemia and the involvement of the spinal cord was evidently direct, the former commenced four years ago, gradually became more and more pronounced, and two years later sensory and motor symptoms, also sphincter manifestations, made their appearance. The course of the disease was chronic from the beginning to the end; at no time did any of the cord symptoms show an acute onset or acute development. As to the individual nervous symptoms, there was particularly notable syringomyelic dissociation in the upper extremities. Pain, heat and cold were not perceived by the patient, and in some areas heat was taken for cold, and *vice versa*. This phenomenon has not been observed in any of the cases reported, and anatomically it corresponds to a genuine involvement of Gowers' tract, more on one side than on the other.

20. **Solid Carbon Dioxid in Lupus Erythematosus.**—During the last two years Gottheil has employed only the solid carbon dioxid in treatment of lupus erythematosus, and has found it very effective. Being a solid body it can be whittled into any desired shape. The strength and amount of application can be gauged with the utmost nicety by varying the time and the pressure. Solid carbon dioxid, however, has further advantages. It is a cold cautery, and therefore an anesthetic cautery. This is a most important point. While other efficient cauterizing agents, almost without exception, are so painful that, save with patients of considerable fortitude, a local anesthetic at least is required when they are used, carbon dioxid can be employed on women and children without any trouble at all. The intense cold itself is a local anesthetic. The pain at the time of the application is trivial; a few minutes later there is a moderate amount of burning similar to that after a frostbite. This wears off entirely in an hour or two.

21. **Treatment of High Dorsal Pott's Disease.**—The plan of treatment described by Gallie was devised as a means of getting over the mechanical difficulty presented. The idea involved is the lengthening of the short upper lever by adding to it the cervical spine. Inasmuch as it is impossible to apply pressure on the front of the neck, owing to the presence of the larynx and vessels, the splint must be extended up to the head and preferably to the forehead and occiput. It consists of a plaster jacket extending from the pelvis to the head, leaving free the arms and exposing the face, ears and part of the chest. It conforms to the principles laid down for the treatment of tuberculosis of bone, in that it provides fixation to the parts, prevents increase of the deformity, and when applied with moderate hyperextension of the spine above and below the kyphosis causes the deformity to diminish.

The plan has been given a thorough trial extending over a period of two years, and so far results have been most gratifying. All the patients have shown marked improvement, the acute symptoms disappearing rapidly after the application of the first jacket. In no case has the deformity increased and in practically all there has been a diminution of the kyphosis. The general plan of management of these patients includes both recumbent and ambulatory treatment. Although the jacket gives excellent support to the spine, nevertheless the patient is kept in bed six months or more as an extra precaution. After that, if there is reasonable improvement, he is allowed up. The length of time he will need to wear the jacket has not been definitely determined as yet.

Lancet-Clinic, Cincinnati

June 19

25 *Conquest of the Tropics for the White Race. W. C. Gorgas, Ancon, Canal Zone.
26 Practical Suggestions for the Family Physician in the Early Recognition of Pulmonary Tuberculosis. F. M. Pottenger, Monrovia, Cal.
27 Treatment and Management of Strabismus. V. Ray, Cincinnati.
28 *Tachycardia from Cholecystitis with Section of Gall Bladder. B. Holmes, Chicago.

June 26

29 The Cutaneous Tuberculin Reaction. J. L. Tuechter, Cincinnati.
30 Disease of the Labyrinth: Report of a Case. K. L. Stoll, Cincinnati.
31 Psoriasis. J. V. Shoemaker, Philadelphia.

25. Published in The Journal, June 19, 1909, p. 1967.

28. **Tachycardia from Cholecystitis.**—Holmes reiterates his belief that drainage of the gall bladder is frequently indicated in myocarditis because tachycardia myocarditis is often due to a toxemia from cholecystitis with or without gallstones. The exact source of the toxic elements is not known to Holmes, but seems to originate in the gall-bladder wall or in changes in the bile due to contact with the excretions of the sick mucosa of the gall bladder. The toxins may be absorbed in the intestines or by the diseased mucosa of the gall bladder. The uniform enlargement of the lymph glands near the head of the pancreas to which the gall bladder is tributary seems to point to this possibility. The toxicity of a stone-carrying gall bladder seems less pronounced than that of the thickened gall bladder without stones. The end-result of the stoneless cholecystitis seems to be "brown atrophy" of the heart and

central arteriosclerosis followed by general peripheral arteriosclerosis. The drainage of the gall bladder gives immediate relief, and its long-continued drainage, six weeks or more, permanent betterment. The operation should be performed rapidly under local anesthesia or ether.

Virginia Medical Semi-Monthly, Richmond

June 11

32 Insanity: The Home Treatment of the Patient. P. C. Hunt, Washington, D. C.
33 Importance of Early Attention to Obstructive Respiration in Children. J. A. White, Richmond, Va.
34 *An Unusual Case of Puerperal Eclampsia. J. H. Hiden, Pungoteague, Va.
35 Gastric Ulcer. M. O. Burke, Richmond.
36 The Ureter—Anatomy and Pathology. B. M. Ricketts, Cincinnati.
37 Scarlet Fever. J. A. Owen, Turbeville, Va.
38 Change of Base. W. Waugh, Chicago.

June 25

39 Diagnosis and Treatment of the Early Stages of Hip Disease. A. R. Shands, Washington, D. C.
40 Extent and Importance of Venereal Diseases in the Social Body. F. T. Simpson, Hartford, Conn.
41 How should we Determine Errors of Refraction, and What is their Actual Relation to General Conditions. O. Wilkinson, Washington, D. C.
42 Tuberculous Hip-Joint Disease. L. Sexton, New Orleans.
43 Editorial Revision of Titles of Medical Papers. F. H. Garrison, Washington, D. C.

34. **An Unusual Case of Puerperal Eclampsia.**—Hiden's patient was only 12 years old, and when first seen was suffering severely from dropsy of face, hands, legs, feet and vulva. Diuresis and catharsis proved ineffective. Labor soon set in, was rapid, accompanied by seventeen convulsions, and terminated with the patient in coma. The immediate treatment consisted of the administration of morphin, veratrum viride, calomel, jalap, bromid of potash and chloral hydrate, pushed to the limit of tolerance. After the completion of delivery, the patient was soon put into a hot, wet pack and steamed for three hours; and after four hours' interval, the hot pack was again used. The patient continued in coma for about thirty-six hours, but there was great diminution in the general edema, and it was evident that she was improving under the treatment. After consciousness was restored the case progressed to a rapid recovery.

Medical Fortnightly, St. Louis

June 25

44 Squint: An Appeal to the Family Consultant. E. E. Clark, Danville.
45 History of Scientific Medicine, What it has Done and Does To-day for Medicine and Surgery. L. H. Warner, Brooklyn.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

June

46 Addresses Delivered at Dedication of New Library Building of the Medical and Chirurgical Faculty of Maryland.

Chicago Medical Recorder

June

47 Brain Surgery. C. Wagner, Chicago.
48 *Diagnostics of "Traumatic" Hernia. W. H. Allport, Chicago.
49 Abruptio Placentæ—Premature Detachment of the Normally Implanted Placenta. F. O. Bowe, Chicago.
50 The Enema—Its Place in the Treatment of Gastrointestinal Diseases. C. J. Drueck, Chicago.
51 Ocular and Cutaneous Tuberculin Diagnosis. M. Biesenthal, Chicago.
52 Eye and Ear Defects of Exceptional Children. T. Faith, Chicago.
53 The Graduate Nurse Versus the Patient of Moderate Income. F. Allport, Chicago.

48. **Traumatic Hernia.**—According to Allport, all examinations of cases of alleged traumatic hernia should be based on a consideration of: 1. Is there a protrusion which was reasonably certain to have been primary and local at the time of the accident? 2. Was there a trauma—in the sense of an unusual or unlawful use of force—inflicted on the person examined? It should be possible for an examining surgeon unerringly to classify the following forms of hernia: (1) The recent hernia accompanied by objective signs of trauma; (2) the recently injured, but ancient hernia; (3) the ancient uninjured hernia, masquerading as a recent result of trauma. It is always difficult, and often impossible, without operation, to differentiate between a small, quiet, old, thin-sacked hernia fraudulently presented, and a genuine recent hernia, which has thrust itself for the first time into a funicular process so large that it has admitted the bowel without objective evidence of trauma. Especially difficult is this when the patient is examined some time after the accident.

Allport directs special attention to the following points: 1. The value of a preliminary physical examination of all employés in mechanical occupations, with a carefully made and preserved record of the same. This examination has been too largely overlooked by employers. 2. When the etiologic diagnosis of hernia is at all in doubt, the surgeon should have the option of offering to the patient the benefit of a radical curative herniotomy.

American Journal of Urology, New York

June

54 Principles of the Modern Treatment of Gonorrhea. J. L. Boehm, St. Louis.
55 Hair-pin in the Bladder, with Removal by the Cystoscope. L. W. Bremerman, Chicago.
56 Epididymotomy in Gonorrheal Epididymitis. L. Gross, San Francisco.
57 How to Aborte Acute Gonorrhea. W. L. Champion, Atlanta, Ga.

Journal Indiana State Medical Association, Fort Wayne

June

58 *Surgery of the Thyroid, with Special Reference to the Psychic Factor in Graves' Disease. G. W. Crile, Cleveland.
59 Uses and Abuses of Gastrojejunostomy. J. R. Eastman, Indianapolis.
60 *What to Eat in Gastric Ulcer: A Milk-Free Diet. F. W. Foxworthy, Indianapolis.
61 Case of Gastric Ulcer with Perforation and Death. J. A. Work, Elkhart.
62 Sketches of Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
63 Gleanings from Obstetrics in General Practice. A. C. McDonald, Warsaw.
64 Value of Split Proteids in Infant Feeding. C. E. Hansel, South Bend.

58. **Surgery of the Thyroid.**—In Crile's series of 253 operations on the thyroid, 4 were performed for infections, all ending in abscess and requiring incision and drainage; two of the patients were in the course of typhoid and gave pure cultures of typhoid bacilli; one case followed an operation for extrauterine pregnancy; and one was a sequel of influenza. These were treated as abscesses elsewhere and all the patients recovered. There were 14 cases of malignant tumors, 9 carcinomata and 5 sarcomata. Of these, one patient with carcinoma and one with sarcoma passed the three-year period without recurrence; the remainder died of the disease. Among the operations for benign tumors, such as cysts and adenomata, and for plain goiters, results were as satisfactory as operations for benign pelvic tumors, interval appendicitis, and uncomplicated gall-bladder cases. There was but a single death in the entire series, and in the last 120 there was no fatality.

The special points of operative importance emphasized by Crile are: That the anesthetic should be given by a special anesthetizer; that the anesthetic should be preceded by a hypodermic of atropin to control the salivary and the buccal secretions; that in cases of compression of the trachea with obstructed respiration, morphin-cocain anesthesia is the safest; that the least scar and the best exposure are secured by the low collar incision; that the divided muscles should be sutured; that the gland should be handled as little as possible; that the dissection should be made in a clear field with perfect hemostasis; that the enucleation rather than excision should be made; that a strip of glandular tissue at the upper and lower pole and along the posterior border should be left, especially if a bilateral excision is made, ensuring the safety of the parathyroids; that the arteries should be secured early close to the gland itself so as not to cut off the blood supply of the parathyroids; that these arteries should be tied with linen or silk and not catgut, as the latter may slip; that the inferior laryngeal is best protected, not by exposing it, but by carrying the incision through tissues in which it does not lie; and that the best aid in the prevention of hemorrhage consists in placing the patient in the reverse Trendelenburg posture, thereby lowering the pressure in the veins. The wounds are always drained for from 48 to 72 hours.

Goiter has a rather definite geographic distribution. For the United States, it is most prevalent in the Great Lakes basin and the Columbia River Valley. For all practical purposes, goiters may be divided into three great classes, the first comprising benign tumors, hypertrophies and degenerations; the second Graves' disease—a true hyperplasia; and, third, neoplasms. Colloid goiters and benign tumors in experienced hands have about the same mortality following excision as that of interval appendicostomy. Operation is indicated for cosmetic reasons, for the relief of pressure symptoms, and when beginning malignancy is suspected. From 6 to 10 per cent. of all goiters that come to operation are malignant. Graves' disease should be recognized early and medical treatment faithfully tried. If, after careful treatment, the relapses grow more severe, excision of the gland should be done. If good judgment is used in selecting the stage for operation, the mortality should be but slight, probably 2 or 3 per cent., and a clinical course may then be completed under the care of a physician.

60. **Milk-Free Diet in Gastric Ulcer.**—After the usual methods employed in the treatment of gastric ulcer had failed, Foxworthy gave a milk-free diet in a case of two years' standing and with entire success. The white of one egg was beaten up in a glass of cold water and sipped slowly; this feeding was given every three hours, and each day the dose was increased by one egg, so that at the end of two weeks the patient was getting the whites of twenty eggs each day—that is, the whites of four eggs to a glass of water every three hours. The pain gradually disappeared, she was able to lie on her right side, which was not possible before, no vomiting occurred, and marked mental improvement was noticed. The only medical treatment used was lavage with one pint of warm water, in which ½ ounce of sodium bicarbonate had been dissolved. One-half of this amount was allowed to remain in the stomach. Before each feeding of albumin water, she was given one-half teaspoonful dry on the tongue, of the following mixture:

℞	gm. or c.c.	
Magnesiæ ustæ		
Sodii carbonatis		
Potassii carbonatis, āā	5	or gr. lxxv
Sacchari lactis	25	ʒvj

On the fourteenth day, a meat juice preparation was added to the diet—and then gradually meat, eggs, vegetables and bread. On the forty-second day the patient was well nourished, enjoyed her food and had no pain for several weeks, no eructations of gas, the test meal showed normal acidity, and there was no tenderness over the abdomen, lavage made three hours after a meal found the stomach absolutely empty, and no symptoms of ulcer could be found.

Montreal Medical Journal

June

65 Life. J. G. Adami, Montreal.
66 Use of Radium in Paris. G. E. Armstrong, Montreal.
67 The Essential Character of Hysteria. T. A. Williams, Washington, D. C.
68 *Canadian Leprosy. C. M. Kelly, Montreal.
69 Value of the Roentgen-Ray in the Diagnosis of Renal and Ureteral Calculus. F. M. Auld, Montreal.
70 Medicine in Canada. M. Charlton.

68. **History of Leprosy in Canada.**—Kelly found that although the early history of leprosy in Canada is somewhat vague, it is established that the first cases appeared in 1816 among the Acadian people of Tracadie, N. B. The two first cases were Acadian girls born of Acadian parents fifty years after immigration from France had ceased, so it is rather doubtful if the bacilli were imported from that source. The late superintendent of the Lazaretto at Tracadie, Dr. Smith, held to the opinion that the disease came not from Normandy but from Norway, not from colonists, but from sailors shipwrecked on the shore of Bay Chaleur. Two sailors spent the entire winter with the family in which the first cases of leprosy appeared in the following summer. The disease was in existence for upwards of thirty years before identified as such. A hospital was founded and four years thereafter it was burned by the lepers themselves, and the people treated the discovery of the disease in their midst with the utmost indifference. The present building equipped after the manner of a modern hospital, was erected in 1896 by the federal government which assumes control over leprosy in Canada. There are now eighteen known cases of leprosy in Canada. Of these thirteen are probably traceable to the original infection, the remaining five being foreigners. Of these five, two, mother and son, were discovered in Nova Scotia, having come from the West Indies; Manitoba furnishes two, Icelanders by birth, and the fifth is a Doukhobor boy from the Northwest. In the treatment, prevention takes first place. Of therapeutic agents, Chaulmoogra oil is used internally and checks the acute symptoms; externally it is employed as a dressing and promotes the healing of leprous ulcers.

Journal of Medical Research, Boston

June

71 *Studies on Meningitis. W. J. Elser, and F. M. Huntoon, New York.

71. **Meningitis.**—The studies recorded at length in this article were carried out under the commission for the investigation of cerebrospinal meningitis appointed by the Board of Health of New York City in 1905. In view of the controversy then existing in regard to the characters of the meningococcus, it was deemed advisable to study a comparatively large number of strains. The results of this study indicate that while the meningococcus can not always be recognized positively on ordinary morphologic and cultural ground, yet its identification for practical purposes is quite easy; furthermore, that the cultural characters of different meningococcus strains are remarkably uniform; and for all that, the meningococcus may be differentiated from other Gram negative cocci by means of fermentation tests. Careful special investigation led the authors to conclude that the meningococcus is always Gram-negative, results to the contrary always, in all probability, being due to the admixture of different Gram-positive cocci. The highly variable agglutinability of different strains of meningococcus even by the same immune serum deprives agglutination of much diagnostic value. Nearly half of the meningococcus strains studied were found to be relatively inagglutinable. At the same time, the agglutinogenic power of the meningococcus also varies; in some cases immune serums were obtained that agglutinated homologous strains in dilution of 1 to 25,000. Agglutination tests revealed that there exists a group relationship between the meningococcus and the gonococcus. Serum from cases of epidemic meningitis may contain specific agglutinins in testing for which it is necessary to carry out control tests with normal serum. Unfortunately, the agglutinin is the only antibody for meningococcus that the authors studied.

In 210 cases of meningitis a bacteriologic examination of the spinal fluid during life established a positive diagnosis in 194 instances (92.4 per cent.). Gram-negative cocci not identical with meningococci were encountered, but rarely in the spinal fluid, and for practical purposes the detection in smears from this fluid of a Gram-negative coccus with the morphology and staining properties of the meningococcus is sufficient to establish a diagnosis, if the examination is made shortly after the fluid has been withdrawn, and if the cells present in the fluid indicate the existence of an acute meningitis. The diagnosis is further strengthened if the coccus is intracellular. In the case of Gram-negative cocci from the nasopharynx and other parts not connected with the central nervous system, all the different tests are necessary in order to reach a reliable conclusion.

As regards the mode of dissemination and origin of epidemic meningitis, Elser and Huntoon conclude that the meningococcus is transmitted directly from individual to individual. Authentic instances of so-called indirect transmission are not recorded and would not be in harmony with the great sensitiveness of the meningococcus to drying. Meningococcus carriers play the most important part in the spread of this disease, and in an epidemic their number exceeds the number of those actually sick with the disease. The occurrence of adult carriers and the fact that most individuals are naturally immune to meningococcus infection explains many of the peculiarities of the epidemics. Meningococci gain entrance by way of the respiratory passages, as indicated by their early appearance there. While the path followed by the meningococcus to the brain is not definitely traced, the evidence at hand appears to favor a hematogenous route, the localization taking place in the leptomeninx on account of a special affinity of the meningococcus for that structure. It appears that only one other bacterium may cause epidemics of cerebrospinal meningitis, viz., the encapsulated streptococcus of Bonome, which by many is regarded as a Streptococcus mucosus. The pneumococcus, on the other hand, does not cause true epidemics of meningitis.

Texas State Journal of Medicine, Fort Worth

June

72 The Doctor's Duty as a Public Educator. H. W. Cummings, Hearne, Tex.

Wisconsin Medical Journal, Milwaukee

June

73 *Open-Air Treatment of Pneumonia. A. J. Patek, Milwaukee.
74 Gonorrheal Endocarditis. H. Hanson, Milwaukee.
75 Indications for Extirpation of the Lachrymal Sac. S. E. Wright, Marinette.
76 Present Status of Medical Expert Testimony on Insanity. N. Smilie, Philadelphia.
77 Ophthalmia Neonatorum. S. R. Boyce, Madison.

73. Abstracted in The Journal, Aug. 22, 1908, p. 793.

University of Pennsylvania Medical Bulletin, Philadelphia

June

78 Relation of the Thyroid and Adrenals to Pancreatic Gylcosuria. C. H. Stone, Philadelphia.
79 *Experimental Production of Acute Toxic Ulcer of Stomach. M. E. Rehfuss, Philadelphia.
80 Transplantation of the Ureters into the Gastrointestinal Tract. C. R. Steinke, Philadelphia.
81 Etiology of Papilledema (Choked Disc). C. Coover, Philadelphia.
82 *Effect of Atoxyl on the Eye. B. W. Key, Philadelphia.
83 Moot Points in Diagnosis and Treatment of Ectopic Gestation. E. S. Sledge, Philadelphia.
84 The Parathyroid Glands. J. L. Herman and W. B. Harvey, Philadelphia.
85 Maternal Milk as an Immunizing Agent to the Nursling. L. T. de M. Sajous, Philadelphia.
86 Occurrence of Acetonuria Following Anesthesia. R. N. Hamblen, Philadelphia.
87 Removal of Gallstones Coincident to Other Abdominal and Pelvic Operations. A. F. Jackson, Philadelphia.

79. **Experimental Production of Gastric Ulcer of Stomach.**—Rehfuss found that marked intoxication is the most important factor in the production of ulcer, and is the guide for the dose of poison, no matter what poison is used, which shall be given with sufficient frequency to insure a result. The dose must also vary with the weight of the animal. Observing such conditions, he was able to produce ulcer in 35 out of 41 animals injected with venom alone, or in a little over 85 per cent. of the cases. This ulcer seemed independent of agony, but usually was worse in direct proportion to the degree of intoxication manifested by the animal. The same underlying cause existed in all these cases, inasmuch as the ulceration and hemorrhage differed only quantitatively. The only factor which seemed essential was the condition of "marked intoxication." Rehfuss, therefore, tried various substances, poisonous in nature, injecting with sufficient frequency to secure such an effect for several hours always with the same result.

For the purpose of determining whether digestion or hemorrhage is the primary factor, he introduced 14 c.c. of a 4 per cent. solution of sodium bicarbonate into the stomach tube. Later, to bar out the effect of the passage of this fluid into the duodenum, two injections of 10 c.c. each were given, one hour apart. He found that alkali inhibits and in the great majority of cases actually prevents the formation of ulcer. Thus, in thirty animals so injected, only six gave ulcer—about 20 per cent.—and in four cases these ulcers were single. In the controls, 20 animals placed under similar conditions, over 80 per cent. developed ulcer, and in the majority of these the ulcers were multiple; a 2 per cent. sodium bicarbonate solution was not so efficacious, and failed to exhibit the same control over the lesions, although it seemed to inhibit their formation. These experiments make it highly probable that digestion is the primary step in the formation of these ulcers. As to the cause of primary digestion, his experiments do not permit him to make any definite statement. He is inclined to believe that the process is due to malnutrition of certain areas of the gastric mucosa, and that this malnutrition is brought about by the slowing of the circulation. The fact that animals which are in a state of collapse are especially liable to ulcer also would favor this interpretation. In other instances, injurious substances may pass directly from the capillaries into the surrounding mucosa, lead to interference with the vital processes of these cells, and thus lower their resistance to peptic digestion.

82. **Effect of Atoxyl in the Eye.**—Key concludes that atoxyl no doubt is of distinct therapeutic value, but that it has a treacherous toxic action in the organism. The most interesting and prominent effect of its toxic action is manifested by the production of amblyopia, the result of optic nerve atrophy, with primary involvement of the retina, though in certain cases central lesions, shown experimentally and apparent clinically, are very suggestive.

Atlanta Journal-Record of Medicine

June

88 Mouth and Tongue Disease. M. B. Hutchins, Atlanta.
89 Vaccines in Diagnosis and Treatment of Tuberculosis. E. C. Thrash, Atlanta.
90 Address of Welcome to the Medical Association of Georgia. T. E. Ryals, Macon.
91 Treatment of Typhoid. J. B. Baird, Atlanta.
92 Tuberculosis. J. E. Summerfield, Atlanta.
93 Celiac Parotitis. H. J. Williams, Macon, Ga.
94 Squint and the Importance of its Early Correction. H. M. Lokey, Atlanta.

Journal of Cutaneous Diseases, New York

June

95 Case of Systemic Actinomycosis. H. R. Varney, Detroit.
96 Multiple Dactylitis, Syphilitica (Phalangitis Heredo-Sphyilitica, Hochsinger) in an Infant. H. G. Klotz, New York.
97 Pemphigus—Death in Collapse. H. G. Klotz, New York.
98 Fulguration—The Local Application of a Current of High-Frequency by Means of a Pointed Metallic Electrode—Its Use in Dermatology. G. M. MacKee, New York.

Annals of Surgery, Philadelphia

June

99 *Surgical Treatment of Locomotor Ataxia. Le G. N. Denslow, New York.
100 Traumatic Asphyxia. D. L. Despard, Philadelphia.
101 Stasis Cyanosis Following an Epileptic Seizure, Simulating Traumatic Asphyxia. E. G. Alexander, Philadelphia.
102 *Ligation of the External Carotids. A. L. Fisk, New York.
103 Cystitis and Ulceration of Bladder in Women. J. B. Shober, Philadelphia.
104 *Tuberculosis of the Bladder. G. MacGowan, Los Angeles, Cal.
105 *Surgical Treatment of Tuberculosis of the Epididymis and Testicle. C. G. Cumston, Boston.
106 Removal of Gauze Sponge from the Scrotum, Two and One-half Years After Operation for Double Inguinal Hernia. H. L. Kretschmer, Chicago.
107 Bone Transference. E. A. Codman, Boston.
108 Report of Saturday Surgical Clinics for Students. J. B. Deaver, Philadelphia.
109 The Volunteer Military Surgeon. W. G. LeBoutillier, New York.

99. **Locomotor Ataxia.**—Denslow insists that there has been much misconception as to the claims made by him regarding his treatment for tabes. He says any permanent pathologic changes that may have taken place in the spinal column or other portions of the nervous system are, of course, irreparable, and in that sense a cure is out of the question; but where a train of symptoms is undoubtedly due to a continued irritation of these lesions, and this irritation is stopped by removal of the causal peripheral irritation to the extent of relieving the patient permanently of the train of symptoms, such as pain, incontinence of urine and feces, balance, gait and sensations restored, it would seem as if, so far as the patient is concerned, he has obtained what he sought—relief from his troubles. Practically, he is cured; pathologically, he is not. He reports a further series of cases, 17 in number, which came to him during October, November, and December, 1908. Of the eight cases sent to him by Dr. Starr, the good results of seven of which were verified by Drs. Starr and Cunningham, six are doing well, all being able to work and attend to their usual vocations; one has never reported, and one has been lost sight of. He is more firmly convinced than ever that his conclusions previously stated are correct.

102. **Ligation of External Carotids.**—Fisk reports four cases of ligation of the external carotids for cancerous disease of the neck and face, and concludes from his experience and a review of the literature that ligation of the external carotid more thoroughly controls the hemorrhage than does ligation of the common carotid; that there is less probability of secondary hemorrhage, and that there is no fear of brain complications. He considers such ligation a safe and wise procedure in operations on the neck and face.

104. **Tuberculosis of the Bladder.**—MacGowan reports three cases of mushroom-like growths obstructing the outlet of the bladder, and springing up on a tuberculous focus. He discusses, in general, the treatment of tuberculosis of the urinary

tract. The cardinal indications are: (1) Estimation of damage already done; (2) relief of pain and hemorrhage; (3) lessening of urinary frequency; (4) prevention of progress. In no case should dependence be placed on local treatment alone, but use must be made of constitutional remedies, urinary antiseptics and analgetics. The happy effects of iodin are often as noticeable in securing the cure of localized tuberculous lesions as they are in syphilis. The cautious use of mercury by the mouth, by inunction of colloidal mercurial ointment, or by intramuscular injections of the salicylate is of assistance. Urinary antiseptics are valuable in combating bacteriuria, but their dose must be regulated to avoid irritation. Of analgetics, morphin should be avoided as long as possible; codein, in full doses, coal-tar preparations and crystallized hyoscyamin are of value. Methylene blue certainly has a calmative influence on the cystospasm. Suppositories are useful. Instillation of small quantities of corrosive sublimate in the bladder (Guyon's method) have given MacGowan excellent results, the first two weeks demonstrating if they will be of any use. MacGowan has seen many striking illustrations of the harmfulness of tuberculin in too great and too frequent injections, but he can not praise too highly its value when used intelligently as an aid in effecting a cure. He differs with many who deprecate surgical interference in vesical tuberculosis.

105. Published in the *Clinical Journal*, London, Feb. 17, 1909.

Journal Missouri State Medical Association, St. Louis

June

110 The State's Duty in the Conservation of Public Health. G. McConnell, St. Louis.
111 The Ocular Reaction to Tuberculin. A. W. McAlester, Jr., Kansas City.
112 Suggestive Form of Government Control of the Public Health. J. H. Morroway, Ridgeway, Mo.
113 Care of the Breasts and Nipples During Pregnancy and the Puerperium. P. H. Swahlen, St. Louis.
114 Tinea Sycosis. T. F. Lockwood, Butler.
115 Acute Inflammation of the Mucous Membranes of the Upper Air Passages. W. K. Statler, Oakridge.
116 Importance of Early Attention in all Cases of Rectal Disease. J. C. Miuor, Chillicothe.
117 Our County Medical Society. J. W. Clark. Joplin.

American Journal of Surgery, Philadelphia

June

118 Acute Pancreatitis: Symptoms and Treatment. J. F. Erdmann, New York.
119 Electrotherapeutics in Diseases of the Genitourinary Tract. F. H. Bermingham, Brooklyn, N. Y.
120 Conservative Treatment of Tuberculous Joints. H. A. Pingree, Portland, Me.
121 Operative Treatment of Saphenous Insufficiency. J. S. Lewis, New York.
122 Treatment of Talipes Equinus Varus by Plaster-of-Paris. E. L. Barnett, New York.
123 Practical Deductions Regarding Weak Foot. C. R. Keppler, New York.
124 *The Versatile Omentum. F. A. Dunsmoor, Minneapolis.
125 Case of Congenital Sacral Tumor. W. F. Campbell, New York.
126 Surgical Treatment of Epilepsy. G. F. Shiels, New York.

124. Abstracted in THE JOURNAL, Jan. 30, 1909, p. 415.

Journal of the Michigan State Medical Society, Detroit

June

127 Burns of the Eye and its Appendages. V. A. Chapman, Muskegon.
128 Recurrent Vomiting of Children. H. M. Rich, Detroit.
129 *Etiology and Pathology of the Toxemias of Pregnancy. W. H. Morley, Detroit.
130 *Toxemias of Pregnancy—Diagnosis and Treatment. H. E. Randall, Lapeer, Mich.
131 Toxemias of Pregnancy—Eclampsia. E. Elliott, Chesaning.
132 Comforts and Minor Necessities in Management of Obstetric Cases. C. H. Judd, Detroit.
133 An Interesting Brain Injury. H. B. Garner, Traverse City.

129 and 130. Abstracted in THE JOURNAL, Aug. 29, 1908, p. 787.

Long Island Medical Journal, Brooklyn

June

134 Organized Campaign against Tuberculosis. L. Farrand, New York.
135 What the City is Doing and Proposes to do with the Tuberculosis Problem. R. W. Hebberd, New York.
136 Tuberculosis Work in the Borough of Brooklyn. J. Jenkins, Brooklyn.
137 Treatment of Ectopic Gestation in its Early Stages. H. C. Keenan, Brooklyn.
138 *When shall Gastric Ulcer be Treated Surgically? R. W. Westbrook, Brooklyn.

138. **When Shall Gastric Ulcer be Treated Surgically?**—Westbrook answers this query as follows: In cases in which the symptoms and physical signs point to retention of food contents due to pyloric obstruction, dilatation of the stomach, hour-glass contraction, adhesions, etc.; in cases of perforation; in cases of severe hemorrhage; in cases of recurring hemorrhages, which produce secondary anemia; in cases which culminate in hemorrhage after dyspeptic symptoms over a long period; in chronic ulcer which resists medical cure for a period of two to four months. All the early uncomplicated cases of ulcer may be considered to be amenable to medical treatment.

The Journal of the Kansas Medical Society, Kansas City

June

139 Post-Diphtheritic Complications and Their Prophylactic Treatment. L. W. Shannon, Hiawatha, Kan.
140 Puerperal Eclampsia. J. H. Langworthy, Leavenworth, Kan.
141 Uterine Hemorrhage with Reference to the Menopause and Uterine Cancer. J. C. Shaw, Holton, Kan.
142 Case of Gastric Ulcer; Gastrojejunostomy. R. B. Gibb, Pittsburg, Kan.

Journal Medical Society of New Jersey, Orange

June

143 The Pancreas as a Possible Field for Surgery. E. M. Foote, New York.
144 The Cancer Problem in New Jersey. J. A. McGlinn, Philadelphia.
145 Needs of the Medical Profession in Essex County. W. P. Eagleton, Newark.
146 The Physician in Politics. W. E. Ramsay, Perth Amboy.
147 The Meddlesome Doctor. J. W. Bradshaw, Orange.

Therapeutic Gazette, Detroit

June

148 *Prevention of Tropical Abscess of the Liver by Treatment of the Presuppurative Stage with Ipecacuanha. L. Rogers, Calcutta, India.
149 *Use of the Oil of Cloves (Oleum Caryophylli) in Pulmonary Tuberculosis. H. R. M. Landis and H. J. Hartz, Philadelphia.
150 *Apomorphin as a Hypnotic. C. J. Douglas, Dorchester, Mass.
151 Facts as to Chloroform and Delayed Chloroform Poisoning. T. S. Githens, Philadelphia.
152 Cuguillere's Serum in Bone Tuberculosis. C. H. Muschlitz, Philadelphia.

148. **Prevention of Tropical Abscess of Liver.**—Rogers has found ipecac of great value in the treatment of the hepatic complications of amebic dysentery—preventing suppuration if given in the presuppurative stage and preventing recurrences if given after surgical treatment. For the last three years it has been usual to continue full doses of 20 to 30 grains once a day for one or two weeks after the temperature fell to normal, and in smaller doses for some time longer in the more acute cases. Full doses are required, and as much as 60 grains at a time have been administered. However, full effects can be obtained with half that amount, while in feeble patients or women 20 grains will usually suffice. In one case only 5 grain doses were given by mistake, and a very acute hepatitis subsided completely, although much more slowly than is usual under fuller doses in other cases. The usual method is to give it as a powder twenty minutes after a dose of tincture of opium, or better, 20 grains of chloral hydrate, no food or drink being given for several hours before and after, the patient being kept as quiet as possible and instructed to try not to vomit. A method used with success in the Philippine Islands, and also recently in Calcutta, is to make fresh 5-grain pills of ipecacuanha, and brush them over with a thick coating of melted salol, which does not readily dissolve in the stomach. Rogers' plan is to put up the powdered drug in 5-grain doses in keratinized capsules, which do not dissolve in the stomach, but carry the drug into the bowel, where its action is required. This method has done much to get over the objections to the treatment.

149. **Oil of Cloves in Pulmonary Tuberculosis.**—Of the fifty cases in which Landis and Hartz employed oil of cloves, thirty had a severe cough and expectorated large quantities of sputum, while in the remaining twenty the amount of sputum was slight and the cough for the most part was unproductive. Twenty-four of the thirty patients with large amounts of sputum were distinctly benefited. Those with an unproductive cough were not helped, and as a rule were made worse by the drug. Given internally, the oil of cloves may be administered in the dose of from 3 to 5 minims in half a glass of milk or in capsules. The following combination gave the best results:

℞	gm. or c.c.	
Olei caryophylli		
Syrupi senegæ, āā	8	fl.ʒij
Extracti glycyrrhizæ	45	fl.℥iss
Aquæ destillatæ, q. s. ad	90	fl.℥iij

M. Sig.: Teaspoonful three times daily after meals.

While the relief given to the cough might be attributed to the anesthetic action of the drug in the upper air passages, it is to be noted that the same effect is produced when the drug is given hypodermically. Furthermore, an irritating cough unattended with much sputum, instead of being improved, seems to be made worse. The abatement of the cough is probably simply secondary to the diminution in the quantity of sputum, which requires less effort for its removal. Inasmuch as no ill effects follow the diminished secretion of oil of cloves probably has an inhibitory action on the secreting membrane of the cavities rather than causing a locking up of the material, as does opium.

150. **Apomorphin as a Hypnotic.**—Douglas again calls attention to the usefulness of apomorphin as a hypnotic when given hypodermically in 1/30 of a grain dose, although this is not a fixed amount. Individual susceptibility to the action of apomorphin varies somewhat. If it is desired to avoid nausea the dose must be as near to the emetic dose as possible without quite reaching it. If it is a little too small it produces no effect whatever, even if repeatedly administered every thirty minutes, as it has no cumulative action. On the other hand, if the dose is a little too large it produces emesis.

Buffalo Medical Journal

June

153 The Next Twenty-Five Years in Surgery. R. Park, Buffalo.
154 Radical Operation for Cure of Incipient Hip-Joint Disease. H. C. Rooth, Buffalo.
155 The International Congress of Surgeons, 1908. E. R. McGuire, Buffalo.
156 Effect of High-Frequency Currents on Blood Pressure, Demonstration of the D'Arsonval Cage. W. L. Conklin, Dansville, N. Y.
157 Blastomycosis in New York State. H. C. Baum, Syracuse, N. Y.

The Ohio State Medical Journal, Columbus

June 15

158 Colopexy and Other Surgical Procedures Indicated in Treatment of Constipation (Obstipation) Due to Intestinal Ptosis. S. G. Gant, New York City.
159 Isoagglutinins and Isohemolysins. W. M. Moss, Baltimore.
160 The Danger of Infection in Tuberculosis from Bovine Sources, with Special Reference to the Situation in Ohio. A. B. Smith, Wilmington.
161 Ectopic Gestation. F. T. Marr, Chillicothe.
162 Serous or Posterior Basic Meningitis; Its Early Recognition and Treatment. J. P. West, Bellaire.
163 Extirpation of Lachrymal Sac—Indications for and Technic of Operation. C. S. Means, Columbus.
164 Bacteriology of the Conjunctiva. E. M. Weaver, Akron.

Northwest Medicine, Seattle

June

165 Treatment of Acute and Chronic Inflammation with Hyperemia. E. O. Jones, Seattle, Wash.
166 Diagnosis of Incipient Pulmonary Tuberculosis. H. M. Page, Freewater, Ore.
167 Accidental Hemorrhage. R. J. O'Shea, Seattle, Wash.
168 Present Status of the *Spirochæta Pallida*. A. M. MacWhinnie, Seattle, Wash.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

June 19

1 Prominent Motive in Murder. T. C. Shaw.
2 *Theories as to Mode of Production of Grocco's Paravertebral Triangle of Dulness. W. Ewart.
3 Pancreatic Glycosuria Ten Years After Typhoid. P. J. Cammidge.
4 Relation of Acidosis to the Carbon Dioxid of the Blood in Diabetic Coma. A. P. Beddard, M. S. Pembrey and E. I. Spriggs.
5 The Operation of Cardiolysis. F. J. Poynton and W. Trotter.
6 Proposed International Standard for the Physiologic Assay of the Heart Tonics of the Digitalis Series. E. M. Houghton.
7 Rupture of the Spleen; Removal; Recovery. T. S. Lukis.
8 *Treatment of Chronic Suppuration of the Maxillary Antrum: An Operation and New Instruments. J. Donelan.
9 Aphasia Succeeded by Jacksonian Epilepsy; Operation; Recovery. W. Alexander.
10 *Catalepsy Occurring in a Boy Aged 15. D. E. Core.
11 *Removal of Superfluous Hairs by Improved Methods. A. H. Pirie.
12 *Simple Method of Diagnosis in Paralysis of the Extrinsic Muscle of the Eye A. MacNab.

2. **Grocco's Paravertebral Triangle of Dulness.**—A principle of fundamental importance to clinicians in their study of intrapleural events is the fact that a lung laterally compressed by fluid retreats into the spinal groove by virtue of the posterior position of the pulmonary root above, and of the attachment below of the posterior edge of the lung by means of the ligamentum latum pulmonis. Ewart believes that this recession and this attachment govern in effusion the persistence of the spinal and vertebral resonance for some distance below the upper level of the fluid, and the production of the S-shaped outline of dulness of Damoiseau. He concludes, therefore, that Grocco's paravertebral thoracic triangle of dulness, due to fluid free in the pleura, is rectilinear, not curved; and in other respects also it agrees with the description of it given by Grocco. It is also produced by fluid collections in the abdomen; its base is then broader than in pleural cases. In the latter, neither its width nor its shape vary appreciably, but only its height; this rises exactly to the level reached by the effusion itself. In bilateral cases of pleural effusion a Grocco's triangle can be made out on both sides, in spite of the dulnesses due to the two effusions. As the effusions are seldom quite equal, two unequal Grocco's triangles are the rule.: In ascites and analogous abdominal cases the rule is for the two triangles to be equal; they therefore make up together a low but wide equilateral triangle bisected by the spine. The simultaneous occurrence of a right and of a left Grocco's triangle is incompatible with the alleged causation by pleural bulging across the vertebral column. The same reasoning applies to the theory that a pendulum displacement of the intrathoracic viscera across the middle line might explain the dulness. Anatomic probabilities are against any possible shifting of a collapsed pulmonary base away from its own vertebral growth. The assumption that a Grocco's triangle is produced directly by any fluid or other non-resonant substance immediately underlying it is negatived by the circumstance that the general outline of the triangle is always geometrically the same and is not contingent on the innumerable variations in size and shape which belong to fluid collections or to solidifications. This is an argument in favor of the causation suggested under the name of the pleximetric spine theory. The same view is supported by the results of the crucial test and counter test, which also afford proof of the genuineness of this clinical sign and of its helpfulness in the diagnosis of pleural and abdominal conditions.

8. **Chronic Suppuration of Maxillary Antrum.**—Donelan says that the important thing in chronic antral suppuration is to operate as early as possible by a sufficient removal of the middle or posterior part of the external nasal wall, and not to allow such cases to drift on to formation of nasal polypi and polypoid degeneration of the antral mucous membrane which may demand the much more severe and sometimes disfiguring radical operation.

10. **Catalepsy.**—A boy with previous history negative, had three fits in six weeks. The boy would first become very stiff for a short time and then jerk himself about, but he had never fallen, as there had always been time to recognize what was about to happen and to get the boy into a chair. There had not been any passing of urine in these attacks, neither had he ever bitten his tongue. There was no history of fits of any kind in any other member of the family. The last attack occurred about two weeks before the patient was first seen, and was apparently followed by a state of stupor, in which the boy would not feed himself, and had to be made to pass his urine. Otherwise he had been in a condition of blankness. When first seen by Core, the boy was in an absolutely passive condition. He allowed his limbs to be put into any position and made no attempt either to resist or to alter their attitude. He was, however, alive to painful stimuli, and resented pin-pricks by frowning and finally by turning his body away from the stimulus. The only muscles which were active were those of the eyes; these were moved voluntarily, and the patient watched proceedings with interest. The general condition was very good, the boy being well grown, and with remarkably well-developed muscles.

Shortly after his admission he would not swallow what was put into his mouth and nasal feeding had to be instituted. After the first meal given in this way, he took his food perfectly well if it was placed in his mouth. On the eighth day he developed a very slight but definite squint, the left internal rectus apparently being at fault. This, after varying from day to day, disappeared within a week of its appearance. The boy was treated with galvanism and massage, and although at the time of application he seemed to improve, he remained in the state described for over sixteen weeks. During this time he never, apart from electric stimulation, made a single voluntary movement. He lay on his back staring at the ceiling and generally soaked in urine. While being galvanized he turned himself about in order to evade the battery, and on several occasions shouted out, but as soon as the current was taken off he relapsed into his former state. Some ten weeks after his admission contractures of the fingers made their appearance, and any effort to extend them met with the most violent resistance. This was followed by flexion of the legs on the thighs, and of the thighs on the trunk, but the mental condition remained just as it was, and the limbs when straightened could be molded in the same way as when he was first seen. Sixteen weeks after his admission the boy was suddenly heard singing in the night, and shortly after he spoke a few words apart from electric stimulation. From this time he recovered rapidly, but for some time he was unable to feed himself and to speak; his muscles were in their original state of waxy flexibility. Thus after having been given a plate of rice and a spoon he would sit and stare at the food without making the least attempt to eat it. Then when some was lifted into his mouth he would start feeding himself and would continue to raise the spoon to his mouth long after the plate was empty. When told to stop he would obey slowly. If he was questioned, he would at first make no effort to answer, neither would he look at the questioner, but after a long pause he would reply in a peculiar monotonous tone. This transition state passed off rapidly, and the boy assumed what was probably his normal condition. This was one of irritating stupidity, mingled with a low degree of cunning. The temperature through the whole period of his stay in the hospital was normal. There was never any albuminuria. There were no signs of any cerebral trouble, and a diagnosis of hysteria was made. This was confirmed by the appearances of the contractures. A diagnosis discussed was one of postepileptic stupor, but the length of time which had elapsed between the last fit and his admission, fourteen days, put this out of the question. Then, again, the fits were not perfectly typical of epilepsy. Of the many hysterical manifestations the case conformed most closely to that known as catalepsy.

11. **Removal of Superfluous Hairs.**—The essentials for obtaining good results in Pirie's operation are: (1) Connect the needle to the negative pole; (2) use a fine stiff wire as a needle (the wire supplied with the finest hypodermic needle is a suitable one); and (3) insulate the wire so that only the last one-sixteenth of an inch supplies the current. The advantages of this method are two—(1) no scarring after the operation; and (2) a lower percentage of re-growth of hairs.

12. **Paralysis of the Extrinsic Muscles of the Eye.**—MacNab's method, briefly stated, is as follows:

1. A muscle is paralyzed when a diplopia occurs in one part of the field of vision or when there is diplopia over the whole field and the separation of the images increases in one direction.

2. The direction in which the diplopia is greatest indicates the direction of action of the affected muscle.

3. The image projected further in the direction of greatest diplopia is formed by the affected eye. When the candle is moved in the direction in which the diplopia increases, the image which moves most rapidly in that direction is the one formed by the affected eye.

4. The separation of images is greatest when the eye is looking along the line of the tendon of the affected muscle or when this object is opposite the end of the affected tendon.

British Medical Journal, London

June 19

13 *Radioactivity and Carcinoma. W. S. Lazarus-Barlow.
14 Red Degeneration of Uterine Fibroids Complicating Pregnancy. J. Bland-Sutton.
15 *Spontaneous Rupture of Cyst-Adenomatous Ovarian Tumors. H. Briggs.
16 Incidence of Gonorrhea in Gynecologic Hospital Practice. F. Ivens.
17 Cesarean Hysterectomy in Pregnancy Complicated by Myoma Uteri. J. B. Hellier.
18 *Hysterectomy for Puerperal Infection. A. K. Gordon.
19 Clean Midwifery in General Practice. A. H. Gregson.
20 Primary Epididymitis in Mumps. J. J. Waddelow.
21 Treatment of Boils and Carbuncles. A. O. Ward.
22 Tetanus Following Surgical Operations. J. I. Jaffé.
23 Poisoning by Bismuth Subnitrate Injected into a Knee-joint. A. Don.

13. **Radioactivity and Carcinoma.**—Lazarus-Barlow has found that certain tissues of the human body show skotographic action (liver, kidney), while others do not (spleen, lung); that a larger amount of this property resides in female tissues that possess it than in male of the same kind; that the amount present in the liver increases from infancy to the age of 55 years, with an unexplained drop in both sexes during the age period 35 to 45, and that after 55, while it increases still further in the case of males, in females it undergoes a sharp diminution. He has shown that carcinomatous material possesses skotographic power, whether it be primary or secondary, and that female carcinomatous tissue has a higher skotographic value than male, and that the existence of a mass of carcinoma in a tissue modifies its normal skotographic value. He has also found that certain substances commonly supposed to be casually related to carcinoma possess the skotographic power to a high degree (cholesterin gallstone), while others are devoid of it (pipe clay, paraffin). Lazarus-Barlow has endeavored to throw some light on the nature of the skotographic action manifested by animal tissues and certain other substances, comparing their behavior with that of woods in which the action has been regarded as dependent on the formation of hydrogen peroxid and with that of recognized radioactive substances. On this point he has adduced evidence showing that the animal tissues and other substances under examination can not, so far as their action on a photographic plate in the dark is concerned, be grouped conclusively with the recognized radioactive substances or segregated into a class such as that formed by the woods, and believed by Russell to affect a photographic plate in the dark by means of a purely chemical action. They occupy an intermediate position and have affinities with the woods on the one hand, and with the recognized radioactive substance on the other.

15. **Cystadenoma of Ovary.**—Briggs records four cases which show that in non-malignant cyst adenomata the clinical manifestations are those of: (a) Tumor degeneration: (1) Impairment of health disproportionate to the size of the tumor; (2) abdominal pain; (3) variable distention of the abdomen; (4) irritability of the bladder; (5) irregular menstruation subject to the usual modifications of pregnancy, lactation and the climacteric. (b) Rupture of the cyst, acute pain, recurrent pain, vomiting, the accumulation at a variable rate of free fluid in the abdomen. The diagnosis of cyst rupture by free intraperitoneal fluid can only be (1) positive, when the partially filled cyst can be felt or when the previously firm cyst has completely collapsed; (2) presumptive, when the clinical manifestations of degeneration and rupture have been obtained; and (3) occasionally and exceptionally, when the free fluid is small in quantity and the rupture minute, both may escape detection before and during the operation of ovariotomy.

18. **Hysterectomy for Puerperal Infection.**—In a series of 250 cases of the more severe type of puerperal fever, Gordon has only attempted the operation once with a good prospect of success in the following case, though he has removed the uterus unsuccessfully in 5 other cases (twice by the vagina and three times abdominally) as a last resort and at the urgent solicitation of the relatives or of the medical attendant. As a rule, the patient is either in a condition of general septicemia with streptococci in the circulating blood when she arrives at the isolation hospital, or if the lesion is well localized, reacts to vigorous disinfection of the uterus. In the case reported the infection followed the removal of an adherent placenta by one who had no facilities for proper asepsis. Having determined by blood cultures that there was no general bacillary infection, and that it would probably not be possible adequately to disinfect the uterus by local palliative treatment, Gordon

amputated the uterus at the level of the internal os, leaving both ovaries and covering the stump with peritoneum in the usual manner. A rubber tube was placed in the remains of the cervix, and the peritoneal cavity closed without drainage. After the effects of the ether had passed off, the patient was propped up in the sitting position and three pints of saline solution given subcutaneously. The woman made a slow but complete recovery.

Medical Press and Circular, London

June 2

24 Clinical Forms of Arteriosclerosis. H. Huchard.
25 Essentials of Physiologic History. D. F. Harris.
26 Experiment to Determine the Value of Colored Underclothing for Soldiers. J. M. Phalen and H. J. Nichols.
27 Suprapubic Prostatectomy. G. P. Newbolt.

June 9

28 Extraction and Cutting of the Roots of the Trigeminal Nerve as an Operation Substituting the Extirpation of the Gasserian Ganglion. J. Dollinger.
29 Essentials of Physiologic History. D. F. Harris.
30 Eye Strain (Asthenopia). G. A. Berry.
31 High-Frequency Cytolysis and Fulguration of Cancer. J. A. Riviere.
32 Recent Researches on the Function of the Non-Auditory Ear. R. H. Woods.

Clinical Journal, London

June 2

33 Cancer of the Gall Bladder and Bile Ducts. J. Bland-Sutton.
34 Syphilis. H. Cripps.
35 Demonstration of Cases of Nervous Disease by the Cinematograph. W. Harris.

June 9

36 Use of the Cystoscope. E. S. Bishop.
37 Results of Recent Research on Certain Diseases. F. M. Sandwith.
38 Diagnosis of Malignant Disease by Estimating the Antitryptic Power of Cancerous Serums. E. C. Hort.

Glasgow Medical Journal

May

39 Report of Cases Illustrating Some of the Difficulties in the Diagnosis of Abdominal Disease. A. E. Maylard.
40 *"Puna" or "Soroche." J. W. Allan.
41 Macrostoma, Associated with Cleft of Soft Palate. G. H. Edington.
42 Dermatitis Repens. J. W. Nicol.
43 *Treatment of Phthisis by Intravenous Injection of Iodoform. J. Bain.
44 Rheumatoid Arthritis. W. F. Somerville.

40. **Puna.**—Allan describes a disease not uncommon in the mountainous countries of South America, the effect of diminished atmospheric pressure on the human organism. It is called by the various names of puna, soroche, mareo and veta. He gives an account of it received from a layman of advanced middle life who was attacked by it in the mountains of Bolivia. The symptoms were great depression and sickness, vomiting, gasping for breath, and later, bleeding, formation of mucus or phlegm in the throat, mixed with blood, the throat being dry and painful. It gets worse instead of better on going to bed. Many persons in Oruro, a mining town in the mountains of Bolivia, have died from it. It frequently attacks individuals suddenly. The narrator improved sensibly while coming down on the railway from Oruro. The author's other informant had never had the disease, but had seen many cases, the course of which he describes much as the other man had done. He is of opinion that puna does not depend alone on the elevation, but that the cold wind has much to do with it. He is further of opinion that some persons bring the condition on themselves by nervous apprehension.

43. **Iodoform Injection in Phthisis.**—Bain points out that the sanatorium, as at present constituted, is for those who can afford to pay a minimum fee, and for the very indigent who come with cognizance of the inspector of poor. The great majority of the working classes, however, are excluded, and he records in more or less detail six cases from this class to show what can be done for working people, in their own homes and under very unpromising surroundings, by intravenous injections of iodoform. The solution used is that of Dewar, as follows: Liquid paraffin, 40 per cent., anesthetic ether to 2 ounces. In every 20 minims dissolve one grain of iodoform; thus 10 minims contain ½ gr. of the drug. The mode of administration was detailed in an abstract of Dewar's article (*British Medical Journal*, Jan. 14, 1905) in The Journal, Feb. 11, 1905. The amount of iodoform which Bain's patients all received was, on an average, ½ grain every second day, and, toward the end of treatment, every third day, except at the first injection, when it is advisable only to give ¼ grain, or 5 minims of the ethereal solution of the drug, to see how the patient is going to stand it. On the day following an injection of 15 minims, the patient sometimes complains of severe headache and aching all over the body, particularly in the lumbar region, which might lead one to suspect the onset of influenza, but these symptoms clear up in 24 hours. These cases are at present undergoing the test of time, and one can not yet say that the cure will be permanent. However, if one were to judge by the look of robust health on the faces of these patients, and their own statements that their health has never been better, one would be inclined to say that they will never again be troubled with pulmonary tuberculosis.

Annals of Tropical Medicine, London

May

45 Nomenclature of Mammalian Trypanosomes Observed in Northwestern Rhodesia. R. E. Montgomery and A. Kinghorn.
46 Experiments on Combined Atoxyl-Mercury Treatment in Monkeys Infected with Trypanosoma Gambiense. A. Breinl.
47 *Drugs from the Congo. P. H. Marsden.
48 Gregarine Parasitic in the Dog Flea, *Ctenocephalus Sorraticeps*. E. H. Ross.
49 Action of Aryl-Stibinic Acids in Experimental Trypanosomiasis. A. Breinl and M. Nierenstein.
50 *Mechanism of Hemolysis in Piroplasmosis Canis. A. Breinl and H. E. Annett.
51 Gland Puncture in the Diagnosis of Animal Trypanosomiasis. R. E. Montgomery and A. Kinghorn.
52 Observations on the Hooklets of *Cysticercus Cellulosæ* in Man. J. W. W. Stephens.

47. **Drugs from the Congo.**—Marsden follows up a previous study of native African remedies with a macroscopic and microscopic description of mouindu. No mention is made of its clinical uses.

50. **Piroplasmosis Canis.**—Breinl and Annett describe researches on dogs which tend to prove that the hemolysis and the hemoglobinuria in infections with *Piroplasma canis* is due neither to an isolysin nor to an autolysin, but apparently only to a disintegration of red blood corpuscles after the escape of the parasites from them.

Dublin Journal of Medical Science

June

53 Physical Deterioration and a Remedy. J. B. Story.
54 The General Anesthetic Bill, 1908. T. P. C. Kirkpatrick.
55 *Grocco's Paravertebral Triangle of Dulness. T. G. Moorhead.

55. **Grocco's Paravertebral Triangle.**—According to Moorhead, this sign is found only in cases of pleural effusion, and is absent in pneumonia and pulmonary fibrosis. It is not present in all cases of pleural effusion. Moorhead found it in fourteen out of nineteen cases only. This is in agreement with the earlier observations of others, but most clinicians now maintain its invariable presence in effusion. He has not observed any difference varying with the side on which the effusion existed, though some maintain that the dulness is best marked when the effusion is on the right side. The sign, when present, is of great value; its absence is of less importance. If the sign has once been observed to be present its disappearance is of great value in distinguishing between thickened pleura and persistent effusion. Moorhead has never observed the dulness to extend above the fourth dorsal spine, even when the effusion filled the entire chest. He believes, moreover, that the reason for his finding is the fact that the easily movable mediastinal mesentery does not extend above the fourth dorsal spine. Above that level lies the superior mediastinum, in which the structures are less readily movable. This observation, therefore, is a further point in favor of the dulness being caused by mediastinal displacement.

Annales de Dermatologie et de Syphiligraphie, Paris

May, X, No. 5, pp. 289-351

56 Ringworm, and Connection between Ringworm and Trichophytons. (Sur les soi-disant godets produits par des trichophytons et de soi-disant trichophytons producteurs de godets.) R. Sabouraud.
57 Alterations of Tissues after Mercurial Injections. (Altérations déterminées par l'injection d'huile grise.) Pellier.
58 Case of Erythema Induratum, with Positive Tuberculin Reaction, Subsiding under Injections of Tuberculin. G. Thibierge and P. Gastinel.

Annales de l'Institut Pasteur, Paris

May, XXIII, No. 5, pp. 361-440

59 Action of Yoghurt Ferment on Sugars. (Action du ferment bulgare sur les principaux sucres.) G. Bertrand and F. Duchacek.
60 Whooping Cough Endotoxin. (Endotoxine coquelucheuse.) J. Bordet and O. Gengou.
61 Epizootic Lymphangitis in Horses. (Lymphangite épizootique des équidés au Sénégal.) A. Thiroux and L. Teppaz.
62 Treatment of Trypanosomiases in Horses with Orpiment. (Traitement des trypanosomiases chez les chevaux par l'orpiment seul ou associé à l'atoxyl.) Id.
63 Transmission to Young of Immunity to Rabies. (Etude de la transmission héréditaire de l'immunité antirabique.) P. Remlinger.

Archives Générales de Chirurgie, Paris

May, III, No. 5, pp. 441-550

64 *Ischemic Paralysis. (Paralysie ischémique de Volkmann.) R. Froelich. Commenced in No. 4.
65 Partial Nephrectomy in Treatment of Hydatid Cysts in the Kidney. V. Nicaise.
66 Tardy Deformity following Broken Leg. (Déformations tardives consécutives aux fractures du membre inférieur.) D. G. Zesas

64. **Ischemic Paralysis.**—Froelich reports eight cases, the trouble following compression from an apparatus applied for fracture of the bones of the arm or a tourniquet to arrest hemorrhage in the hand. His patients were between 3 and 11 years, and he does not know of any instance in which this form of paralysis occurred in adults. In treatment he applied an orthopedic appliance or made the tendons longer or the bones shorter. The latter operation is to be regarded as the preferable method for treatment in the majority of cases of ischemic paralysis. In one case of total suppurative myositis of the muscles of the forearm, he attempted to suture the extensor tendons to the triceps and the antagonist tendons to the biceps, but the tendons were found destroyed beyond relief. The details of the technic followed are described; the outcome was always satisfactory, but never absolutely perfect from the esthetic point of view.

Archives Générales de Médécine, Paris

May, CC, No. 5, pp.257-320

67 *Differential Diagnosis of Phlegmonous Angina and Diphtheria. H. Roger and J. Margarot.
68 Visual Disturbances and Lesions in the Fundus in General Paralysis. A. Rodiet and P. Pansier.

67. **Differentiation of Phlegmonous Angina and Diphtheria.**—Roger and Margarot have observed 2 cases of pseudophlegmonous angina of diphtheritic origin and have found 25 on record, with 5 fatalities. This form of diphtheritic sore throat is most common between the ages of 15 and 30; children seldom present it. In another case they encountered a phlegmonous angina which simulated true diphtheria, although of non-diphtheritic origin. In a certain number of cases in the literature the two affections were associated. Diphtheria antitoxin should be injected without waiting to ascertain whether the diphtheria bacilli are to be incriminated or not. In these cases, more than anywhere, the motto, "in case of doubt do nothing," must be systematically disregarded, and antitoxin used until the case clears up.

Grèce Médicale, Syra, Greece

May 15, XI, Nos. 9-10. Last indexed February 20, p. 668

69 *Malaria in Children. (Malaria infantile.) J. P. Cardamatis. Commenced in No. 8.

69. **Malaria in Children.**—Cardamatis reviews what has been reported on malaria in children, and adds his own experiences with 806 children under 5, 1,228 under 10 and 985 from 10 to 15 years old, out of a total of 8,600 malaria patients in his charge at Athens during the ten years ending 1904. Enlargement of the spleen was observed in from 2.87 to 50 per cent. of all the children. Infants less than a year old seem to display greater resistance to the disease, both against acquiring it and against its effects. Malarial cachexia occurred most frequently between the ages of 3 and 7; if children thus affected survive, they acquire durable immunity. The spleen is not always enlarged even in these severe cases, and the anemia is not always intense. Various types of the hematozoa were found combined in the blood in some cases. Gastrointestinal disturbances were the main complication of the malaria in the children, but the blood findings were negative in 92 cases of febrile diarrhea ascribed at first to a malarial origin. Malarial nephritis has scarcely ever been observed in a child, but epistaxis, purpura, vomiting of blood, cirrhosis, urticaria and ascites are frequent complications, as also convulsions and delirium. Bronchitis, pneumonia and other infections are not complications, but merely intercurrent diseases. Epidemics of malaria and whooping cough or measles sometimes coincided, but each disease ran its course independently of the other in the same child. Tuberculosis and typhoid fever were rarely observed in malarial children. In chronic malaria, quinin should be given for three months, even if the child has left the malarial region. The disinfection of the blood is the most important task in prophylaxis of malaria, as the children are responsible for the endemics in nearly every instance. Between the ages of 2 and 5 it is almost impossible to get them to take the quinin, although the new chocolate tablets have improved conditions in this respect. He advises a little quinin for the non-infected children as a prophylactic measure, about 0.2 gm. (3 grains) every day, for this age, in the endemic foci.

Lyon Chirurgical

May, I, No. 7, pp. 721-856

70 *The Parathyroids and Their Tumors. (Les glandules parathyroides et leurs tumeurs.) L. Bérard and H. Alamartine.
71 *Radical Operation for Femoral Hernia through Inguinal Region without Closure of Femoral Ring. (Cure radicale de la hernie crurale par la voie inguinale sans fermeture de l'anneau crural.) M. Vallas and E. Perrin.
72 *Lumbar Puncture in Injuries of the Head. (Traitement des accidents méningés lointains par évacuation de l'épanchement sanguin sousarachnoidien.) P. Savy.
73 Treatment of Ptosis by Transplantation of Tongue Flap from Tendon of Superior Rectus on the Tarsal Cartilage of the Paralyzed Lid. (Ptosis opéré par la méthode de Motais.) L. Dor.

70. **The Parathyroids and Their Tumors.**—Bérard and Alamartine have examined with the microscope the parathyroids in fifty adults from 19 to 75 years old, their report forming a good picture of what is known to date of the anatomy, physiology and pathology of the parathyroids. They found a single parathyroid in 1 case, two in 12, three in 11, and four in 6 cases, and report a case of tumor in one parathyroid. They summarize from the records 29 cases of parathyroid tumors. In 3 instances the growth was evidently malignant and metastasis proved fatal after removal of the primary tumor. In 24 cases the tumor was formed exclusively of parathyroid tissue, while in 5 there were islands of thyroid tissue. No clinical syndrome is yet known corresponding to overfunctioning of the parathyroids, but the rapid growth of a tumor in a parathyroid gland justifies the assumption of malignancy and indicates prompt removal. Makai reported 3 cases in 1907, Walther one last year and da Costa a similar one. Nearly two pages of bibliography and a dozen illustrations accompany the long article.

71. **Treatment of Femoral Hernia.**—Vallas and Perrin think that the main point in operating on a femoral hernia is to obliterate the sac high up. This is the only means to prevent relapse, and it can be best accomplished by obtaining access to the sac through the inguinal canal. This remedies the conditions causing the predisposition to hernia, while it does not weaken the femoral canal. The conditions in the femoral canal do not favor its permanent closure. They add to the five previously published, seven new cases in which this inguinal method of treating femoral hernia was successfully applied; the patients were between 20 and 40, all employed in laborious work which they were able to resume the day they left the hospital, without necessity for special precautions. The hernia recurred in two of the twelve cases, once in consequence of secondary local suppuration and once on account of an unusually difficult childbirth after an intervening year of health.

72. **Lumbar Puncture in Treatment of Trauma of the Skull.**—Savy reports the case of a woman of 43 who fell from a second story window; subconjunctival ecchymosis suggested the possibility of a fracture of the base of the skull, but no operation was attempted, as the patient rapidly recovered. Three months later weakness and stiffness of the legs with persistent headache and in the course of a few weeks other symptoms indicating a meningeal process developed, and the patient complained of pain along the sciatic nerves. Lumbar puncture allowed the escape of blackish blood, a drop at a time. Improvement followed the second and third lumbar

puncture, but the fourth brought neither fluid nor blood. About 40 c.c. in all of the bloody effusion was evacuated, and the symptoms gradually subsided to complete recovery by the end of a month. The long interval of latency, the possibility of evacuating the blood at this late date, the rapid improvement and final recovery, all emphasize the importance of lumbar puncture in case of injury to the skull. He thinks that the extravasated blood did not cause the symptoms so much by compression as by the toxic action of the decomposing blood. Consequently, he advises lumbar puncture, even if a long interval has elapsed since the primary trauma, in all cases of nervous disturbances possibly to be attributed to this cause.

Obstétrique, Paris

April, N. S., II, No. 4, pp. 241-311

74 Tubular Menstruation. (Recherches sur la menstruation tubaire.) F. Delporte.
75 *Serodiagnosis of Syphilis in Pregnant Women and New-Born Infants. (Recherches sur le sérodiagnostic de la syphilis chez la femme enceinte et l'enfant nouveau-né.) P. Bar and R. Daunay. Commenced in No. 3.
76 Spontaneous Healing of Rectovaginal Lacerations During Childbirth. (Guérison spontanée des déchirures recto-vaginales produites au cours de l'accouchement.) C. Jeannin.

75. **Seroreaction in Pregnant Women and New-Born Infants.**—This communication from the Tarnier maternity at Paris gives the findings of the Wassermann test with 57 infants and their mothers, with a number of controls. They seem to show that with florid syphilis in the mothers the serum reaction in the infants is less frequently positive than when the maternal syphilis is quiescent or merely probable or suspected. The reaction is inclined to be negative in infants whose syphilitic mothers have been thoroughly treated. Negative findings in the infant of a woman with florid syphilis do not authorize the assumption that it is free from syphilis: positive findings have the same significance as in the mother. At the same time, the writers state, partial or doubtful reactions are obtained frequently with infants whose mothers are free from syphilis beyond question. There seems to be some factor, besides syphilis, in the new-born which has a tendency to modify the reaction toward a positive result. This occurred in their tests generally in connection with bile pigments in the serum or a lactescent serum. A positive or partial reaction was obtained with the cerebrospinal fluid of infants with syphilitic paralysis, untreated.

Presse Médicale, Paris

June 2, XVII, No. 44, pp. 401-408

77 Wounds of the Chest. (Plaies de poitrine et thoracotomie.) P. Riche.
78 Massage and Exercises in Treatment of Hemiplegia. (Traitement kinésithérapique des hémiplégiques.) P. Kouindjy.

June 5, No. 45, pp. 409-416

79 *Sudden Death in Incipient General Paralysis. (La mort subite dans la paralysie générale au debut.) J. Roubinovitch and H. Paillard.
80 *The "Alternating Suture" for Enteroanastomosis. (Procédé rapide de suture intestinale.) H. Chaput.

June 9, No. 46, pp. 417-424

81 Diagnosis of Facial Neuralgias. F. Levy.

79. **Sudden Death in Incipient General Paralysis.**—This occurred in 10 out of 238 cases of general paralysis at Bicêtre since 1901; adding this number to others on record, we have a proportion of 4.6 per cent. of 538 cases. An additional case is described in detail; the patient was a man of 33, infected with syphilis eleven years before. A year ago he became melancholy and talked of suicide, but was restored to apparent normal condition for a few months by a month of mercurial treatment, but then signs of general paralysis developed with progressive maniacal excitement and sudden death for which no organic cause could be discovered.

80. **The Alternating Suture.**—Chaput applies this term to a suture made by drawing the tissues to be sutured alternately across to the other side over the tip of the long, straight needle, which thus pierces each in turn. The lips of the wound fit into each other in a series of scallops through which the needle passes in a straight line. After the needle has been drawn through, the lips of the wound spring back into place to form a straight line, and each stitch forms a U. Drawing the thread tight again straightens it, and the lips of the wound again fit into each other in a series of alternating scallops. This suture takes little time and has other advantages which he enumerates in connection with the three illustrations.

Revue de Chirurgie, Paris

May, XXIX, No. 5, pp. 875-1028

82 *Peptic Ulcer in Jejunum. (La fistule jéjuno-colique par ulcère peptique du jéjunum à la suite de la gastro-entérostomie.) G. Lion and C. Moreau.

82. **Peptic Ulcer of the Jejunum.**—Lion and Moreau state that only 3 cases have been reported to date of a fistula between the jejunum and the colon, the result of a peptic ulcer in the jejunum, but they have found records of 40 cases of the latter. Only 4 of the patients were women. They report 2 additional cases of fistula formation with a peptic jejunal ulcer, and discuss the pathologic anatomy and symptoms, which include diarrhea, eructations with fecaloid odor, vomiting and pain. The diarrhea is always exceptionally severe and abundant, resisting all treatment but showing sometimes the influence of food and then appearing three or four hours after meals. Other signs are the excessive peristalsis, paradoxical splashing sounds and dulness below. The details of the 5 cases with fistula are given in full.

Semaine Médicale, Paris

June 2, XXIX, No. 22, pp. 253-264

83 *Aortic Insufficiency without Murmur. (Les insuffisances aortiques sans souffle.) L. Bard.

83. **Aortic Insufficiency Without Murmur.**—Bard believes that many cases of aortic insufficiency escape recognition on account of the absence of the characteristic diastolic basic murmur, but that the condition can be readily diagnosed by the peculiar dome protuberance of the wall over the apex which is lifted up in a dome at each heart impulse—the *choc en dôme*. Its absence, when other signs of aortic insufficiency are pronounced, indicates accessory complications, possibly pericarditis. It is seldom absent in the young, and it occurs in several varieties of aortic insufficiency as he describes in detail. Differentiation is important from several standpoints, especially from that of kidney disease. The detection of the dome push against the chest wall before the development of the murmur may reveal aortic insufficiency in its incipiency, before any other sign suggests it.

Beiträge zur klinischen Chirurgie, Tübingen

April, LXII, No. 3, pp. 593-820

84 Operative Treatment of Abdominal Injuries. (Zur Chirurgie der Bauchverletzungen.) W. Weber.
85 Local Anesthesia for Major Operations. (Lokalanästhesie im Krankenhaus, nebst Bermerkungen über die Technik der örtlichen Anästhesierung.) H. Braun.
86 *Treatment of Cholelithiasis and Cholecystitis. M. Friedemann.
87 Ultimate Results of Circular Suture of Arteries and Implantation of Veins. (Beiträge zur Gefässchirurgie.) R. Stich, M. Makkas and W. Capelle.

86. **Operations on the Bile Passages.**—Friedemann has examined again recently 155 patients operated on for cholelithiasis or cholecystitis between 1901 and 1907, and tabulates the operative and ultimate findings. They show good results in cases in which intervention was restricted to conservative measures, while nervous or other disturbances still persist in 10 of the 15 patients in whom the gall bladder was removed.

Correspondenz-Blatt für Schweizer Aerzte, Basle

May 15, XXXIX, No. 10, pp. 329-360

88 *Serodiagnosis of Syphilis in Practice. (Klinische Verwendbarkeit der Wassermann-Neisser-Bruck'schen Seroreaktion.) H. Merz.
89 *Importance of Diazo Reaction in Prognosis of Tuberculosis and other Infectious Diseases. J. P. Gwerder.

88. **Serodiagnosis of Syphilis.**—This communication from Neisser's clinic goes over about the same ground as in articles from there recently summarized in these columns. The findings in 1,892 cases are analyzed.

89. **Diazo Reaction in Prognosis of Infectious Diseases.**—Gwerder's research has demonstrated that the substances responsible for the diazo reaction may in certain cases be present in the serum but for some reason fail to show the reaction. On the other hand, it is possible that patients showing a pronounced diazo reaction may improve until the test gives transient or permanent negative findings. Only when the re-

action is obtained on repetition of the test over a long period can it be regarded as necessarily of bad omen.

Deutsche medizinische Wochenschrift, Berlin

June 3, XXXV. No. 22, pp. 961-1000

90 *Treatment of Gastric Ulcer. (Behandlung des Magengeschwürs.) W. von Leube.
91 *Respiration and the Work of the Heart. (Atmung und Herzarbeit.) H. Cornet and J. Berninger.
92 *Treatment of Empyema. Treibmann.
93 Peripheral Nerves and Trauma. (Periphorische Nerven und Unfall.) H. Kron.
94 *Chronic Chorea after Migraine. T. O. Schabad.
95 *The Cutaneous Tuberculin Reaction in New-Born Infants and their Mothers. (Die Pirquetsche Tuberkulinprobe bei Neugeborenen und ihren Müttern.) Poten and Griemert.
96 The Stain Reaction in Syphilis. A. Galambos.
97 Rapid Healing of Perforation of Tympanic Membrane under Scarlet Red. (Scharlachrot bei Trommelfellperforationen.) A. Heermann.

90. **Treatment of Gastric Ulcer.**—At the recent German congress for internal medicine. Lenhartz reported his success in 295 cases of gastric ulcer treated according to his principle of a more nourishing diet than that allowed by von Leube, which has been the standard for so long. In 262 cases there had been a hemorrhage just before treatment was commenced, and in 33 the stool contained blood, but his total mortality was 2.3 per cent., and only 18 patients had hemorrhage after treatment was commenced. He commented on the prompt recovery and the lack of weakness. In this article von Leube replies to Lenhartz, maintaining that his thirty years of experience and especially the 627 cases of gastric ulcer in which he has applied his "rest cure" during the last eleven years have fully confirmed the advantages of his technic while he sees possibilities of danger in following Lenhartz's directions. Fully 90 per cent. of his patients were cured; 8.5 per cent. improved, and only 1 per cent. failed to benefit, while the mortality from hemorrhage was 0.3 per cent. He is convinced that the only way to induce the production of the life-saving thrombus and thus check the tendency to hemorrhage is to keep the stomach absolutely at rest; the patient is kept in bed with a single dose of 30 drops of a 1 per thousand solution of adrenalin supplemented by bismuth, an ice bag over the stomach, an injection of morphin to keep the stomach quiet (never for its pain-reducing properties), and complete abstinence from food by the mouth. Ingestion of egg or milk may bind the acid, but at the same time they stimulate the peristaltic movements of the stomach, which it is the aim of treatment to avoid. Only after the stool has lost its admixture of blood and other signs show that the hemorrhage has been arrested, which is usually the case in two or three days, he then cautiously commences a liquid diet in the course of one or two days. The patients may lose in weight at first, but they have made it up and more by the end of the second week. He refrains from iron on principle, as ulcer patients do not seem to tolerate it well, and study of 25 cases on the liquid diet for two weeks did not show any special reduction in the hemoglobin. Laxatives must be strictly avoided. The four elements of his "rest cure" are the absolute rest in bed; one glass of tepid Carlsbad water twice a day, fasting; hot flaxseed poultices, renewed every ten or fifteen minutes, applied continuously for twelve hours, at night a wet linen cloth being substituted. The special diet completes the course of treatment, and he emphasizes the fact that the combination of these four factors is indispensable for the best results, and that complete abstinence from food until the hemorrhage has been arrested is the only safe and commendable method.

91. **Respiration and the Work of the Heart.**—Cornet and Berninger have been applying in the treatment of affections of the myocardium a mechanical method of increasing the respiration which in turn increases the action of the heart with better arterial nourishment throughout. A number of cases are reported in which the deeper breathing had an unmistakable effect in increasing the functioning of the heart and its blood supply, with the other advantages of increased ventilation in the lungs. The apparatus used is a large chair with small electromotor beneath which works two pads that spring against the chest during the phase of expiration, compressing the chest with adjustable force and springing back during inspiration. Residual air is thus squeezed out of the lungs and inspiration is rendered much deeper. Experiences with 100 patients with asthma, bronchitis, etc., demonstrated the benefit of this measure, and tests on 31 persons with normal hearts confirmed the physiologic improvement which it induced. In health the blood pressure does not change, but in 54 patients with heart disease the systolic blood pressure varied from 16 to 64 cm. water. This chair apparatus has rendered good service in chloroform, carbon monoxid, morphin and other poisoning, it being thus possible to keep up artificial respiration for fifteen and eighteen hours. Michaelis has reported a case of carbon monoxid poisoning with total apnea in which the apparatus worked for twenty-four hours until the natural respiration was fully restored; at every attempt before this to remove the apparatus, the respiration ceased. It maintains a nearly isolated action of the heart, and the changes in the blood pressure permit oversight of the functional capacity of the heart.

92. **Treatment of Empyema.**—Treibmann criticises unfavorably the method of treating empyema of the pleura recently advocated by Pust and described in these columns April 3, page 1149. It makes much greater demands on the patient's resisting powers than the ordinary technic of siphon drainage which gave 92.1 per cent. cures in 38 cases of empyema in his experience in the ten years ending 1904. The drainage was kept up on an average of 55 days; only 2.6 per cent. of the patients were not benefited; other clinics have reported equally favorable results. The siphon drainage is applicable only for the non-malignant cases and when simple topographical conditions permit; tuberculous or purulent empyema, and empyema with cavities generally require surgical measures.

94. **Chronic Chorea After Migraine.**—The patient was a woman of 50 who had had migraine recurring about every month or oftener, since the age of 22 except during one of her twelve pregnancies, during which she suffered from chorea. The chorea later became chronic, and Schabad thinks that the case throws some light on the origin of chorea, especially as migraine has been known to blend into epilepsy. The migraine is probably only a functional affection of the vasomotors in the brain, but its repetition may induce various anatomic disturbances, such as extravasation of blood into the brain, softening of the brain, hemorrhagic pachymeningitis, hypertrophy and thickening of the hemispheres or thrombosis of the internal carotid. Some of these changes are found at autopsy of persons suffering during life from chronic progressive hereditary chorea.

95. **The Cutaneous Tuberculin Test in the Very Young.**—Poten and Griemert applied the Pirquet test in 53 children less than two weeks old and in 4 less than four weeks old, the mothers being apparently free from tuberculosis. Not one of the children showed a trace of reaction, not even on a repetition. They regard this as conclusive evidence that negative findings positively exclude tuberculosis. The unreliability of the cutaneous test for the diagnosis of active tuberculosis is now generally recognized; it is so extremely sensitive that it apparently reveals every focus of tuberculosis, no matter how harmless. But, they add, this great sensitiveness may prove of inestimable service in the recognition of incipient tuberculosis in children. The moment that the negative reaction of the infant becomes transformed into ever so weak a positive reaction, the enemy has penetrated into the body. In order not to overlook this moment, so as to be able to combat the foe at once, the cutaneous test should be repeated once or twice a year or still more frequently. They say that the simplicity of the test and its absolute harmlessness render this by no means an utopian idea; it opens a prospect for a rational and effectual fight against tuberculosis, while the infection is still capable of being promptly eradicated.

Medizinische Klinik, Berlin

June 6, V. No. 23, pp. 837-874

98 *Diagnosis of Brain Tumor. (Zur Diagnose des Hirntumors.) A. Schüller.
99 *Roentgen Findings in Digestive Tract. (Neuere besonders radioskopische Ergebnisse aus dem Gebiete der Magen und Darmuntersuchungen.) C. A. Ewald and M. Cohn.
100 Mechanotherapy of Nerve, Heart and Metabolic Disturbances. (Neuerungen auf dem Gebiete der Heilgymnastik der Nerven, Herz und Stoffwechselkrankheiten.) S. Munter.
101 Biologic Research in Balneology. A. Bickel.
102 Seaside Sanatoriums for Children in Europe. (Die Kinderseehospize Europas und ihre Resultate.) Häberlin.

98. **Diagnosis of Brain Tumor.**—Schüller reviews the various symptoms of brain tumor and calls attention to the fact that headache may be intermittent, more like migraine; this is especially liable with tumors in the hypophysis region. In one case this recurring migraine was the only symptom that suggested the tumor, finally revealed by the Roentgen rays. Choked disc and vomiting may be lacking in the picture of a tumor in the frontal region, but changes in the character are liable with this form. Somnolency may suggest a tumor in the third ventricle. The syndrome of pseudotumor occurs suddenly, generally in children or young adults, and although presenting choked disc, Jacksonian epilepsy and hemiplegia, it may subside completely, disproving the existence of an actual tumor. The latest figures give still a mortality of 30 per cent. and permanent recovery in only 5 per cent., but even this is a great gain as the patients are doomed without intervention.

99. **Roentgen Examination of the Digestive Tract.**—Ewald and Cohn review their experience with various tests and Roentgen examination of the digestive tract. The most instructive information is obtained in affections of the esophagus. The findings also show that the tonus of the stomach wall is normal far less frequently than was formerly supposed. Inflation of the stomach causes it to expand in all directions, and the organ is generally found horizontal, while the Roentgen rays, with bismuth dragging the stomach down, usually show it more perpendicular; the patient generally reclines for inflation and stands for Roentgen examination. The Roentgen rays are of little use in incipient gastric cancer in most cases, but they are important for differentiation of hour-glass stomach and to reveal the cause for the epigastric tender points. Castor oil is indispensable in preparing a patient for Roentgen examination of the abdominal organs; it does not draw much water from the intestinal walls. Fluid in the bowel is the worst enemy of Roentgen research. False impressions are obtained when the skiagrams of the digestive tract are taken within a few minutes. The most instructive findings are obtained with exposures made in the course of 48 hours, during which the conditions are examined at intervals with the screen.

Münchener medizinische Wochenschrift

June 1, LVI, No. 22, pp. 1113-1160

103 *"Phrenocardia;" a Special Heart Neurosis. (Ist die von Max Herz beschriebene "Phrenocardie" eine scharf abzugrenzende Form der "Herzneurosen?") W. Erb.
104 *Peripheral Greenish-Brown Discoloration of the Cornea as Symptom of a Special General Nervous Disease. (Die periphere braun-grünliche Hornhautverfärbung, als Symptom einer eigenartigen Allgemeinerkrankung.) B. Fleischer.
105 *Two Cases of Aspiration of Foreign Bodies. (2 Fälle von Fremdkörperaspiration.) H. Bayer.
106 Morning's Milk in Infant Feeding. (Verwendung der Morgenmilch für Säuglinge.) H. Berger.
107 Two New Instruments for Testing Hearing. (Neuerungen auf dem Gebiete der funktionellen Prüfung des Gehörorganes.) R. Dölger.
108 Importance for Prognosis of Hemolysis by Streptococci. W. Sigwart.
109 Study of Neutrophile Blood Picture. (Zur Untersuchungsmethode des neutrophilen Blutbildes.) R. Kothe.
110 *How Typhoid Fever Spreads. (Art der Typhusausbreitung in einer Stadt.) H. Kayser. Commenced in No. 21.
111 Successful Removal of Tumor in Cervical Spinal Cord in Two Cases. (Beiträge zur Neuro-Chirurgie.) H. Oppenheim and F. Krause. Commenced in No. 20.

103. **Cardiac Neurosis.**—Herz has recently described a special neurosis affecting the heart, which he calls "phrenocardia," and defines as a "sexual psychogenic cardiac neurosis." The syndrome includes characteristic paroxysmal localized pain in the heart, shooting pains, palpitations, tachycardia, painful breathing, oppression, anguish and sometimes nervous chills, deep sighing and voiding of large amounts of pale urine, but no actual dyspnea. The physical findings in the heart appear entirely normal. The Roentgen rays reveal that the diaphragm is very low; sometimes the heart is abnormally movable, and sometimes there may be a slight systolic murmur and duplication of the first sound, but never any change in the blood pressure. These alarming attacks occur generally in the evening or night and may last for one-half or several hours and may recur nightly or at longer intervals. The condition is more frequent in middle-aged women than in men, but may occur at all ages. Herz assumes as the essential and most frequent source abnormal or exaggerated sexual longings, generally disappointment in love or loss of husband or wife, although every possible sexual occurrence may be connected with it. Erb here reports 25 cases, 15 of which, including 11 females, are typical of the neurosis as Herz has described it. The erotic basis was more than probable in a number. In 5 other cases the affection was manifestly connected with the genital organs as it recurred at pregnancy or postpartum, or with chronic metritis with menorrhagia, onanism, chronic gonorrhea or syphilophobia. Besides psychotherapy, tonics and sedatives as for neurasthenia and hysteria form the basis of treatment, while the actual heart tonics, the stronger hypnotics, are contraindicated except in special circumstances. In conclusion Erb accepts this syndrome as an entity, although its definition as necessarily of sexual origin is not yet fully established.

104. **Discoloration of Cornea as Symptom of Constitutional Disturbance.**—Fleischer adds two more to the two cases previously reported from the Tübingen clinic by Kayser in which a nervous affection resembling multiple sclerosis was accompanied by a greenish-brown discoloration of the cornea similar to that of bronzed diabetes. In three of the four cases there was a history of acute articular rheumatism. The most striking symptom was progressive tremor. No signs of true sclerosis could be discovered at autopsy.

105. **Aspiration of Sequester.**—Bayer reports a case in which autopsy revealed a molar of the first dentition as the cause of the fatal lung abscess in a boy of nine. A similar abscess in the second case was explained by the discovery of a sequester from a syphilitic perforation of the hard palate. Both foreign bodies had been aspirated into the right bronchus.

110. **Distribution of Typhoid in a City.**—The German authorities have made a special study of typhoid in the city of Strasburg, the most advanced ideas in regard to detection of sources of infection and means to extinguish them having been put in action. Kayser here presents the data learned in the course of this four-years' campaign. A total of 505 cases of typhoid were recorded—about 0.92 per thousand inhabitants. In 32 cases paratyphoid bacilli were involved. Certain streets in the city are entitled to be called "typhoid streets," as only 23 per cent. of the total cases occurred isolated on a street. In 479 cases, the 384 houses involved were on 216 streets, this predilection for certain streets being explained by discovery of chronic bacillus carriers on some of these streets. Fully 73 per cent. of the 804 streets of Strasburg were entirely free from typhoid although many were closely populated. The various occupations are tabulated in comparison with the frequency of typhoid, the results showing that it can almost be classed as an occupational affection for persons dealing in food materials, for cooks, housemaids, laundry and dairy employés and bakers. Fully 2.6 per cent. of the bakers of Strasburg contracted typhoid, probably from drinking raw milk. Midwives, druggists, shoemakers, teachers, dressmakers, tailors and porters also suffered in large measure from the disease—that is, all classes of persons who come into close personal touch and contact with others, while occupations in which this does not occur to such an extent were almost exempt from the disease: artists, smiths, textile and other industries, stonecutters, brewers, etc. It was found that raw milk was probably responsible for 26.7 per cent. of the cases; contact with patients for nearly 17 per cent.; and with bacillus carriers for 9.5 per cent., while the drinking water was incriminated in 14.6 per cent. No source for infection could be discovered in 13 per cent. and 13 per cent. of the patients arrived in town already infected. The temperature seemed to influence the number of cases, the effect of the temperature being felt a month afterward, the maximum occurring in August, the minimum in February. The warmer weather causes more copious drinking and thus more opportunity for infection, while the germs proliferate more readily in the food and are distributed by sweaty hands, while the opportunities for bathing and swimming add to the chances for contagion, the traveling, the flies and dust, and the bathing in dubious water. Three-fourths of the patients were under 30, and a little over one-fourth were children. Among the prac-

tical measures suggested by these experiences and enforced at Strasburg are the necessity for trained nurses to care for typhoid patients, periodical instruction of school children in regard to the dangers of contaminated waters and the necessity for keeping water supplies free from pollution, press notices in regard to the dangers from raw milk, buttermilk and ice, and special regulations for bacillus carriers and their homes. Among the 28 bacillus carriers discovered were 4 children and 9 chronic carriers, with 8 carriers who lost their bacilli after a few months. The list included 2 housemaids, 2 bakers' wives, 1 tramp, 1 tailor and 1 capitalist. The fate of the bacillus carriers is dreary; one girl of 20 was dismissed from the factory on this account and from service as a chambermaid later, when the family learned her history. Her reputation as a carrier followed her to another town until bacteriologic tests gave negative findings, probably because she had substituted another's stool for examination. When dismissed from the factory she applied to the hospital to be freed from the bacilli and perseveringly submitted to a Naunyn gallstone course of treatment, with other measures, but all to no avail. After several experiences of this kind, Kayser refrained from informing the environment of the carrier's condition when he felt that circumstances allowed this, merely impressing the necessity for prophylactic measures on the carrier with minute directions, urging disinfection of the hands after defecation, the use of a pit privy, and warning against leaving urine or stools near streets, water courses and cultivated fields. In one instructive case the mother was a bacillus carrier, but for eleven years the family lived in hygienic conditions in town and there was no contagion. The family then moved into an unfinished house in the suburbs where the well was not protected against privy pollution, and two of the children developed typhoid and one died. In another case fruit and cake brought from another town evidently transmitted the contagion, as a bacillus carrier was found in the family of the donors. The man had typhoid first and the wife escaped for a year when typhoid developed after a contusion of the abdomen. Another bacillus carrier infected her son and daughter, and still disregarding the advice as to prophylactic measures, infected a married daughter who lived in the same street, and also the latter's child who died. On account of the danger from swimming in polluted waters, Kayser states that well-kept public baths and swimming tanks are important aids in the prophylaxis of typhoid.

Therapie der Gegenwart, Berlin

June, L, No. 6, pp. 265-312

112 *Gelatin in Therapeutics. O. Wandel.
113 Breathing Exercises in Asthma. (Atmungstherapie bei Asthma.) H. E. Knopf.
114 *Tardy Complications of Brain Abscess after Successful Operation. (Spätkomplikationen des Hirnabszesses nach erfolgreichen Operationen.) L. Jacobsohn.
115 Dosage of Alcohol, especially for Children. (Die Alkoholdosierung vom pharmakologisch-toxikologischen Standpunkt aus.) W. H. Becker.

112. Gelatin in Therapeutics.—Wandel remarks that gelatin has not disappointed the anticipations aroused when it was introduced into therapeutics as a hemostatic about twelve years ago. Its field of usefulness includes lung, stomach, bowel, uterus and other hemorrhages, but it is also valuable in constitutional affections of the blood entailing a hemorrhagic tendency. The technic at Quincke's clinic at Kiel aims to destroy anaerobic spores and protect the gelatin from external influences. This is accomplished by sterilizing a neutralized 10 per cent. solution of gelatin in an Erlenmeyer jar with a layer above of fluid paraffin to keep out oxygen. A long glass tube reaches to the floor of the jar, the upper end capped with a rubber tube and stop-cock. A larger short tube in the stopper, filled with cotton, allows the entrance of air. The whole is sterilized in a linen bag in steam for 40 minutes at 100 C. (212 F.). After cooling, it is kept in the incubator at 37 C. (98.5 F.), then sterilized again for 30 minutes as at first, and this is repeated for 15 minutes the following day. The gelatin thus sterilized is poured into vials containing 50 c.c., which are then fused. In a number of tests the gelatin was inoculated with garden soil and tetanus spores, but after this sterilization inoculation of guinea-pigs always gave negative results.

114. Tardy Complications After Operative Treatment of Brain Abscesses.—In the case described, alarming symptoms suddenly developed in a healthy woman of 30 suggesting epilepsy, eclampsia, uremia or serous meningitis, but the diagnosis by exclusion was finally that of irritation of the cortex by some sequel of a brain abscess which had been successfully operated on seventeen years before with no disturbance in the interim. The symptoms subsided in a week as suddenly as they came, and there has been no trouble since. Jacobsohn has found three similar cases on record of tardy complications, and he remarks that he knows of only four cases of brain operations followed for an interval of from eight to nineteen years.

Wiener klinische Wochenschrift, Vienna

June 3, XXII, No. 22, pp. 771-802

116 *Physical Development of Cretins under Thyroid Treatment. (Grössenwachstum bei Schilddrüsenbehandlung des endemischen Kretinismus.) A. von Kutschera.
117 *Ulcers in Palate in Typhoid. (Gaumengeschwüre bei Abdominaltyphus.) J. Novotny.
118 *Seroreaction in Blood of Eclamptics. (Vorkommen lezithinausflockender und komplementbindender Substanzen im Blute Eklamptischer.) E. Gross and E. Bunzel.
119 *Improved Technic for General Anesthesia. (Erfahrungen über das Narkotisieren.) R. Frank.
120 Treatment of Artificial Anus. O. von Frisch.

June 10, No. 23, pp. 803-838

121 Importance of Medical Clinic for General Medical Training. (Antrittsvorlesung.) A. von Strümpell.
122 Serum Reactions in Tuberculosis of Lungs and Skin. (Serologische Untersuchungen bei Tuberkulose der Lunge und der Haut.) E. Eitner and E. Stoerk.
123 Experimental Adrenalin Arterionecrosis. (Zur Frage der Adrenalin-Arterionekrose und deren experimenteller Beeinflussung.) F. Falk.
124 Optic Neuritis resulting from Uncontrollable Uterine Hemorrhages Cured by Vaginal Hysterectomy. R. Marek.
125 Operative Injury of Thoracic Duct. J. Gobiet.

116. Thyroid Treatment of Cretinism on Immense Scale.—Since 1905, the Austrian government has been supplying thyroid tablets free of charge in seven endemic foci of cretinism with medical inspection twice a year. About 108,600 tablets were thus distributed in 1907, and 157,900 in 1908, the number of persons taking them was 1,011, and 608 were still under the thyroid treatment at the close of 1908. The results are tabulated here under various headings, special attention being paid to the increase in height as the most certain index of the benefit derived. Other findings are more liable to be influenced by subjective impressions. The report states that the results have been extremely satisfactory, confirming the efficacy of thyroid treatment as a prophylactic measure especially in endemic foci of cretinism. In 677 cases followed to date marked improvement was obtained in 48.6 per cent., and only 8.6 per cent. showed no benefit from the course. The most striking proof of the beneficial influence of thyroid treatment on the growth is the fact that in 377, that is, in 85.7 per cent. of all cases, the former dwarf cretin children grew to be taller than the normal standard for their age. As a rule, treatment was restricted to school children; the oldest cretin was 26 years old. Even after 20 a number of the cretins grew much taller and the other symptoms of cretinism became attenuated. This growth at this age is so surprising that it seems as if the growing power of the preceding years had been held in reserve, until suddenly released by the thyroid treatment, when it made all its force felt in a relatively short period. A large number of the more interesting cases are cited in detail. One cretin 20 years old grew 11 cm., but then refused to continue treatment as he outgrew his clothes too fast. He did not lose his milk teeth until after thyroid treatment was commenced, although those of the second dentition were in place.

117. Ulceration in the Palate in Typhoid.—Novotny states that in 102 cases of typhoid at Chvostek's clinic at Vienna during the last ten years larynx or palate complications, or both, have been observed in nearly 24 per cent., including 6 cases of severe ulceration in the palate. In one case besides the typhoid bacilli in the blood, stools and urine, paratyphoid B. bacilli were cultivated from the ulcer in the palate.

118. Serum Reaction in the Blood of Eclamptics.—Gross and Bunzel obtained a precipitating and complement-binding reaction in the blood of six women in eclampsia, while the tests were invariably negative in normal pregnant and lying-in women.

119. **Auto-anesthetization.**—Frank ascribes great pathogenic importance to the mental excitement of the patient as the preparations are made for an operation. Anxiety, fear, disagreeable sensations induced by the odor of the chloroform and other emotions influence the patient's mind so that it is easy to understand that this intense psychic commotion may induce sudden heart failure before the effect of the anesthetic is felt. True chloroform syncope is peculiar to the beginning stage of the anesthesia before the consciousness is lost, and this is the most dangerous phase for arrest of the heart action. The asphyxia and other disturbances occurring later in the anesthesia are of an entirely different quality from those of this preliminary stage. In several years' experience he has found that all this fright and excitement can be avoided by the simple method of allowing the patient to anesthetize himself. He is given the mask and chloroform; no one holding or compelling him, the anesthetist merely encouraging and praising his efforts and urging him to count aloud. This method is particularly useful for children, as they are interested in the mask and are allowed to sit up and examine it and apply the chloroform themselves. The method is not needed for tranquil patients, but is much safer for the timid, the excited, the worried and for hard drinkers and children. It takes no more time than the usual technic; the anesthetist assumes his task as the patient loses consciousness.

Zentralblatt für Chirurgie, Leipsic

June 5, XXXVI, No. 23, pp. 825-856

126 Technic of Appendicectomy. Bertelsmann.
127 Portable Apparatus for Positive Pressure. (Portative Ueberdruckapparate; weiche Kammer; Injektorintubation.) E. Kuhn.

Zentralblatt für Gynäkologie, Leipsic

June 5, XXXIII, No. 23, pp. 801-832

128 Case of Galactorrhea following a Burn. (Fall von Galactorrhoea post combustionem, zugleich ein Beitrag zur Lehre des Antagonismus zwischen Brustdrüsenfunktion und Ovulation.) E. Vogt.
129 Permanent Cure in a Case of Chorioepithelioma with Metastases. A. Labhardt.
130 The Endometritis Question. J. Voigt.

June 12, No. 24, pp. 833-864

131 Shortening Round Ligaments by way of Inguinal Canal. (Die subfasciale Eröffnung des Inguinalkanals behufs Kürzung der Ligamenta rotunda.) A. Littauer.

Gazzetta degli Ospedali, e delle Cliniche, Milan

May 27, XXX, No. 63, pp. 665-672

132 Negative Results of Treatment of Angioma with Carbon Dioxid Snow. (Sulla pretesi efficacia della cura degli angiomi con l'acido carbonico congelato.) D. A. Lucio.

May 30, No. 64, pp. 673-688

133 Idiopathic Dilatation of the Colon. (La Malattia di Hirschsprung.) A. Rossi.

June 6, No. 67, pp. 705-720

134 *Reaction of the Urine Important Factor in Typhoid Bacteriuria. (Importanza della reazione dell'orina nella bacteruria tifica). R. Caretto.

June 8, No. 68, pp. 721-728

135 *"Xanthochroic Bodies" in Stained Urine. (Nuovo elemento colorabile del sedimento urinario.) E. U. Fittipaldi.

June 10, No. 69, pp. 729-736

136 *Is There a Syphilitic Diabetes? (La frequenza del diabete mellito tra i sifilitici.) G. Sarra.

134. **Reaction of the Urine Important Factor in Typhoid Bacteriuria.**—Caretta states that research at the Turin clinic with urine drawn directly from the kidneys and from the bladder demonstrated that when the urine gave an alkaline reaction the bacteria proliferated in it, while an acid urine seemed to keep their growth within certain narrow bounds. It further showed that stagnation in the bladder favored the multiplication of bacteria even when the urine from the kidneys was comparatively sterile. After the patients were given sodium bicarbonate, the growth of typhoid bacteria in the urine was seen to be much more profuse, although there is a remote possibility that the greater numbers of bacilli found in the bladder were the result of increased elimination by the kidneys under the influence of the alkali.

135. **"Xanthochroic Bodies" in Stained Urine.**—Fittipaldi calls attention to certain bodies in urine sediment which resemble tube casts, except for the different way in which they take the eosin and acetic acid stain.

136. **Is There a Syphilitic Diabetes?**—Sarra states that there are less than fifty cases on record in which the symptoms of diabetes were observed in a syphilitic, and yet in a number of them treatment directed against syphilis caused the subsidence of the diabetes, which had previously resisted antidiabetic measures. In such cases it must be admitted, he says, that the syphilis does not by itself produce the diabetes, but only that the location of some of its manifestations induces the syndrome of symptomatic diabetes.

Policlinico, Rome

June 6, XVI, No. 23, pp. 709-740

137 *"Karell Cure" in Treatment of Failing Compensation in Heart Diseases. (L'ipoalimentazione cura Karell in certi scompensi cardiaci.) G. Galli.
138 *Special Sign Characteristic of Paresthetic Meralgia. (Sopra uno speciale segno caratteristico di meralgia parestesica.) G. Impallomeni.
139 Stricture of the Urethra in Women. (Sul restringimenti uretrali nella donna.) F. Cuturi.

June, Medical Section, No. 6, pp. 241-283

140 Kala-azar in Sicily. U. Gabbi.
141 Experimental and Clinical Research on Strophanthin. (Sull'azione della strofantina.) C. A. Crispolti. Id. P. Ettore.
142 Metabolic Findings in Addison's Disease under Suprarenal Treatment. (Il ricambio materiale in un caso di morbo di Addison in rapporto al trattamento organiterapico.) C. Capezzuoli.

137. **Karell Cure in Treatment of Failing Cardiac Compensation.**—Galli has had very favorable experiences with this strict milk diet, described in The Journal, Sept. 5, 1908, page 877. It does no good to attempt it unless the physician is able to maintain it strictly according to rule, not allowing more than the 800 gm. (27 ounces) of milk during the day, taken in four portions. The temperature of the milk is immaterial, as also whether it is boiled or not. This diet must be kept up three to seven days, and it is remarkable, he says, to note the increased diuresis and the disappearance of edema. By the fourth day the diuresis may be six or seven times the amount of milk ingested, while the heart action is improved to correspond. Not only the edema disappears, but the waste products are eliminated to a remarkable extent. In one of his cases with complicating asthma, it vanished entirely after the third day of the Karell cure. The heart is relieved of part of its load by the elimination of such large amounts of fluids, if the heart and kidneys are still capable of functioning. Parenchymatous nephritis offers little chance for success with it; interstitial nephritis is its most grateful field. No drugs are needed except possibly with much cyanosis and dyspnea when a heart tonic may prove useful. The Karell cure is almost ideal, he adds, in obesity with failing compensation. The load of fat imposes extra work on the heart, which resumes normal functioning after the weight has been reduced. From 10 to 40 pounds may be lost in a few days under this Karell diet. The patient must remain in bed during the course. In chlorosis, with doughy tissues and flabby heart, this treatment may also give benefit.

138. **Sign of Paresthetic Meralgia.**—Impallomeni states that it is possible to differentiate this condition by the sharp pain induced when the reclining patient tries to flex, adduct and rotate outward the leg while the examining physician strives to turn it in the inverse direction.

Riforma Medica, Naples

June 7, XXV, No. 23, pp. 617-644

143 Reproduction of the Bruce Trypanosome. F. Valerio.
144 *Comparative Pressure in Brachial and Digital Arteries. (Sfigmomanometria comparata delle arterie omerale e digitale. Importanza clinica e diagnostica.) E. Pesci.

144. **Comparison of the Blood Pressure in the Brachial and Digital Arteries.**—Pesci has found that the difference between the blood pressure in the brachial and digital arteries may aid in the differentiation of certain affections. In arteriosclerosis the brachial pressure is constantly high, but with considerable fluctuation from day to day or even within the twenty-four hours. The digital pressure is constantly low, behaving constantly inversely to the brachial pressure. In atheroma the brachial pressure is normal or below, while the digital pressure is extremely low. In nephritis both brachial and digital pressures are constantly much higher than normal. In heart affections, a rapid and durable reduction in pressure is always

an unfavorable sign in regard to the heart action. In compensated mitral defects, the pressure in both arteries is below normal, while it is above normal when compensation is failing. In aortic defects, the pressure in both arteries is always much higher than normal. In myocarditis, the brachial pressure is high, the peripheral low. He gives the particulars of over two dozen cases of various cardiovascular and kidney affections with these comparative pressure findings. They are especially instructive when the pressure is determined before and after exercise fatiguing the heart. If the heart is functionally capable, the normal proportion between the two pressures is maintained; the lower the peripheral pressure in comparison, the weaker the myocardium.

Hospitalstidende, Copenhagen

April 14, LII, No. 15, pp. 441-472

145 Local Tuberculin Reactions. (Om Conjunctivalreaktion ved Tuberkulose.) F. Tobiesen. Id. (Kutane Tuberkulinreaktion.) C. Gøtzsche and H. Petersen.

April 28, No. 17, pp. 505-528

146 *Red Light and Darkness in Treatment of Smallpox. (Behandling af Kopper i rodt Lys og i Mørke.) C. H. Wurtzen.

May 5, No. 18, pp. 529-568

147 *Early Detection of Cutaneous Eruptions with Optic Means. (Omtidlig Paavisning af Hudndslet ved optiske Hjælpemidler.) O. Jersild.

146. **Treatment of Smallpox Under Red Light and in Darkness.**—Wurtzen discusses the method of preventing pitting in smallpox by exclusion of light which was practiced years before Finsen called attention to the action of the chemical rays on the skin. Failure to obtain satisfactory results with the darkness and red light treatment is probably owing to the fact that the chemical rays are not completely excluded. Spectroscopic tests of various samples of red glass revealed a great difference between them in this respect, and showed also that red glass, perfect at first, deteriorated with age in respect to its permeability for the chemical rays. It is safest to darken the room entirely. The adjoining room and corridor should also be darkened or kept in red light so that the chemical rays can not enter when the door is opened. No daylight should be allowed to enter, not even for a moment for the purpose of inspecting better the eruption. Patients bear the red light or darkness differently, some objecting seriously to it, and a few complaining of a feeling of oppression and headache. The attendants find the frequent transition from outside daylight to the darkened room annoying, as the red light makes the retina very sensitive. This latter inconvenience, however, can be obviated by having the attendants wear colored glasses. The red light or darkness method has been applied since 1894 in the hospital with which Wurtzen is connected, and the results have always been satisfactory in the highest degree, so that the exclusion of the chemical rays is now the routine practice. The method can not be applied so well in the home, as it is difficult to ensure the exclusion of all the chemical rays, and the success of the method depends on the perfection with which this is done.

147. **Early Detection of Cutaneous Eruptions by Optic Means.**—Jersild reports extensive tests and clinical experience with optic means to detect eruptions invisible to the naked eye even in bright daylight. He has found that the mercury vapor lamp gives the most striking findings. This simple lamp requires very little electricity to work it and the red and orange rays are entirely absent from its light. Everything with a tinge of red shows bluish in this light, while parts with less blood show greenish. Incipient eruptions thus stand out much plainer than with other practicable optic means. He tabulates the findings with the mercury lamp, with the blue glass method and with Haan's "maculoscope." The observer with the latter inspects the skin through a thin layer of an ammonical solution of copper sulphate. The findings with this and the blue glass method are about the same, but with the mercury lamp they are much more instructive.

Hygiea, Stockholm

April, LXXI, No. 4, pp. 289-416

148 *Cutaneous Tuberculosis. (Om olika former af hudtuberkulos.) M. Möller.

149 *Phototherapy of Laryngeal Tuberculosis. (Om Solljusbehandlingen och öfriga fototerapentiska metoder vid struptuberkulos.) J. Tillman.

150 Malaria Plasmodium and Relapses. (Fall af intermittens tertiana tillika med några anmärkningar beträffande malaroaplasmodierna och recidiven.) M. Bruhn-Fåhræus.

151—Esophagoscopy, Tracheoscopy and Bronchoscopy. W. Waller.

152 Intravesical Diverticula Formed by Ureters. (Om intravesikal divertikelbildning å uretererna.) G. Nilson.

153 Deformation of the Skull. (Om kraniala deformationer, särskildt om scafo- bathry- och clinocefali.) G. Backhan.

148. **Cutaneous Tuberculous Affections.**—Möller refers with pride to the stand taken by the Swedish government in 1903 that lupus patients without means are to be treated free of expense to them, provided the community or private individuals will assume the expense of their maintenance during the time they are taking treatment and of their journey to and from the place of treatment. No other country has made such provision for its lupus sufferers, except Denmark. Even in Germany, nothing has been done for them until quite recently. He is convinced that lupus is far more frequent than generally recognized; in Denmark a collective enquiry disclosed one case of lupus to every 2,000 inhabitants. The great trouble is that the lupus installed in the nose, for example, may be regarded as merely a tedious catarrhal affection, and no attention be paid to it. Even when it spreads below and around the nose it is supposed to be merely eczema, and the patient and his family seldom think of consulting a physician for it. Even if a physician is consulted, unless he bears the possibility of lupus constantly in mind, he is liable to overlook the true nature of the lesion. The lupus thus gets a firm foothold, and even the most energetic treatment then is liable to fail to ensure a permanent cure. The measures aimed to restrict the spread of pulmonary tuberculosis will also prove prophylactic against these cutaneous tuberculous lesions, but the main point in prophylaxis is for district and school medical inspectors, public vaccinators and specialists in children's diseases to keep a sharp watch for cases of incipient lupus so that the disease can be recognized early and arrested, testing for the tuberculin reaction if necessary for differentiation. It is a great misfortune for the patients that it commences so insidiously. Besides the special institutes for treatment of lupus, establishments should be provided where those taking treatment can be conveniently lodged and given a chance to support themselves in some way. Sweden has a model institute and lupus home of this kind, and he gives an illustration of each, with thirty other illustrations of typical cases of lupus, miliary ulcerative tuberculosis and scrofuloderma and various tuberculides, lichen scrofulosus, papulo-necrotic tubercle, nodular tuberculides, etc., before and after Finsen treatment.

149. **Sunlight in Laryngeal Tuberculosis.**—Tillman comments on the fact that nearly three years have passed since any further communications on this subject have issued from the Alland sanatorium, where Sorgo in 1904 claimed to be so successful with sunlight treatment of tuberculous laryngeal lesions. Tillman reviews what nearly two dozen other writers have published on heliotherapy and the few experiences with it in Sweden, and then reports the history of four patients between 21 and 35 in his own sanatorium at Osterasen. His conclusions are that heliotherapy is a simple and harmless method of treatment, effectual when the weather conditions are favorable, and free from the slightest untoward by-effects. The results may be a complete and permanent cure, even in case of extensive but not too diffuse infiltration. It certainly is an important adjuvant to general treatment, and he commends it warmly for further trials. One of his patients has passed through a pregnancy since without recurrence of the throat trouble; another is a public school teacher who has to lead a singing class several times a week, but has no further trouble from his throat since the sunlight treatment, although there is a tuberculous process in the left lung. The lungs were also affected in the third and fourth cases, but the laryngeal process was much improved during the course of sanatorium treatment. He has had no experience with the various other methods of phototherapy, but cites the judgments of others on them.

Norsk Magazin for Lægevidenskaben, Christiania

May, LXX, No. 5, pp. 417-488

154 *Opsonins and Other Antibodies. L. Hektoen.

155 Appendicitis at Christiania. 1888-1907. P. Bull.

156 *Three Cases Suggesting Abortive Neurofibromatosis. (Nævus mollis? Fibrolymphangioma cutis? von Recklinghausen's sygdom forme fruste?) K. Grøn.

157 *Importance of Michaeli's Square in Obstetrics. (Om Michaeli's firkant.) E. Rode.
158 Nature of Anaphylaxis. (Om overømfindtlighedens væsen og dens forhold til immuniteten.) S. Widerøe.

154. This article appeared in the *Journal of Infectious Diseases*, Chicago, February, 1909, and was abstracted in THE JOURNAL, March 20, 1909, page 998.

156. **Abortive Neurofibromatosis.**—In the three cases reported by Grøn, the puzzling cutaneous affections suggested soft nevus, fibrolymphangioma and abortive neurofibromatosis, and he does not know under which heading to classify them; two are illustrated.

157. **The "Venus Square."**—The four recesses or dimples at the lower part of the back, which form a square, have been long known to art, but Michaelis at Kiel early in the last century first called the attention of obstetricians to them as a means of determining conditions in the pelvis affecting childbirth. Study of works of art has shown that the ideal of beauty in this respect coincides exactly with the ideal conditions most favorable to an easy delivery. In children the distance between the upper and lower dimple, on the median line, is longer than between the two dimples on each side, and this proportion persists in the male, but in normal women the dimples form a perfect square. The distance between the opposite dimples in Norwegian women is about 4 inches (10 cm.), with the usual distance of 9 inches (25 cm.) between the anterior superior spinous processes of the ilium. The Celtic type of woman, with 22 cm. for this measure, has this Venus square of the same size: 10 cm., and sometimes even 11 cm. between the opposite corners of the square, and childbirth is easy with this type, notwithstanding the smaller interval between the ilia. In German Jewesses the Venus square measures only 9 by 9 cm., but due proportion is maintained, and delivery is easy likewise with this type. Aside from these types, any deviation from the regular perfect Venus square, measuring 10 by 10 cm., should be regarded with suspicion, Rode states, although the discovery of some ancestor belonging to these types may explain apparent discrepancies. In rachitic pelves the upper dimple is apt to be unduly low, and curvature of the spine is suggested when one of the side dimples is farther from the median line than its mate, in which case delivery with vertex presentation is easy or difficult according as the back of the head is in the larger or smaller half of the pelvis. The same woman may thus alternate easy and difficult childbirths from this cause. When the distance between the depressions is less than 9 cm., delivery without artificial aid is a rare exception. Rode's article was read as an address at a conference of midwives; he urges them never to neglect this important help for determining in advance the conditions for the impending childbirth, explaining the anatomic bases for the dimples and their arrangement, and emphasizing the point that the symmetrical regularity of the square is the main point.

Books Received

A PRACTICAL TREATISE ON RECTAL DISEASES: Their Diagnosis and Treatment by Ambulant Methods. By Jacob Dissinger Albright, M.D. Cloth. Pp. 455, with 32 plates and 39 illustrations. Price, $4. Philadelphia: Published by the Author, 3228 North Broad St., 1909.

DIE CHEMISCHE ENTWICKLUNGSERREGUNG DES TIERISCHEN EIES (KÜNSTLICHE PARTHENOGENESE). Von Jacques Loeb, Professor der Physiologie an der University of California in Berkeley. Paper. Mit 56 Textfiguren. Price, 9 marks. Berlin: Julius Springer, 1909.

TUBERCULOSIS: A Preventable and Curable Disease. By S. Adolphus Knopf, M.D., Professor of Phthisiotherapy at the New York Post-Graduate Medical School and Hospital. Cloth. Pp. 394, with illustrations. Price, $2. New York: Moffat, Yard & Co., 1909.

EIGHTH ANNUAL REPORT OF THE WORK OF THE CANCER LABORATORY OF THE NEW YORK STATE DEPARTMENT OF HEALTH. Conducted at the Gratwick Research Laboratory, University of Buffalo. 1907. Paper. Pp. 59.

FURTHER STUDIES ON THE PHENOMENON OF ANAPHYLAXIS. By M. J. Rosenau and John F. Anderson. Hygienic Laboratory. Bulletin No. 50. Paper. Pp. 52. Washington: Government Printing Office, 1909.

DISEASES OF THE BONES AND JOINTS. By Joel E. Goldthwait, M.D., Charles F. Painter, M.D., Robert B. Osgood, M.D. Cloth. Pp. 685, with illustrations. Price, $6. Boston: D. C. Heath & Co., 1909.

TECHNIQUE OF HYDROTHERAPY AND SWEDISH MASSAGE, As Employed at The Loma Linda Sanitarium, Loma Linda, Cal. Edition 2. Compiled by George Knapp Abbott, M.D. Paper. Pp. 40.

THE GREATEST GOOD OF MANKIND: PHYSICAL OR SPIRITUAL LIFE. By William Wenzlick, LL.B., M.D. Cloth. Pp. 374. Price, $1.50 net. Chicago: Published by the Author, 1206 Lawrence Ave.

REPORT OF THE DIRECTOR OF HEALTH AND CHARITIES FOR THE FISCAL YEAR 1907-1908, Office of Health, Charities and Correction. Bureau of Health, San Juan, P. R. Paper. Pp. 75.

THE UNIFICATION OF MEDICAL TEACHING IN THE STATE OF MINNESOTA. A Historical Evening, Dec. 8, 1908. University of Minnesota. Paper. Pp. 88.

THE ERRORS OF MIND-HEALING. By Reinhold Willman, M.D., St. Joseph, Mo. Cloth. Pp. 179. Price, $1. St. Joseph, Mo.: The Advocate Publishing Co.

New Patents

Recent Patents of Interest to Physicians

922841. Vehicle for hospital and other purposes. W. F. Bernstein, Philadelphia, Pa.
922845. Speculum. C. H. Borden, Hartford, Conn.
922859. Combined abdominal supporter and truss. J. F. Cruff, Cranston, R. I.
923118. Surgical device. C. E. Eekrode, Milltown, N. J.
922810. Irrigator having a constant temperature. E. de N. du Plantier, Paris, France.
922985. Endoscope. R. H. Wappler, New York, N. Y.
923751. Aparatus for mixing and administering gases. G. von Ach, Newark, N. J.
923752. Apparatus for holding and administering gases. G. von Ach, Newark, N. J.
923234. Vibrator. W. F. Acton, Norwalk, Conn.
923317. Fracture appartus for use with invalid beds. C. S. S. Barrows, Ipava, Ill.
923760. Diffusion apparatus. W. Bock, Prinzenthal, near Bromberg, Germany.
923625. Hernia-truss. G. Christodule, Paris, France.
923768. Manufacture of surgical ligatures. A. W. Clark, Conshohocken, Pa.
923776. Filtrative inhaler. S. Danielewiez, San Francisco, Cal.
923781. Prescription balance or scale. W. W. Dryden, Philadelphia, Pa.
923158. Massage device. J. J. Egan, New York, N. Y.
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923525. Hospital bed elevator and rest. J. M. Hopkins, Lexington, Ky.
923656. Surgical table. J. O. Hunter, Red Sulphur Springs, W. Va.
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923798. Artificial leg. H. T. Odgers, Columbus, Ohio.
923444. Air-purifier. H. A. Robinson, Chicago, Ill.
923303. Dilator. J. W. Shults, Wichita, Kans.
923729. Invalid-bed. A. C. Taylor, Richmond, Va.
924596. Appliance for relief of headache. J. M. Blashfield, Kalamazoo, Mich.
924135. Sanitary mouthpiece for drinking glasses. F. E. Blenckstone, Oradell, N. J.
924433. Combined disinfector and lamp. B. F. Corwin, Brooklyn, N. Y.
923822. Atomizer. F. C. Dorment, Detroit, Mich.
924337. Catamenial sack. F. A. Fromann, Dallas, Texas.
923967. Producing camphene. C. Glaser, Baltimore, Md.
924230. Antifraud bottle. J. A. Horne, Oregon City, Oregon.
924468. Medicine cabinet. J. W. Hunt, Lunsford, Ark.
924075. Attachment for invalid-beds. J. Johnson, Fremont, Ohio.
924359. Hair-tonic. E. Kearney, New York, N. Y.
923862. Surgical head-holder. S. M. Langworthy, Cedar Rapids, Iowa.
924083. Invalid-bed. J. Mackey, Cape Horn, Wash.
924177. Invalid lifter, swing, and wheeled chair combined. C. F. Moore, Gillett, Pa.
924367. Suspensory bandage. O. M. Morris, Spring Lake Beach, N. J.
924494. Preparing pure lactic acid. H. Noerdlinger, A. Caroselli and L. Berg, Florsheim-on-the-Main, Germany.
923999. Hair tonic. A. P. Riggs, Seattle, Wash.
924383. Douche or bed pan. I. Schikorra, Philadelphia, Pa.
924294. Forming sacks for suspensory bandages. J. K. Toles, Chicago, Ill.
40046. Design, Fibrous sheet material for surgical dressings. W. M. Stone, New York, N. Y.
924875. Artificial paw. H. Baehr and A. Sommerfeld, New York, N. Y.
924644. Catamenial appliance. D. S. Daudt, North Plainfield, N. J.
925121. Combination drawers and suspensory. E. A. Melze, Chicago, Ill.
925380. Mouth speculum. G. J. Reed, Peoria, Ill.
925059. Combined portable folding cot and tent. J. A. Walker, Los Angeles, Cal.
924870. Shirt suspensory. W. S. Wootton, Roanoke, Va.
926011. Nipple. T. W. Miller, Akron, Ohio.
925645. Truss. C. Molz, Kaiserslautern, Germany.
925590. Producing a medicament. W. D. Neel, Chicago, Ill.
925592. Splint holding frame. W. H. Parker, Passaic, N. J.
925718. Syringe nozzle. E. T. Pearl, Passaic, N. J.
926075. Capsule for holding compressed or liquefied gas. H. V. R. Reed, London, and H. Campbell, Edmonton, England.
925947. Remedy for eczema. W. N. Ringer, Palacios, Texas.
925658. Preparation of chloroform in solid condition. C. L. Schleich, Berlin, Germany.
926033. Invalid-bed. T. Taylor, Parkersburg, W. Va., and W. M. Stuart, Mount Oliver Borough, Pa.
926042. Sanitary building. H. Zeitschner, Munchen-Glabach, Germany

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Address

THE HYPOPHYSIS CEREBRI

CLINICAL ASPECTS OF HYPERPITUITARISM AND OF HYPOPITUITARISM*

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BALTIMORE

Few chapters in the history of medicine tell a more creditable story than that which relates our progress toward a better understanding of the thyroid and parathyroid glands. A combination of clinical, experimental and surgical experiences during the past twenty years has served to unveil many of the mysteries which formerly surrounded the function of these structures, whose normal activities prove to be so essential to the maintenance of physiologic equilibrium. Myxedema, cretinism, exophthalmic goiter, surgical myxedema (cachexia strumipriva) and tetany have come to be understandable maladies, definitely amenable to rational methods of treatment—and organotherapy, when glandular activity is subnormal, or partial surgical removal to correct functional over-activity, is a triumph of the experimental method in medicine, at the hands of Horsley, Kocher, Halsted, Gley, Vassale and Generale, MacCallum and a host of others.

Not the least memorable incident of the entire story was the recognition, first by the Italian investigators, of the important rôle played by the lesser glands—the parathyroid bodies—in occasioning the so-called acute cachexia thyreopriva with tetanoid symptoms; for without this knowledge the condition of myxedema must have remained obscure from inability to produce its experimental counterpart, and actual investigation of the parathyroids might have been long delayed.

No less satisfactory a tale is in the making as regards a hitherto even more obscure member of the family of ductless glands—the pituitary body—and it is my purpose on this occasion to recount briefly some of the steps already taken toward a better knowledge of the normal function and the part played in certain diseases by this peculiar and inaccessible structure—called "l'organe enigmatique" by Van Gehuchten. Our progress, such as it is, would have been much slower without the previous experiences with the cervical glands, for out of the confusion which long reigned in their case from lack of appreciation of the double glandular rôle a lesson has been learned and applied to the pituitary body, for it likewise combines glandular structures of widely differing function.

Not only in view of the general awakening of interest in the subject, but owing to the fact that most of the recent work on the hypophysis has appeared in foreign languages, it has seemed to me that a simple review of our knowledge of the anatomy and physiology of the gland and some discussion necessarily of a more speculative character as to the part it plays in certain diseases would make an appropriate topic for this annual oration.

THE GLANDULAR STRUCTURE

Regarded by the ancients as an organ which discharged *pituita* or mucus into the nose, and by most scientists of the past century as a mere vestigial relic of prehistoric usefulness, our first insight into a possible functional activity of this gland came from the laboratories of the modern comparative anatomists and embryologists, with many of whom it has been a favorite object of research. As a knowledge of its structure, development and morphologic significance is essential to the proper understanding of matters relating to its function, it may not be out of place to briefly recall here some few of the more important facts:

Rathke, in 1838, described an invagination of mucous membrane, supposedly arising from the anterior end of the foregut—since known as Rathke's pouch—and correctly attributed to this origin the epithelial portion of the pituitary body, which before this time was thought to be wholly derived from the brain. It remained for Götte and Balfour and Mihalkovics, in 1874 and 1875, to show that the invagination described by Rathke was derived from the embryonic buccal cavity rather than from the primitive gut, and hence was of ectodermic rather than of entodermic origin.

This ectodermic and epithelial pouch of Rathke, therefore, projecting from the buccal cavity and pressing against the floor of the anterior cerebral vesicle, leads to a downward fold in its wall, which becomes the early infundibulum. The stalk of the epithelial pouch becomes cut off, leaving a closed sac—the hypophyseal sac—which embraces the thickening wall or infundibular body at the tip of the vesicular fold, and the combined epithelial and nervous structure represents the anlage of the adult hypophysis. As the primitive gland develops further the epithelium of the anterior or lower part of the closed sac representing the remains of Rathke's pouch becomes thickened, forming the anterior lobe of the pituitary body. A more or less definite cleft separates this portion of the gland from the so-called posterior lobe, composed of the upper portion of the primitive closed epithelial sac together with the infundibular body to which it has become intimately adherent and with which it remains functionally associated. It is the persistence of this cleft in the mammalian hypophysis which usually permits of an easy, gross anatomic or surgical separation of the two lobes.

Thus the neural portion of the gland (the infundibular body) becomes surrounded by an intimate epithelial investment possessing a different histologic picture in the adult gland from that which characterizes the anterior lobe, though the two are of the same ectodermic origin. In accordance with the terminology proposed by Herring, this epithelial investment of the posterior lobe, together with its upward extension onto the outer walls of the infundibular stalk will be referred to as the *pars intermedia;* the infundibular body itself, as the *pars nervosa*, and the anterior, epithelial portion separated, from these by the persisting cleft, as the *pars anterior*.

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* The Oration on Surgery, read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* From an etymological point of view the terms *hyper-*, *hypo-*, *dys-*, and *a-pituitarism* are doubtless of badly mixed parentage, but there are certain obvious objections to such a combination as *hypohypophysism*, and I have therefore concluded to retain the Latin word with its Greek prefix. *Hyperpituitism*, etc., might possibly be less unwieldy.

The posterior lobe as a whole is scantily vascularized through a single stalk of vessels which enter this part of the gland at its posterior surface; the anterior lobe, on the other hand, is excessively vascular, the vessels of its outer or cortical portion in particular being sinusoidal in character. Apparently, the blood supply to this portion of the gland, from observations made by Dr. G. J. Heuer, comes, at least in the dog, through the infundibular stalk; and at all events separation of this stalk may seriously jeopardize or, according to Paulesco, effectually check the functional activity of the gland. To this I shall return when discussing the operative procedures.

Histologically, the anterior lobe is seen to be made up of cells with a peculiar staining reaction, the protoplasm of some of them being receptive to eosin, some to hematoxylin, and some barely staining at all. These are thought to represent merely periods of activity in the same type of cells—the eosinophilic cells being generally regarded as representing the functionally mature stage. These active cells seem to distribute themselves in the neighborhood of the thin-walled venous sinuses, into which they doubtless discharge their secretion. Some, indeed, have claimed that the product of cellular activity can be demonstrated under favorable conditions within the lumen of the vessels.

In the pars intermedia, investing the posterior lobe, the cells are of a different type, without eosinophilic granules, and it is here chiefly that one finds a tubular or acinous distribution of cells which have a tendency to secrete colloid resembling in appearance the secretion characteristic of the thyroid gland. These cells also seem, under certain circumstances, actually to invade the pars nervosa, into which the product of their secretion is directly discharged, whence, as Herring first pointed out, it seems to pass through tissue channels toward the infundibular cavity, to find its way ultimately between the ependymal cells into the cerebrospinal cavity of the third ventricle.

We have come fully to accept this view of Herring's, and under certain experimental conditions we have seen the masses of hyaline secretion which stream through the pars nervosa toward the cerebrospinal space enormously increased in amount. In certain animals, as the dog and monkey, the cells of the pars intermedia extend well up over the stalk of the hypophysis and around the infundibulum, and hence in removal of the whole gland it is almost inevitable that some functionally active fraction of the pars intermedia remains attached.

The pars nervosa itself contains no true nerve cells, being made up of ependymal and neuroglial tissue which is so loosely laid down that the spaces which apparently serve as the channels through which this hyaline-like secretion passes toward the third ventricle can be easily detected. Whether the pars nervosa actually has a secretion of its own, whether it serves to modify or merely to transmit the secretion from the pars intermedia, are questions which must await solution.

Anatomical studies, therefore, show us that the pituitary body, present in all vertebrates, is a composite gland with a double source of origin. It is made up (1) of a smaller posterior lobe with a nucleus of neural origin (pars nervosa), which, developing from the infundibular pouch of the thalamencephalon, becomes invested by and intimately fused with a portion of the epithelial sac (pars intermedia) that has arisen from a diverticulum of the buccal epithelium; and (2) of a larger, purely epithelial lobe (pars anterior) arising from the same source as the pars intermedia, from which it remains, however, more or less separated by a cleft—a vestige of the cavity of the original epithelial invagination from the primitive mouth.

THE GLANDULAR FUNCTION

There are a number of ways in which we may approach matters relating to the function of a gland: by laboratory methods of comparative physiology, by the experimental production of pathologic conditions, and by observing the symptomatology of clinical cases and correlating them either with postmortem findings or with the conditions disclosed or brought about by surgical procedures.

Physiologists are accustomed to attack these problems in two ways, by observing, on the one hand, the symptoms brought about by hypersecretion, and, on the other, those consequent on a lessened or hyposecretion, The first—the consequences of over-secretion—must, unfortunately, rest largely with observations on the effects of ingestion or of subcutaneous or intravenous administration of the material extracted from the glands of other animals; for until some hormone can be isolated there seems to be no way by which the pituitary body, or any other ductless gland, may be so over-activated as to give a permanent and pathologic excess of secretion. Transplantations of additional glands from other animals have signally failed in this respect.

Limited, however, as the injection methods are, they have nevertheless taught us certain important facts: first, that the hypophysis of all animals contains a blood-pressure-raising principle, confined, as Howell has proven, to the posterior lobe and restricted, as we believe, to the pars nervosa of this lobe; and second, that an extract or emulsion of this same lobe has a marked diuretic effect on the kidneys (Schäfer)—whether from direct action on the renal epithelium or from the rise in blood pressure and increased volume of the organ seems undecided. The blood-pressure-raising substance, though occasioning a more enduring rise in pressure than that produced by the more familiar extract of the adrenal glands, seems nevertheless to be akin to adrenalin, one striking resemblance being the pupillary dilatation which follows the instillation of either of these substances into the eye.

My associate, Dr. S. J. Crowe, has corroborated the findings of others that successive injections of posterior lobe extract not only soon fail to cause a rise in blood pressure, but may produce an actual fall, or indeed on several repetitions may even be fatal. It has been shown that extract of the gland when boiled still retains undiminished its evidences of physiologic activity (shown by the blood pressure reaction), so that it is possible to introduce sterile extract. Certain of Crowe's observations have given evidence that repeated daily injections are exceedingly deleterious to the well-being of the animal and lead frequently to extreme tissue alterations, particularly in the liver, a disturbance which apparently is due to posterior lobe secretion rather than of anterior.

Beyond these few properties possessed by an extract of the posterior lobe, the methods of injection have taught us little or nothing indeed regarding the function of the anterior lobe, which histologically would seem to be by far the more important part of the gland. Sandri has observed some apparent thickening of the bones and atheromatous patches in the arteries following intraperitoneal injections in young animals but we have failed as yet to produce any constant disturbances except a definite loss of weight by repeated (over weeks) injections of extracts of pars anterior alone, using the boiled extract or the emulsion of fresh and aseptically removed glands.

All this goes to indicate how far removed we are from a satisfactory organotherapy of the hypophysis, for as yet most of the available preparations contain the extract of both lobes, and so long at least as there is any confusion as to their separate activity, particularly in view of possible injury from excessive posterior lobe administration, we must restrict our studies, as well as their therapeutic application so far as possible to the individual lobes.

The reverse of these experimental observations directed toward the effects of over-activity of one or another part of the gland, concerns the effects of their diminished secretion; and here the problem might be simple were it not for the fact that Nature has placed the pituitary body in one of the best protected and most inaccessible spots in the body. It is here that modern surgical methods have been called on to play their part in furthering knowledge of these matters.

Since the earlier unsuccessful attempts to remove the hypophysis by operation, many investigators have endeavored in divers ways to find some satisfactory approach to the gland in an animal suitable for experimental observation. Frogs, cats, dogs, chickens and monkeys have been used for this purpose at various hands, with the attempt either to extirpate the gland or to destroy it *in situ.* It has been approached from below by numerous transphenoidal routes, the best of which are attended with a great risk of subsequent cerebrospinal infection; numerous intracranial methods of approach have been likewise evolved: through the vertex, with penetration of the cerebrum or separation of its hemispheres; through the forehead with elevation of the frontal lobes; and from the side by a passage under the temporal lobe.

Leaving aside for the time being the question of the preferable approach to the gland under various circumstances in man, and confining ourselves to the experimental problem, there can be no doubt but that the lateral and intracranial approach under the temporal lobe is the only method worth considering in the canine —the animal most suitable for these researches. Paulesco was the first to appreciate the possibilities offered by this operation when coupled with a certain principle of modern cerebral explorations—that of dislocation. The steps of the procedure have already been described by Dr. Lewis L. Reford and myself, and during the past year, in collaboration with Dr. S. J. Crowe and Dr. John Homans, the method has been perfected to such an extent that in our later series—and we have had all told more than one hundred total or partial hypophysectomies—it has been possible, in an hour's time, to carry through an individual operation, treating the gland in the way desired, without any complication whatsoever either from bleeding during the operation or from subsequent infection. A report *in extenso* of our experimental, clinical and pathologic observations on the gland will be forthcoming, but it will not detract from its interest to mention here a few of our results, in order to round out this general review of the entire subject.

Since the brief report of our work of a year ago[1] we have gained further and more conclusive evidence as to the correctness of the view that the pituitary body is essential to the maintenance of life, though the important fact has been brought out by Dr. Crowe that young dogs survive the total loss of the gland for a considerably longer period than do older dogs; and we have been able to prolong life for a time, though not indefinitely, by immediate or antecedent transplantation of the anterior lobe or by postoperative injection of its extract.

Since Paulesco, in 1908, published the results of his investigations, the reports of subsequent researches have appeared which are not confirmatory of his more important contention; but it is our impression, from their careful perusal, that the results are inconclusive, owing to the employment of unsatisfactory surgical methods. The assertion may safely be made that the total removal of the gland leads, in the course of days or at most of a few weeks, to death with a peculiar and characteristic train of symptoms (apituitarism or cachexia hypophyseopriva).

Does this property of maintaining the physiologic equilibrium reside in the anterior or the posterior lobe? The anatomic separation of the posterior from the anterior lobe by a persisting cleft has been mentioned, and this line of cleavage, when facility in the surgical procedure has been acquired, makes possible in the dog the operative separation of the two lobes and the removal of one of them singly—the posterior more easily than the anterior. No particularly characteristic symptoms, if we may possibly exclude some sexual disturbances, appear to follow the loss even of the entire posterior lobe (pars nervosa and its epithelial investment), though it must be confessed that some of the epithelium of the pars intermedia usually remains attached to the tip of the infundibulum after the operation.

Now, it is otherwise with the anterior lobe, for its partial removal, supposedly equivalent to a condition of hyposecretion of this part of the gland, though not incompatible with life nevertheless leads in some cases to profound alterations—notably an increase in the deposition of fat. This condition seems to have occurred in one of the animals of Paulesco's series—a chance observation to which especial attention does not seem to have been paid. We have had a number of similar experiences; and indeed believe that we have succeeded in purposefully producing this condition which we regard as characteristic of lessened secretion. The adiposity has been associated in some cases with polyuria and transient glycosuria, with shedding of hair, occasionally with unmistakable lessening of sexual activities and even with atrophy of testes and ovaries.

The problems relating to bodily growth and to organs of sex are especially difficult ones, requiring as they do months of observation; and concerning them our data is as yet very insufficient, though in all probability they are matters which are associated with the function of the anterior rather than of the posterior lobe. To correlate fully our experimental with the clinical conditions to be described, a long series of partial removals of the anterior lobe in animals of different ages and of both sexes will be required.

In all these observations, not only on the hypophysis cerebri, but on any other of the ductless glands, there is one vitally important matter that is not to be disregarded—namely, the close physiologic interrelation of all of these structures[2]. It is impossible to remove—probably partially to remove—the hypophysis without producing marked alterations in all the other glands—

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[1] Johns Hopkins Hosp. Bull., 1909, xx, p. 105.

[2] Though the hypophyseal question was not considered by them, an article by Eppinger, Falta and Rudinger (Ueber die Wechselwirkungen der Drüsen mit innerer Sekretion. Ztschr. f. klin. Med., 1908, lxvi, 1-52) is of interest in this connection. Cf. also: Rénon, Delille and Monier-Vinard: Syndrome polyglandulaire par dyshypophyse et par insuffisance thyro-testiculaire, Bull. et mém. Soc. méd. des Hôp. de Paris, 1909, series 3, xxvi, 204-211.

thyroid, parathyroid, adrenal, testicle, ovaries, islands of Langerhans, and thymus. Changes in the hypophysis consequent on thyroidectomy or castration have long been known, and after an hypophysectomy we have found the reverse to be true—the simplest example being an acute hypertrophy of the thyroid.

This interrelation of the ductless glands makes the problem the more interesting and at the same time increasingly difficult. Does the adiposity following partial hypophysectomy hold any possible relation to the secondary lesions in the ovaries or testes, or the glycosuria to alterations in the islands of Langerhans or thyroid? Answers to these and other similar questions must await further investigation. Then, too, it must be borne in mind that the various ductless glands not only give evidence of adaptation to a pathologic process affecting one or another member of their family, but respond to an unusual physiologic process likewise, as is illustrated by the recognizable functional alterations in the thyroid and hypophysis which accompany pregnancy.

Thus, it would appear, from these various investigations on the physiology of the hypophysis that the extract of the physiologically active posterior lobe, supposedly the most important part of the gland, may be actually harmful when injected, and yet after this portion of the gland has been removed there is no apparent disturbance with the physiologic balance of the body. On the other hand, the supposedly inactive anterior lobe can not be removed in its entirety (leading to a condition of apituitarism) and life be long maintained. This portion of the gland, furthermore, seems primarily to be associated with the growth of the body, with the metabolism of fat, with sexual activities, and to be bound up in ways which as yet are symptomatically obscure with the function probably of all the other ductless glands of the body.

CLINICAL SYMPTOMATOLOGY

Let us pass from these scant observations on the anatomy and physiology of the gland to see in how far they may be applied not only to the few maladies which are under the suspicion of being primarily hypophyseal diseases, but also to other conditions which may show secondary symptoms possibly of hypophyseal origin. Among the primary diseases acromegaly and gigantism naturally deserve the first mention.

Since Pierre Marie, in 1886, gave the name acromegaly to the peculiar and unmistakable malady characterized by striking deformities due to skeletal overgrowth, and in 1889 called attention to the fact that an hypophyseal enlargement (adenoma or hyperplasia) was a frequent accompaniment of the condition, there has been an active dispute in regard to the part, if any, which the gland actually plays in the disease. Many cases of acromegaly have been recorded in which, in agreement with Marie, glandular enlargements or tumors of the pituitary body, with the characteristic deformation of the sella turcica, have been demonstrated after death.[3] On the other hand, there have been a still larger number of carefully studied cases in which a tumor of the hypophysis or of its neighborhood has been unaccompanied by these symptoms. Finally, a few cases of undoubted acromegaly have been described in which the hypophysis on postmortem examination is said to have been normal in every respect.

Now these apparently conflicting observations are possibly not difficult of explanation in the light of our somewhat more definite knowledge as to whether the underlying condition is one of glandular hypersecretion or hyposecretion—a far more important matter than the mere association, or otherwise, with a tumor. In glands affected by an adenomatous growth, as well as in those the subject of simple hyperplasia, it is a natural conjecture that there may be some excess of glandular secretion. However, in view of the many instances of hypophyseal tumor occurring without acromegaly, Massalongo's supposition that the disease represents a condition of hyperfunction—hyperpituitarism—has been widely discredited. It is believed by Benda and others that an excess of large cells in the eosinophilic stage indicates an overactive gland, but as this supposition has not been widely accepted it is easily understood how a pathologic overactivity in glands not macroscopically enlarged may have escaped recognition, so that the supposed finding of actually normal glands in association with acromegaly must be open to grave doubt.[4]

It has remained for surgical measures to cast the deciding vote in favor of the hypersecretion theory, for there have been two fairly conclusive cases. One of them was a case of Hochenegg's in which a successful effort was made to remove the gland completely, and the other an unpublished case of my own, in which, purposely, a partial hypophysectomy only of the anterior lobe was performed. In the latter case the tissues resemble histologically what we regard as a simple hypertrophy, and the patient has been not only completely relieved of the pressure symptoms, but there has been an actual measurable postoperative reduction in the size of the hands. In Hochenegg's patient there was a measurable diminution of the bony overgrowth, shown first by a narrowing of the spaces between the teeth. Even a tendency toward subsidence of the disease after a partial hypophysectomy—equivalent to the partial thyroidectomy for exophthalmic goiter—would seem to speak conclusively in favor of the hyperpituitarism theory.

That tumors of the gland or of its vicinity may be found unaccompanied by symptoms of acromegaly is precisely what would be expected. Indeed, if there is a resultant interference with the normal secretory activity of the gland one would expect the reverse condition, but this will be considered more appropriately under the heading of hyposecretion.

The relation of gigantism to acromegaly and of both of these to a possible lesion of the hypophysis has been much discussed, and the generalization of Massalongo, that acromegaly is nothing but delayed or abnormal gigantism, has been endorsed by Meige, Woods Hutchinson and Bassoe, who have made the most thorough studies of the question. Thus in Meige's formula, when hypophyseal disease—an evidence as we believe of over-activity of the anterior lobe—commences in youth, gigantism occurs; when in adult life, acromegaly; when commencing in youth and continuing into adult life, a combination of the two is seen. The important fact is that an enlargement of the pituitary body is found in a large majority of cases of both acromegaly and gigantism, and it is a natural conclusion that they are merely different expressions of one and the same morbid condition.

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[3] Marie and Marinesco (Sur l'anatomie pathologique de l'acromégalie. Arch. de méd. expér. et d'anat. path., 1891, p. 539) considered acromegaly as a dystrophy analogous to myxedema due to a diminution or an abolition of the functions of the hypophysis. Vessale and others go so far as to regard the hypophyseal hyperplasia, acknowledged to be present in a large percentage of acromegalics, not as the primary process but as one secondary to the general nutritional disorder.

[4] The matter has been fully discussed in an able study by Dean Lewis (Hyperplasia of the Chromophile Cells of the Hypophysis as the Cause of Acromegaly. Johns Hopkins Hosp. Bull., 1905, xvi, p. 157) of a case of acromegaly with an hypophysis which appeared normal in its gross appearance but showed, in confirmation of Benda's view a definite hyperplasia of the chromophile cells.

What now are the clinical manifestations, if any, of diminished activity of the gland? There occurs a remarkable physical state characterized by sexual infantilism and adiposity—*dystrophia adiposo-genitalis*—a syndrome to which a paper by Fröhlich[5] first attracted general attention in Vienna, where most of these cases have subsequently been observed. The condition is probably far from an infrequent one, though it has received but tardy recognition in English and American writings.

These patients, in addition to the local pressure symptoms of a growth in the hypophyseal neighborhood show small stature, infantile genitalia, hypotrichosis and an excessive deposition of fat. The title of Fröhlich's paper—and there have been many other articles similarly entitled as "cases of hypophyseal tumor without acromegaly"—indicates a widespread misconception as to the cause not only of these symptoms, but of those described by Marie as well. It is equivalent to describing the goiter which may accompany cretinism or myxedema as "cases of tumor of the thyroid without exophthalmic goiter." This confusion clears away on better knowledge of the effects of hyposecretion, for it is my opinion that in these cases the pressure from the tumor has led to a considerable lessening of the normal glandular activity. In this light, they become equivalent to the canine partial hypophysectomies after which, as I have described, an excessive deposition of fat may occur (with the accretion in some cases of over one-third the former weight within a few weeks after the operation), accompanied at times by a definite atrophy of the genitalia.

One must acknowledge that not only the anterior, but the posterior lobe also, is in all probability affected by such a pressure disturbance from a neighboring tumor, so that the whole picture perhaps can not be ascribed to diminished activity of the anterior lobe alone. It is safe to say, however, that the small stature and the adiposity can be thus accounted for, and further investigations will doubtless reveal the cause for the sexual infantilism. This, indeed, may only be indirectly due to pituitary body alteration, the lessened secretion from which has failed in some way to activate the testicular or ovarian secretions.

It is important to note that among the earliest successful operations on the hypophysis have been those performed by v. Eiselsberg on patients exhibiting the symptoms described by Fröhlich, either with the removal of solid tumors or the evacuation of cystic growths. Striking improvement in the condition, shown by a lessening of fat and rapid appearance of sexual adolescence, has followed these operations, but I am unaware that this was ascribed to reawakening of functional activity in the previously compressed hypophysis, nor that especial care was taken to avoid its removal with the tumor.

It is noteworthy that a frequent early symptom of acromegaly or of gigantism associated with tumor is amenorrhea in women and impotence in men—though this need not apply to those adult cases which show a simple hypertrophy of the anterior lobe without tumor formation—and it is quite probable that here we see an overlap in the symptoms occasioned by hypersecretion of one part of the gland and diminished secretion of another. It must be kept in mind also that in the condition of "adiposo-genital degeneration" described by Fröhlich, which in the light of our experimental observations we consider to be due to hyposecretion, the malady begins to show itself before adolescence, and it is quite probable that the clinical picture, when the disease originates later in life, has a somewhat different aspect, just as gigantism differs from acromegaly. As an analogous condition in the case of the thyroid I may mention cretinism as the result of thyroid deficiency dating from childhood, and myxedema as the result of a similar deficit occurring in adult life.

One somewhat characteristic symptom of hyposecretion of the anterior lobe, not only after partial experimental ablations, but also evident in clinical conditions is polyuria, sometimes associated with glycosuria. This symptom, in our animals, we might possibly have attributed to a temporary activation of the retained posterior lobe, the secretion of which, as Schäfer has shown, possesses diuretic properties when injected, had it not been for the fact that it occurs in animals with a partial anterior and total posterior lobe removal. In some of our dogs in which there had been an increase of fat. these urinary symptoms persisted over months.

Clinical instances of hyposecretion are doubtless far from uncommon and probably many will recall illustrative cases in their own experience. I have heretofore recorded a typical case of the infantile type associated with a congenital teratoma of the hypophyseal region, and the following may serve as an instance of the adult condition—the patient having been under Dr. Heuer's and my observation this past winter:

A single woman, aged 36, had suffered from severe bitemporal headache for seven months, during which time there was a gain of 69 pounds (from 118 to 187 pounds) in weight. Polyuria was constant and sugar had been present in the urine from time to time. The hair had become thin and scanty. Evidences of the local lesion were shown by a primary optic atrophy unassociated with a choked disc, and by a homonomous hemianopsia. Amenorrhea had been present from the onset. The *x*-ray showed no enlargement of the sella turcica, and a lateral intracranial exploration (subtemporal) was performed, in the hope of exposing the growth so as to determine how it could best be attacked. It was not possible to dislocate the tense temporal lobe sufficiently to disclose the lesion. A transphenoidal operation was refused. The patient's condition remains unaltered.

Another history of considerable interest is:

The patient, a man aged 40, exhibited characteristic symptoms of intracranial pressure, thought to be due to tumor or to the edema of arteriosclerosis. A subtemporal decompression was performed, with complete relief for a year, during which time he became very fat. Subsequently, polyuria occurred with intermittent traces of sugar in the urine; he became somnolent, with a persistent subnormal temperature and slow pulse, and finally succumbed. A primary tubercle of the hypophysis (pars anterior) was found postmortem, in addition to a marked degree of cerebral arteriosclerosis.

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[5] Fröhlich's paper (Ein Fall von Tumor der Hypophysis Cerebri ohne Akromegalie, Wiener klin. Rundsch., 1901, 47, u. 48), describing two of these cases, preceded by several years an article of my own (Sexual Infantilism with Optic Atrophy in Cases of Tumor Affecting the Hypophysis Cerebri. Jour. Nerv. and Ment. Dis., November, 1906) in which two further cases were described, though insufficient emphasis was laid on the peculiar adiposity which was present in each. Both of these reports were made before a safe method of operative approach to the gland has been evolved.

Compare also, Berger's paper, Ein Fall von Tumor des Hypophysengegend mit obduktionsbefund. Ztschr. für klin. Med., 1904, liv, p. 448.

Whether the adiposis dolorosa of Dercum is akin to hypophyseal adiposis is not assured, though there are many features of the condition which lend support to such a conjecture. G. E. Price, in a recent article, describes the changes in the gland, but they are possibly no more marked than in the average adult gland; and from a histologic standpoint we are still groping for the characteristic cellular picture of lessened hypophyseal activity. Gross lesions of the pituitary body (tumors, etc.) have been found in at least four of the few reported cases that have come to autopsy; and there have been certain features of their symptomatology also which suggest a close relationship.

Symptoms of hypophyseal origin doubtless occur in association with many diseases in which they are overlooked, for we have found, in the examination of over a hundred glands taken at random from autopsy material, that histologic alterations are very common. It is not always possible to interpret the effect of these lesions, particularly since, on the clinical side, we are far from being on the alert for them. Certain hypophyseal symptoms, nevertheless, even in the state of our present knowledge, are capable of interpretation. This is particularly true of the glandular lesions which occur secondary to injuries and to intracranial tumors which are provocative of hydrocephalus.

In most of the cases of brain tumor which we have examined, Dr. G. J. Heuer and I have found characteristic gross alterations of the gland, which is often cup-shaped, flattened or otherwise deformed. This is particularly true of the cases in which there has been an associated internal hydrocephalus, in which one sees evidences of the damming back of the hyaline secretion of the posterior lobe, which often accumulates as a large hyaline cyst. This is what would be expected from Herring's observation. It is not inconceivable, therefore, that many of these patients would actually show symptoms of altered hypophyseal function were our attention more definitely centered on the activities of this gland. These symptoms would be more likely to fall in the group due to hyposecretion than that of hypersecretion, and may account for the occasional marked increase in weight, the amenorrhea and somnolence not infrequently seen in company with cerebral neoplasms.

These may be considered as secondary hypophyseal symptoms in contradistinction to the primary manifestations which occur when the gland is directly implicated by a growth in its immediate neighborhood—a state of things betrayed by the well-known local symptoms.

I have here endeavored to postulate in simple form some clinical conditions which we may safely regard as evidences of hypersecretion of the anterior lobe, as shown by overgrowth, and others which may equally well be taken as evidences of hyposecretion, shown by undergrowth or infantilism accompanied by a tendency toward an excessive deposition of fat. As we have seen, it is possible to simulate the latter condition by experimental methods. A condition corresponding to the clinical state due to hypersecretion still remains to be reproduced in the laboratory.

This simple subdivision must be taken merely as the suggestion for a working basis. It may in time prove to be wrong, and it signally fails to take into consideration not only the possible lesions of the other portions of the pituitary body (pars intermedia and pars nervosa), but also of the other correlated ductless glands. This fact, however, holds equally true for the condition of the other ductless glands in the analogous diseases of the thyroid—the hyperthyroidism of Graves' disease and the hypothyroidism of myxedema. Still, it gives us a certain hold on the maladies of the pituitary body which heretofore we seem not to have possessed.

There is every reason to suppose that functional irregularities of the hypophysis are at least as common as those of the thyroid gland, though heretofore only when a local neoplasm has clearly pointed the way to the hypophyseal region have the symptoms due to these irregularities been given the attention they deserve.

THERAPY

If such a subdivision of these conditions as our experimental observations have tempted us to make shall prove to be practicable, with a grouping of clinical cases into those suffering from excessive secretion (hyperpituitarism), *versus* those with diminished secretion (hypopituitarism), can we safely draw any conclusions therefrom which will hold out some promise of their future rational treatment?

It is far from utopian to look forward to the day when organotherapy, or, better, the administration of the isolated active principle of one or another part of the gland, will accomplish, at least for conditions of hyposecretion, what thyroid extract does for cretinism or myxedema. We can even now with reasonable certainty anticipate the results of anterior lobe administration for the adiposity associated with the conditions of hypopituitarism, and it is not improbable that many of the cases of adiposity of diverse origin which have been benefited in the past by thyroid administration have been so benefited in consequence of the indirect reawakening of activity in the hypophysis (and possibly with a secondary activation of the generative organs) resultant to this treatment.

Possibly less can be expected in the near future from glandular therapy for the conditions of hyperactivity, though it is conceivable that physiologic chemists may succeed in elaborating substances which will counteract the excessive secretion of any one of the ductless glands which may be under investigation.

At present, as is the case with hyperthyroidism, the cruder measures of surgery must be resorted to—namely, the partial removal of the hypertrophied or overactive gland. This, as I have stated, has been carried out with promising results in certain cases of acromegaly—a disease supposedly representing the effects of overaction of the gland in adult life. Our experimental observations, largely confirmatory of those of Paulesco, have shown that the procedure must be limited solely to a *partial* removal of the anterior lobe with careful avoidance of *total* removal, which leads to a condition of cachexia hypophyseopriva as definitely as does a complete thyroidectomy to one of cachexia strumipriva. In view of the experimental results, one would naturally apprehend serious consequences in man, as well as in animals, if the whole anterior lobe, or indeed of its major portion, be removed, though proper glandular administration of extract of this lobe would doubtless do for such a condition what thyroid extract does for the hypothyroidism following too extensive a removal of the thyroid.

Glandular therapy, as I have said, would be the natural therapeutic resource in the conditions which we have described as due in all probability to a diminished hypophyseal activity; but as yet no clinical cases of this sort have been recorded as consequent on a simple primary incompetence from atrophy of the gland, though such a condition doubtless occurs. As a matter of fact, they have only been described as an accompaniment of tumors in its neighborhood with secondary implication of the hypophysis through compression. Hence in many of these conditions of hypopituitarism, as well as in those of hyperpituitarism, there are definite indications for surgical intervention, and fortunately in many of the cases, especially those with delayed adolescence of the Fröhlich type, the damaging growth is a benign one, favorable for operation.

We must realize, too, that there may be a double reason for operating, in view of this frequent association of a local neoplasm with both of the conditions which we are considering. I have purposely refrained from making particular mention of the well-recognized local symptomatology of these growths in the infundibular region, for it is their effect on the hypophysis that I wish to emphasize, unobscured by other symptoms. Headache, of course, is often extreme in these cases—a form of cephalalgia produced by distention of the dural pocket enclosing the gland and consequently not relieved by the usual decompressive measures, as I have found to my discomfiture. Amblyopia from an optic atrophy which usually is primary—not secondary to a choked disc—is a still more serious and equally frequent manifestation of the local lesion. It appears in its most characteristic form as a bitemporal hemianopsia, though this is far from the most common type of partial blindness, inasmuch as one nerve is apt to be more seriously implicated than the other. Enlargement of the sella turcica is another valuable sign, one which need be expected, however, only in those cases in which the growth originates in or invades the glandular dural pocket. There are a number of additional signs of less moment.

Though these manifestations of a local tumor, whether primarily originating in the gland or secondarily involving it from pressure, have possibly been absent more often with hyperpituitarism (acromegaly) than with the reverse condition, we must remember that they may be common to both of them. These local tension symptoms may be completely relieved, as we have found to be the case with our acromegalic patient, by the simple incision of the dural pocket encasing the enlarged gland.

These things, of course, are quite apart from the treatment of the hypophyseal symptoms themselves, in regard to which the matter must likewise remain at present largely a surgical problem. This resolves itself, on the one hand, into partial removal of the hypertrophied gland or the glandular tumor when there are clinical manifestations of over-activity (acromegaly and gigantism); on the other hand, when there are evidences of under-activity (adiposity, either with infantilism or sexual degeneracy) into removal, if possible, of the tumor causing the compression, with supplementary organotherapy (anterior lobe administration) should the gland prove to have been injured by the operation or for other reason fail to resume its normal activity.

As has been the case with operations on the thyroid, we may expect a rapid perfection of the surgical methods of approach even to this far more inaccessible structure—the pituitary body; and depending on whether the growth largely occupies a distended sella turcica or lies above it in the interpeduncular region, the transphenoidal route, successfully followed in our case of acromegaly, or an intracranial route comparable to that employed by Horsley and used in our animal experiments, will prove to be the preferable one to follow.

SUMMARY

Two conditions, one due to a pathologically increased activity of the pars anterior of the hypophysis (hyperpituitarism), the other to a diminished activity of the same epithelial structure (hypopituitarism), seem capable of clinical differentiation.

The former expresses itself chiefly as a process of overgrowth—gigantism, when originating in youth, acromegaly when originating in adult life. The latter expresses itself chiefly as an excessive, often a rapid, deposition of fat with persistence of infantile sexual characteristics when the process dates from youth, and a tendency toward a loss of the acquired signs of adolescence when it first appears in adult life.

Experimental observations show not only that the anterior lobe of the hypophysis is a structure of such importance that a condition of apituitarism is incompatible with the long maintenance of life, but also that its partial removal leads to symptoms comparable to those which we regard as characteristic of lessened secretion (hypopituitarism) in man.

A tumor of the gland itself, or one arising in its neighborhood and implicating the gland by pressure, is naturally the lesion to which one or the other of these conditions has heretofore been attributed, though it is probable that over-secretion from simple hypertrophy, or under-secretion from atrophy, will be found to occur irrespective of tumor growth when examination of the pituitary body becomes a routine measure in the postmortem examination of all cases in which the conditions suggest one or the other of the symptoms-complex described.

When due to tumor, surgery is the treatment that these conditions demand, and at present there are reasonably satisfactory ways of approaching the gland; but clinicians and surgeons must clearly distinguish between the local manifestations of the neoplasm due to involvement of structures in its neighborhood other than hypophysis, and those of a general character from disturbances of metabolism due to alterations of the hypophysis itself.

3 West Franklin Street.

Penetrating Injury of the Brain.—W. A. Gills, in the *Virginia Medical Semi-Monthly*, May 7, 1909, reports the case of a man, aged 30, who shot himself with a 32-caliber revolver, the ball entering the right side of the head two inches behind the upper temporal ridge and one inch above the zygoma, traversing the frontal region, passing entirely through the bone of the opposite side (but not through the skin) at a point midway between the frontal eminence and the superciliary ridge, an inch to the outer side, a skin incision being necessary to remove it. About one hour after the shooting the patient was almost pulseless, with breathing very shallow, but conscious—recognizing voices. His eyes were so badly swollen that one was unable to recognize him; and because of the swelling, it could not be determined if there were any ocular changes present. Gills noted the presence of brain substance on the cheek. An incision of about an inch and a half was made through the skin and the ball removed without any trouble. Treatment was tentative and conservative. On removal of the dressing it was found that each wound extended to the brain. Drainage was put in each, an ice cap applied to the head, a mercurial purge given and the patient placed in a dark room under the care of a competent nurse. The head of the bed was elevated; a saline solution four ounces every fourth hour per rectum, ordered; the eyes cleansed with boric acid solution; the ears and nose irrigated with saline solution, and morphin given to induce sleep. No probing was done. The patient made a complete recovery except for slight impairment of the sense of smell.

Original Articles

OPTIC ATROPHY IN TABES

A DIAGNOSTIC SYMPTOM IN THE DIFFERENTIAL DIAGNOSIS FROM GENERAL PARESIS *

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Any point which can be discussed and which may in any way make the diagnosis of general paresis more positive, especially in its early stages, seems to me of value.

The earlier definition of general paralysis, its symptomatology and duration, would hardly apply to many of the cases which are included under the head of general paralysis to-day.

It has seemed to me that such cases which continue for five or even ten years must belong to another pathologic state that the type which pursues a course of three years with fulminant active symptoms ending in complete dementia, and often spinal symptoms involving both the lateral and posterior columns of the spinal cord.

The pathologic returns also in these former cases, i. e., those of long protraction, are not, to my mind, distinctive of general paralysis, but may also be found in other diseases marked by arterial degeneration as seen in chronic alcoholism, especially if associated with syphilis.

Many other points of differential diagnosis may also be suggested by the question as to whether tabes dorsalis and general paresis are one and the same disease.

Ferrier and others assert that the only difference is the part of the nervous system involved, the disease process being the same. I believe, however, that the conditions are distinctly different, no typical case of tabes ever passing into general paralysis.

This statement may appear extreme, but I think careful consideration will lead most of us, if we look back over our histories of the typical cases of tabes—the so-called classical symptom-complex cases—to conclude that they have never shown mental symptoms, while those which were perhaps diagnosed as tabes and have later developed undoubted evidence of general paralysis have been somewhat irregular in their spinal manifestations, probably ataxic paraplegia being present.

I believe that it can be positively asserted that in the cases of general paralysis which have apparently given the history of a preceding tabes—the so-called tabic general paralysis—the pathologic returns will show spinal cord changes more diffused than those found in typical cases of tabes. We find both the lateral and posterior columns affected in general paralysis, especially the former, while in tabes the lesion is more strictly limited to the posterior spinal ganglion, the posterior and Clarke's columns.

I have alluded in a paper read before the American Neurologic Association, at its last meeting in New York, to the comparative infrequency of pain in general paralysis and to the difference in type from that in tabes, if present—i. e., the absence of the lightning-like pains, the girdle-like or band-like pains, and especially the visceral crises—as a differential diagnostic point from tabes.

The non-tabic type of general paralysis, i. e., the classical form running its course in three years, is, in my experience, but slightly affected by these pains. I do not forget, in saying this, that there is great variation in the pain symptom in the typical cases of tabes.

Again, the involvement of the cranial nerves is not as frequent in general paralysis as in tabes—and this leads me to the special consideration of the subject referred to in the title of this paper.

In looking over my cases in private practice and those in my hospital experience, I find a very small proportion with optic atrophy unless associated with a previous history of irregular or non-typical tabes.

The statistics of optic atrophy give such varied reports from different writers as to the percentage both in tabes and in general paralysis as to be almost contradictory; they are, therefore, of little value.[1] This is evidently due to the fact that the cases coming before these individual observers have been only of a certain type. For instance, general paralysis, if seen in the early stages as found in a general hospital service, might show very few cases of optic atrophy; if, however, the cases are taken from the records of a hospital for chronic nervous diseases the percentage will be higher.

There is, again, very great difference of opinion as to the stage of the disease when optic atrophy appears in tabes. Some classify it as a very early symptom; others as a later appearance.

Again, some assert that in tabes its presence signifies a different type of tabes with either a cessation of progress of the spinal symptoms or as occurring in cases in which the spinal symptoms are never as prominent.

This, again, is denied by equally responsible observers. (Ferrier.) My personal opinion is that it has little or no bearing on the character or progress of the disease in tabes.

I have written to several of the physicians in the New York State asylums for the insane in regard to the frequency of optic atrophy in general paresis. Their reports in part support my views.

Dr. Louis C. Pettit, of the Manhattan State Hospital, Wards Island, states that in 1,000 males with general paralysis, complete atrophy existed in 28 cases, and incipient atrophy in 12 cases. In 200 females it was present in only 4 cases.

Dr. Robert M. Elliott, superintendent of the Willard State Hospital, says that in his nineteen years' experience he can recall only three cases of optic atrophy in general paralysis.

Dr. G. A. Smith, of Central Islip Hospital, states that it is comparatively rare, citing the pathologist of the hospital, Dr. J. W. Moore, as follows: In 100 males there were only two cases, and one of these patients had had tabes for some years before the onset of the general paralysis.

Dr. W. A. Macy, of King's Park Hospital, makes a like statement in regard to the infrequency of optic atrophy in general paralysis.

Dr. W. A. Holden reports in seventy carefully selected typical cases of general paralysis no instance of optic atrophy.

It is not my intention to quote other authorities. This paper is a clinical one and my object is to excite discussion and lead all observers in hospital and private practice to look into a subject which certainly up to the present time has not been very carefully studied.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Posey and Spiller (Dercum): The Eye and Nervous System, pp. 479 et al.

This is, indeed, a preliminary report, which I shall make more complete in the future.

Under the head of general paralysis I feel convinced that too many diseases have been included, and within the next ten years we shall have differentiated and classified these various forms into several distinct diseases.

19 West Fifty-second Street.

ABSTRACT OF DISCUSSION

Dr. Charles K. Mills, Philadelphia: Dr. Fisher's statistics show the occurrence of optic atrophy in a considerable percentage of his cases of general paresis—about 40 in 800 or 1,000, and certain other low percentages. The occurrence of optic atrophy in tabes dorsalis is perhaps not more than 4 or 5 per cent. I have seen cases of optic atrophy in general paresis; they are reported by good observers and the other ocular phenomena of tabes have been of course extensively reported as occurring in paresis. Bevan Lewis, if I recall aright, has very elaborate records of all sorts of ophthalmic and ocular affections occurring in general paresis analogous to or identical with those occurring in tabes. I still feel like holding to the view that fundamentally general paresis and tabes are the same disease, and in saying this one needs not to say that tabes in regular form shall occur before the appearance of the paresis, or the reverse.

Dr. C. B. Burr, Flint, Michigan: I have in my care a patient with paretic dementia with complete blindness for two years. The disease has run the ordinary course, extravagant delusions, motor symptoms, etc. Owing to focal symptoms present before the patient came under my care, suspicions of tumor or local lesion in the motor tract arose; but an operation brought to light nothing at all; and the case has been regarded since as a properly diagnosticated one of paretic dementia.

Dr. George A. Moleen, Denver: I saw a number of cases of optic atrophy sent to the hospital and I asked Dr. Jackson if he could regard them as primary optic atrophy; he said they were often followed by symptoms of paresis even after a period as long as twenty years. One of these cases I was able to follow for some time. The patient showed nothing when sent down but the atrophy of the tabetic type. Four or five months later he had a typical epileptiform attack followed by an attack of mental disorder in which he had to be restrained; and a year following he had a typical apoplectiform attack and is now confined, probably permanently. I came to the conclusion that a good many of those patients with so-called primary optic atrophy ought to be watched rather carefully to see if this atrophy was not the first indication of a paresis.

Dr. E. D. Fisher, New York: What has been stated by Dr. Mills is the generally accepted view. I have purposely put this in an extreme way. There are so many contradictory statements by different writers in regard to the condition of the eyes, as to the percentage of optic atrophy in tabes and general paralysis, that the subject is well worthy of reconsideration. In my private practice and in talking with others I find their experience coincides with mine, that ocular symptoms are comparatively rare in general paresis as compared with those which we find in tabes. Dr. Nonne states that the serodiagnosis gives quite a different report in tabes from that found in general paresis. Possibly that furnishes an additional proof that the two diseases are not one and the same.

Philadelphia's Public Playgrounds.—Philadelphia has an excellent system of public playgrounds, which is put into execution during the summer months. The schoolyards of the city are thrown open to the youngsters of the neighborhoods, swings, slides, games and all sorts of entertainment are provided for the little ones, and there are teachers and caretakers on hand to see that the fun proceeds along proper lines. There is even some slight attempt made at instruction, though nothing onerous is imposed on the little brains. The teacher reads stories that divert and instruct at the same time. The system has been found to be of such benefit that it will be extended along large lines.—*Hygiene and Physical Education.*

EPIBULBAR LEUCOSARCOMA

EXENTERATION OF ORBIT. NO RECURRENCE AT ORIGINAL SITE. DEATH IN THREE MONTHS FROM METASTASES*

CASEY A. WOOD, M.D.
CHICAGO

New growths on the eyeball, whether malignant or other, are so rare that a detailed history of an example of them seems worth while. I have been able to follow the course of a neoplasm of this kind almost from its beginning to its termination, and I take the liberty of reporting it.

Patient.—Miss J. O., aged 15, was referred to me Sept. 9, 1908, by Dr. F. W. Kettlestrings and Dr. H. S. Warren of Chicago, on account of a swelling of the right eyeball.

History.—She had had no trouble with her eyes except a slight discharge from them when a few days old, but this infection had lasted only a short time and had left no trace. From that time there was nothing particularly noticeable about her eyes until May, 1908, when the right lid became swollen. This was followed by an extension of the swelling to the eyebrow, after which it was noticed that the upper lid began to droop. Four weeks later the condition became decidedly worse and was shortly followed by pain in the eyeball itself. At that time she also noticed that any attempt to use the eye longer than half an hour—as in reading or studying—was followed by decided fatigue. Dr. Warren reported that the general health had been only fair, although the blood and urine, as well as the internal organs, were practically normal. She had been taking a simple iron and strychnia tonic. Her family history is negative so far as the occurrence of tumors is concerned and the patient has had none but the usual (infantile) complaints.

Examination.—On examination of her nose by Dr. Frank Brawley the patient gave a history of a yellowish-green discharge from the left nostril, but this had stopped before the eye trouble set in. She showed normal nares except a left posterior hypertrophy of the inferior turbinal. Coming to a nearer examination of the eyes vision of the left eye was normal; the patient read 6/5 minus and Jaeger 1, with good range. The sight of the left eye was 6/9 minus; Jaeger 1, not so well as on the right side. The fundi in both eyes were entirely normal. There was an apparent protrusion of the right eye. On raising the upper lid, which was distinctly swollen and covered about one-half the pupil, there was exposed a large, tense, semitransparent swelling which involved about one-half of the upper aspect of the globe. On digital examination, the tumor gave an elastic sensation and showed that it was in all probability confined to the superior bulbar surface and did not extend posteriorly. It was slightly tender to the touch, but the conjunctiva covering it was entirely smooth and non-adherent to the growth beneath. There was no true proptosis, although the globe and lids seemed more prominent than on the opposite side. The excursions of the eyeball were as extensive in the affected eye as in the normal eye. There was no evidence of changes in the cornea or in the sclerotic or overlying conjunctiva for 5 mm. around the sclerocorneal junction, and on using the ophthalmoscope there seemed to be, so far as it was possible to see, no involvement of the anterior segment of the internal eye. The new growth was apparently quite circumscribed, attached to the sclerotic but did not to any appreciable degree involve any portion of the conjunctiva. The right preauricular gland was rather hard, well-defined and slightly prominent. The corresponding submaxillary and anterior cervical glands were more easily outlined on the right side than on the left.

Roentgen Examination.—An *x*-ray picture of the orbital contents and neighboring cavities showed that there was no bone enlargement and probably no extension of the tumor mass behind the eyeball; indeed, the ocular swelling seemed during the whole time of observation to be confined to the upper half of the globe and to diminish in volume below the equator. A number of further observations were made of the neoplasm. Dr. Reichmann made several skiagrams and believed that the *x*-rays indicated an orbit on the right side freer of skiagram shadows than the left orbit.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Diagnosis.—The Calmette test gave a negative result in the opposite eye. That the patient might have the further benefit of any doubt, very large doses of iodid of potassium were given, in conjunction with pilocarpin sweats, for two weeks, with but slight benefit, except perhaps some reduction in the prominence of the preauricular gland. Under these circumstances and since the tumor showed a smooth surface, appeared to be circumscribed, was of elastic consistency, whitish in color and was associated with a preauricular enlargement, a diagnosis was made of probable subconjunctival leucosarcoma arising from the tissues about the superior rectus insertion.

Microscopic Examination.—To settle the question, under a general anesthetic a section of the tumor was removed on Oct. 1, 1908, and examined by Dr. Dagg of the Chicago Laboratory. His report is as follows:

"The tissue has the appearance of a small round-celled sarcoma. There are no well-formed vessels. One margin of the section shows diapedesis of red cells into the tumor mass. Mitosis of the cells not noticed."

The wound of operation healed kindly in a few days.

Although the right preauricular gland seemed to be less swollen after the treatment just outlined the group of glands at the angle of the jaw shortly became more prominent. In consultation with Dr. A. E. Halstead and after considering the *pros and cons* of the case, it was decided to do a combined exenteration of the orbit, with removal of the enlarged preauricular, submaxillary and cervical glands; in fact, of all the grandular tissue that seemed to be affected by the disease. On October 8, with the assistance of Dr. Halstead, this operation was successfully carried out.

Postoperative History.—On October 20 the skin incision involved in the removal of the extraocular glands had closed nicely and the patient did not complain of pain either in it or in the exenterated orbit.

Oct. 29, 1908: The patient left the hospital for her home. For some weeks after the orbital exenteration the Roentgen rays were used, as a remedial measure, within the orbital walls.

Dec. 29, 1908: The patient was able to go out of doors and was apparently doing well. The orbital wound showed no recurrent deposits and the external wound of operation had entirely healed.

Pathologic Report on Tumor.—From the pathologic department of St. Luke's Hospital I obtained the following report on the removed preauricular and submaxillary glands:

"The mucous glands from both sides show infiltrations of round cells about the ducts, corresponding to the small round cells of the primary tumor of the orbit, and are, therefore, to be regarded as metastatic small round-cell sarcomata."

I am indebted to Dr. Francis Lane for a report on the orbital mass which, of course, includes the eyeball, most of the conjunctiva and other tissues of the orbit.

"Gross Findings: Right eye; bulb collapsed with furrow horizontally across the cornea (globe injected with formalin 4 per cent.); mass of orbital fat surrounds a 9 mm. long optic nerve and extends forward to superior rectus; superior rectus severed 26 mm. back of corneal margin with cut surface, oval, 7x14 mm.; circular cut of conjunctiva varying from 9 to 11 mm. from limbus; upper inner quadrant of conjunctiva brownish color, wrinkled and folded, apparently much thickened and immovable over underlying sclera; bordering upper one-half of cornea the conjunctiva *bombé*-like and slightly overlaps superior quadrant of corneal margin; an irregularly shaped central defect of corneal epithelium. Deep in cornea are number of zigzag, for most part horizontally directed, narrow striæ [posterior to horizontal corneal groove and due to collapse (?)]; superficial, uniform, moderate corneal haze somewhat obscures an apparently normal anterior chamber and anterior iris surface; pupil round, 3.5 mm. diameter; lens opaque [postmortem (?)].

"Coronal Section: Anterior segment—sclera thinned; upper one-third of cut surface shows sclera covered with a closely adherent 0.5 mm. thick, firm, pinkish layer, from which capsule and conjunctiva can be easily stripped, leaving behind very delicate strands of connective tissue [Tenon's space (?)]. Lens yellowish-white and slightly translucent with transmitted light. Vitreous streaked and filled with innumerable very fine highly refractile particles (not crystals, but globules as shown under microscope). Posterior segment: retina very white color, cloudy vitreous hides details of disc head; inner lower half of sheaths of optic nerve thickened to 3 mm. and movable over nerve trunk.

"Anatomical Diagnosis: A small, round-celled sarcoma. The tumor cells always appear to surround the blood vessel walls or to lie in the perivascular lymph spaces and are never found within the lumen of the blood vessels themselves."

Remarks.—The last time I saw the patient she seemed very well. It was evident there was no recurrence of the neoplasm either in the orbit or in the neck or lower jaw. However, in March, 1909, the family physician reported to me that although she had had several attacks of *malaise* of apparently trivial import, she was quite well until the end of January when, after some obscure symptoms referable to her abdomen, she died rather suddenly of what Dr. Warren believes to be an abdominal metastasis, without the slightest appearance of the tumor in its original locality. No autopsy.

Anyone examining the bibliography of epibulbar tumors will find that, although the sarcomata are probably the commonest of the malignant forms, they are not so common as one might at first imagine. LaGrange[1] gives full references to all of these new growths described to the year 1900.

72 Madison Street.

ABSTRACT OF DISCUSSION

Dr. Melville Black, Denver: I have never had a case of epibulbar sarcoma of the eye; therefore, I do not feel qualified to speak of this case from personal experience. Dr. Wood is to be congratulated on having acted so promptly and for having performed so radical an operation. He is gifted with an unusually large amount of personal magnetism, and we must attribute to this happy faculty his having gained the consent of the parents to the early operation which undoubtedly prolonged the girl's life and enabled her to enjoy it to the last without pain. It is to be regretted that an autopsy could not have been held and the cause of death determined. From a scientific aspect, it is unfortunate that the girl could not have lived longer in order to know whether the growth would have returned at a point near the site of the former disease.

Dr. George F. Keiper, Lafayette, Ind.: According to Parsons in his "Pathology of the Eye," to 1904 there were only 80 cases of epibulbar sarcomata reported. The first was by Baumgarten in 1852, in which he differentiated it from "cancer." The non-pigmented variety numbered but 12. Parsons further states that sarcomata in other parts of the conjunctiva are very rare. It has fallen to my lot to have seen a spindle-cell sarcoma at the inner canthus of the eye and adherent to the eyeball. Though the eye had fair vision, the patient, a woman of 50, accepted the advice to have the orbit exenterated, leaving the eyelids, which did not seem to be involved. At the time of the operation it was a question as to whether the growth might not be also epithelioma. The subsequent microscopic examination showed its true nature to be sarcoma. Over ten years have elapsed with no recurrence. These patients are reported to be usually old. But three other reporters, Krautner, Benson and Schultze, report three cases in which the patients were 14 years and under. Dr. Wood's case, therefore, belongs to that group noted for its extreme rarity at the age of 15, as well as that rare variety of non-pigmented sarcomata.

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[1] Traité des Tumeurs de l'Oeil, vol. i, pp. 237 to 246.

THE MANAGEMENT OF ACUTE HEMORRHAGIC GLAUCOMA IN THE PRESENCE OF ADVANCED ARTERIOSCLEROSIS

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DEFINITION OF HEMORRHAGIC GLAUCOMA

A glance through recent ophthalmic literature would seem to show that there is some difference of opinion as to what hemorrhagic glaucoma is. It therefore appears proper to preface these remarks by a definition of the term "hemorrhagic glaucoma," as I understand it, as follows:

This disease presents the usual symptom-complex of acute glaucoma, occurring suddenly in an eye in which retinal or other intraocular hemorrhages have previously occurred before any glaucomatous symptoms were present. In brief, the hemorrhages are the exciting cause. I believe that this condition should be differentiated from a pre-existing glaucoma in which hemorrhages have occurred subsequently. Clinically, an operation might be indicated in the latter class of cases, but would not only be valueless but positively injurious in the former class.

The predisposing cause in every case is probably general arteriosclerosis. Hemorrhagic glaucoma is always caused by the intraocular hemorrhages, but these should be looked on as a local expression of disease of the general vascular system.

Most of the cases occur between the ages of 50 and 70, and the constant accompanying condition is general arteriosclerosis. Fundamentally, the primary reason for the outbreak is the loss of balance between the general blood pressure and that of the eye, and this leads naturally to a consideration of the subject of increased blood pressure, or, more correctly, of chronic arterial hypertension. In any attempt to define the relations existing between arteriosclerosis and arterial hypertension it should not be forgotten that there is no exact correspondence between the pathologic changes in the vessels and the clinical phenomena. It should also be remembered that the blood pressure is greater when the blood stream is slow, and hence the rapidity of the blood current is a factor to be considered in these cases.

DISTINCTION BETWEEN ARTERIOSCLEROSIS AND ARTERIAL HYPERTENSION

We should draw an absolute distinction between arteriosclerosis and arterial hypertension, though we may recognize the relation of cause and effect. The arteriosclerosis encountered in cases of hemorrhagic glaucoma is of mechanical origin, the result of long-persistent high blood pressure, and presents an actual pathologic alteration of tissue in the vascular walls. On the other hand, arterial hypertension is a cardiovascular condition, the perverted action and abnormalities of which we are now able to recognize; and by the correction of these perverted activities it may in the future be possible by the regulation of the habits of life, by diet and by proper administration of drugs, to prevent or limit the development of arterial degeneration. The earlier this condition of chronic arterial hypertension is recognized and its importance properly estimated, the better we shall be able to correct its destructive tendencies, for the functional perversion of vascular tension is amenable to treatment, and thus the real pathologic condition known as arteriosclerosis may be prevented.

If by giving a vasodilator drug we relieve some of the unpleasant or dangerous symptoms in a case of arteriosclerosis, we effect no permanent benefit in the diseased condition of the arteries, but simply correct the hypertension. How much more valuable would this treatment be if undertaken before the arterial degeneration had begun: We are now able to estimate accurately the degree of hypertension, and can follow it up and regulate its progress and tendencies; and before long we may be able to state that the advance of old age is in inverse proportion to the pulse tension.

This relationship of arterial hypertension and arteriosclerosis is a complex problem, which is by no means easy of solution. In some of the smaller arteries the arteriosclerosis seems to cause an increase in the tension through increased peripheral resistance. Another apparently contradictory fact mentioned by Broadbent is that patients with very marked hypertension do not generally live long enough to develop a high degree of arteriosclerosis.

As regards the etiology of this hypertension, it would seem that heredity is a considerable factor, especially in males. Mental strain is very influential in developing hypertension, as is constantly seen in patients subjected to continual care and anxiety. The pathologic changes noted in connection with this condition are cardiac hypertrophy and dilatation, hyperplasia of the tunica media, and later the arteriosclerotic kidney and advanced general arteriosclerosis with enfeebled cardiac action.

In endeavoring to understand the real pathology of this complex condition we must differentiate between arterial contraction and the blood pressure. We must be able to decide whether the thickening of the arterial coats is an apparent thickening, due to hypertension, or whether the change is real and due to actual arteriosclerosis. The hypertonus is not confined to middle and later life, but is met not infrequently in early life. Here it may produce no symptoms of which the patient is aware, because of the greater elasticity and endurance of youth. Russell has well said that even in vigorous persons with sound cardiac action, hypertonus leads at once to heightened blood pressure and increased arterial tension. But hypertonus occurs in people with enfeebled heart action, and to this class belong the elderly patients with hemorrhagic glaucoma. In the former class any temporary excitement causes increased cardiac action and increased blood pressure, but as soon as the one subsides the other disappears. In the latter class the thickened arteries are associated with a low blood pressure, for these patients have no margin of reserve force in their hearts.

TREATMENT

With this brief description of the two differing conditions of arterial hypertension and arteriosclerosis, and the probable relationship of cause and effect existing between them, I ask attention to the subject of the paper: How shall we best manage these cases of hemorrhagic glaucoma, associated with advanced arteriosclerosis?

As before stated, these patients are between 50 and 70 years of age. The high blood pressure, with the increased vascular tension found in these patients, tends to raise the intraocular tension beyond the normal limits and well within the danger zone, and then the slightest exciting cause may bring about a retinal or vitreous

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

hemorrhage, which in its turn precipitates an attack of glaucoma. If the patient is hypermetropic, with shallow anterior chamber, the more or less complete obstruction of the channels of filtration is almost certain to occur, ending in the explosion of acute glaucoma. Now the classical operation for acute glaucoma is iridectomy, but we all know what has been the well-nigh universal experience of the results of iridectomy in hemorrhagic glaucoma. The sudden lowering of the intraocular tension almost invariably causes a sudden profuse intraocular hemorrhage, either subretinal or into the vitreous, which again increases the tension above the normal, the return of the severe pain, which can not be controlled, and ultimately necessitates the removal of the eyeball. Moreover, the operation of iridectomy on an inflamed eye is excessively painful and can not be done under cocain anesthesia, but demands general anesthesia. We are thus brought face to face with the actual dominating feature of the situation. These patients with extensive cardiovascular changes, with cardiac hypertrophy, enfeebled heart action and brittle arterioles, are not fit subjects for general anesthesia, because of the danger of a fatal termination. I believe that no operation, whether iridectomy or sclerotomy, which requires general anesthesia should ever be done in a case of hemorrhagic glaucoma in which the extensive cardiovascular disease makes the use of general anesthesia dangerous to the life of the patient. We have other means at our disposal for allaying the pain, reducing the increased tension and arresting the glaucomatous process, even though the eye remains permanently blind.

The immediate treatment for the relief of the urgent symptoms is the same for all these cases, but the subsequent management must vary with the age and general condition of the patient and his environment.

The immediate local treatment which I employ in these cases of hemorrhagic glaucoma, in order to avoid the dangers of an iridectomy, is as follows: Under the influence of a 10 per cent. solution of cocain, instilled as often as may be necessary, a careful paracentesis of the cornea is done, the instrument being withdrawn very slowly, and thus the aqueous humor is allowed to flow out only drop by drop from the anterior chamber. In this manner the intraocular tension is lowered very slowly, and the danger of the occurrence of an intraocular hemorrhage is reduced to a minimum. Two or three leeches are then applied to the temple and allowed to fill themselves until they drop, or the Heurtcloup wet cup may be used, and the bleeding kept up as long as may be necessary. Then a solution of eserin sulphate, one grain, and pilocarpin hydrochlorate, four grains to the ounce is instilled every hour, until under the combined influence of the paracentesis, the local bleeding, and the miotics, the eye softens and the pain grows less. As the intraocular tension subsides and the intravascular tension diminishes the pain grows less and the instillation of the miotics may be less frequent. Then the patient is directed to have hot applications made to the eye for half an hour at a time, and to repeat them every two hours until the pain has gone. He is also directed to take twenty drops of the fluidextract of Jaborandi three times a day, as a valuable additional means for lowering the intravascular tension. Hypodermic injections of pilocarpin will bring about the same result, but in the presence of advanced cardiac disease they are dangerous. It is sometimes necessary to repeat the paracentesis of the cornea several times in the same careful way at varying intervals, but eventually the end is accomplished.

As the symptoms subside the use of the miotics may be reduced to two or three times a day, and then the all-important subsequent management of the patient begins. This must vary with the age and general conditions of the patient and the severity of the type of lesion. The habits of life must be regulated, being modified in strictness by the patient's general condition and environment. It must be largely dietetic, based on accurate knowledge of the patient's digestive capabilities. The administration of drugs, except to combat certain symptoms as they arise, is of secondary importance. The daily life of the patient should be rendered as quiet as possible, and there should be great moderation in eating and drinking. As an abundant meat diet raises the blood pressure, the amount of meat eaten should be strictly limited. For some of the patients a certain definite amount of systematic exercise, preferably walking in the open air, should be insisted on, because it increases oxidation, improves the capillary circulation and aids in the process of elimination. If the patient has been addicted to the use of alcohol in moderation, it is not wise to interdict it, but it should be taken largely diluted, for while dilating the peripheral blood vessels, it does not increase the blood pressure to any appreciable extent. Tobacco should be forbidden or only slightly indulged in, because it contracts the blood vessels and raises the blood pressure. Water should be drunk freely between meals in order to aid elimination. The products of faulty metabolism which induce hypertension only exercise their toxic effects while in the circulation. The uric acid group are largely eliminated through the kidneys, and the best renal eliminants are the salts of soda, potash and lithia. Each patient should be carefully studied for himself, and the dietetic and therapeutic management varied according to the necessities of the case. In many of these patients the arteriosclerosis has forced the heart to do an excessive amount of work, and at the slightest additional burden the heart may collapse in spite of the administration of a cardiac stimulant. If the general symptoms are severe the first necessity is rest in bed, and this must be enforced if we are to expect any improvement. Muscular exercise often produces temporarily a rise in vascular tension, and complete muscular rest in bed removes the additional strain and gives the heart a chance to recover its tone. I believe that in many, if not in all, these chronic cases in high-strung nervous individuals, the cardiovascular sedatives ordinarily employed are almost useless unless rest of the body in bed is insisted on.

To reduce the high blood pressure I employ sodium nitrite as a vasodilator, but always in combination with some reliable heart tonic. It is a wise precaution to have a thorough examination made of the heart and general circulation before prescribing any cardiac drugs, especially the vasodilator drugs. A rapid, irregular or intermittent pulse, with a rapid pulse rhythm, and with a systolic murmur, probably indicate a cardiac inadequacy with high blood pressure, and in such a condition cardiac stimulants should be combined with vasodilator drugs. A high blood pressure does not necessarily mean the need of the prompt administration of drugs, for Nature often maintains a cardiac integrity, in spite of the circulatory resistance, and the apparently urgent symptoms yield gradually without the use of drugs to reduce the pressure. If the blood pressure be over 200 millimeters of mercury, the vasodilator should be slowly administered and its effect on the blood pressure, the pulse rate, and the sensations of the patient carefully noted. The subjective sensations of the patient are often a better means of judging of the effect produced than the blood pressure or the pulse rate. The administration of a full dose at once might cause very serious consequences to the patient's heart.

I have tried the systematic employment of hot baths, as recommended by Hirschfeld, but with indifferent success. The hot bath changes the distribution of the blood pressure by unloading the internal organs and increasing the vascularity of the skin, and should afford prompt relief from pain. It also increases the elimination of waste products. But we must note very carefully the reaction of the patient, and it is not safe to begin with a temperature of more than 100 degrees. The duration of the bath should not be over ten minutes. Of course, the deciding factor in the application of the hot bath should be the condition of the heart and the quality and distinctness of the first and second aortic sounds. Without a fairly vigorous heart the hot bath must be very cautiously employed.

Following the suggestions of Erlenmeyer and Fraenkel, I always give the patients some preparation containing iodin to reduce the viscosity of the blood. Either potassium iodid or sodium iodid, by diminishing the frictional resistance of the blood current, causes a diminution of the obstruction to the circulation and brings about better nutritive conditions in the parts. I give the potassium iodid in progressively increasing doses, changing to sodium iodid when the stomach revolts, and continue the use of the one or the other drug for a period of weeks or even months. When the administration of these drugs must be suspended for a period I advise the patient to take in the interval two or three drops of a 1 per cent. solution of nitroglycerin.

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ABSTRACT OF DISCUSSION

Dr. Myles Standish, Boston: I agree with the definition of hemorrhagic glaucoma given by Dr. Bull, with the proviso that the hemorrhages preceding the glaucomatous condition are more often retinal than otherwise. Dr. Bull, if I read this paper aright, considers the kidney lesions of which he speaks to be the result of arterial hypertension. That this is the general rule I do not believe. Many competent observers think that all cases of hypertension of the arterial blood current have their origin in pre-existing kidney lesions of the interstitial type. Whether this is true or not is somewhat difficult to prove, owing to the difficulties of diagnosis in the early stages of the disease, but I am firmly of the opinion that all cases of hemorrhagic glaucoma should be treated as if the presence of such kidney lesions had been proved in the management of the cases included with the definition of the writer I am in entire accord. Rest, quiet and an equable climate are always to be desired. An iridectomy is nearly always unfortunate, and if the victims of this distressing condition are to be relieved of pain, the intraocular tension permanently diminished, and an enucleation with its subsequent disfigurement and discomforts avoided, it must be accomplished by the methods outlined by the reader. I have seen repeated paracenteses succeed even in cases of great persistency. I remember in the practice of a colleague seeing a paracentesis done twenty-four times with an ultimately quiet eye.

In regard to the medical treatment I have nothing to add except that I have made use of the inhalation of amyl nitrite with advantage in some cases. We can not expect by these means to avert an enucleation in every case. An explanation of this fact is perhaps offered in a recent case of my own, in which, after the eye was removed, it was given to Dr. Verhoeff for examination. He reported to me that there was such a sclerosis of the canal of Schlemm that it amounted to the obliteration of that important channel. If that fact is approximately true in all these cases, it may be that the efficacy of repeated paracentesis depends on the subsequent formation of scars which permit of filtration and that this is the explanation of the permanent reduction of tension in many of these cases. It is not necessary that the tension should be normal in order to give relief from the symptoms. Comfort is not inconsistent with a slight increase of tension.

Dr. Melville Black, Denver: I would like to emphasize what Dr. Bull has said regarding the necessity of having a thorough examination made of the heart and general circulation before administering any drugs. It would be different if we could always be sure that vitreous hemorrhage was attended with high arterial tension, but my experience has been that these hemorrhages frequently occur in the presence of subnormal arterial tension. The treatment of low and high tension is very different. If drugs are given empirically, it may be that vasodilators would be given when low tension exists and the condition thereby made worse. Within the last few years I have had several of these cases, and among the number were two cases of vitreous hemorrhage with secondary glaucoma. The blood pressure in one case was 250 and in the other 105. In both cases one eye was lost. These patients are still living. The one with low tension retains very good vision in the remaining eye, but within the last few months there have been a few retinal hemorrhages, and this was the condition which preceded the vitreous hemorrhage which destroyed the other eye. In consequence, the patient is somewhat worried at the present time. The other patient has been under observation for something like five or six years, one eye being lost from a vitreous hemorrhage, causing secondary glaucoma. The fellow eye soon began to have a number of recurring hemorrhages scattered throughout the retina with symptoms of optic nerve disturbance, such as described by Dr. Bull some years ago from the pressure of the hardened central artery where it penetrates the optic nerve. The patient had a small scotoma which extended over the macular region and put out central vision. That eye, however, has remained free from an attack of glaucoma from vitreous hemorrhage, and I attribute this as well as the man's fair general health to the lowering of the blood tension to within safety limits. In high tension cases I think the diet should be exceedingly simple, largely vegetable, and even in the presence of interstitial nephritis we often keep these patients alive considerably beyond the period of two years, which we used to consider the limit.

Dr. Edward Jackson, Denver: With reference to arteriosclerosis in connection with hemorrhagic glaucoma, it ought to be borne in mind that it is frequently, and for a long time, a localized process. This is true of the larger vessels, as examined postmortem; and it is illustrated in every case examined with the ophthalmoscope. Certain portions of the vessels show advanced sclerosis, and others seem comparatively free from it. Hence, while there may be marked retinal evidence of arteriosclerosis in one case, it may not be detected in another, yet the general condition of the chorioidal vessels may not be essentially different in the two cases. With reference to blood pressure, probably more extended observation will show that nearly all of our patients with primary glaucoma have high blood pressure. In all in whom I have taken the blood pressure this was shown; and within the last year Frenkel reported fifteen cases, in fourteen of which the blood pressure was notably high. So that discovering retinal hemorrhage and evidence of arterial sclerosis in the retina, along with an abnormally high blood pressure, does not take a case of glaucoma entirely out of the category or separate it very widely from other primary glaucomas.

About six months ago I obtained satisfactory results from an iridectomy in a patient with an enormous number of widely diffused retinal hemorrhages. The blood pressure was 175 mm. during the acute pain, and 185 mm. when the patient was free from pain; and yet the iridectomy was not followed by any serious complication and led to a permanent reduction of the intraocular pressure. In these cases posterior sclerotomy has not been mentioned. I think it is equal, probably superior, to paracentesis of the anterior chamber. It opens the chorioidal vessels, and I think undoubtedly temporarily reduces the blood pressure in the veins and locally in the arteries of the chorioid; and the patient perhaps has a better chance on account of not having a subsequent hemorrhage.

With reference to the operations that have been mentioned, I want to call attention to the formation of new veins in the scar. In the case I mentioned I had done a posterior sclerotomy and the iridectomy was not done for about three weeks afterward. The sclerotomy scar bulged until it was 5 or 6 mm. in diameter and stood out 4 mm. from the general level of the sclera. Ultimately that scar showed a bunch of veins that have the capacity of all the veins usually found perforating the sclera in a senile eye. I think this formation of veins after a cyclodialysis, after iridectomy and after sclerotomy may have an important influence in the permanent reduction of tension. Of course, diet and general regimen are of the greatest importance, and I think we can not have it too much impressed on us. I think that probably the recent work of Bordley and Cushing makes the reduction of blood pressure by nitrites problematical. I have never seen any marked lasting benefit from them.

Dr. F. H. Verhoeff, Boston: I think the pathology will throw some light on the treatment of this condition. I admit that it is not altogether fair to draw conclusions from eyes enucleated, but my statements are based on them. Dr. Bull states that hemorrhagic glaucoma is due to intraocular hemorrhage. The pathologic examinations do not bear this out, because in typical cases there are no hemorrhages in the vitreous, but only in the retina. The retinal hemorrhages and the glaucoma are due to the same cause, which in most of the cases carefully examined has been obstruction of the central vein by endophlebitis. So that the glaucoma is really the result of edema of the retina and vitreous. Just whether this is due to the fact that the vitreous becomes loaded with albumin and can not filter off readily through the canal of Schlemm, or whether due to the high osmotic pressure set up is uncertain. In view of the cause of the condition it does not seem that treatment could have much effect on vision. All that can be attempted is to keep the eye in the patient's head, and also to combat the general vascular disease by measures which I think are unfortunately not often successful.

Dr. R. L. Randolph, Baltimore: In a paper fifteen years ago I reported three cases of hemorrhagic glaucoma treated by paracentesis of the vitreous. The first patient was a woman of 52, who came to me with a number of superficial hemorrhages scattered over the retina of one eye. The diagnosis was made of hemorrhagic retinitis, due probably to arteriosclerotic changes generally. Six weeks later, high tension developed, associated with intense pain. It struck me immediately as a case of the so-called hemorrhagic glaucoma. An iridectomy gave relief for ten days, when the pains returned and in a most unmanageable form. I then adopted the following measure: A Graefe cataract knife was introduced into the vitreous about half way back and about one-fourth of the length of the blade. The knife was introduced in three places, just above the external rectus, just a little to the inner side of the superior rectus, and the last puncture was made a little below the internal rectus. Of course, all punctures were made at one sitting and under cocain and apparently with little or no discomfort. This gave her complete and permanent relief. She died ten years later of chronic nephritis. The eye at the time of her death was somewhat smaller than its fellow. The second case was in a woman of 38 who developed changes in the retina following pregnancy, and a month after I first saw her she was suffering with acute inflammatory or what I regarded as hemorrhagic glaucoma. In this case paracentesis of the vitreous in the manner described gave relief. The third patient was a man of 70, and here the operation failed utterly. This, too, when first seen was a typical example of hemorrhagic retinitis of one eye which some weeks later developed high tension. In my opinion, the operation is a harmless one and is calculated, judging from this limited experience, to relieve pain and preserve at least in the comely eye.

Dr. D. W. Green, Dayton, Ohio: I have carefully kept records at the National Military Home of 700 observations of blood pressure in men above 60 years of age. I have not the figures before me, but my recollection is that I have never seen acute glaucoma with normal blood pressure. The patients I have seen have always had a blood pressure above the standard, which I have established for that age at 160 mm. of mercury.

MORPHEA-LIKE EPITHELIOMA *

M. B. HARTZELL, M.D.
PHILADELPHIA

Although the form of epithelioma about to be described in this paper presents such peculiar clinical features, it has not yet, so far as I know, been mentioned in text-books of surgery and is only very briefly alluded to in but one text-book of dermatology. I have, therefore, thought it might be of some interest to call attention to it very briefly and to report some illustrative cases which have come under my observation in the past few years.

Case 1.—In October, 1902, Mr. H., 50 years old, consulted me for an affection of the skin situated on the face just beneath the malar eminence, consisting of an oblong, yellowish-white, somewhat depressed patch about three-quarters of an inch long by one-half inch wide, having at its upper border a split-pea-sized ulcer with slightly elevated and thickened edges. The patient stated that the patch had existed for four or five years, but ulceration had begun only two years previously. The disease was unattended by any marked subjective symptoms, but its steady spread and the appearance of ulceration led the patient to seek advice. The lesion was so extremely like morphea in many of its features that notwithstanding the ulceration, such a diagnosis was made, although the possibility of epithelioma was not overlooked. After the failure of other forms of treatment to effect any material change in the lesion it was subjected to the *x*-ray, and under this treatment the ulcer rapidly healed in the course of two months and the entire patch almost, but not completely, disappeared. Some two or three years later there was a slight recurrence in the shape of a small scaly nodule which was unmistakably epitheliomatous.

The second case was remarkable not only on account of the peculiar features presented by the lesion, but also because of its situation and the early age at which it made its appearance.

Case 2.—Jennie M., aged 24, came to the Skin Dispensary of the University Hospital in March, 1902, seeking advice for a lesion situated on the left side of the thorax in the axillary line, on a level with the breast. This lesion, which was of four years' duration, consisted of a waxy-looking, yellowish-pink oval patch about two and one-half inches long by one inch wide, its long axis parallel with the ribs, with a rounded, slightly elevated border over which ran numerous fine blood vessels arranged radially. The center of this patch was occupied by an almond-shaped ulcer with sharp edges which had made its appearance about three years after the beginning of the affection. There were no subjective symptoms worth noting. The patient had been under treatment at various hospitals, and various diagnoses had been made, but epithelioma had not been included among them. During the year or more in which the patient was under more or less continuous observation there was practically no change in the appearance of the lesion except that the ulcer had slightly increased in size. After the failure of various methods of treatment to bring about any noticeable improvement, the patient was urged to permit excision, but she declined this, and soon ceased attendance at the dispensary. Six years later she reappeared with the site of patch occupied by an extensive linear cicatrix which she said was due to prolonged *x*-ray treatment given at another hospital, and in this cicatrix was a small nodule which microscopically presented unmistakable signs of carcinoma.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The third case was of special interest, because the clinical diagnosis of epithelioma was confirmed by microscopic examination, a procedure which was not possible in the two previous cases because of the unwillingness of the patients to permit the excision of a portion of the growth; it was also interesting because it was a close copy in many respects of the first case published, a beautiful model of which is in the museum of the St. Louis Hospital, Paris.

CASE 3.—C. N., female, unmarried, aged 50, an inmate of a home for blind women, was referred to the skin dispensary of the University Hospital by Dr. William Evans, the attending physician of the home, for an opinion concerning an affection of the skin of the forehead which consisted of a yellowish-pink, slightly elevated, round, smooth plaque about the size of a silver half-dollar, extending from the root of the nose up over the forehead, the border covered by numerous fine vessels running toward the center of the patch, which gave it a distinctly violaceous hue. At the root of the nose was a deep, irregularly quadrilateral ulcer with sharp edges. The disease had begun some five or six years previously, and, according to the statement of the patient, had followed immediately on a blow. A clinical diagnosis of epithelioma was made, and a small piece was excised from the edge of the ulcer and submitted to microscopic examination; this examination fully confirmed the clinical diagnosis, showing the growth to be an epithelioma of the baso-cellular type. But while it was easy to demonstrate the epitheliomatous character of the lesion, nothing was found in its histology to explain its peculiar clinical features.

To these three cases should probably be added a fourth, seen in the University Skin Dispensary, ten years or more ago, in which a diagnosis of ulcerating morphea had been made. The patient was a woman, 40 years old, who had a flat, round violaceous, somewhat depressed patch on the tibia just below the patella, with a small ulcer at the border. Owing to the scantiness of the notes of the case, details are lacking, and, as the woman soon disappeared from observation, the further course of the affection is unknown; but from later experience I feel assured that this case probably belongs to the group of cases here described.

The first reference in medical literature to this peculiar form of epithelioma is to be found in the *Bulletin de la Société francaise de dermatologie et de syphiligraphie* for 1899.[1] At the séance of July 13 of that year Danlos presented a man who had on the nape of the neck a round plaque 6 cm. in diameter, having a ring-like border about 1.5 cm. broad of a yellowish hue, traversed by numerous vessels which ran from the periphery toward the center of the plaque. Around this slightly elevated ring was a lilac-colored zone, while the central portion showed an irregular, ulcerated surface. A biopsy demonstrated the epithelial character of the lesion, and the case was exhibited as one of epithelioma simulating morphea or xanthoma. In the discussion which followed the presentation of this case, Brocq stated that he had seen two similar ones. At the clinical meeting of the American Dermatological Association, held in Philadelphia in June of the same year, Stelwagon[2] presented a case of "flat epithelioma of the temporal region with a superficial inch-wide border resembling morphea"; and this same author briefly alludes to the possibility of epithelioma resembling morphea in his treatise[3] on diseases of the skin.

In the third edition (p. 1012) of his well-known work on diseases of the skin, Crocker refers to a case of rodent ulcer, unique in his experience, which was quite certainly an example of morphea-like epithelioma. On the temple of a woman was a lemon-yellow, slightly elevated plaque the size of a shilling, with a few small vessels running over it centripetally, which had begun as a hemp-seed-sized white spot when she was 35 years old. Three and one-half years later, when ulceration had taken place, the growth was excised and found to be a typical epithelioma of the rodent ulcer variety. Crocker states in a note that when this case was exhibited at the International Dermatological Congress in London, in 1896, no one was able to make a diagnosis.[4]

In a paper[5] read before this Section, at Chicago, in 1908, Fordyce refers very briefly to a case of tricho-epithelioma which "presented the clinical appearances of a morphea without a suggestion, macroscopically, of a tumor formation."

The foregoing are the only references in literature to this peculiar and interesting form of epithelioma which I have been able to find.

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ABSTRACT OF DISCUSSION

DR. JOHN A. FORDYCE, New York: I have seen one case which was identical with the type described by Dr. Hartzell. There was a depressed, whitish, morphea-like lesion involving the skin of the chin, covered by dilated blood vessels. The lesion gave no suggestion of epithelioma until a biopsy was made. It was of the tricho-epithelioma type. This case was reported in THE JOURNAL, Oct. 24, 1908, p. 1398, among some of the unusual forms of epithelioma of the skin.

DR. LOUIS A. DUHRING, Philadelphia: The question might arise whether such epitheliomatous degenerations should be regarded as carcinoma of the skin simulating morphea in form and general appearance or whether they may begin in some other way—as morphea, and then undergo degeneration. As has already been remarked, there is no doubt that morphea lesions may at times undergo ulceration. I have seen several cases of the kind. There seems on the other hand, however, to be no doubt that occasionally carcinoma of the skin manifests itself in the form of a lesion, especially on the face, simulating the morphea patch rather closely, though perhaps generally the lesion is raised and not flat or sunken.

DR. HENRY H. HAZEN, Washington, D. C.: About two years ago I saw a woman with a morphea-like patch on the right cheek which she stated had been there for nine years. The spot was slightly depressed, with a hardened edge. Epithelioma was suspected, and on biopsy and examination the lesion proved to be a typical basal-celled epithelioma. There was no recurrence two years after excision, and no similar lesions have developed elsewhere.

DR. WILLIAM A. PUSEY, Chicago: I wish to express to Dr. Hartzell a feeling of personal gratification for the title that he has given his paper. It describes with great accuracy a type of epithelioma of which I have seen a few examples. I imagine that Dr. Hartzell's conception of these lesions is that they are not morphea and have nothing whatever to do with morphea except in the resemblance they bear to it. It is a superficial epithelioma of the skin that looks like morphea. When I first saw this title on the program I was struck by it because at the time I had such a case under observation. In this case the lesion was ivory-like, yellowish-white in color, infiltrated, without elevation or depression. The infiltration was dense and there was no violaceous border, but a marked deposit of black pigment. There was no ulceration, and there had been none. Histologically, it was a basal-celled carcinoma, and the diagnosis was made by the surgeon who sent the patient to me. I have seen several similar cases in the past. Dr. Schamberg brought up the question of the possible development of the epithelioma in a morphea lesion from the use of the *x*-ray. In my case the patient had never been exposed to the *x*-rays before I saw him. Under the use of the rays the lesion disappeared with the exception of this black pigmented spot which I destroyed by cauterization.

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[1] Ann. de dermat. et de syph., 1899, x, 656.

[2] Stelwagon: Tr. Am. Dermat. Assn., 1899, p. 166.

[3] Stelwagon: Diseases of the Skin, ed. 5, p. 819.

[4] I am indebted to Dr. George Pernet for directing my attention to this case.

[5] Fordyce, J. A.: Some of the More Unusual Forms of Epithelial Growths of the Skin, THE JOURNAL A. M. A., Oct. 24, 1908, li, 1398.

Dr. M. B. Hartzell, Philadelphia: Notwithstanding the scant mention of this disease in dermatologic literature, I do not think that it is really rare. As ulceration had already taken place before the *x*-ray was used the latter could by no possibility be held responsible for the epithelioma. As is well-known, ulceration takes place in some cases of morphea owing to the tense condition of the skin; but I believe that the cases here reported were epithelioma from the beginning. This is simply another example of the mimicry so often seen in diseases of the skin. The case referred to by Dr. Pernet, in Crocker's book, had escaped me, but that was not one to which I referred. It is difficult to explain the peculiar clinical features of these lesions. So far as my rather hasty study of the sections goes, there is nothing in the histology to account for the clinical appearances.

THE TEACHING OF DERMATOLOGY—DERMATOLOGY AND THE PHARMACOPEIA *

[Editor's Note: The Chairman's address with the above title, by Dr. William Allen Pusey, Chicago, appeared in The Journal, June 19, before the discussion thereon had been submitted to the speakers for correction. The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

Dr. Louis A. Duhring, Philadelphia: All teachers of dermatology doubtless have their own methods of bringing the subject before the classes. Of course, it is well understood that they are usually limited in the amount of time allotted to the subject in the college curriculum. Dr. Pusey intimated that the dermatologic material at the command of the teacher in most universities was usually sufficient. That, in my opinion, depends to some extent on the city where the school is located, but even in some large cities in this country it is not so abundant at the college clinics as in most of the cities of the old world. There are certain cities where difficulty exists in getting enough material of the right kind, especially where large classes are to be provided for. Coming to the matter of didactic instruction, I have always regarded it as distinctly valuable to the student. I base this view largely on conversations with former students with whom I have come in contact in after years, and their statements on the question have impressed me much. In the institutions with which I am connected as a teacher, our examinations for a number of years have been oral, and I have, therefore, from remarks made, been convinced that students have acquired a good deal of knowledge from didactic lectures. I do not think that the importance and value of properly illustrated didactic lectures should be ignored. Compel the students to read and to become familiar with terms and nomenclature, and this, in my opinion, in itself is distinctly valuable. In connection with didactic instruction arises the question of illustrations. Should we illustrate our lectures very fully or only partially? Should we throw on the screen a large number of pictures with each disease or only a few selected typical cases? Some err, I believe, in illustrating lectures too freely. Students, I think, learn more from a small number of typical illustrations, either large, colored portraits, well-illuminated or photographs thrown on the screen, or through wax models, while too many illustrations in succession only confuse and embarrass. Wax models of skin lesions in particular are of much value. I do not think they are sufficiently appreciated.

Briefly summing up my views on the subject, I regard clinical instruction as, of course, of paramount importance, but, as already remarked at times, it is difficult in some cities to get sufficient material for lecture purposes for a class of, say, 125 students, several times weekly. Secondly, I view didactic instruction as of much value, especially when combined with a moderate number of typical, colored illustrations. I am aware that some teachers may take exception to these views, but we should each express our own based on experience with classes and that is what I have tried to do.

Dr. M. B. Hartzell, Philadelphia: I think I have already expressed my views on this subject in answer to the questions that were sent to me by the chairman of the committee, but there are one or two points about which there may be some debate. One relates to the amount of time that should be devoted to the clinical teaching of dermatology as compared with that given to didactic instruction. Some regard the didactic lecture as out of date; and I agree that it would be out of date if each one of us had a clinical service sufficiently large to illustrate all classes of diseases of the skin. I am acquainted with some of the larger skin clinics of the world, and with perhaps a single exception, I do not know of anywhere it would be possible to give a systematic course in dermatology by illustrative cases alone; therefore, we are compelled to give a certain place to didactic lectures. Of course, there are didactic lectures and didactic lectures. If given in a perfunctory way they do not amount to very much, but if the teacher is honest and earnest, they furnish an important foundation for other kinds of instruction.

There is only one way in which the student can actually learn dermatology, and that is, by seeing the cases. One might as well attempt to describe a sunset to a man who had never seen one as to describe some cases of disease of the skin. It is absolutely impossible to have a real, practical knowledge of diseases of the skin without considerable acquaintance with their appearance as they occur in the living subject. Illustrations, wax models and photographs are very well in their way, but nothing can take the place of the living subject. I believe that no actual teaching of dermatology can be done which neglects to give this a large place in the course of instruction.

THE CHRONIC SCALY ERYTHRODERMIAS *

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The literature on this subject is comparatively meager, especially in this country. This fact alone would seem to be sufficient warrant for further comment, even if the malady were not classed among those which are strangest and most interesting. The rarity of the disease also leads me to report three cases, which have come under my care within the past year; a goodly number, it appears, to fall to the lot of one observer in so short a period. Two of them are clinic patients, the observations being made in the service of Professor Fordyce, at the University and Bellevue Hospital Medical College; the third is a private case.

Sporadic cases have been recorded by Unna, Juliusburg, Jadassohn,[1] Méneau,[2] Brocq and others on the Continent; by Crocker,[3] Little, Galloway, Fox, and Macleod, in England, and by White, Anthony[4] and

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Jadassohn: Festschr. zu Ehren von Moritz Kaposi, 1900; Verhandl. d. LV Deutsch. dermat. Kong., 1894.

[2] Méneau: Jour. d. mal. cutan., 1902.

[3] Crocker: Brit. Jour. Dermat., 1905.

[4] Anthony, H. G.: Report of a Case of Parakeratosis Variegata, Jour. Cutan. Dis., 1906, xxiv, 455.

Fordyce in our own country. Several of these observers have expressed their views in excellent articles on the subject, to whom reference will be made later.

The ground has been fairly well covered by previous observers, but the subject has been by no means exhausted, so, while not hoping to disclose any unique or surprising facts, I shall be glad if any of my observations are new and helpful to others.

The diagnosis was reached after careful study, both pathologically and clinically, the patients being examined many times, and shown to my confréres on numerous occasions. Experience has long since taught me that it is extremely difficult to fix in the mind's eye the aspect of a rare skin disease from a written description, without having under observation a similar case. For that reason illustrations are shown so as to throw as much light as possible on the description.

REPORT OF CASES

Case 1.—*Patient.*—A woman, aged 26, single, born in Poland, weight about 120 pounds, seamstress by occupation. She was a well-developed young woman, slightly below the medium height and, except for her skin affection, enjoyed good health. (Fig. 1.)

Family History.—The patient's father died at 58, having suffered from paralysis for some months previous to his death; the mother is still living but not strong. She had three sisters and four brothers, all living and healthy. There was no history of tuberculosis in the family, and, as far as she knew, no other member had had a dermatologic complaint.

Personal History.—The patient said that she was a sickly child, having had practically all the diseases of childhood, the most noteworthy being measles and scarlet fever. Her hearing was slightly impaired on the left side as the result of the fever, and a scar existed on the cornea of the left eye, the aftermath of an ulcer, which was the sequel of the measles. She came to this country when 19, and soon after that time suffered from suppression of the menses; this lasted about six months, during which period the disease first made its appearance, making its duration six years.

Present State.—The eruption was almost universal, the exceptions being the face and upper part of the back, viz., above the superior borders of the scapulæ. On the chest, back, arms and forearms, it occurred in ill-defined, noninfiltrated patches, varying from the size of a pea to that of a silver quarter. They were dull pink at the periphery, with a brownish tendency toward the center; the patches were apparently broken up and coalescing in places; these, mingled with areas of healthy skin, gave it a mottled appearance. The ensemble was pinkish yellow to purple in some places. This purplish hue was marked on the lower extremities, where practically no healthy skin existed; the condition here resembled ichthyosis greatly, with the exception of the color. The chest plaques were somewhat like those of pityriasis rosea. The lesions were covered with fine scales which left no bleeding points on removal; this scaling was more marked on the lower extremities, the disease being much older in these regions. There was a small patch on the palm of the left hand, but the right palm was free. The soles exhibited a tendency to scale slightly, but no definite lesions were visible. The nails were unaffected. The patient perspired very little on the body, but freely and constantly on the face, even in winter; the disease was attended with practically no itching, perhaps a very little in the summer. When the case was first seen, and for some time afterward, the lesions were all macular; the patient was subjected to strong and vigorous treatment, and at the time of last report a few of the small lesions on the forearms were slightly elevated and might be called papular. Abortive exacerbations and remission took place but the evolution of the patches was extremely slow. The urine showed no abnormal constituents.

Histopathology.—The whole epidermis was very much thinned, especialy in the middle of the specimen; the horny layer was slightly increased in thickness. It was completely cornified in most of its extent, but in one or two places a parakeratosis existed, though the retained nuclei were quite pale. The stratum lucidum could be seen in a portion of the specimen. The granular layer also varied; it was entirely wanting or very much diminished where the parakeratosis existed; in other areas where the stratus corneum was thin it was quite distinct, though consisting of only one layer of cells. In one rather large area in the center the rete pegs were obliterated, the prickle layer at this point being flat and consisting of two or three layers of cells. This change occurred immediately over that portion of the corium where the cellular exudate was most marked. Only a slight degree of intercellular and intracellular edema was discernible. The palisade layer in places was very indistinct, the cells being arranged transversely instead of longitudinally. The corium showed dilated vessels filled with blood, and a moderate amount of perivascular infiltration, lymphocytic in character, with an occasional plasma cell. Some of the sweat coils were dilated, and on the surface the mouths of the follicles were somewhat widened and filled with horny material.

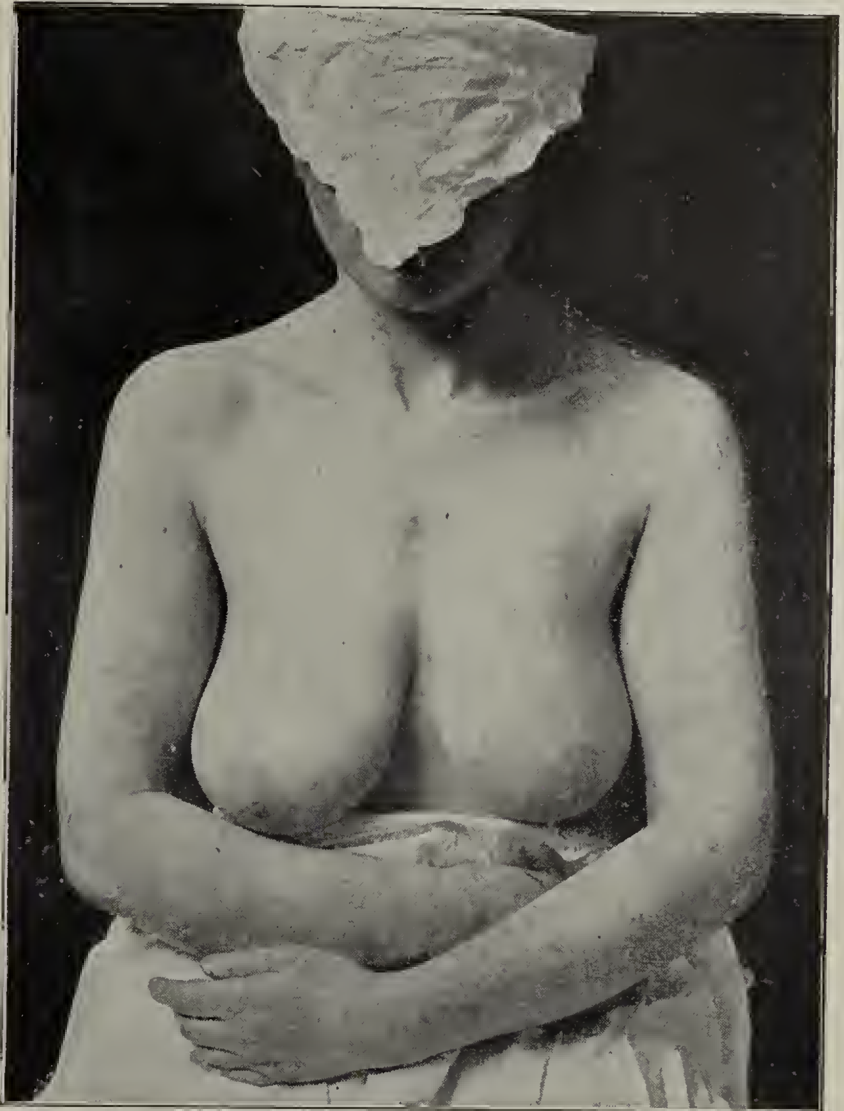

Fig. 1.—Chronic scaly erythrodermia, Case 1.

Case 2.—*Patient.*—A man, aged 40, married, nativity, England; occupation, butler; strong, healthy, medium height, weight 160 pounds. This case differed from the preceding one as to duration and location (Fig. 2).

Family History.—The patient's father's death was caused by an attack of pneumonia at 55. Tuberculosis was the cause of the mother's death at 37. The patient was the only living child; his mother had four other children, all of whom died at birth. Collateral branches of the family were strong and healthy, for far as he remembered; no other member of the family had a cutaneous malady. His wife and child were in good physical condition and had never had a skin disease.

Personal History.—About twenty-two years ago the man had a sore on his penis; he was told at that time by a first-class physician that it was entirely local; no secondaries followed. He gave a rather obscure history of having worn "braces" and having been treated by an orthopedic surgeon for some spinal trouble, caused, as he says, by a fall. It seemed probable that he had had some slight anterior curvature, as when he stood in the military posture he was noticeably "sway-backed." There was no apparent lateral curvature of the spine. He did not remember having any of the diseases of childhood, but had had two severe illnesses since adolescence. The first was an attack of cerebrospinal meningitis about eighteen years ago, and the second rheumatism of shoulder, which persisted for weeks.

Present State.—The arms and lower extremities, especially the thighs, were thickly covered with pinkish-brown patches, most of which were about three-quarters to one inch in diameter; they were superficial, free from infiltration and had a tendency, in this case, to be rather sharply circumscribed. Those on the thighs were almost a perfect picture of the lesions of pityriasis rosea. The desquamation is marked and they coalesced in places, giving a somewhat marbled appearance. The patches on the legs, as well as those on the arms, were very slightly infiltrated and more scaly than the rest. The duration of the disease had been twenty years, and, as a rule, it remained stationary; it exacerbated and remitted, however, but only at long intervals, the old lesions never disappearing entirely. The patient stated that the eruption had disappeared completely on two occasions; the first time, during the attack of cerebrospinal meningitis, and the second time, when he was under treatment for the rheumatic shoulder; the latter disappearance came about after he was put upon a diet of bread and milk; it reappeared very quickly when his regular diet was resumed. There was practically no itching, possibly a little at night, but never enough to cause sleeplessness or annoyance. The extremities were the main locations, but there were a few lesions on the trunk. The palms and soles were free and so was the face. There was an occasional papule, but the disease was, in the main, macular; the piling up of the scales in some of the small lesions gave it a papular feel, but when these were removed by the fingernail the lesion seemed to be flush with the normal skin. There were no hemorrhagic points on removal of the scales. The nails were in good condition. There was no glandular enlargement, and no dandruff of consequence. The urine had a specific gravity of 1037 but the examination was negative in other respects. The evolution of the lesions was very slow. The patient perspired excessively on the face but normally on the body.

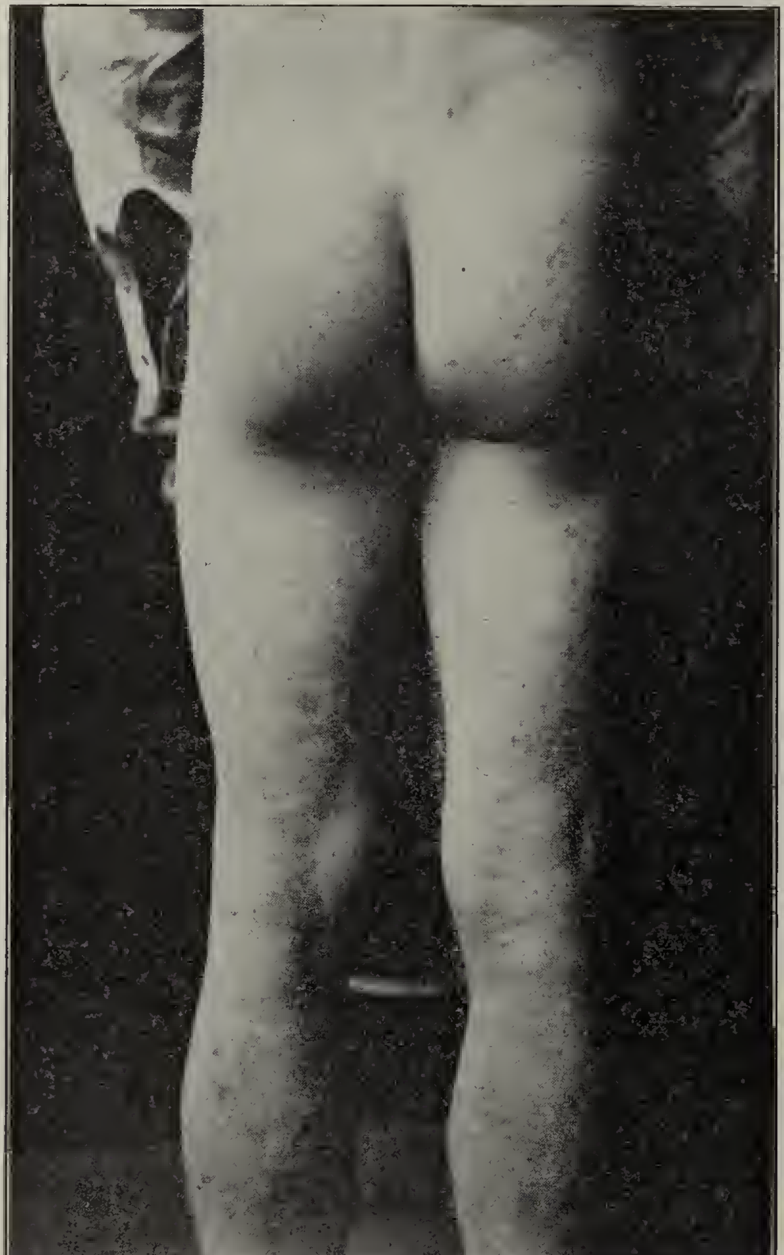
Fig. 2.—Chronic scaly erythrodermia. Case 2.

Histopathology.—The horny layer was irregularly increased in width, and where it was augmented in thickness parakeratosis existed. One portion was firmly adherent, and contained well-stained but flattened nuclei. The stratum lucidum was not constant. The granular layer was not uniform either as to depth or density of granules; it was much diminished or lacking in some places, while it was thickened in others. The parakeratosis was more marked over the places where the granular layer was thinned or absent, although it existed in other parts of the section. An overgrowth of the rete was present; in one area the pegs had anastomosed, forming a network. The palisade layer was intact and about normal. There were a few emigrated leucocytes present both in the rete and in the scale. In the upper corium a mild lymphocytic exudation was observed; the vessels were dilated and sheathed by lymphocytes. There was some proliferation of the fibroblasts. The appendages presented nothing beyond a dilatation of some of the coil glands.

For the sake of brevity, the history of the third case will be shortened, eliminating the parts that seem to have no special bearing.

Case 3.—*Patient.*—A woman, aged 27, married, born in United States; housewife. She was somewhat above medium height, very thin and anemic; weight 115 pounds (Fig. 3). Although her appearance indicated the contrary, she insisted that she was perfectly well. The family history was of negative character and did not seem to bear any weight.

Personal History.—The duration of the disease was one year. The patient had never before been afflicted with a skin disease. She had no children, having had, some years ago, a double ovariotomy performed. The reasons for this were obscure. She had never had a serious illness.

Present State.—When the patient first presented herself for treatment the left side of the face was much swollen, almost to the point of closing the left eye. This was diagnosed as neurotic edema. Her recovery from this was rapid. She then called attention to the disease in question, which had been present several months. The eruption was, in the main, confined to the trunk; there were some few scattered lesions on the arms, but the chest, back and abdomen were the main locations. The palms, soles and face were free. The lesions in this case were much smaller than in the two preceding; the majority were about the size of a match-head, a few reaching the dimension of a half dime. The eruption was maculopapular, the papular element being in the great minority. The color of the lesions was dull pink with a brownish tinge, and they were scaly and discrete. The scales could be removed without bleeding. The case was under observation one year, and during that time had three so-called exacerbations; the evolution of the new lesions was slow ,and the old ones never entirely disappeared; in fact, the history was the same as in the other cases, except that the lesions were much smaller, and discrete. The urine examination was negative. The patient perspired very freely on the face, but normally on the body.

Histopathology.—The changes in this specimen were so slight that a very few words will suffice for its pathology. The epidermis was thin in all its layers, but presented no other abnormality. Only an occasional nucleus could be found in the horny layer, which was almost completely cornified. In the upper cutis a very mild perivascular infiltration of lymphocytes was seen.

CLINICAL ARGUMENT

It has been the tendency of the dermatologic profession of late years to designate as identical all the diseases with the following titles: Dermatitis psoriasformis nodularis, parakeratosis variegata, *érythrodermie pityriasique en plaques disséminées,* pityriasis lichenoides chronica, dermatitis variegata, lichen variegatus, etc., etc. This is not concurred in by some observers, especially by those who have reported sporadic cases. The divergence of opinion is, in all likelihood, due to the fact that the disease is very rare, and few cases fall to the lot of one observer. Some manifestations predominating over others, in widely separated cases, may also account for the various names it has acquired.

Ever since the original description of parakeratosis variegata in 1890 by Unna, Santi and Pollitzer[5] the chief point of contention has been whether the primary lesion of the malady is a macule or a papule. This is still an unsettled question. In the article just mentioned many of the lesions were described as papular.

Brocq,[6] in 1897, in a report of cases observed at the Hôpital Broca-Pascal and described under the head of *érythrodermie pityriasique en plaques disséminées,* did not mention any papular element, but spoke of the disease as a pityriasis in circumscribed patches.

J. C. and C. J. White[7] in 1900 reported cases of Brocq's pityriasis in patches, seen at the Massachusetts General Hospital; they lay great stress on the fact that the lesions are macular and not papular.

Fox and Macleod[8] in 1901, in reporting a case of parakeratosis variegata, speak of the lesions as maculopapular, the macular element predominating. Brocq[9] in a later admirable communication inclines to the opinion that all the diseases, the numerous titles of which have been given above, are related. He has grouped them all under the head of parapsoriasis, which he divides into three classes: (1) parapsoriasis guttata; (2) parapsoriasis lichenoides; (3) parapsoriasis in patches. He compares the cases described by Jadassohn to the first variety; those of parakeratosis variegata and lichen variegatus to the second, and his own pityriasis in patches to the third. He also speaks, in this last article, of having observed occasionally a few papules in some of the cases of pityriasis in patches.

Should it be desired to assign the cases I have here reported under the title of parapsoriasis, then Cases 1 and 2 would come in the third class (parapsoriasis in patches) and Case 3 would be assigned to the second division (parapsoriasis lichenoides).

As far as I can judge from the description of the German cases,—viz: those of Neisser,[10] Juliusberg[11] and others—it seems that the papular feature is distinct; therefore they would be classed as parapsoriasis lichenoides according to Brocq's classification. Keeping my own cases in mind to the exclusion of others, I would enumerate the main features as follows: The distribution on the trunk, and sometimes on the extremities, of variously sized, ill-defined patches varying in color from a dull pink to a light brown, the almost total absence of itching and also of all other subjective symptoms; the persistent fine scaling and the slight, if any, infiltration of the patches.

The development of the eruption is extremely slow; the integument very dry; the great majority of the lesions are macular, and the disease is very rebellious to treatment.

It is difficult to grasp the reason why so much time has been spent in theorizing as to the primary lesion, whether a macule or a papule; it does not make much material difference; the lesion could be macular at first and later become papular as the process advanced.

From the studies of these three cases I am constrained to believe that the disease is primarily macular, and not in the true sense a lichen. This opinion is sustained by the fact that, with the exception of Case 3, practically all the lesions were macular when the patients were first seen; afterward a few so-called papules were noticed, which were due partly, perhaps, to the continuous stimulating applications. This treatment irritation probably produces some slight proliferation of the horny layer in places, and also a certain degree of lichenification, which causes some of the lesions to appear slightly raised. In Case 3 the lesions are better described as maculopapular; even in this case they were very flat and the majority displayed very little infiltration when picked up between the thumb and forefinger, and inspection from an angle showed them in most instances to be flush with the normal skin.

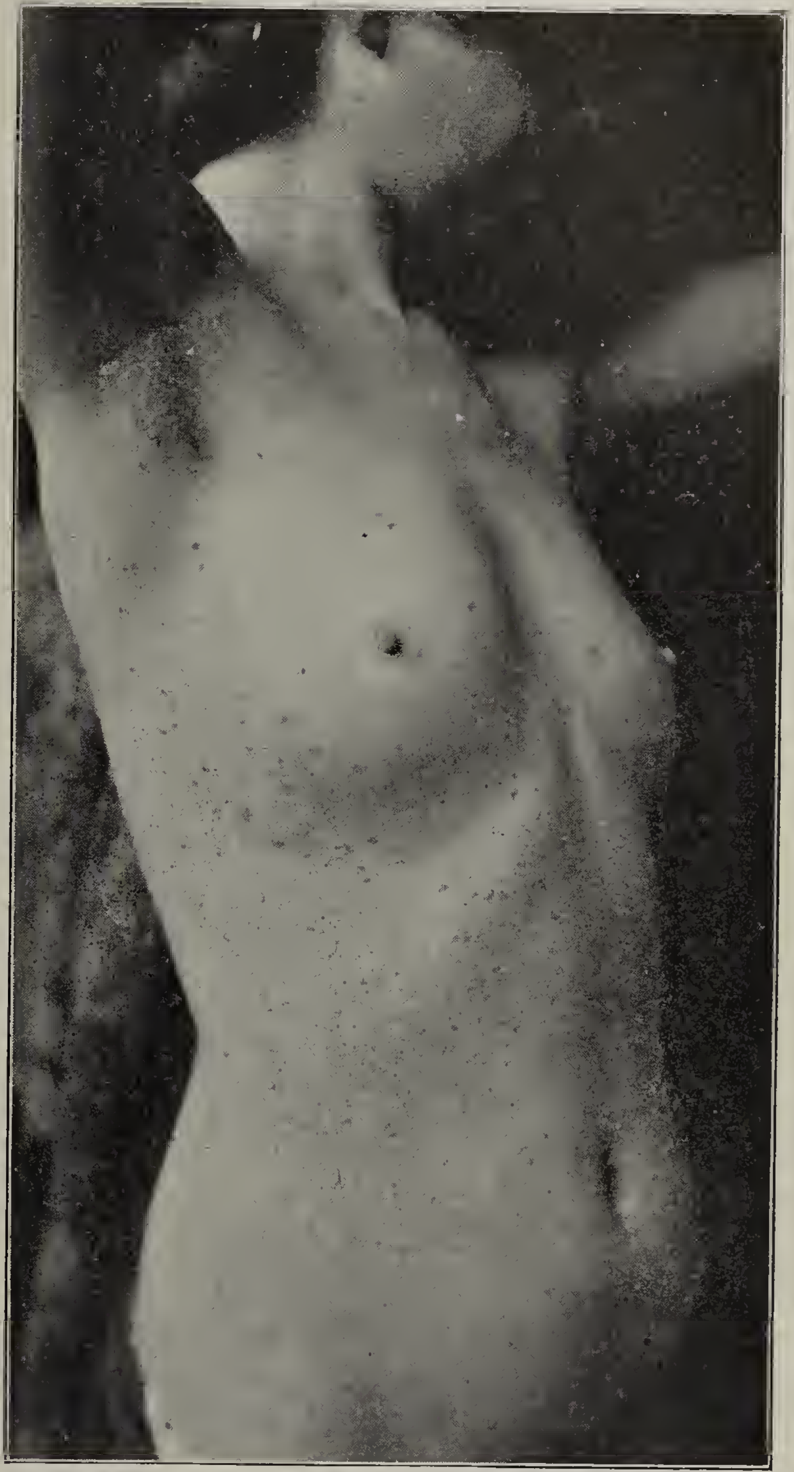

Fig. 3.—Chronic scaly erythrodermia, Case 3.

The diseases mentioned by other writers as akin to or having resemblances to this malady are psoriasis, seborrheic eczema, lichen planus, premycosis and pityriasis rubra.

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[5] Unna, Santi and Pollitzer: Monatsh. f. prakt. Dermat. x, 1890; (abstr.) Brit. Jour. Dermat., 1890.

[6] Brocq: Jour. d. pract., September, 1897.

[7] White, J. C.: Jour. Cutan. and Genitourin. Dis., 1900.

[8] Fox, T. C., and Macleod, J. M. H.: Case of Parakeratosis Variegata, Jour. Cutan. and Genito-Urin. Dis., 1901, xiii, 319.

[9] Brocq, L.: Parapsoriasis (including the érythrodermies pityriasiques en plaques disséminées), Jour. Cutan. Dis., 1903, xxi, 315.

[10] Neisser, A.: Zur Frage der lichnoiden Eruptionen, Verhandl. d. lv deutsch. dermat. Kong., 1894, iv, 495.

[11] Juliusberg, F.: Arch. f. Dermat. u. Syph., 1897; Ueber die Pityriasis lichenoides chronica (psoriasiform lichenoides Exanthem), 1899, l, 359.

At first glance it seems almost absurd that the lesion in question could have points of resemblance to all the above, as an eruption that is similar to lichen planus could hardly resemble pityriasis rubra; still the disease has different phases and it is natural to compare it. It is similar to a vanishing psoriasis, and this was attentively considered when Cases 1 and 2 first presented themselves, especially in the second. It has, however, many differential features from an ordinary case of psoriasis. The lesions in these cases show no particular predilection for the knees and elbows; the scales are different in character, being finer and not lamellated; they show no bleeding points on removal; the patches are only slightly infiltrated and the scalp is not affected.

There was no resemblance to lichen planus in the first two cases, but Case 3 had some features in common—namely, the lesions were small; they were maculopapular and flat, and were surmounted by a scale. The points of difference are: the lesions do not glisten as do those of lichen planus; there is no tendency to umbilication; the color is not the same, and nowhere does any tendency to hypertrophy exist; lastly, they do not yield to the most persistent lichen treatment and there is no itching. These cases differ from seborrheic eczema in that the scales are not greasy, the distribution is very general and the scalp is not affected. According to my own experience, the patches did not in any way resemble those of premycosis; they were not so large, did not show the infiltration; and the intense itching that nearly always accompanies premycosis was absent. The long duration, in one case seven years and in another twenty, would not preclude mycosis, but would weigh a little against it, although I realize fully that this early stage of premycosis can last a very long time; having had a patient under my care in whom it existed for twenty-five years. There is also on record a case shown by Dr. Allan Jameson at the British Medical Association in 1898, which some of the members diagnosed positively as parakeratosis variegata, and which later revealed itself as mycosis fungoides.

The diagnosis from pityriasis rubra is obvious and needs no further comment.

One of the striking features, which is not mentioned by some writers and only casually by others, is the similarity to pityriasis rosea. This was more noticeable in Cases 1 and 2, but it existed in a slight degree in Case 3 in one or two of the macular lesions.

This likeness was so marked in one of the patients that the assistant clinicians were unanimous in their opinion that the case was one of pityriasis rosea. This conjectural diagnosis was made before the patient was questioned; this is our custom in the clinic, and might be termed dermatological sight-reading.

The eruption in pityriasis rosea is probably more erythematous and the patches more uniform in size and regularity, but the likeness was great enough for us, sometimes, carelessly perhaps, to speak of it as chronic pityriasis rosea.

REMARKS ON THE PATHOLOGY

The morbid changes seem, in the main, to be much like those already reported, but there are some minor differences. The mild perivascular infiltration of cells in the uppermost layer of the corium seems to be common to all; in most instances the predominating variety were lymphocytes; this is true of the cases referred to in this paper, though there was an occasional plasma cell. Other writers, however, have described both mononuclears and polynuclears, and Anthony,[4] reporting a case of parakeratosis variegata, states that the cells were mostly of the latter variety.

The basal layer in one of the sections was indistinct and blurred, being somewhat like one of White's cases. Parakeratosis existed in all the sections, but very little in Case 3, as only an occasional nucleus could be discovered; slightly more pronounced in Case 1 and quite well marked in Case 2. Wherever the parakeratosis existed the granular layer was either absent or very much diminished, as has been frequently noticed before by others.

The stratum lucidum is not constantly present; it has been reported absent in most other cases, but was distinct in Anthony's.

The histologic changes in Case 2 are comparable to one reported by Jadassohn—viz., parakeratosis, some acanthosis and emigrated leucocytes were present in both cases. These always point strongly to psoriasis, and the specimen in a few places had features which were not unlike those seen in sections of that disease. The duration of this case was twenty years, and if it were ordinary psoriasis the infiltration of the skin would be greater and the pathologic changes much more marked.

The generic titles suggested for these dermatoses are parapsoriasis (Brocq) and resistant maculopapular scaly erythrodermias (Fox and Macleod). Of the two the latter term seems to me preferable. If it is necessary to group the affections, the title at the beginning of this article might answer the purpose as well as any. Clinically there seems to be almost enough difference between parakeratosis variegata and parapsoriasis in patches to warrant classing them separately. The names for the individual cases are not particularly apt, and numerous objections can be raised. For instance: It would seem best to relegate the word parakeratosis to the laboratory and not use it as a clinical term. The word "lichen" is also rather inappropriate for an efflorescence in which the majority of the lesions are macular.

From a descriptive standpoint Brocq's title of *érythrodermie pityriasique en plaques disséminées* can not be improved on, except that it does not fit very well in American dermatology. The nomenclature is already so confusing that one hesitates to further complicate it; consequently it will be allowed to remain *in statu quo.*

One curious symptom observed in all three cases was the very noticeable and rather excessive sweating on the face, which persisted to a degree even in the cold weather. The face was never the seat of any of the patches and where the disease was present on the trunk and extremities the perspiration was either normal or diminished. This feature is unexplainable.

My thanks are due to Dr. E. C. Jagle for the work of preparing the specimens and valuable suggestions during the examination of the same; and also to Professor Fordyce, who has so kindly allowed me the privilege of the laboratory and the use of some of his material.

NOTE.—In addition to the references previously cited, the following may be found of interest:

Corlett and Schultz: Jour. Cutan. Dis., 1909.
Ravogli, A.: A Case of Erythema Squamosum, THE JOURNAL A. M. A., July 13, 1901, xxxvii, 109.
White, C. J: Jour. Cutan. Dis., 1903.

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ABSTRACT OF DISCUSSION

Dr. **William S. Gottheil**, New York City: I think we must all admit that a new name is required for this class of eruptions, and the name is of little consequence so long as it is simple and easy to remember. I believe that para-psoriasis is a better name than chronic scaly erythrodermia. These cases are commoner, I think, than we suppose, and that would explain some of the differences of opinion that they have given rise to. One man calls his case a seborrheal eczema, another a psoriasis, and still another a pityriasis rosea. I think that para-psoriasis is perhaps the most appropriate name for this particular class of cases.

RODENT ULCER OF THE CORNEA (MOOREN'S ULCER) *

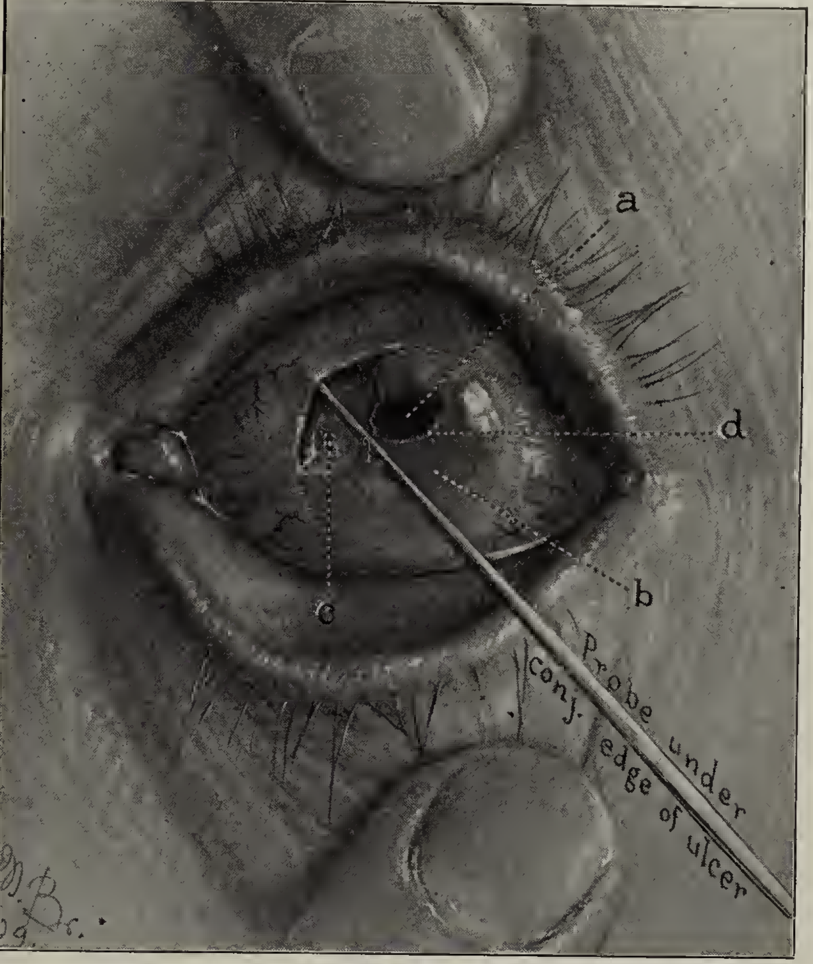
ROBERT L. RANDOLPH, M.D.
BALTIMORE

It is a matter of some surprise to me to find how few reports of cases of so-called rodent ulcer of the cornea have found their way into literature; according to Hayashi not more than thirty-five. I can not but think that this is due in many instances to the fact that the condition has not been recognized as rodent ulcer but was regarded perhaps as a marginal ulcer of the serpiginous variety and treated accordingly. That most ophthalmologists whose experience extends over a number of years have met this variety of corneal ulcer once at least is very likely and that it has not been identified as the rodent ulcer first described by Mooren is equally probable. I say first described, for it was really Mooren whose name is most closely associated with the condition, though reference to the same condition will be found in the writings of Bowman many years previously.

At first sight this form of corneal ulcer does not differ from that form which every ophthalmologist sees now and again, and which he recognizes as a marginal ulcer. Indeed I doubt whether it is possible to identify clinically a rodent ulcer in its early stages, and this uncertainty will prevail until we learn more of its etiology. If it be due to a specific bacterium (and I think it is) it would be possible to identify it at once, but from a bacteriologic point of view no conclusive light has been thrown on this variety of corneal inflammation, and we are confronted with a disease which in many respects is similar to what we now and again see in hospital practice. Even after the disease has been present for many weeks, it is more than probable that most of us would fail to realize that we were dealing with anything more than a very obstinate corneal ulcer. And yet there was in the only case which I have seen one feature at least which distinguished it from any other ulcer of the cornea which I had ever seen, and that was the deeply undermined conjunctival edge of the ulcer. The edges of marginal ulcers are always more or less undermined, but owing to the better blood supply at the conjunctival edge this edge of the ulcer is not conspicuously undermined, except probably in the case of rodent ulcer.

In the case reported here the conjunctival edge of the ulcer could be lifted up and was undermined to the extent of at least four or five millimeters from the border of the cornea. This, I believe, is peculiarly true of the rodent ulcer and it will be found in the early stages of the affection. It is well known that the corneal or progressive edge of the ulcer is always undermined to the extent of two or three millimeters, but I do not think that attention has been sufficiently called to the extensive invasion which goes on beneath the limbus, and which is often lost sight of. My attention was called to this feature in about three weeks after the patient came under my care. McNabb and others mention the possibility of the process extending under the limbus, but it seems to me that careful examinations of the conjunctival border of the ulcer should be repeatedly made, for we can hope to mitigate this condition only by addressing our remedies to those parts of the ulcer where undermining is in active progress. In my case the corneal edge was distinctly undermined and could readily be elevated and a probe passed into a cleft two millimeters in extent, while, as I have said, the conjunctival edge was undermined to twice the extent of the corneal edge.

Chronicity is an important point in the history of rodent ulcer. The average length of time is from two to ten months and occasionally the condition lasts for more than a year.



Rodent ulcer of cornea. a. The only part of the cornea which has not been attacked but which is gradually becoming hazy with approach of the ulcer. b. Area of cicatrization after ulcer has run its course. c. Ulcerative process is especially marked in this area (note undermined limbus). d. Corneal or progressive edge of ulcer, showing crescentic shape which was more marked in early history of case. This edge is also undermined.

History.—The patient (E. T. L.) whose case I report was under treatment since early in July, 1908, two months before he came to me. He was and still is a healthy looking man of 52 and has a well-marked arcus senilis on his right eye. The ulcer of his left cornea obliterated the arcus on that eye. He had never had any serious sickness. He gave a rather vague history of an injury to his left eye early in June. About this time he had a foreign body removed from his left eye by an optician and from that time his troubles with the eye commenced. He first consulted an ophthalmologist in July. All this time, however, he continued his occupation, which was that of a traveling salesman in connection with a big business concern in Baltimore. In July he returned from a trip south and, according to the oculist who then saw him, he had a marginal ulcer which occupied the outer and lower fourth of the left cornea. When I saw him in September this was still his condition, though his attending physician said that the ulcer had spread considerably since he first saw him.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Treatment and Course of Disease.—I found that the patient had been using massage with yellow ointment and irrigations of weak sublimate solution. I advised the application of pure carbolic acid, the instillation of atropin preceded by an irrigation with normal salt solution and also that he be put on tonic treatment, quinin and strychnin. This was done and with apparently no benefit, for he returned in ten days with a request from his oculist that I take charge of the case. There was then the remarkable undermining of the limbus which had escaped me at the patient's first visit ten days previously and which no doubt had been there all the time. This undermining is well shown in the accompanying drawing. I felt sure now from the superficial character of the involvement, the undermined edges, and the fact of its having been present for over three months that I was dealing with a rodent ulcer. The galvanocautery was applied and particular care was taken to pass the loop well up under the limbus and under the progressive edge of the ulcer as well. Fluorescin proved a help in bringing out the areas which were affected. There was marked improvement right away, and in three or four days new blood vessels were seen making their way over the affected part from the conjunctiva. The atropin and internal medication were of course kept up. Ten days later the eye became intensely red, the irritative symptoms broke out afresh, and several new spots appeared at the upper end of the ulcer. These spots in a few days coalesced and fused into the main ulcer. Again the cautery was applied as before and again a few days later to another point which I thought I had overlooked. Apparently this last application was of distinct benefit, for improvement continued up to the middle of October, when he had another outbreak, and I determined to try tincture of iodin. Three applications were made in one week, but there was not the slightest benefit obtained, contrary to what is usually obtained when we use iodin in the ordinary forms of marginal ulcers of the cornea. Iodin is my main reliance in corneal ulcers in this situation. Between November 1 and Christmas two more applications of the galvanocautery were made and always with improvement, but this lasted for only a few days. At the last application improvement was so pronounced that I promised the patient his Christmas dinner at home. Much of the redness of the eyeball had disappeared and much of the cornea was clear. The patient left the hospital to return home, where he spent his Christmas with a black patch over the eye. The next day the process started up with unusual vigor and I concluded that the galvanocautery had been given a fair trial. About this time I picked up a communication by Risley, who had seen benefit follow the administration of thyroid extract in obscure cases of keratitis. The patient took three grains of this three times daily, but in a week had to leave it off, as it produced diarrhea even when smaller doses were given. This is a not infrequent occurrence during the administration of the so-called thyroid treatment. I then tried the application of trichloracetic acid, and this, I am sure, made the condition worse. Only one application of this was made. It was then suggested that I try a light compress bandage and a boric acid ointment between the lids. This was faithfully tested for ten days but without any benefit. A great deal of the time in the early history of the case I had tried the instillation of chlorin water several times daily, but I could never see that it did the slightest good. The last measure tried was recourse to tincture of iodin and a light immobilizing bandage, but the result of all this was the infliction of a great deal of suffering without the slightest improvement. The iodin was applied six times over a period of two weeks. What seemed peculiar was the fact that none of the many remedies employed seemed either to accelerate or to retard the process, which went on slowly and surely to take in the greater part of the cornea. I might except trichloracetic acid, which probably did harm. Soon after Christmas a very light grade of plastic iritis developed, which was easily controlled. There have been times when the ciliary neuralgia has been intense, but the patient has slept and eaten well and, generally speaking, has been comfortable. The only measure which seemed to promise recovery was the galvanocautery, and more than once I thought the chances fair, but no substantial, certainly no permanent advantage over the process was gained, and I would return to the patient's room the next day to find his eye in a blooming state of inflammation. It seems strange that Fuchs should give such a favorable prognosis in this class of cases if the galvanocautery is used, when in by far the majority of cases reported the cornea was ultimately covered by a leucoma in spite of this treatment in the hands of skilful observers. At the present writing the patient's cornea is gray all over, with the characteristic anesthesia of most of the surface and he counts fingers at one foot.

It may be interesting to note the following data in reference to the frequency of rodent ulcer. Hayashi saw rodent ulcer 4 times in 11,400 eye cases. Mooren in twenty-five years saw the affection 20 times in 108,417 cases; Jany once in 66,000 cases; Vossius 3 times in 25,000 cases; Uhthoff 3 times in 10,000 cases; Hillemann failed to see the disease in 11,000 cases in the eye clinic in Bonn, but observed it 3 times in 7,000 cases in Utrecht. Asayama met with rodent ulcer 4 times among 6,780 eye cases; Kiribuchi saw it 6 times in 11,000 cases and Ogiu saw it 6 times in 8,900 cases. The disease would seem to be somewhat more frequent in Japan.

It is a mistake to think that the affection is a painless one, for it is characterized by frequent attacks of suffering and irritative symptoms generally. The ulcer shows a decided tendency to keep close to and run parallel to the limbus of the cornea and one of its peculiarities is its tendency to clear up and look as though it would be completely well in a few days, when a fresh outbreak would land the patient back at a point which was thought to have been left far behind days ago. The progressive edge of the ulcer at this time as Nettleship describes it, "forms a narrow sinuous whitish band level with the cornea of which the two ends are in advance of the centre, so that the diseased surface at this stage is roughly crescentic and sometimes semilunar." Behind this edge of course there is no epithelial covering and here the fluorescin stain takes well, and further back comes that part where the process has spent itself and the cornea has been left scarred, and it takes poorly the fluorescin stain. In most cases the disease dies out after the entire cornea has been involved, but according to McNabb recurrences take place in exceptional instances and the ulceration reappears to penetrate deeply into the cornea and expose Descemet's membrane, or even to penetrate through it.

Rodent ulcer as a rule is seen in individuals over forty, though Pflüger, Handmann and Grossmann report cases in younger patients. It has probably never been seen in children. Men are more prone to it than women. Of the 36 cases, reports of which are found in literature, 25 were in men and 11 were in women. It is not infrequently found in both eyes. Hillemann, who has made an analysis of the subject, found that it occurred eleven times in both eyes, though I do not believe it has ever been observed in both eyes at the same time.

We are completely in the dark as to its etiology. There are those who maintain that disturbances in the sensitive nerve endings are largely responsible. Among these are Ahlström, who noticed anesthesia of the cornea in its entire extent, and Vossius, who in three of his cases observed somewhat similar phenomena. On the other hand there are others who have failed to observe this condition. I have thought at times that there was some anesthesia, but I could never get any convincing evidence of this condition except in those parts in which the nerve endings had probably been destroyed. Ahlström holds that it is a kind of progressive necrosis of the superficial subepithelial corneal layers and of nerve origin. Kiribuchi touches on its probable systemic origin as evidenced by its appearance not infrequently in both eyes. Asayama found in four cases evidences in the stools of intestinal parasites, and thinks that there may be some causal connection. This possibility was excluded in my case. A study of the published cases throws no satisfactory light on the etiology of this rare and intractable disease, neither does it offer any remedy which carries with it more than doubtful value. I am inclined to the view that the disease is of bacterial origin.

I have almost made up my mind that my patient has done better since all aggressive treatment has been abandoned, especially in the way of irritating applications. If the galvanocautery had been applied a month or six weeks earlier I believe that the story would have been different. When one meets a corneal ulcer along the margin, careful examination should be made to ascertain whether the limbus edge of the ulcer is deeply undermined. If so the cautery should be applied at once, and it might be well to cut away with a delicate pair of scissors the overhanging edges of the ulcer so that parts underneath can be readily reached. If the disease shows no substantial improvement at the end of two months, I think it best to stop all irritating applications and simply continue with atropin and salt solution irrigations and tonic treatment. I am not at all satisfied that repeated applications of the galvanocautery are advisable, such applications often being followed by a denser opacity than is produced by the actual ulceration. McNabb states that some of these patients are left with a vision of from 1/6th to 1/4th.

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ABSTRACT OF DISCUSSION

DR. GEORGE E. DE SCHWEINITZ, Philadelphia: Dr. Randolph kindly permitted me to examine the patient whose case history he has just described, and I can do no more than confirm his findings and observations. Once or twice in the last fifteen years I have seen in the wards of the Philadelphia General Hospital ulcers of the cornea in old persons, which in general terms resembled the chronic serpiginous ulcer of Nettleship, but in none of these cases has the undermining of the conjunctival ulcer been so conspicuous a sign as it was in Dr. Randolph's patient, a sign which, as he points out, should be regarded as the chief characteristic of this affection. In other respects the resemblance was close and, so far as I can remember (I have no accurate notes at hand), the results of treatment were conspicuously unsatisfactory. It is always doubtless possible to make a diagnosis of rodent ulcer of the cornea by the chronicity of the process and especially by the undermined corneal edge of the ulcer and the decided and extensive undermining of its conjunctival border. Perhaps the lesion for which it might most readily be mistaken is that corneal disease to which Fuchs has given the name *keratitis marginalis superficialis*, also an affection usually seen in elderly persons, but differing from Mooren's ulcer in that the lesion is more superficial, that the gray line which frames the corneal border is not undermined, that the conjunctival edge is not specially undermined, and that the process never proceeds to the center of the cornea. Like Mooren's ulcer, it is chronic in type and subject to many relapses and intermissions. (Here the case history of the patient, with ulceration of the cornea, with final loss of the eye, bearing resemblance in some respects to *keratitis marginalis superficialis*, and in other respects to Mooren's ulcer was recited. The exciting cause of the trouble was attributed by the patient to exposure to *x*-rays.)

Microscopic examination of eyes the subject of rodent ulcer has thrown no light on the etiologic factor, and Andrade's rod-like bacillus which he found has not, I believe, been confirmed. Parsons has examined several cases of Mooren's ulcer, but failed to find this bacillus in any other specific micro-organism. Fuch's statement that destruction of the margin of the ulcer with the actual cautery will in most cases result in a cure, seems to me too optimistic. With nitric acid, recommended by Jackson, I have had no experience. I have thought that should the opportunity present itself, after cutting away the conjunctival edge of the ulcer and thoroughly applying the actual cautery, I would cover the cornea with a conjunctival flap after the manner of Kuhnt, or entirely, according to the De Wecker method of managing large wounds of the cornea. Such a procedure could at least do no harm; it might do good.

DR. BARTON PITTS, St. Joseph, Mo.: In my experience in the treatment of all classes of ulcers, there is one sovereign remedy which I have not heard mentioned. When atropin, which is the sheet anchor of the therapeutic agents, fails, and the galvanocautery is resorted to, which comes next, my experience is that the actual cautery far surpasses the galvanocautery. I use a strabismus hook and an alcohol lamp and get a decidedly more beneficial effect, and I account for this on the ground that it is not so intense. I have tried the galvanocautery and it cuts like a knife. In these ulcers of the cornea, or rodent ulcers, which I think are simply another class of serpiginous ulcers, with the actual heat, one gets a more decided and beneficial reaction. I do not put much confidence in the galvanocautery; the sovereign remedy in my opinion is paracentesis. I do not think I ever lost an eye entirely in which paracentesis was resorted to, particularly if used early. I know I have never regretted the procedure, but I have regretted postponing it. With a free corneal incision through the base of the ulcer the reaction is immediate. Not simply in the mild form, but even in hopeless, purulent cases, and in cases of gonorrheal origin, I have often obtained a reasonable amount of vision.

DR. J. A. DONOVAN, Butte, Mont.: Recently I had a patient with ulcer who had been treated by an ophthalmic surgeon for two months before he was referred to me. The ulcer was about 2 or 3 mm. in width all around the edge of and completely encircling the cornea. When the man first came, I used the electrocautery according to the method described in a recent number of *Ophthalmology* and checked it. For two months or so it remained stationary, but the last two weeks rapidly increased in size. I had to leave town and I gave my assistant instructions to use nitric acid in case it was not checked. For some time back I had been using the red iodid of mercury ointment and used 1 to 5,000 strength with him, instructing the assistant to increase the strength; when I got back my assistant had got up to 1 to 2,000. That put the ulcer under control for a little while, and not having the electrocautery at hand, I then used the heated probe. I found a difference, but I cauterized a second time and still did not control it. I kept on using the 1 to 2,000 ointment of mercuric iodid as a sort of forlorn hope and gave an almost absolutely bad prognosis. The ulcer was spreading in from all sides. In the course of three weeks I could see a little vessel growing in from the nasal side, and a day or two before leaving home the ulcer was checked, leaving in the center 3 mm. of clear cornea, and I give the credit to the mercuric iodid ointment. I generally use 1 to 5,000, but with this patient used 1 to 2,000 four times a day. It caused severe pain twice after having been used several days, but by omitting it once or twice it was resumed without further trouble.

DR. H. GIFFORD, Omaha: Mooren's ulcer is very rare. I have only seen one case. A man had been struck with the tail of a cow and came to me after the ulcer had been going on for a couple of weeks. It looked like a mild, simple ulcer, involving about the lower third of the cornea, but there was very little reaction; it did not get deep, and I thought it was going to be easy to cure with good sight. To my surprise, it kept on until it involved nearly the whole cornea. Then I found that the conjunctiva was undermined for about 3/32 of an inch beyond the limbus. I immediately cut off all of the loose conjunctiva and then cauterized very freely clear down to the sclera all the cornea affected and all the area denuded. From that time on the ulcer made no further progress. Therefore, I feel like urging you not to run the cautery under the pocket, but to cut the conjunctiva away as Dr. de Schweinitz and Dr. Randolph have suggested, and then use the cautery freely. As to whether Dr. de Schweinitz's idea of covering the cornea with the conjunctiva would pan out I am not certain. Here are germs which show a particular predilection for growing under the conjunctiva, and if you do not destroy them all they may keep on growing under the flap, if you do not get them out. That is the great objection to covering the cornea with conjunctiva in all ulcerative cornea processes. It may cure, but if it does not, you can not tell what is going on.

Dr. R. L. Randolph, Baltimore: A study of the literature of rodent ulcer establishes conclusively the fact that the disease is exceedingly rare, and yet one might infer from what Dr. Pitts has said that he had encountered this affection not infrequently; but in this connection I would like to say that until it is recognized that rodent ulcer is a distinct clinical entity, nothing but confusion will arise as to the diagnosis. I forgot to state that the actual cautery was employed in the form of a platinum loop heated in a Bunsen burner, but with no apparent benefit. Paracentesis was not employed, as I have not been impressed with the value of this operation in corneal inflammations in which I have seen it tried by others, and I would call attention to the fact that paracentesis has been employed by others in this form of corneal ulcer, but with negative result. When the eye was enucleated nearly two months later, the man had light perception and had been troubled with periodic attacks of redness and pain.

PROSTATIC CANCER

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Little of practical value appears in the literature before Oraison's report, in 1903, of twenty-three cases. Ten, or 43 per cent., of the patients were well after four years, 4 died from the operation, and 3 had recurrence. Young, in the following year, gave his report of 6 cases of total extirpation, resulting in 3 patients well after eleven and twelve months, respectively. Two died as a result of the operation and one following litholapaxy nine months later. A small area of cancerous tissue was found, however, in the pelvis at autopsy. Watson and Cunningham cite Fuller and Czerny's results in two cases of enucleation. Each patient had recurrence, but lived for eleven and nine months, respectively. From a consideration of these results they assert that we are not justified in attempting the operation of extirpation as practiced by Young. Previous articles have been résumés, as a rule, of delayed operations, and these, coming late in the disease, called for extensive dissections and a necessarily high mortality.

Walker places the frequency of prostatic cancer at about 16.5 per cent., while Young's statistics denote one in seven of all cases of enlargement. Figures differ widely for cancer, not only with different surgeons, but with different geographical as well as anatomic areas. It is very apparent, however, that malignancy dominates many of our cases of prostatic enlargement. There will be a great increase in the future, when more who operate for senile hypertrophy subject the tissue removed to a more careful microscopic examination, as cancer here is, at its inception, not easily discernible, necessitating a most careful search in some cases of all parts of the gland. This same care should be exercised at all necropsies of male subjects past middle life.

The growth proceeds more slowly than in other organs, as the lymph supply is meager; further, it is a disease of late adult life, when the lymph circulation at its best is carried on but poorly. The degree of its malignancy is not extreme while it remains confined, though it becomes rapidly fatal after the seat of the disease has been changed to the bones, or, as is often the case, to the internal organs. No one has as yet explained with satisfaction the pathologic significance of the osseous metastases common to carcinoma of the thyroid, the mammary and prostatic glands. Hawley accepts von Eiselsberg's theory for carcinoma of the thyroid, that the veins are the source of all dissemination for cancer of the prostate as well, and to substantiate his belief states that the prostatic veins are often the seat of phleboliths.

The adverse criticism applied in the past to operative procedures for prostatic cancer have not been wholly unjustified because of the lack of attempts at early diagnosis, or recognizing the difficulty in this to appreciate the fact that the large percentage of senile hypertrophies which become malignant justified earlier operative interference.

The earliest symptoms of prostatic cancer are identical with those of senile hypertrophy. It is very apparent that those cases with an infiltration predominating from the first have certain characteristics evidenced by cystoscopic examination of the bladder base and digital examination of the seminal vesicles. This, however, is after the invasion has gone beyond the capsule and can hardly be regarded as early in the disease. How often the malignant process is grafted on hypertrophy we do not know, but, considering that senile hypertrophy is found in about one-third of all men past sixty, the number of cases reported undergoing degeneration in the past would indicate a large ratio between the two. Whether malignancy is suspected or not, the hemolytic action of the blood should be studied in all cases; although not accurate, according to Crile, in over 85 per cent., it should be carried out as a routine procedure. The clinician is dependent on microscopic investigation for an exact differential diagnosis, and this examination should be made at the time of operation by means of the frozen section. Under certain conditions, when an extensive pathologic examination can not be made immediately, or a more thorough subsequent search reveals cancer, the operation may be performed at two sittings. In those cases in which the lobes enucleate easily with the finger, if a malignant process exists, it will be confined to the interior of the lobe or lobes and the necessity of a more radical operation will not be apparent. This responsibility, however, must rest with the surgeon at the time of operation. Just as we have come to know the danger of leaving benign growths of the mammæ, so must the profession regard the prostate, for innocent enlargement does not always remain benign and there is little satisfaction in the oft-repeated statement, "a patient bears catheter life well" if his forbearance brings him to a state of cachexia.

A lowering of the high mortality of the past will not come from the perfection of operative procedures alone, but through the knowledge of the efficacy of early intervention. Surgical work is of as little avail on the prostate as on the mammary gland, if we wait for conclusive symptoms before we interfere.

Sufficient time has not elapsed for me to report final results in the following series of cases; suffice it to say that the death of the patient whose pathologic report is No. 4 was the only hospital death. The chief object of the paper being to report the prevalence of cancer among patients coming to the University Hospital for prostatic enlargement, the series on which this paper is based began with the opening of the college year in September, and numbers 20 cases, 15 of which were simple hypertrophies incident to old age, while the remaining 5 were carcinomas. I am indebted to Dr. A. S. Warthin for the following pathologic description of these 5 cases.

Case 1.—The patient was 71 years old: was operated on Dec. 5, 1908. In the glands removed the normal prostatic tissue was largely replaced by dense fibrous connective tissue containing small atypical islands of cells, many of these retaining a gland arrangement. The epithelial cells of this gland space were very atypical and there was definite infiltration of the surrounding connective tissue. Portions of the gland remaining showed epithelial hyperplasia. In the connective tissue there were many corpora amyplacea apparently embodied in the connective tissue but surrounded by a layer of atrophic cells. The connective tissue was hyperplastic throughout; showed many areas of small round-cell infiltration, and there was a new formation of blood vessels. Diagnosis: adenocarcinoma.

Case 2.—The patient was 53 years old, and was operated on Jan. 21, 1909. Microscopic examination of the specimen removed showed very little normal gland structure left, the greater part of the gland being replaced by carcinoma tissue showing a dense stroma infiltrated with very small spheroidal cells of epithelial type. In some areas there was slight preservation of a gland structure. Large prostatic ducts were seen scattered throughout the gland, and a few small areas of gland tissue showing dilated acini, filled with corpora amylacea, were present. There was distinct evidence of infiltration outside the capsule. Microscopic diagnosis: Carcinoma, partly of the type of scirrhosum, partly of the type of an adenocarcinoma.

This is an interesting case from the fact that the patient showed vertebral secondary lesions before leaving the hospital. He had catheterized himself twice daily for two years, but as he had neither cystitis nor the pain and inconvenience which accompany it, his previous decision has been to let well enough alone. The second afternoon following his operation he had a violent chill and his temperature rose quickly to 104 F. His pulse, at first thready and rapid, became imperceptible at the wrist. He was *in extremis* for eight hours, but rallied after the intravenous injection of 72 ounces of normal saline solution and 10 ounces subcutaneously into each breast. The extent of the infiltration into the bladder wall precluded any attempt to remove it completely, and only palliative measures could be employed. Although the growth was large it had influenced a powerful constitution but little, so that the loss of a small amount of blood at the time of operation could not account for his postoperative symptoms, which I think must be explained from the standpoint of reflex irritation to the central nervous system. The osseous complication manifested itself in a bony prominence at the ninth and tenth dorsal segments.

Case 3.—The patient, aged 56, was operated on Jan. 5, 1909. The prostate showed marked glandular hyperplasia with papilliferous ingrowth into the dilated glands and an almost complete loss of normal structure. Corpora amylacea were present in some of the dilated acini. The stroma was greatly increased and throughout the stroma there were atypical nests of epithelial cells preserving slightly a gland type. These new-formed glands were, however, wholly atypical and presented the picture of an adenocarcinoma. There were large areas of large-celled infiltration scattered throughout the tissue. Diagnosis: Adenocarcinoma.

Case 4.—The patient, aged 78, was operated on Jan. 28, 1909. This operation, like the other four, was by the perineal route. Two very large lateral lobes (see illustration) were easily enucleated with the finger. The right lobe was much the larger, measuring 3½ inches by its greatest diameter. After careful search the median lobe could not be found, and it was decided that it came away with the left lobe. Either this conclusion was erroneous or a nodule of the other lobes was left behind, involved secondarily in a malignant process, which was overlooked at the time of operation. The portion of prostate removed at operation showed only the picture of a marked glandular and cystic hyperplasia. The portion of the prostate examined at autopsy showed, on microscopic examination, an infiltration of squamous-celled carcinoma extending into the prostate and partly replacing it, the growth being apparently along the ducts. It was impossible to say whether this carcinoma was primary in the bladder or in the prostate. From the character of the cells it was more probable that it was a primary bladder or urethral carcinoma rather than primary in the prostate. This case is interesting in showing the difficulty of a reliable diagnosis in those glands having first a senile hypertrophy followed by a malignant process and further a secondary involvement of glandular tissue from the bladder or the urethra. This patient died eighteen days after operation from purulent cystitis and chronic nephritis.

Lateral lobes of the prostate, enucleated as described in Case 4; right lobe on right in illustration.

Case 5.—The patient, aged 68, was operated on April 9, 1909. There was marked chronic inflammation, fibroid hyperplasia and slight atypical changes in a few glands. The specimen was perhaps beginning carcinoma. Suspicious.

The number of extirpations reported is too small to establish the superiority of this method as a conservative measure over that of enucleation. It must also be admitted that the latter can be regarded as only a palliative measure when the infiltration has invaded the capsule, but unless we can report cures by extirpation, or at least prolong life in a certain number of instances, we must confine ourselves in the future to palliation. To admit this seems hardly to conform to progressive surgery, and I think extirpation must be the operation of choice in selected cases of capsular invasion.

Goodspeed Building.

Stenosis of Aorta in the Young Free from Rheumatism.—L. Gallavardin reports three cases, and refers to others confirming the existence of a form of stenosis of the aorta, not congenital and not due to rheumatism or atheroma. This fourth variety of aortic stenosis occurs in the young, generally in a pure form, and the tolerance for it is remarkable. Its origin is obscure, but probably it is acquired, a relic of some subacute or chronic endocarditis in childhood or adolescence, of unknown cause. In one of his cases the stenosis was an accidental discovery at the age of 22 and seemed to cause no disturbance. In the second case, the stenosis, accidentally noticed at 20, caused no disturbance until 30, when functional symptoms developed, proving fatal. The same history applies also to the third case, discovery at 20, with gradual development of functional disturbances, but still mild at 31. His article is published in the *Lyon Médical*, Jan. 10, 1909.

THE APPEARANCE OF PELLAGRA IN THE UNITED STATES *

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HISTORY OF THE DISEASE

It is probable that pellagra existed for many years in Europe before its recognition as a distinct disease. For many years it was considered an unusual manifestation of some other disease such as scurvy or leprosy. The first indication of the disease in literature was made by Ramazzini, who called it *mal del padrone*. In 1730 Gaspard Casal, a physician of the Asturias, described pellagra under the name *lepra asturiensis*. This name is accounted for by the fact that leprosy was at that time prevalent in the Asturias and Casal considered pellagra a manifestation of leprosy. Another author accredits the name *lepra scorbutica* to Casal. Soon after this it was noted in Galatia, and somewhat later in Castile, Rome and Aragon. Among the people it was variously designated as *mal de la rosa, mal del sole*, or *mal de la misera*. About 1750 the northern provinces of Italy, chiefly in the neighborhood of the Lago Maggiore, became its chief seat and seemed to furnish a much more favorable field for its extension, and, while the disease was still present in the lower Spanish provinces, it never made the same headway there.

Frapolli was the first to apply the name "pellagra" (Italian *pelle agra*—rough skin). This was about 1771. Frapolli asserted that the disease pellarella, which had been known for many years, was identical with pellagra, and that it was present before the introduction of Indian corn from America. Contemporaneously with Frapolli the disease was described by Odoardi in Venetia and called by him *scorbutus alpinus*. Somewhat later Puyati did important work in showing that all these descriptions and names were for one and the same disease—pellagra.

By 1784 the disease had reached such proportions and the people had become so aroused that the Joseph II Pellagra Asylum was established in Legnano under royal authority and the elder Strombio placed in charge of it. Strombio's work was of the greatest importance and a decided advance in the study of the disease.

By the close of the eighteenth century pellagra had extended into Liguria and Piedmont. In 1818 Hamea, the elder, described it under the name *mal de la teste*, because occurring in the neighborhood of Teste, and it was at this time that the people bestowed the appropriate name *mal de la misera*. It was also known as *dartres malignes, mal de sainte-Rose, mal de la sainte-Marie* and numerous other names of similar character.

Roumania, which is now a stronghold for pellagra, had no recorded case until 1810. This date is associated with the introduction of Indian corn from Italy in coastwise vessels. In 1836 Varnow described it in his inaugural dissertation, and in 1858 Julius Theodori did likewise. The people knew the disease by the name of *Buba Tranjilar*.

In 1826 Marchand recorded the appearance of pellagra in the southern provinces of France, especially in the rural districts, in the Gironde, in the Pyrenees, and in the Haut-Garonne and the Aude. Recently in these districts it has been greatly reduced, presumably because the corn culture has largely given place to the cultivation of other grain for which the soil is better suited.

In more recent years Bouchard described the disease in Mexico. It has occurred in Brazil, Argentine Republic, Uruguay, and also in Africa. There have been sporadic cases reported from the Tyrol, Servia, Bulgaria, Greece, Asia Minor, and one case from England. In the sixties Gray of New York and De Wolfe of Nova Scotia reported sporadic cases, but the correctness of the diagnosis was questioned.

Pellagra has without doubt existed in this country for many years, but the appearance must necessarily have been sporadic, for no death-dealing pestilence such as the acute pellagra now so prevalent in the southern states could have been long overlooked.

In 1883 Sherwell reported a case in New York. The patient was a Genoese sailor.

In 1902 Harris of Georgia reported a case simulating pellagra in which he found abundant hookworms. From the description the case must have been well-defined pellagra.

We are indebted to G. H. Searcy of Alabama for the first positive report. He recorded an epidemic of 88 cases occurring in the State Hospital for Colored Insane at Mount Vernon. Of this number 57 patients died. In 1907 J. T. Searcy reported 9 cases from the Bryce Hospital in Alabama. T. C. Merrill in 1907 reported a sporadic case from Texas. Recently, before the medical section of the American Medical Association, R. H. Bellamy reported ten cases seen by him in Wilmington. Bellamy and J. B. Wright of Lincolnton were the first to recognize the disease in North Carolina, and did so before the appearance of Searcy's paper.

Moore has recently reported a case from Augusta, Georgia. Babcock's report to the South Carolina Board of Health aroused much interest in the matter. He described twelve typical cases.

At the 1907 session of the American Medical Association I reported a series of cases under the title of "Symmetrical Gangrene of the Skin," not recognizing their identity with pellagra. I suspected that malaria played a part in the causation of the skin lesion.

In Europe at the present time the chief seats of the disease are northern and central Italy and Roumania. The disease is endemic between 42 and 46 degrees north latitude, 11 degrees west and 26 degrees east longitude of Paris. Several small foci are not included in this area.

In 1879 the number of cases in Italy was 97,855. About this time in Venetia among 10,000 deaths 500 were due to pellagra. Since 1881 the number has declined materially, supposedly owing to the strenuous efforts on the part of the government in the more careful inspection of Indian corn and in the improvement of the general hygienic conditions. Next to Venetia stands Lombardy, with 300 deaths, then Emilia, with 200 deaths. Piedmont, Umbria, and Tuscany attribute over 5 per cent. of all deaths to pellagra. Neusser asserted that in 1886 in Venice, with a population of 36.588 natives, there were 1,086 cases of pellagra.

In Roumania in 1885 there were 10.626 cases; in 1886, 19,797 cases out of a population of 5.300,000. In 1892 there were 4.500 cases, in 1898 21.272 cases. Triller says that in 1906 in Roumania there were 30.000 pellagrins. From 1893 to 1898 Sandwith reported 500 cases at the Kase el Ainy Hospital in Cairo. In Algiers the disease is well distributed. Triller's idea of the extent of the disease is amazing. He states that in certain parts of Italy in 1906 from 30 to 50 per cent. of the population were affected: that in 1899 the number of cases in all Italy reached 73,000, which was more than 10 per 1,000 of the rural population. Tuczek asserted that in 1884 there were 10,000 pellagrins in Italian institutions.

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* Read by invitation before the College of Physicians of Philadelphia.

Pellagra has extended with great rapidity throughout the south during the past few years. It has been reported from North Carolina, South Carolina, Georgia, Alabama and Texas. I have been able to find reports of 200 cases. Of this number 88 are from the above-mentioned epidemic reported by Searcy in Alabama, 25 are at present under the care of J. W. Babcock at the State Hospital for the Insane in Columbia, S. C.; 12 were reported by McCampbell from the Western North Carolina Hospital for the Insane and 3 from the North Carolina State Hospital for the Insane under the care of J. H. McKee. In all 65 cases have been recognized in North Carolina; of these, 25 have occurred in New Hanover county, with a population of about 40,000.

The disease appears essentially in two forms. In one, the chronic, we have the typical picture described by the Italians: symmetrical erythema, especially of the exposed portions of the body, which appears usually in the spring associated with stomatitis, diarrhea, often some gastric disturbances, and followed by cord symptoms of various kinds, and finally by mental disturbances of varying degree and cachexia. As summer advances the symptoms usually disappear, only to reappear with the following spring. With each recurrence the impression on the nervous system becomes more indelible, the cachexia more marked, and the skin more atrophic and discolored. The average duration of these cases in Italy is five years, though not infrequently the duration is twenty years. One of Tuczek's cases was diagnosed as pellagra in 1851 and the patient died of bronchopneumonia in 1887.

REPORTS OF CASES

The cases here described are illustrative of previously unreported cases, all of which came under my personal observation in North Carolina.

CASE 1.—(Dr. Thomas M. Green's case).—*Patient.*—Mrs. W., aged 34. Nothing of note in her family or early personal history except malaria. In the spring of 1906 she suffered with indigestion and diarrhea. One month after the occurrence of these disturbances an erythema appeared on the backs of her hands, around both eyes, and on the back of the neck which much resembled sunburn. During the summer her condition became improved. In the spring of 1907 she suffered a recurrence similar to what she had had in 1906.

Examination.—In May, 1908, her condition was as follows: A poorly nourished, cachectic woman appearing much older than her real age. Situated on her forehead were two areas of desquamating erythema, symmetrical in position, shape and size, between which was a vertical strip of normal skin. Lesions of like character surrounded both eyes. On the upper lids the lesions were more recent and were covered with crusts with a weeping surface beneath, extending into the anterior nares. The lesions were present below the eyes. There was considerable brownish pigmentation indicating their greater age. On the backs of both hands extending from the finger-nails to the middle of the forearm there existed the moist lesions which were covered with crusts. Over the knuckles and the tip of the styloid the condition was exaggerated, the surface being entirely raw. The lesion was present on the anterior surface and the palms and like the posterior except that the skin of the palms was simply erythematous with exfoliation. Near the margins of the arm lesions there was considerable brownish pigmentation. On the back of the neck was a much older lesion which had caused a tawny discoloration, which posteriorly was about two inches in width but became narrowed as it extended anteriorly. From the two sides the lesion lacked two inches of meeting in front, forming a sort of collar. The labia were affected with a moist lesion. The patient had had an obstinate diarrhea and stomatitis. Physical examination was negative. The urine contained a small amount of albumin and granular casts. The blood showed a simple anemia of moderate degree and no leucocytosis. The differential leucocyte count showed no abnormal variations.

Course of Disease.—When first seen this patient presented the picture of profound melancholia. As her condition became worse her mental state changed to one of wildest mania, making it necessary to restrain her forcibly to prevent her from leaving her bed. She never spoke, but made incoherent cries and presented the spectacle of great fear. She refused nourishment when it was offered but would take it if it were left at her side. Her whole body was in a condition of tonic spasm. In her mania the crusts had been rubbed off from the diseased areas and the bleeding surfaces made her a loathsome patient. She died about two weeks after her admission to the hospital.

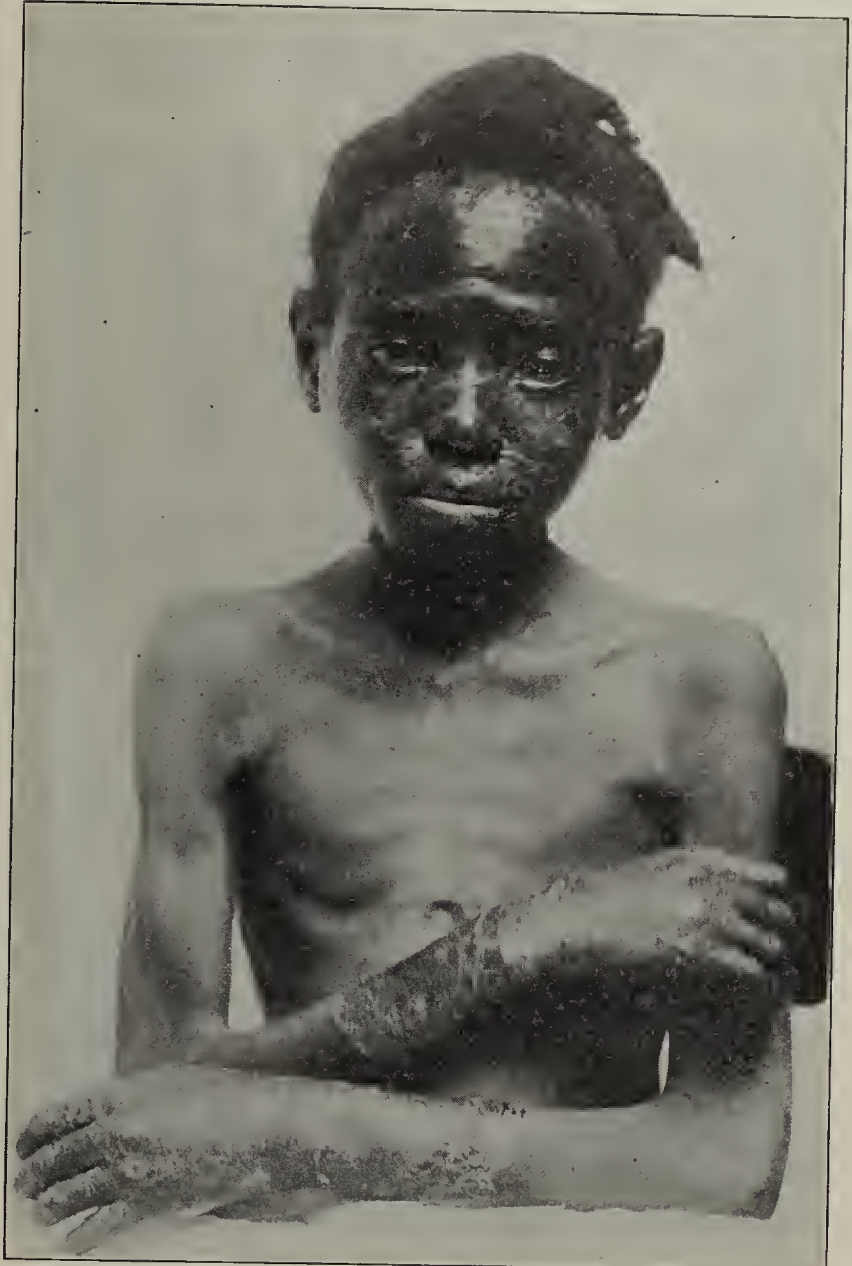


Fig. 1.—Patient 6; pellagrous lesions on face and hands.

Autopsy.—There were general fatty changes in the liver with slight increase in connective tissue around the blood vessels. There was also a slight round-cell infiltration. The capsule was thickened. The kidneys showed moderately advanced interstitial changes. The spleen and adrenals were negative. The changes in the cord were inconsiderable and indefinite save for obliteration of the central canal. The case was not sufficiently chronic to have produced very characteristic nervous changes.

CASE 2.—(Dr. J. B. Wright's case, Lincolnton, N. C.).—X., female, white, aged 11. This patient belonged to the better class. The course of the disease was typical except that she had four attacks in six years, dying in the fourth when 17 years of age. The four attacks began each time in March.

The erythematous recurrences of pellagra usually occur yearly and almost invariably in the spring. One of my earlier cases presented an interesting deviation from this rule.

Case 3.—*Patient.*—A. R., white, married, aged 46, a grocer. His family and previous history were both negative. He was a magnificent specimen of vigorous, robust manhood. The condition was ushered in with high fever without prodrome—probably an attack of malaria—followed by a profuse sweat and apparent recovery. One week later the patient's strange actions attracted his wife's attention. He would ring his own door-bell and appeared dazed, making many absurd mistakes in his business. This was followed by a general apathy. He suffered from no delusions or hallucinations and there were no sudden outbursts. After six months there appeared, in June, 1905, two spots of erythema on the backs of his hands. He suffered at this time from diarrhea and had no control over his bowel or bladder. He would lie quietly in bed. His speech was slow and hesitating and his gait unsteady. His habits were most untidy. The erythematous areas, which were of the dry variety, cleared up and after desquamation the skin was soft and smooth. The patient's mental condition, however, did not improve. In October, 1905, he was admitted to the James Walker Memorial Hospital in Wilmington, N. C.

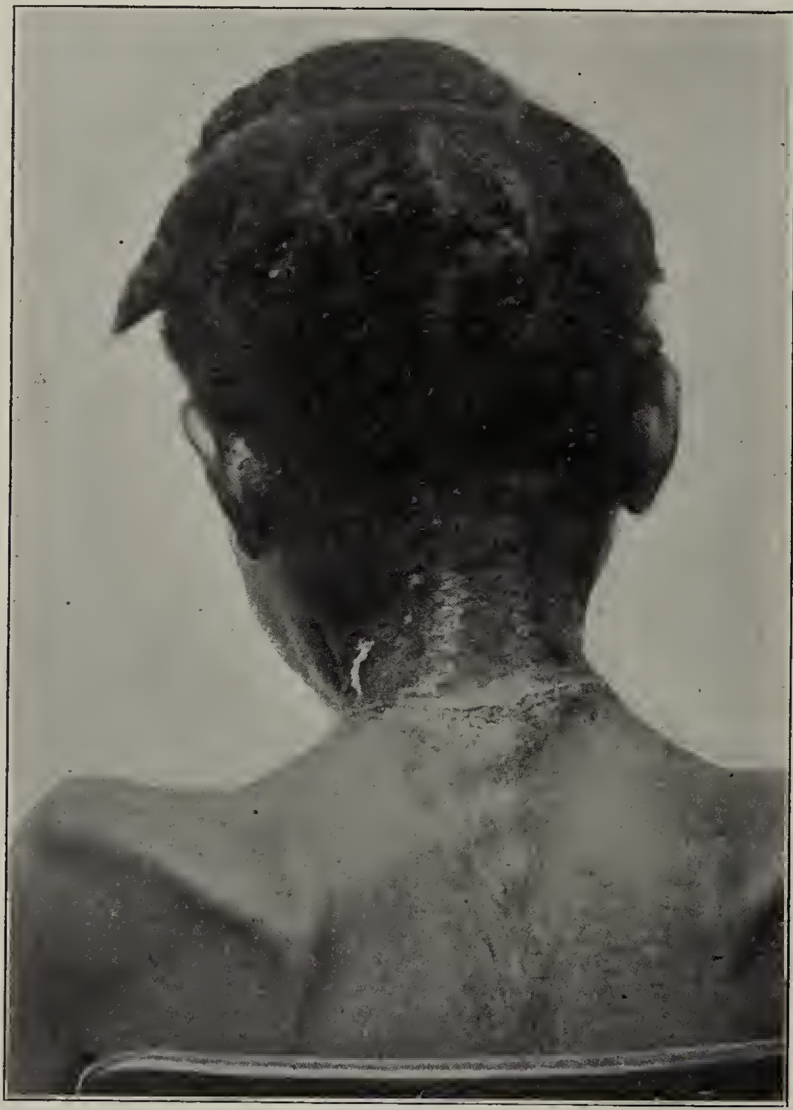


Fig. 2.—Patient 6; pellagrous lesions on back of neck.

Examination.—At this time the erythema had reappeared and extended from the ends of his fingers posteriorly to two inches above the wrist joint. The lines of demarcation on the two hands were symmetrical in the most minute detail. There was also a lesion on the external surface of the right leg. This lesion involved the lower third of the lower leg and the external surface of the foot. It had caused considerable destruction of the skin. There was a corresponding lesion of smaller size and of the dry variety on the left leg.

Course of Disease.—This patient's blood presented a remarkable condition. For three weeks the blood was loaded with tertian malarial parasites, and a carefully kept chart showed no rise of temperature. At the end of this time the temperature suddenly rose to 105 and the blood showed the preponderance of quartan parasites. From that time his temperature chart showed remarkable variations and the blood showed the preponderance of first one variety of parasites and then another. In the spring of 1906 this patient had his third attack and died in an epileptiform seizure.

From the beginning a case may be classified as acute or chronic without difficulty. Here is a typical case:

Case 4.—*Patient.*—D. J., female, colored, aged 21, a field hand, was troubled in February, 1908, with a bloody diarrhea, indigestion, globus hystericus, and leucorrhea. After three months the erythema appeared in the "snuff-box" of the right hand. This spot desquamated before the corresponding lesion of the left hand appeared. In June, 1908, she was admitted to the James Walker Memorial Hospital.

Examination.—On the backs of both hands from the finger tips upward was found a dry exfoliating lesion of the skin which was darker than the normal. The upper margins of the two lesions made oblique lines extending from a point at the middle of the forearm internally downward and outward to within one inch of the wrist joint. The same line was carried out anteriorly and the lesion in this respect was unusual. There were small, round symmetrical areas on the upper lids near the inner canthi and at the outer canthi smaller areas. Small areas were found at the angles of the mouth. On the tops of the feet over the ankle joint and also on the tops of the toes were present similar lesions. The patient had never gone without shoes. There was no history of stomatitis.

Course of Disease.—In July the lesions subsided and the patient was discharged. This was her first attack.

It remains to be seen what will be the course of some of our chronic cases; the patients have survived the first attack, and even the second.

The acute or fulminating variety of pellagra called by Lombroso "typhoid" differs widely from the common Italian form. It runs a course usually of three weeks to three months and invariably ends fatally. The patients usually die before any marked nervous changes appear other than those usually incident to a profound acute toxemia. Over 50 per cent. of the cases in the southern states are of this variety. Belmondo and a number of other Italian observers state that this form is never primary; that it is always an exaggeration of a regular recurrence of the chronic form of the disease.

Case 5.—(Dr. R. H. Bellamy's case, Wilmington, N. C.).—*Patient.*—B. B., aged 30, white, married. When first seen the disease had existed for several weeks. The patient was much emaciated and was suffering from an obstinate diarrhea and stomatitis which suggested ptyalism. On the backs of the hands and the posterior surface of the forearms there were found moist exfoliative skin lesions. The same lesions were present on the back of the neck. In the beginning the patient thought he had simple sunburn. In all situations the chief characteristic was absolute symmetry.

After a few weeks this patient died of exhaustion.

Case 6.—(Dr. W. J. H. Bellamy's case, Wilmington, N. C.). *Patient.*—V. S., negro, female, aged 12, was admitted to the James Walker Memorial Hospital in May, 1908. In February there had appeared at the outer canthi of the eyes two small red symmetrical areas. These areas extended over the forehead. It next appeared beneath the angles of the jaws and from there around the neck, meeting behind. Soon after the appearance of the skin lesions there developed a severe stomatitis. The next step in the disease was the appearance of the erythema on the backs of the hands, including the fingers. From the beginning there was always an obstinate diarrhea. In May the patient came under my care.

Examination.—At this time the whole face was covered with the lesion which appeared like an old burn and had caused much contraction, producing thereby an ectropion of both lower lids and distorting the mouth. The patient was unable to open her mouth wide enough to permit any examination; she was also unable to close her eyes completely. Both hands and both lower thirds of the forearms were covered anteriorly and posteriorly with the moist lesion.

Course of Disease.—Conjunctivitis soon developed and there was marked subconjunctival edema. The feet were edematous and later (several weeks) the lesion appeared on the dorsal surfaces. The knee-jerks were absent; skin sensation normal. The pupils reacted normally to light and accommodation. The patient complained constantly of cold. Her appetite at first was good but later she refused all nourishment. The affected skin was exfoliated, leaving perfectly raw surfaces. The patient passed eighty round worms during the three weeks she was under observation. She died of exhaustion in June.

In Italy the disease is confined to the peasantry almost exclusively. There poverty and pellagra are interchangeable terms. With us the disease affects all classes alike. In none of the twenty-five cases which I have studied was there a history of a preexisting chronic affection as tuberculosis. As a rule the victims were well-nourished and robust until affected with pellagra.

We have had occasion to consider whether the disease is infectious or contagious, and also whether it is a family disease. The patient just referred to was one of two members of the same family simultaneously affected. The other member was a younger sister, who has the chronic form, and recovered from the first attack. I have seen four children of the same parents affected simultaneously. Two of these patients died suddenly in the first attack. The other two have passed from our observation.

SIGNS AND SYMPTOMS

A prodrome is acknowledged by all writers on pellagra. This prodrome usually begins about Christmas time and is characterized by indefinite symptoms, such as anorexia or voracious appetite, pain and sensation of distension in the epigastric region, frequently diarrhea, though often constipation, insatiable thirst or the reverse. Later there appears headache, which is chiefly occipital, pain in the back and the neck, hyperesthesias, dizziness, muscular weakness, and uncertainty of motion. Roussel considered sensations of dryness and burning in the mouth and heat in the stomach to be the first symptom of the disease. In most respects these symptoms present nothing peculiar, but we have learned that when our patient complains of headache, vertigo, sensations of weakness, especially in the lower extremities, together with diarrhea, we should be suspicious of pellagra, especially if the season be late winter or spring. Theodori asserted that these prepellagrous symptoms existed four weeks before the appearance of the erythema, but in many cases the period is much prolonged.

The erythema almost invariably makes its appearance in the spring. In one series it appeared as early as February and as late as July. The greatest number developed in April and May. The uncovered portions of the body, as the hands, face, and neck, are more apt to be affected and in all cases are first affected. Authorities have always differed in regard to the rôle played by insolation in the causation of the disease. From our experience we are disposed to reject the idea. The disease usually appears so early in the spring that the sun's rays are of little consequence. Those of our patients who had the lesions of the skin of the feet were in most cases adults who were not in the habit of going without shoes. Further, the skin over the sternum is often affected. Some writers think that the actinic rays are responsible for these lesions of the exposed parts of the body.

The backs of the hands are invariably the first situation of the lesions. This occurred in all of our cases. The lesion in this position is very distinctive and usually furnishes sufficient evidence for a positive diagnosis. The first appearance is often mistaken for sunburn; no two things could be more alike. The lines of demarcation between the normal and diseased skin are absolutely symmetrical in position and direction. The points of greatest intensity are usually the skin over the knuckles and tip of the styloid processes. The lesions usually begin at the ends of the fingers posteriorly and extend upward to the junction of the middle and lower thirds of the forearm. The general appearance is usually that of diffuse redness, without swelling, but in some cases the swelling is added and makes its appearance before the erythema. The condition terminates in dry exfoliation or there may appear blebs, which rupture, leaving raw surfaces, which soon become covered by crusts. The appearance of the skin after healing is variable. It may be soft and velvety like an infant's skin, but there is always a tendency to the disposition of pigment, which increases with each recurrence. In three of our cases the lesion extended to the palmar surfaces, and in this position we always noted the soft, smooth condition of the skin after the lesions disappeared.

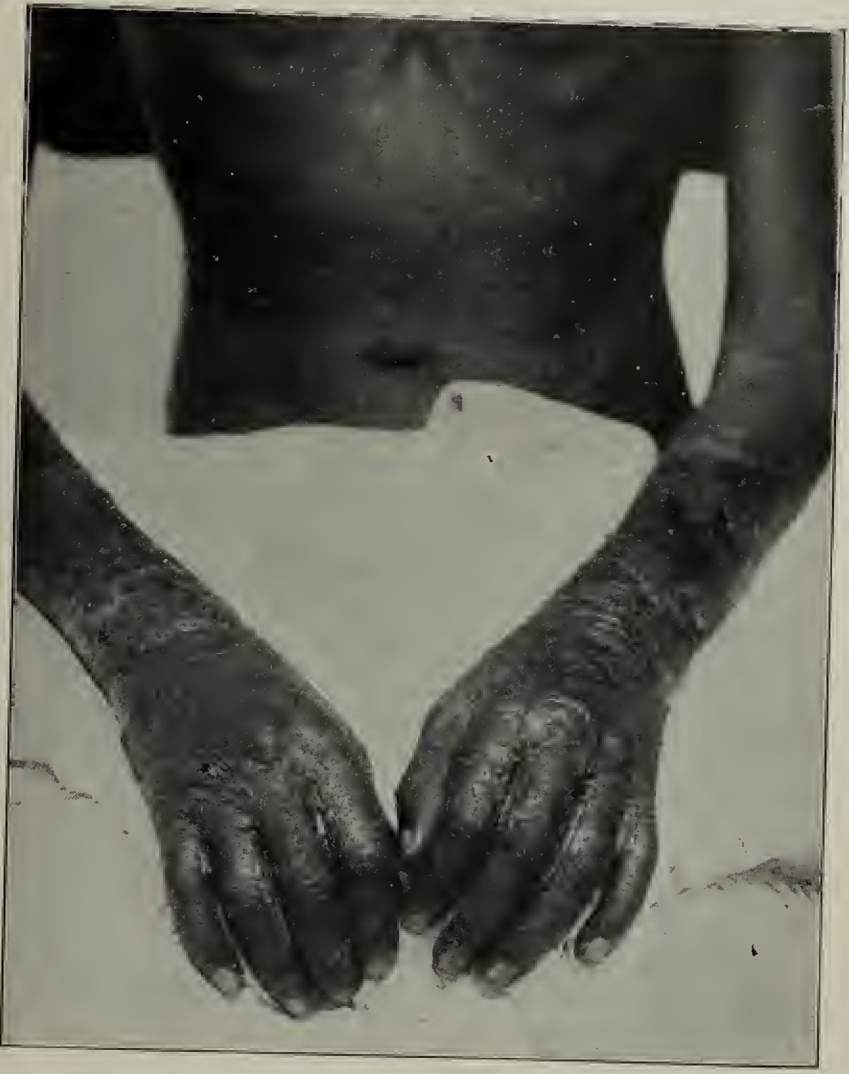
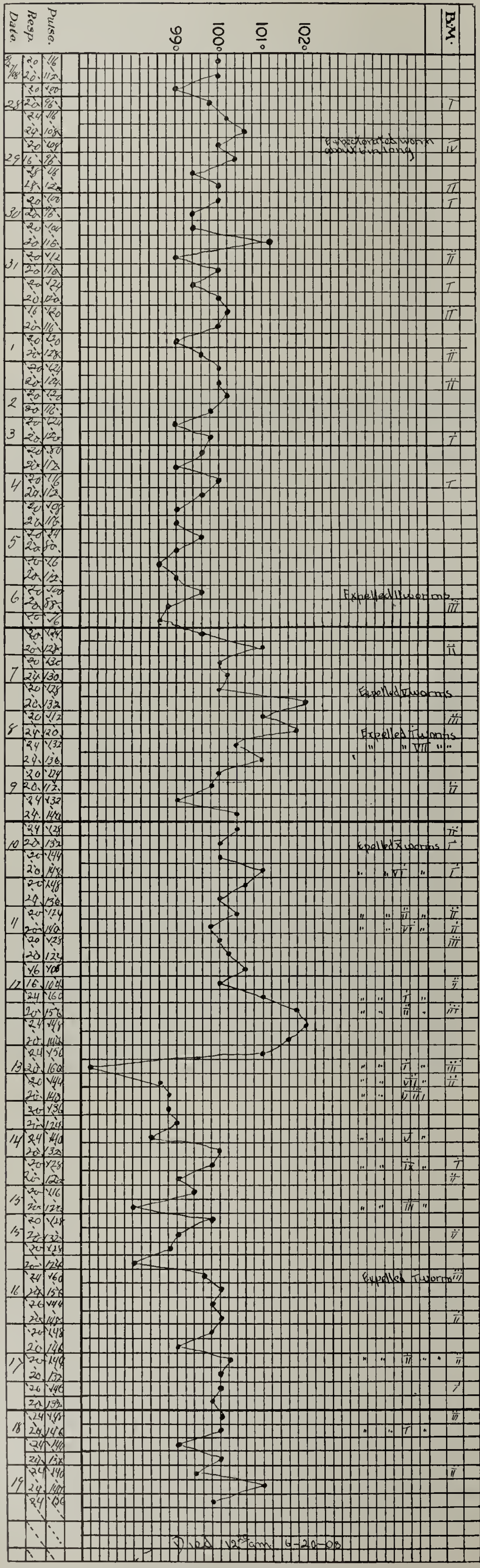


Fig. 3.—Patient 6; pellagrous lesions of hands.

After the hands the face is most apt to be affected, and we found this much oftener in women and children than in men. Perfect symmetry is maintained here just as in the hand lesions. Often the first appearance on the face is two small spots at the outer canthi of the eyes or the angles of the mouth. In several cases there were two spots of erythema on the forehead, with a narrow strip of normal skin exactly in the mid-line separating them. Sometimes the lesions assume the butterfly shape of lupus. Small areas below the lower lids are frequent. We have seen the lesions on the back of the neck with a maintenance of the same symmetry and often there is lateral extension of these lesions, which may form a collar meeting in front. The next point of selection is the tops of the feet. This occurred in one-third of our cases. In an acute case the erythema had much the appearance of an acute lymphangitis; beginning over the crest of the tibia and extending downward over the tops of the feet to the toes. As before mentioned, the erythema may appear



over the sternum. The labia pudendi are frequent seats of the lesion even in children. With healing there often is associated contraction of the skin as in superficial burns. In Figure 1 marked contraction of the skin of the face is shown, with resulting ectropion and contractions of the skin of the upper and lower lip which made complete closure of the lips impossible. In the dry lesions exfoliation usually occurs after three or four weeks. The resulting pigmentation varies from a slight yellowish tinge to a brown or chocolate, depending on the number of the attacks.

The stomatitis appears usually after the appearance of the skin lesion, sometimes long before, and, again, may be entirely absent. It is a very characteristic symptom and seldom fails to appear at some stage of the disease. It appears like salivation, which, in fact, is often present. The gums are usually swollen and intensely red. The tongue is red and often denuded of epithelium, giving the characteristic "bald tongue." The papillæ are enlarged, with furrows between. The patient complains of the sensation of a salty taste and burning in the mouth. In all our cases the mouth was affected in some degree.

The stomach is variously affected. In some cases the hydrochloric acid is normal in amount, while in others it is absent. Pyrosis, eructations, vomiting, anorexia, or bulimia, together with great thirst, have been emphasized by various writers.

One of the most unfailing symptoms is an obstinate diarrhea, which is most intractable. Sometimes it assumes a dysenteric character with violent colic. This intestinal condition is considered by many to be a neurosis.

In the acute form of the disease the nervous disturbances are no more than ordinarily occur in any profound toxemia. It is difficult to say at what stage the nervous disturbances appear in the chronic variety. In one of the cases previously referred to a robust man developed mental disturbances of a peculiar sort and had been in an institution for the insane a number of months before the first appearance of the pellagrous erythema. I recently discovered the first attack of pellagrous erythema in a woman who for several years had been in a hospital for the insane with a diagnosis of melancholia. Can it be that, apart from pellagrous insanity, the insane are predisposed to the disease?

The first nervous symptoms manifested are usually paresthesias. Chief among those are usually mentioned itching of the backs of the hands and the back, occasionally also of the lower extremities. The patients under my care often complain of pain of a burning character in the right or left scapular region. This latter is a common symptom often referred to. This burning sensation often occurs in the epigastrium, the hands, and the arms, and is supposed to be the cause of the tendency among pellagrins to throw themselves into the water whenever occasion presents itself. Numbness and formication are often complained of. One of the most constant complaints is cold extremities, and it is no unusual sight to find our patients in midsummer huddled before a fire trying to keep warm.

The vertigo of pellagra is a symptom on which much stress is laid by the Italian observers and was seldom wanting in our cases. It is responsible for many falls. By some it is considered a mere lapse of consciousness. According to the careful observations of McCampbell of the Western North Carolina Hospital for the Insane the psychic manifestations were preceded by a period of anxiety and worry with the attachment of undue importance to trivial things. There is often a simple slowness of ideas. A question is replied to long after the patient seems to have forgotten it. There often occurs an irritable depression with aversion to any activity. Later there develop disturbances of perception with hallucinations. Judgment may be disturbed, giving rise to delusions which usually are painful and depressive, with a tendency toward fear and suspicion.

Our hospital patients were a great care because of their persistence in disarranging the bed-clothes, attempting to get out of bed, and especially in their total disregard of all cleanliness. We were disposed to consider at first this latter as viciousness, but soon learned that it was mental hebetude. Refusal of food and suicidal tendencies were frequent in our series. As the disease approaches its close the patients become delirious and it is usually necessary to resort to the restraining sheet. They frequently cry out in a wild, incoherent fashion, and in their ravings it is impossible to prevent damage to the skin lesions, with the result that large areas are left raw and bleeding. The patient in such cases presents a horrid sight.

A condition is often observed somewhat resembling tetany, with paroxysmal tonic contractions and contractures of the upper and lower extremities in the semi-flexed position. The gait is simple paralytic, occasionally paralytic-spastic, but never ataxic. There is something characteristic; however, in the unsteadiness and seeming lack of confidence with which these people shuffle along. Static ataxia is occasionally mentioned. Incoordination is seldom observed, and then only in the upper extremities. Tremor of the arms, head, and tongue sometimes occurs.

Definite epileptiform attacks with loss of consciousness are occasionally observed, having the character of a cortical epilepsy. One of our patients died in such an attack.

The skin sensibility is very irregular. The sense of taste is usually normal. The cutaneous sensibility to the faradic current is often increased. Sometimes there is decrease of tactile and thermal sense. Owing to the altered condition of the patients' intellect and the resulting unreliable character of the replies to questions an investigation of sensation is unsatisfactory.

The skin reflex is usually normal. The pharyngeal reflex is not infrequently decreased. The tendon reflexes are quite variable, often normal, often increased to the point of an intense clonic contraction. Much less frequently they are decreased or absent. It sometimes occurs that the reflex is increased in the lower extremity and normal in the upper extremity. In Tuczek's 300 cases one-half had increase in the knee-jerk up to the rapid patellar clonus even with the slightest percussion of the tendon. In thirty-five cases there was dorsal clonus and increase of the tendon reflex of the upper extremity. In eight cases the knee-jerks were absent and in the remaining it was partly lessened and partly normal. Differences in the two sides were often noted.

Among the vasomotor disturbances is described a vasoparalytic dilatation of the veins and capillaries and not infrequently edema. The skin lesions are usually counted as trophic disturbances.

Pellagra is usually described as a feverless disease. Our charts show that during the active stage there is invariably a rise of temperature ranging from 99.5 F. to 102 F.

The urine is alkaline and deficient in phosphates. When the toxemia is intense there is albuminuria.

What is called by most writers the third stage is characterized by a general atrophy of the whole body; the subcutaneous fat disappears and the patients present the appearance of advanced cachexia. Profound weakness necessitates rest in bed. The bladder becomes paralyzed and the diarrhea is uncontrollable. Death is usually directly attributable to myocardial degeneration and its consequences.

In the very chronic cases there is frequently an acute terminal exacerbation, and it is this condition that the Italians have in mind when they speak of the "typhoid" pellagra. Evidently they are not familiar with the acute pellagra so common with us. This explains Belmondo's statement that "typhoid" pellagra is never primary, but merely an exacerbation of a very chronic case. It is in this terminal condition that the delirium is so wild. Tuczek states that at autopsy fever could be found to have been due to a bronchopneumonia. In our experience there is just as much cause for fever in pellagra as there is for fever in a large superficial burn which has become infected.

PELLAGRA SINE PELLAGRA

"Pellagra sine pellagra" or pellagra without skin manifestations is a point of contention. Some observers consider erythema or atrophy and pigmentation of the skin essential for the diagnosis. Babcock, in South Carolina, at the present time, has a number of such cases under his care. He says these patients have stomatitis, diarrhea and disturbances of the nervous system. My own experience is too limited to make the diagnosis without reserve. However, I have under my care several cases which I have diagnosed as "pellagra sine pellagra." One of these patients gives the following history:

CASE 7.—Mrs. O., aged 58, was seized with a peculiar attack which was thought to be apoplectiform. She recovered from the attack but was never quite well afterward. She had repeated obstinate attacks of stomatitis and diarrhea. Five years after the first attack the patient, now aged 63, is bedridden on account of profound weakness. She has an obstinate diarrhea and is quite emaciated. There is no erythema. She replies to questions with marked tardiness. The patellar reflex is absent. The pupils react to light and accommodation in rather an exaggerated degree.

I am convinced that in many of the so-called cases of "pellagra sine pellagra" there is or has been a very mild erythema which is not visible at the time when the patient comes under observation. All writers on pellagra state that the extent of the erythema is no index to the severity of the disease.

CASE 8.—Recently there came under my care a white woman aged 46, mother of eight children, with a negative family history and nothing of note in her previous medical history. In July of this year she had an acute gastritis which was quite severe in character. Soon after this she developed diarrhea and later a severe stomatitis. She made a slow recovery. During convalescence the palms of her hands and the soles of her feet desquamated. On close inquiry I elicited the fact that early in her sickness her hands had a purplish cast which attracted attention at the time. Careful examination showed the last remnant of the upper border of what must have been the pellagrous erythema. Certainly the lesion was very inconspicuous. At present this patient is a great sufferer. The pain in her hands and feet is constant and her hands show beginning contractures. She is unable to comb her hair or button her clothes. She walks with great unsteadiness and says she has the sensation of walking on roller skates. Her station is poor. The pupils react sluggishly to light and accommodation. The knee-jerks are greatly exaggerated. Except for increased emotion, the mental condition is little changed. The patient is much emaciated and is losing ground steadily.

Mistakes in the diagnosis are often made owing to the fact that the order of appearance of the symptoms may be entirely reversed. I have seen stomatitis, diarrhea, and all the mental changes appear a year before the first indication of the skin lesion. It is very likely that in "pellagra sine pellagra" sooner or later there will be skin manifestations.

PATHOLOGY

The pathologic changes that occur in pellagra depend largely on the chronicity of the affection. As in ergotism, the most definite changes are in the spinal cord. These changes are just what the symptoms would indicate. In ergotism the posterior root zones are affected, but this does not occur in pellagra. The latter disease shows affections of the lateral rather than the posterior columns. Allbutt says that the weight of the disease falls on the crossed pyramidal tracts; the direct cerebellar tracts are not affected; the cells in the anterior horn are deeply pigmented. The lesions of the posterior columns occur chiefly in the cervical and upper dorsal regions while those of the lateral columns affect the middle and lower third of the dorsal region.

In seven out of the eight autopsies which Tuczek reports the posterior columns were degenerated in seven. In one the degeneration was limited to Goll's column and a medial strip in Burdach's column. In five the degeneration extended throughout the whole length of the cord. In one the lesions were found in the cervical portion alone. In four the dorsal region was the chief seat of the disease. In five the crossed pyramidal tracts were affected. In the first the affected areas extended from the upper cervical to the upper dorsal with degeneration of the cells in the anterior and posterior horns in the middle and lower cervical. There was atrophy of cells in the anterior horns and Clarke's column of the upper dorsal. There was atrophy also of the anterior root fibers. In the second the degeneration of the crossed pyramidal tracts was more intense in the dorsal regions, but extended as high upward as the middle cervical and as low as the upper dorsal. In the third case the lesions extended throughout, but was especially marked in the dorsal portion. In the fourth case the lesion was confined to the dorsal portion, and in the fifth degeneration was massive and limited to the middle cervical portion. Tuczek further found abnormal pigmentation similar to senile changes, especially of the ganglion cells. He considered the presence of hyperemia, anemia and edema, together with the occasional inflammatory affections of the central nervous system coverings, as well as obliteration of the central canal of the cord—all a part of many chronic affections of the nervous system and, while present in pellagra, they should not be considered characteristic.

The changes in the brain are inconspicuous except for occasional fatty degenerations or calcification of the intima of the smaller vessels and pigmentation in the adventitia.

In one of my earlier cases in which, as was above mentioned, an unusual malarial infection was thought to play a part, the tissues were carefully studied by Dr. H. A. Cotton, Superintendent of the New Jersey State Hospital for the Insane. Dr. Cotton reported in part:

> The cortex showed no reaction that could be called pathologic. The topography was unaltered and the elements of the cortex were not affected by the malarial infection. There was probably an excess of pigment in the nerve cells which could be accounted for by the patient's age. The blood vessels appeared a trifle thickened but the fixed cells did not seem altered or to have proliferated at all and the vessels were not increased in number. There was no evidence of general paralysis or other organic affections and no evidence of cerebral syphilis. The plasmodia were very easily seen in the blood stream and in large numbers. The Weigert preparation for medullated fibers did not show any degeneration, but in the Marchi preparation there was a scattered degeneration in both cortex and cord. These scattered degenerations probably only meant that there was some toxic effect of the malarial infection. It was only a very moderate degeneration and of little significance.

The stamp on the nervous system can be discovered only after the disease has existed for years. As all of our cases had run only very short courses, the pathologic changes were not marked.

Pigmentation and fatty degeneration of the thoracic and abdominal organs occur. To this is added atrophy chiefly of the organs innervated by the vagus: the heart, kidneys, spleen, intestines, liver and lungs. There is atrophy also of the coats of the intestine with occasional hyperemia and ulceration of the lower portion.

The pathologic changes seem to be slow degeneration rather than inflammation and is probably not essentially progressive in character.

ETIOLOGY

In 1776 the *Società patriotica di Milano* offered a prize for a solution of the question of the etiology of pellagra and a means to combat it. Marzari, in 1810, suggested the relationship of corn in the etiology. Strombio the elder and Marzari asserted that the corn was deficient in nitrogen because it was sown late and gathered green. Forcher and Roussel asserted that it was a disease of the corn which produced the toxin. Lombroso laid stress on the fact that healed pellagrins when given good corn food became affected again. Pellagrins seem to show a susceptibility at certain seasons of the year for even the smallest quantity of pellagrous material. Corn ordinarily contains many micro-organisms and certain parts of the kernel make an excellent nidus. Lombroso concedes that the best corn is often most diseased, and that the trouble is rather in some noxious agent which uses the corn as a host. The *Acarus farinæ* was supposed to play an important rôle by making a point of entry into the kernel through which the noxious agent entered. Moisture is one of the greatest sources of trouble. The corn, besides being gathered green, is not always carefully handled and is in consequence poorly protected from moisture. It is said that the custom among the Italian peasantry of preserving polenta for days and even weeks, allowing fermentation to occur, is the chief source of danger.

In studying the etiology of the series of cases occurring in my section I was impressed with the fact that practically all of the corn used by the people came from Ohio and Virginia, though in neither of these states had pellagra ever been reported. While by no means ready to accept the corn as the source of the disease, I am of the opinion that, if there is any connection, the noxious agent must appear after the shipping of the corn. Many southern observers attach importance to the heating of the corn which so often occurs in the cars before they are unloaded. Atmospheric conditions probably play an important part.

Last spring I collected three samples of corn which I had reason to suspect of containing pellagrous material. These samples were placed in my laboratory, which during the summer months is a damp place. After an absence of several months I returned to find everything covered with mold. It occurred to me that the conditions were favorable for the development of any fungus.

and I sent the three samples to the North Carolina Experiment Station. Dr. F. L. Stevens furnished me with the following report:

		Per Cent.
No. 1.—	Penicillium	30
	Aspergillus	60
	Syncephalstrum	10
No. 2.—	Aspergillus	70
	Penicillium	20
	Chætomium	5
	Syncephalstrum	5
No. 3.—	Mucor	5
	Penicillium	45
	Aspergillus	50

Dr. Stevens considered each sample a good average grade of corn and suitable for food.

Various molds have been brought forward as the etiologic factor. Most common among these is the *Penicillium crustaceum*, which was not found in any of the corn consumed by my patients.

Lombroso's pellagrozein is said to produce pellagra in animals. While there are toxic symptoms produced, they are not sufficiently typical to be counted as pellagra. Two organisms have been isolated from corn. The first is a short bacillus producing an orange-yellow growth on agar-agar, staining by Gram's method and forming no spores. The cultures are abundant and gelatinous. It does not produce gas. This organism is non-pathogenic. The second bacillus produces spores. On agar-agar it produces faint round colonies, which also grow on glycerin agar. It liquefies gelatin. This bacillus, too, is non-pathogenic to rabbits. Its appearance and characteristics correspond with those of the *Bacillus mesentericus* or with the *Bacillus maidis* of Peltauf and Heider. This organism was isolated from corn-meal and corn bread, as well as from the feces of pellagrins. It is claimed that this organism is also found in the feces of the normal individual.

Majocchi, in 1881, described the *Bacillus maidis* as a very motile organism which he found in the blood of pellagrins in the beginning of the disease. Cuboni found the organism in diseased corn and stated that it resisted the boiling temperature. Peltauf and Heider asserted that the *Bacillus maidis* developed like the *Bacillus mesentericus* or the potato bacillus and that it was not always present in the feces of pellagrins. They considered the organism non-pathogenic, but an alcoholic extract of the corn-meal containing it caused narcosis, paralysis, and death in mice. Babes and Sion produced symptoms resembling pellagra in various animals by the injection of this bacillus. Ballardine, working with the *Sporisorium maidis,* was able to produce in man gastrointestinal symptoms, but his results were not conclusive.

Tizzoni isolated an organism from the blood, cerebrospinal fluid, organs, and feces of pellagrins. With this organism he produced, without question, the disease pellagra in rabbits and guinea-pigs. Tizzoni also found this same organism in two out of nine samples of suspected corn. In these experiments Tizzoni infected 28 animals. Of this number, 4 were infected by mouth, 3 with pellagrous material and 1 with a culture from the blood of a pellagrin. The remaining 24 were infected subcutaneously, 8 with the blood of a pellagrin, 12 with an organism isolated from the feces of a pellagrin and 4 from corn. The disease so produced ran an acute course of from 16 to 50 days and a chronic course from 87 to 105 days. Autopsy showed lesions of the skin and abdominal organs of a hemorrhagic type. The changes in the nervous system were varied and indefinite.

Tizzoni and Panichi, in a previous communication, stated that they could produce the disease experimentally only when, in addition to their inoculations, the animals were fed on corn food.

Lombroso was the chief supporter of the chemical theory of the decomposition of corn as the cause of pellagra. He experimented with great quantities of diseased corn containing *Aspergillus, Rhizopus, Bacillus maidis* and *Ascari.* The dogs on which he experimented were fed milk, bread and flesh, and on the administration of his preparation from the corn the temperature rose and the weight decreased. There usually appeared psychic and muscular torpidity and in some cases anesthesia and tremor. Out of 10 subjects, 7 had diarrhea and in 1 there was an erythema. In all, there were appearances in the dog considered the counterpart of pellagra in man. The feeding of bad corn-meal caused erythema, stupor and dysphagia. Lombroso prepared from the corn an oil, a fluidextract and a tincture. He gave to 12 individuals daily the corn tincture and in 8 cases there was itching of the back and the face and loss of weight, in 5 cases diarrhea, and in 5 cases desquamation. The appearances were not exclusively those of pellagra, and the result is, therefore, not conclusive.

Neusser believes that corn contains a non-toxic glucoside produced by the *Bacillus maidis* and that in the intestine this body is decomposed, producing a toxic substance, but that this occurs only when the bowel is already in a diseased condition. There is not sufficient ground for this view.

Antoniu reported seven subjects fed on diseased corn in addition to meat and cheese. Of this number, several became pellagrous, but even this observation is not counted as conclusive, because the possibility of the victims having been previously pellagrous.

Erba's pellagrozein prepared from bad corn caused convulsions, increased reflexes, narcosis and anesthesia. He noted that in summer his product was more toxic.

Babcock, quoting Sambon, says that the association of pellagra with the eating of maize is too universal to be ignored and that. based on pathology and symptomatology, there is good ground for the hypothesis that pellagra is a protozoan disease allied with trypanosomiasis and syphilis.

I have isolated from the blood of a pellagrin in the active stage of the disease a bacillus. It is probable that it is the same as the very actively motile organism described by Majocchi. My observations on this organism are not sufficient for a detailed report at this time. It is altogether probable, however, that Peltauf and Heider, Cuboni, Majocchi, Tizzoni and myself have found at different times the same organism, and that the varying descriptions are accounted for by the polymorphous properties which have been so well described by Tizzoni. This organism is rightly called a streptobacillus by Tizzoni owing to its very short length. often hard to distinguish from a coccus and again by its tendency to occur in chains. It resists a temperature of 90 C. for one hour.

PROGNOSIS

The prognosis of pellagra in this section is very grave. We have many evidences of the fact that when an infectious disease first appears in a country it is much more malignant than later on. This is well illustrated in the lower mortality among the Japanese troops in their recent war with Russia from beriberi (about 3 per cent.), while in a new country this mortality often reaches 60 per cent. The same condition obtains in measles and yellow fever outbreaks. Fulminating pellagra is an utterly hopeless disease. The death rate of chronic pellagra is very variable, and it is too soon for us to report definitely on this subject. So far we have not observed a case of longer standing than three years.

TREATMENT

The treatment of acute pellagra is of no avail. We have reason to suspect that the epizootic meningitis among horses is due to the same cause as pellagra in man. If the above-mentioned organism is the cause of pellagra and the horse is susceptible, we have reason to hope that the serum therapy will soon come to our assistance. It has been shown that the blood of a healed pellagrin is curative in guinea-pigs experimentally inoculated with pellagrous material.

In the chronic cases it is possible that a cure may result from the removal of all corn food and general tonic treatment. Atoxyl is much vaunted just now, but in our hands the results have not been so brilliant as reported by the European writers on pellagra.

In closing I wish to express to my fellow practitioners of North Carolina my appreciation of their generous assistance in collecting data for this paper and also to the officials of the James Walker Memorial Hospital for the privileges of their wards.

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THE VITALITY OF THE DENTAL ENAMEL *

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My interest in this subject has been renewed recently by being shown some very beautiful sections and photographs of enamel prepared by Dr. C. Francis Bodecker, of Berlin. The sections were decalcified by the celloidin decalcifying method which stains the tissue at the same time. The photographs were made by the ultraviolet light. These enamel sections were shown me while Dr. Bodecker was visiting America a few months ago, and are the result of his own work on the research of this subject. He very kindly gave me a section that he had prepared by this method, which was very thin, and which was stained to show the semblance of living tissue between the rods of enamel, which he offers as a possible proof of his father's theory that there are living fibers between the enamel rods. I have given to the study of this section close attention and with the highest powers of the microscope at my command. Of the results I shall speak later.

Dr. Bodecker is the son of Prof. C. F. W. Bodecker, the author of "The Anatomy and the Pathology of the Teeth," a work which created considerable discussion among the authorities at the time of its publication in 1894, on account of its acceptance of Professor Heitzmann's peculiar views.

Professor Bodecker believed that the enamel is traversed by fibers of living matter located in the interstices between the enamel rods. He states that the fibers are connected with one another by delicate fibrillæ piercing the enamel rods in a vertical direction. Besides these rectangular unions, he asserts that the basic substance is traversed by a minute network of living matter, that the enamel fibers send conical thorns toward the enamel rods, and that such thorns are visible in all interstices between the enamel rods. He also says that the enamel fibers are continuous on the outer surface with the covering layer of flat epithelium, and, on the inner surface with the dentinal fibers, that the latter connection is either direct or indirect through a network of living matter or through intervening protoplasmic bodies in the interzonal layer.

A promise made several months ago to your Secretary to discuss the subject of the vitality of the enamel is my excuse for the presentation of this paper. It has been a battle-ground for discussion by the forces of the Heitzmann theory, in opposition to eminent authorities both in this country and abroad for many years.

In order that we may understand the subject better, I shall describe the formation of the enamel organ with its layers, as it is formed on the cusps of the dentine germ just before the formation of the dentine-forming cells, the odontoblasts. The ameloblasts appear in the enamel organ over the dentine germ as columns of cells while the outer cells of the dentine germ are as yet simply unaltered connective tissue cells. The enamel organ, at its first stage, is a club-shaped ingrowth from the Malpighian layer of the epithelium into the connective tissue which is covered by it. This appears at about the forty-eighth day of embryonic life. As it forces its way into the connective tissue, it expands at its base, and the cells within are multiplying and differentiating, rapidly assuming a stellate form, and causing an expansion at the base of the organ. As it enlarges, it enfolds the growing dentine germ, covering it on all sides except

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its base, and forming a cap or bell-shaped organ over it. In making a section of it at this time, we shall find that the cells on the periphery of the organ are columnar in form, the columns of cells next the dentine germ are to be the ameloblasts or enamel builders, the internal layer; while those on the outer surface, the external layer, have no known function. Just within the internal and external layers is seen a layer of cells resembling connective tissue, but of epithelial origin. This is a layer called the stratum intermedium. This stratum intermedium is an important layer, appearing to give out to the forming enamel new cells, and also its cement substance, which surrounds the rods. The stellate reticulum, a mass of cells filling the central portion of the enamel organ, is thought to be of slight importance. It supplies the salts of lime to the ameloblasts at beginning calcification, but when calcification is actively going on all of this tissue disappears at that part. The neck of the organ connecting the organ with the stratum Malpighi has absorbed, and the embryonic connective tissue with a rich supply of capillaries is giving its soluble lime directly against the cells of the stratum intermedium to the ameloblasts, where, by a chemical change, not yet fully understood, calcospherites are formed. These, merging together, form the globular bodies within the ameloblasts at the point of calcification, which are to be separate segments of the rods themselves.

At about the end of the second and the beginning of the third month of intrauterine life, in the embryonic tissue of the jaw, we shall find the primary specialization of cells which are to form the dentine germ, and from which come the cells that afterward form the dental pulp. It is in no special zone or layer of this connective tissue that the dental germ is formed, but the formation seems wholly influenced by the contact with an enamel organ. In the presence of this organ, the connective tissue cells become stimulated and active. It would appear as though they offered a resistance to its further growth, and from this resistance the enamel organ was made to surround it. The stimulation and activity of the cells is shown by their rapid growth, which clouds the part at this point, becoming a dense focus of new growth. The tissue is seen to be actively building itself up, and this results in the formation of a papilla, around which the enamel organ is growing like a cap or helmet. The papilla grows to a cusp or cusps, and becomes the dentine germ.

At the end of the third, and at the beginning of the fourth month, the dentine germ is rather a homogeneous structure; round cells are very numerous; they have relatively large nuclei and nucleoli. As the germ assumes the cusp shape, multiplication of cells takes place around the blood vessels, which have formed in the germ, and after this a jelly-like or hyaline layer forms around its outer surface. It will be found that the dental germ will grow into the depressions of its special enamel organ, an incisor, bicuspid, or molar tooth, and these growths will become the dentine cusps. We also notice that the different layers of the enamel organ are now formed, and that the sacculus is forming its layers about both the enamel organ and dentine germ. When this process is completed, these are enclosed in the sac, and thus become a dental follicle. Within the area of this sacculus are contained all of the cells which shall develop later into the mature enamel, dentine, cementum, and pulp of the fully formed tooth. They have all become specialized cells.

The cells just within the dentine germ become richer in protoplasm, and many processes are seen to be forming from them. They are becoming branched cells. A little later the cells at the surface grow larger and assume a columnar shape. We also see just within this layer of cells some that are pear-shaped, conical, cylindrical and spindle-shaped. There are some authorities who have spoken of what they call elementary cells on the outer layers, and from which they say the odontoblasts are formed, but I have never observed anything but globular masses forming, and these are not cells.

At the beginning of the fifth month, these cells on the surface are seen to be undergoing a differentiation as stated above, and are becoming specialized or formative cells, the odontoblasts. They are membraneless and little more than masses of protoplasm, which seem to be filled with great numbers of bright glistening globules of different sizes.

It is at this stage of growth that we look for evidence of the penetration of the process or fiber of the odontoblasts into the as yet uncalcified ameloblasts. And it is at this stage of growth, I would like to impress on your minds, that we have the enamel organ fully formed, and ready to calcify. The internal epithelium, wholly ameloblasts, the real enamel-builders, consist of columnar cells, membraneless, and resting on the cusp of the dentine germ. On the outer surface of the dentine germ the connective tissue cells are differentiating into a columnar formation, and these are to be the dentine-builders, soon to begin the process of calcification; for this process takes place first in the odontoblasts until a calcified cap is formed. After this, the process of calcification takes place in the enamel; but just before calcification we shall find between these formative cells of dentine and enamel a peculiar layer. It is soft and plastic, transparent, and appears structureless. Some have called it a zone of amorphous material. Tomes says that it is the formation of the first skin of dentine, a stage of metamorphosis preparatory to the impregnation with calcareous salts. Its formation has originated from the cells of the dentine germ, and it is formed on its outer surface just before the calcifying process begins. It resembles a borderland tissue. I have recently been studying this structureless layer and the condition existing just previous to the formation of a calcified structure, with the desire of finding out whether a fiber of the odontoblasts can be found to enter enamel tissue. I have found the problem a difficult one from the fact that this structureless layer masks or hides any tissue that may pass into it.

We know that the fibers of the dentine cells do irregularly enter the enamel. I shall demonstrate that. This may be seen in the crown section of almost any human tooth, and these fibers must have pushed their way into the uncalcified enamel cells at this time. I have examined many sections just as calcification was about to begin and I am sure that I have seen the processes of the odontoblasts pass into this structureless layer and out on the enamel side, usually passing in an oblique or irregular line over the ameloblasts in the direction of the stratum intermedium. I have also teased enamel from the dentine at this time and have seen a few of the fibers from the odontoblasts coming through on the outside of the dentine edge. As a general thing, we expect to see in the section the course of the fibers in the dentine end just before the enamel is reached. But the microscope shows that many of these fibers go entirely through the dentine sections and into the enamel substance. I have a number of sections which show dentine fibers enlarged and flattened by pressure, running nearly through the enamel. Their course is not generally with the direction of the rods. Usually it is an irregular course. Many of the appearances which we have heretofore thought to be cracks in the enamel are really dentinal fibers, which have entered the enamel before calcification began, and have become flattened by pressure so as to give them the appearance of cracks. Dr. Francis Bodecker has noticed this fact, which has never before been described, and has given the fibers the name "enamel lamellæ." He states that the laminæ are sheet-like processes of pure organic matter in which no lime salts have been deposited, originating at the dental margin and passing to the outer boundary of the enamel. These appearances, which Dr. Bodecker describes, I have said were simply flattened dentine processes; they are sometimes traced nearly to the outer surface of the enamel, and in several instances I believe that I have traced them to the outer surface.

The existence of these enlarged and flattened organic fibrils in enamel would account for the peculiar forms of tissue which I found on the slide when I decalcified thin sections of enamel with strong acid. These forms floated about in the acid when all other tissue had apparently disappeared. They were probably the thin sheath tissues of these organic dentine fibrils. When a tissue is partially calcified, as sheath tissue always is, it becomes a transition tissue, no longer wholly organic, but like the partially calcified tissue which Rainey has called calcoglobulin, is not acted on by acids. The sheath of the dentine fibrils in the dentine matrix is composed of this transition tissue, which is so indestructible that it may be found by decalcification even in fossil teeth. The cement substance between the rods is a tissue somewhat of this nature, but it resembles more a colloid substance than it does a true calcoglobulin. These flattened dentine fibrils within the enamel originate, not as Dr. Bodecker states "at the dentinal margin," but from the process of an odontoblast, which has forced its way into the enamel substance before calcification began, and has become enlarged, and is flattened by the pressure of the enamel rods as they are forming and calcifying. And at this time there is considerable pressure. With my present knowledge I can not call the cement substance everywhere filling the space between the enamel rods "organic envelopes," because this cement substance is only partially organic and it is not an envelope. It is partially calcified, and forms a substance which resists the action of the acids to a very considerable extent. It is shown to be a transition tissue, for it wholly calcifies with age. In young teeth the substance will take a faint stain, and one might mistake it for an organic tissue, which I feel sure it is not. In one of his photographs Dr. Francis Bodecker has mistaken a small triangular space as indicating the existence of a so-called envelope for each rod, but this small space is not really a space, but is a small portion of a new forming rod within it, and the cement substance is surrounding that as well as the others. It is a new rod forming to fill up the larger growing outer surface of the enamel. I have seen many of these rods beginning to form in the central portion of the enamel and they begin as small wedge-shaped rods at their base, afterward forming to the normal size. At the junction of the dentine with the enamel there is found evidence of a layer of what appears as living matter, usually so thin as to be hardly perceptible with the high powers of the microscope, but at times forming a perceptible interzonal layer; it is of dentine origin. Very many of the dentinal canals open to this, and send their fibers into it, and some of these fibers are bent in their course within it, and penetrate the enamel substance, not directly across, but a little further on. I have traced these dentinal fibers in this way in many instances. Dr. John L. Bart, in Professor Bodecker's work, makes the misleading statement that the dentinal fibers rarely enter the enamel in the human teeth, but that the reticulum of the dentine is continuous with that of the enamel. This conflicts with the views of Professor Bodecker, who states, in the same work, that the rods of the enamel are on the average half the diameter of the columns of the basic substance in dentine, and that, therefore, four columns of the former will correspond to two of the latter, and that consequently two dentinal fibers will answer to four enamel fibers; also, that at a place of junction of the enamel with the dentine a direct connection is not infrequently seen between the enamel and dentine fibers, and that in many places the dentinal canaliculi, on entering the enamel, suddenly become enlarged. He states further that in the interzonal layer, at the bottom of the bays, we meet fibers occupying curved spaces between dentine and enamel, or we see in a correspondingly bent course protoplasmic bodies directly connected with the dentinal fibers downward, and with the enamel fibers upward.

In my own investigation I have seen all these appearances, but do not understand what is meant by "connecting with enamel fibers." I can find no enamel fibers, as Professor Bodecker would have you to understand, but we shall find only continuation of dental fibers which have penetrated the enamel tissue. After calcification, they are almost never seen to be between the rods, as they are pictured in Professor Bodecker's chapter on enamel. They run almost always irregularly over and across the rods. The section of enamel showing fibers in Dr. Abbott's article, in Bodecker's work, is misleading. It does not show enamel fibers. What it does show is a thin section of enamel, with the cement substance standing out from the rods. The cement substance, being a partially calcified tissue and harder to decalcify than the rod substance, stands out from these rods and causes this appearance.

Dr. Francis Bodecker, in his article[1] entitled "Enamel of the Teeth, Decalcified by the Celloidin Decalcifying Method," recognizes this fact when he says that in the walls of the organic envelopes (cement substance) minute quantities of lime salts are deposited, making perfectly calcified normal human enamel appear to be almost homogeneous; that the first action of the acid in attacking the enamel is to dissolve this deposit in the envelopes (cement substance), causing the individual prisms to become more apparent; but that when this deposit of lime salts has been removed by the action of the acid, however, the organic envelopes (cement substance) are no further acted on.

In this, it will be seen, Dr. Bodecker acknowledges that the cement substance is partially calcified and changed so that acids will not destroy what is left.

Whenever a tissue becomes partially calcified its nature changes; it is no longer an organic tissue. The impregnation of the lime salts has profoundly modified it, so that acids which would destroy an organic tissue will not act on it after the lime has been dissolved. Such tissues are found in the sheath tissues of the dentinal canals, in all borderland tissue, and in a certain modified condition in the cement substance of the enamel. It is in this condition a transition tissue, which has become partially, and will in time become wholly, calcified. There are many pictures—not from photographs—in Professor Bodecker's chapter on enamel which are misleading. They show in the central portion of the cement substance a regular system of living fibers sending out offshoots anastomosing across the enamel rods with other offshoots from other fibers, and these pictures also show a continuous connection with the processes from the dentine fibers. With my many years of study on the enamel I have never been able to find a trace of such a regular system of living fibers between the enamel rods. And with my present knowledge, based on my investigation, I can not believe that such a system exists. For several years I gave most of my leisure time to investigating this one tissue, making many hundreds of sections, and treating the tissue with every known method of technic in use at that time. As a result in 1888, at Boston, before the Academy of Dental Science, and in 1890 at the International Medical Congress at Berlin I demonstrated for the first time that enamel rods were formed from globular bodies given out from the cell, and not from the calcification of the cell substance itself, as was generally thought at that time. After seeing the beautiful photomicrographs recently made by the use of the ultra-violet ray by Dr. Francis Bodecker I am more than ever convinced that it will be found impossible to demonstrate the existence of a regular system of living enamel fibers between the rods of mature enamel.

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[1] Dental Review, April, 1906.

Dr. Francis Bodecker has entered the field of research in this subject, and is doing some valuable work with every modern accessory to help him. The sections which he has shown me are the finest that I have ever seen. His photographs made with the use of the ultra-violet ray are exceptionally fine. His section of enamel, spoken of in the early part of my paper, which he had made by the acid celloidin process, is the work of an artist; it is unusually thin and beautifully prepared. It has given me great pleasure to study it. The cement substance is well stained, and to the uninitiated it has a certain semblance to an organic tissue, but we are to take into account this important fact that decalcification has profoundly changed this cement substance. In this condition it is not the same tissue that we should find in a thin section of enamel from a freshly extracted tooth. Here we should see the tissue true to life. In Dr. Bodecker's section the decalcification of its lime has given us a different substance, different from what we should see in an unaltered and uncalcified ground section. I should have been glad to find in this section, within the substance of the cement tissue between the rods, that perfect system of living fibers so beautifully pictured in his father's work. I should also have been glad to find the organic envelopes of which he speaks in his paper already quoted from. But, with the highest powers of the microscope at my command, and after a careful search, I fail to find any convincing proof that either of these tissues exist. The section shows very plainly the narrow stained line of the changed cement substance between where the rods of the enamel were, and a cross-section of this shows the cement substance binding all of the rods together as a continuous tissue, but fails to show any suggestion of these organic envelopes which he says surround each separate rod of the enamel. In the many sections which I have made—and I have recently looked them over very carefully—it has been impossible to trace any signs of the formation of these envelopes; the cementing substance is shown to be continuous, surrounding all rods.

It is a question yet to be decided just how far the cement substance between the enamel rods is a vital tissue. I do not, with my present knowledge, believe that it is a vital tissue, or that it has the same power of vitalization as have the fibers which are formed in the dentinal canals. There can be no question but that in the living tooth it is a partially calcified tissue, a transition tissue, which in old age becomes wholly calcified. It is a tissue so changed chemically that when it has had its lime taken from it by acid it can not readily be further destroyed. It resembles in this, not wholly, but somewhat, the sheath tissue of the dentinal canals, which is not a vitalizing tissue, because within the core of this sheath tissue we can see the vital fiber sending out its anastomosing branches through the sheath tissue to other vital offshoots from other canals. This sheath tissue is also a transition tissue, which becomes calcified into calcified matrix as age comes on.

In conclusion, then, we may assume that the scant vitality found in young enamel is given to it by a very thin organic layer of dentine origin between the dentine and enamel called the interzonal layer, together with an ingrowth of some of the processes of the dental forming cells which have invaded the enamel substance prior to its calcification. In some instances I have found these processes to have persisted in this invasion of the enamel substance so as to reach, or nearly reach, to the outer surface of the fully formed enamel. These invading dentinal processes are exceedingly irregular in their course, seldom following the line of the cement substance, but more often running in an oblique direction across the enamel rods. In a thin section of the cusp of a human tooth we can count nearly forty of these invading dentine fibers. Where they pass into the substance of the enamel they seem to have become flattened and compressed like lamellæ by the force exerted by the rods of the enamel while they were calcifying.

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SOME MINOR POINTS IN THE SURGERY OF CATARACT *

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Methods for the successful extraction of cataract have been so often the subject of discussion that it would seem as though further discussion were superfluous unless one had something both new and tried to offer. Yet the subject has a fascination that increases with experience in operating, and to old-fashioned oculists—those who are capable of treating diseases of the eye as well as the errors of refraction—it is ever one of interest. The compiling of statistics by the great surgeons, the publication of results in 100, 500 or 1,000 consecutive operations, the recitation of accidents and of the means of treating and of preventing them, the dissemination of methods for the avoidance of mistakes, are a great boon to the followers of these surgeons and to the victims of cataract. But the record of failures and the causes of failures by men of large experience would be of more service to the beginner than that of their successes. Unfortunately for the oculist's peace and comfort, he does not bury his failures. They seem to

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live forever to tell their tales of woe to sympathetic hearers—oculists and others. Naturally we do not like to publish our mistakes, believing that the publicity given by the victims is quite enough. Yet the story is only half told if the failures are suppressed.

The causes of failures are many. Conspicuous among them stands the inexperience of the operator. With inexperience may be mentioned unsuitable personal habits and insufficient preparation. The beginner must qualify himself by many operations on animal eyes, standing or sitting in the proper relation to the eye, as though it belonged to a human subject, and acquiring accuracy and skilfulness in holding and manipulation of the instruments. Other requisites are good vision, steady hand, perfect illumination, coolness and judgment in difficulties and a full appreciation of his responsibilities. Perhaps the mention of the need of good vision on the part of the operator may seem absurd. It seems inconceivable that any man would approach an operation on the interior of the eye with vision insufficiently acute to give him perfect control of the situation; yet it has happened within my own experience and will happen again. Imperfect vision leads to nervousness and nervousness to disaster. When possible the illumination should be by means of a portable electric lamp of sufficient power, intelligently held by an assistant so that the light shall be reflected into the patient's eye and the surgeon's eyes protected. Thus the annoying corneal reflexes incident to daylight will be avoided. A steady hand is indispensable. If trembling exists its causes should be learned and removed. If it is stage fright the temptation to operate should be resisted until greater familiarity gained by observation of others and repeated practice on animal eyes assures the necessary composure. Intemperance in living, too much smoking or drinking must be controlled and one's habits so regulated that one's physical condition may be fit for the great responsibility assumed. No surgeon has the right to jeopardize the successful result of his operation by thoughtlessness and disregard of precautions. These statements, platitudes though they seem, are worth thinking about and acting on. We operate in sterile gowns, with sterile instruments, using sterile collyria, the field of operation sterile and the body protected by sterile sheets, carrying out with great precision all the regulations suggested in the canons of antiseptic surgery and yet ourselves go to the operating table unprepared and physically unfit.

For patients with uncomplicated senile cataract, long preliminary residence in a hospital or undue postponement of the time appointed for operation is both unnecessary and harmful, particularly to those who are nervous and despondent. The new environment, the consciousness of the impending operation, the isolation of blindness and the fear of the operation and its results induce baneful mental excitation. Twenty-four hours before operation gives sufficient time for thorough physical examination, including urinary analysis and antiseptic preparations; indeed, three or four hours may be enough when one is familiar with the patient's state of health or has had him under observation.

DOES PRELIMINARY IRIDECTOMY CONTRIBUTE TO A SUCCESSFUL RESULT?

Operators who invariably perform simple extraction in uncomplicated cases disbelieve in the procedure of preliminary iridectomy for the assigned reasons that the dangers of two operations are greater than those of one, and that two should be avoided when one will suffice. To the unprejudiced mind this reason is not convincing. The real question is: Are the dangers of the simple or combined extraction less than those of extraction preceded by iridectomy? This subject was fairly presented to the Section by Reber in 1906. The majority of opinions collected by him favored preliminary iridectomy in complicated cataracts, in immature cataracts, and when the patient had but one eye.

A personal expression of opinion may be permitted. I prefer to perform preliminary iridectomy when all conditions permit, the patient's time, his degree of blindness or the length of time he may count on useful vision in the other eye, to a certain extent his social and financial status, his willingness to leave the decision to my judgment or, otherwise expressed, his confidence in me not only as an oculist but as a man who will advise for his patient's best interests. This statement of preference applies to the so-called uncomplicated cataracts, those cases in which most operators do not consider preliminary iridectomy. I believe it is the safest method of operating, else why is it preferred when the patient has but one eye? Iridectomy is a simple procedure and easy to perform. Under complete cocain anesthesia it is absolutely painless. Recovery is prompt and in most cases certain. Prolapse of the iris is almost never seen. Entanglement of the iris in the corneal wound is rare; the wound is small and closes in a few hours. If postoperative inflammation develops it is of milder grade than that following completed extraction. The subsequent extraction is simplified, a decided advantage to both patient and operator. For immature cataracts demanding operation preliminary iridectomy is positively indicated, and I can not agree with those operators who assert that as good visual results can be obtained by other methods, except possibly the extraction of the lens in its capsule.

During the past year I have performed preliminary iridectomy many times, extracting the lens three weeks to three months later. The results have been so satisfactory that I am convinced that the procedure is the operation of choice. I am not positive that the lens grows more rapidly opaque, but I have come to think that the operation may be classified among the ripening operations without their disadvantages. Haessig, whose experience has been very great, says: "Of the operation of extraction after preliminary iridectomy, every phase of the operation, the cystotomy, the expression of the lens, the expulsion of the cortical masses, can be performed without disturbance. The condition of the iris may be readily seen, there is less temptation to squeeze the lids, and undesirable complications—as loss of vitreous, eversion of the corneal flap—are seldom met.[1]

WHEN IS A CATARACT MATURE?

Technically the cataract is ripe when it is entirely opaque. For the purposes of operation (complete extraction) it is mature when the nucleus and the cortex are no longer distinct, but are united into one body, so that after corneal incision, well directed and accurately estimated pressure on the cornea will dislodge and expel the entire lens. In the pathology of cataract this stage is reached when "the lens finally breaks down into a pultaceous mass consisting of drops of fat, Morgagnian spheres, remains of lens fibers and an albuminoid liquid; fluid collects in separate vacuoles between the lens substance and the capsule of the lens, finally separating the capsule entirely from the cortex so that the lens can be shelled out of its capsule in cataract extraction."[2] Therefore, the time best adapted for operation is not when the entire lens is opaque, but when it is hard and its different parts adherent to one another and not to the capsule. The occasion of this final culmination of the formation of cataract varies greatly in different individuals and depends both on the underlying cause of the lenticular opacity and on the senility of the patient. Some boys reach maturity at an earlier age than others; some men are older than their years. It is stated in text-books that a cataract is soft before the patient is 25 and hard after 35 years of age. This implies that needling is the proper operation in the former, extraction in the latter. We are led to believe that after 55 or 60 at the latest the lens is hard enough to extract entire, whether opaque or transparent. The constitutional changes incident to advancing years must be considered in their application to cataract and allowance made for individualities.

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[1] Mitteilungen ueber die letzten 500 Extract. 1908.

Miss A., aged 35. Preliminary iridectomy followed in one week by extraction. No lens debris. V. 20/70. Old corneal opacities.

Mr. S., aged 62, iridectomy in February, extraction in June. No complication in either operation. Lens matter in anterior chamber, chronic iridocyclitis and glaucoma.

Thus one patient, at an age long before the lens is believed to be hard enough to extract entire, recovered promptly and fully, and the other, beyond the prescribed age, had a bad result because the lens was not solid. The degree of opacity of the lens is not a substantial basis for judgment of its degree of solidity. I have removed without difficulty an almost transparent lens from the eye of a woman of 55, and I believe the experience is common to find as late as the seventieth year, lenses entirely opaque but with soft and tenacious cortices. My observation has led me to believe that in corpulent patients the lenses harden only very late, while in meager, emaciated persons the lens seems to partake of the sclerosis of other tissues of the body. The influence of intraocular disease in hardening the lens is problematic. That it induces opacity is well known, but the process is one of degeneration from malnutrition rather than a sclerosis. The answer, then, to the question, "When is a cataract mature"? resolves itself into the simple statement: The proper time for the extraction is to be determined by the degree of the loss of vision. Extraction may be performed at any age, the condition present in each individual case to decide the method adopted.

POINTS IN REGARD TO METHOD

Of the unavoidable causes of failure, such as intraocular hemorrhage, uncontrollable patient, coughing, disease of the eyeground, infection, postoperative delirium and accidents therefrom, it is beside the purpose of this paper to speak. The number of losses may be materially reduced by the operator's impersonal consideration of the qualities of character and temperament and the ocular and bodily health of the patient. For example, in the preliminary training, he may learn the chances of the patient's will or power to rotate the cornea downward. If these are unfavorable, general anesthesia should replace cocain anesthesia. It is my custom to assure my patient that if he will do as I tell him he will positively have no pain and, in all probability, a successful result, but that it is essential to success that I have his cooperation.

The speculum is left in place throughout the entire operation provided I see no indication of loss of vitreous, but in about 50 per cent. of cases I remove it after the capsulotomy. The indications are restlessness, pressure by the speculum on the ball, gaping of the wound and a sight of the vitreous in close proximity to the posterior lip. An assistant's services should be confined, in the case of obedient patients, to handing the instruments in their order to the operator. It is quite unnecessary for him to aid in the operation itself. Fixation is made during the section only; iridectomy and capsulotomy are more safely made without fixation. Expulsion of the lens is satisfactorily accomplished by pressure through the lower lid, and, as an accessory, if advisable, a spoon placed against the sclera posterior to the wound. The toilet is a matter of great importance. Its function is not only to restore the pillars of the coloboma but to cleanse the wound of lens matter, invisible shreds of capsule and clots of blood. Imperfect toilet means delayed union, cystoid cicatrix, and possibly infection. Lens debris not capable of removal by manipulation may be washed out by warm salt solution forcibly injected into the anterior chamber by a small-mouthed pipette, and if, after convalescence is well established, the anterior chamber still contains flocculi, dionin in increasing strength will bring about their absorption.

In conclusion, a word concerning imperfect local anesthesia—a prolific cause of accident. A 4 per cent. solution of cocain hydrochlorate applied freely to the conjunctival sac four times at intervals of four minutes, the lid closed after each instillation, insures complete anesthesia of the conjunctiva, cornea and iris. The corneal epithelium is not disturbed nor is the tension of the ball altered. The partial dilatation of the pupil is not a disadvantage; on the contrary, it contributes slightly to the facility of the performance of iridectomy and capsulotomy, and, in simple extraction, the passage of the lens through the pupil.

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ABSTRACT OF DISCUSSION

Dr. H. Dickson Bruns, New Orleans: It gives me a great deal of pleasure that Dr. Hansell—it is impossible to say *mon chère maitre* in English—separated as we have been by 25 years of time and by 1200 miles of space, has arrived through his still greater experience at exactly what I have arrived at as to preliminary iridectomy. I believe I could add one or two advantages of this practice to those Dr. Hansell has already enumerated. After we have made a preliminary iridectomy we have learned something of the patient's morale; we know how he will conduct himself. In the second place, we have been able in a large degree to train the patient and the patient finds the ordeal is not such a terrible one as he anticipated. In the third place, the actual extraction is bloodless; there is no obscuration of the field of operation during the time we are actually extracting. And in the fourth place, and I regard that as of the most importance, the operation is completed with the least possible loss of time, especially if one opens the capsule with the point of the knife, as is my invariable habit. I think no operator of experience will doubt that the sooner the operation is over, other things being equal, and the bandages placed on the eye the better for the patient.

I disagree with Dr. Hansell on one point. It has not been my good fortune to find always that the iris has been well anesthetized by the installation of cocain. I believe I have tried it in every possible way, but not exceeding a 5 per cent. solution for a cataract extraction. In a number of cases anesthesia is produced, but in another series of cases it is not. Fearing I had not carried out the directions of Dr. Hansell, before I left home I took occasion to try it, following minutely his directions. I did not obtain absolute anesthesia. This is important, because it is usually at the moment you grasp the iris and are about to cut it off that the patient moves and brings about a serious complication. Having used an injection of a solution made up of 10 minims of 1 to 1000 adrenalin, 10 minims 4 per cent. cocain and 20 minims normal salt solution in a large number of enucleations, and always in tenotomies and advancements, and being struck with the perfect anesthesia produced, I was led to try 5 minims of that fluid subconjunctivally at the place where we make the fixation, and I have found in this way, even in cases in which I am about to make an iridectomy for glaucoma, that absolute stony anesthesia can be produced. I have been trying it in a large number of cataract extractions and with success so far as the operator is concerned.

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[2] Gibbon's Diseases of the Eye, 1905.

Dr. G. C. Savage, Nashville, Tenn.; An incision in extracting cataract is not so good when it fails to include the conjunctival flap. Keeping that flap out of the way while making the iridectomy is a very easy matter. Usually the aqueous that has escaped through the corneal incision is enough to moisten the flap so that if it is turned down on the cornea it will adhere; but if it does not do so, then by dropping a drop of sterile water on the conjunctiva and upper part of the cornea the flap can be turned over and it will adhere and be out of the way. This is a little thing but is important. I have made a beautiful conjunctival flap and in doing the iridectomy have clipped it away. Now that danger is absolutely removed. I would not fail to make a conjunctival flap in cataract extraction, and the bigger the flap the better I am pleased. I do another thing that I have never seen anyone else do, but probably a thousand of you are doing it, and that is that I may make just as little and just as short pressure on the eyeball as possible in extracting the lens. I transfix the lens from behind the moment it enters the wound and lift it out. Stopping all pressure makes unlikely any escape of vitreous. I have heard authors of papers say that the cases in which vitreous has escaped were among their best cases, but I have never seen a man who wanted the vitreous to escape. The flap should be replaced, but should this be neglected it will go back over the line of the incision and cover it just as beautifully and just as well as though it had been intentionally replaced. If the flap covers the line of the incision there will be better healing and less postoperative astigmatism.

Dr. W. B. Marple, New York: I agree with Dr. Hansell in reference to the advantages of a preliminary iridectomy. There is no question but what the healing after an extraction where a preliminary iridectomy has been done is much more prompt and attended with much less irritation. The only possible objection is that it subjects the patient to two operations, and I have usually found that my patients dreaded the second operation much less than the first. One great advantage of the preliminary operation is that you find out much about your patient at a time when lack of self-control is attended with much less risk than if the whole operation were done at one sitting.

I operated two years ago on a man on whom, on account of certain complications, I decided to do a preliminary iridectomy. The patient was a man of large affairs and I anticipated that he would be an ideal patient. To my surprise he was quite the reverse; was uncontrollable and squeezed so hard that I am sure if I had had a section large enough to extract the lens he would have emptied his globe. As it was I did the iridectomy without any accident. After his recovery from the preliminary operation I took him in hand and trained him not to squeeze with the speculum in his eye, and subsequently did a successful extraction, which I am sure I would not have done had I attempted to do the iridectomy and extraction at one sitting. Among the patients on Blackwell's Island who can not be depended on my invariable rule is to do the preliminary operation first. I can not agree with the statement that iridectomy can be made absolutely painless; at least that has not been my experience. It is for this reason that among this class of patients I do the preliminary operation. If there is any pain then it will be at a time when my section is small and squeezing can do no harm. I am sure if I had a cataract I would want a preliminary iridectomy done. Like Dr. Hansell, my custom is to decide the proper time of operation by the degree of visual impairment.

Major Elliot of India, in the last volume of the Transactions of the Ophthalmologic Society of the United Kingdom, describes his method of opening the capsule before he makes his section. Although I have never done this, the reasons he gives for so doing seem good ones and I shall try it. I think that is a distinct advantage to instill adrenalin before commencing with the cocain, as suggested by Major Herbert.

Dr. Lucien Howe, Buffalo: To obviate the difficulty in keeping the eye still, I have had a pair of very small forceps constructed on a principle apparently that we have not so far employed. These do not fix the conjunctiva; but they are intended to grasp the external and internal rectus muscle tendons. After that is done we can depress the forceps out of the field of operation.

Another difficulty is that after the lens reaches a certain position it tends to catch there. When this occurs the lens can be lifted out by a pair of fine iris forceps having the blades bent in such an arc that when they close they sink into the lens, and enable it to be easily withdrawn. In some cases—but not always—they help.

Dr. Mark D. Stevenson, Akron, Ohio: One hour before operation my patients, especially if nervous, are given an appropriate dose of one of the bromide salts, which serves to quiet them. If there is no contraindication, a hypodermic injection of morphin and atropin is given 15 minutes before operation further to quiet the patient, reduce pain and relieve after-soreness. Thorough anesthesia is necessary, and in addition to placing a few drops of cocain solution in the eye, I inject a few drops of 0.5 per cent. cocain and 1 to 5000 adrenalin chlorid under the conjunctiva immediately over the cornea. I have never had the cornea fall in from the use of this injection.

I feel much safer with a conjunctival flap which quickly fixes the corneal section. It is more easily made after the formation of a bleb by the hypodermic use of cocain. In total enucleation of the lens, lensectomy—the so-called Indian operation—it should be very small and only at the summit. The remaining capsular tags form one of the chief objections to the old operation, and one of the most important arguments for removal of the lens in its capsule. If capsulotomy is to be done, it should be done definitely with a sharp cystotome, only two cuts being necessary, more making tags.

Dr. G. Oram Ring, Philadelphia: In the ultimate analysis after all it is our duty to give the patient the benefit of our experience as to what produces the finest results. Those of you who know me well know I usually advise a preliminary iridectomy, and a result after a good many years of experience that will give me less than 1 per cent. of failures, is sufficiently good to tie to. I approve almost *in toto* of what Dr. Hansell has said. It seems to me it is a splendid conservative note to give to the young men after a long experience. I am inclined to question the advisability of doing the operation with electric light. I feel that the flash of the electric light on the sensitive retina might produce straining and loss of vitreous. When I can get good natural daylight I greatly prefer it. Sometimes under pressure one must use electricity. As to the strength of the cocain, with a 4 per cent. solution I, like a number of others, failed to get complete anesthesia, and I now habitually use an 8 per cent. solution with much more satisfactory results. It is now my almost invariable habit to remove the speculum immediately after the initial incision and I believe this procedure helps me to avoid straining on the part of the patient, and therefore largely eliminates loss of vitreous.

Dr. O. Tydings, Chicago: There seems to me to be three extrinsic sources of trouble in every cataract extraction. One is now practically eliminated in every well-regulated operating room. I refer to infection. Another is the danger of loss of vitreous by pressure of the lids on the globe. This can be avoided by the use of the Fisher's lid elevator, an instrument which I have used for some years without the loss of vitreous in a single case. It eliminates the possibility of the loss of vitreous or damage to the globe by lid compression. The third source of trouble is in advising the patient to look downward, which is next to lid compression in danger to vitreous. Instruct him to look straight ahead and he will do so. By observing these rules the three extrinsic sources of danger in cataract extractions can be avoided. I can not too strongly emphasize this, because when danger is imminent it is too late to remove a speculum from an unruly patient; uless you have someone holding the speculum who is trained in that kind of work; while with the lid elevator it is a physical impossibility for any patient to do himself an injury.

DR. A. R. BAKER, Cleveland: In early years I not infrequently had cases of delirium following cataract extraction. By placing the patients in the hospital the day before the operation and letting them sleep in the bed they are to occupy and become acquainted with their surroundings, nurses and the house physicians, I have found that delirium is practically eliminated. I became convinced years ago that it was unnecessary to use a speculum and for six or eight years I have been making my extractions without one. I grasp the tendon of the superior rectus muscle with my fixation forceps and it is surprising how easy it is to control the eye. It keeps the lid out of the way and the incision can be made much more accurately and better than by any other method. If one wants to make a conjunctival flap it is the easiest thing in the world, while before it was not. In doing away with the speculum, one nearly always avoids the escape of vitreous. In other respects I manage my cases as recommended by Dr. Hansell. I like the preliminary iridectomy as a matter of choice. In any case in which I have doubts about the behavior or physical or mental condition of the patient I insist on it.

DR. A. E. DAVIS, New York: Insane patients are extremely nervous, but I have operated on a number without general anesthesia. The conjunctival flap gave me much better results than any other plan because in twelve hours the wound would be closed. Some patients would pull off the dressings. I do not agree with Dr. Savage, however, in regard to handling that flap so easily. If you have a rather large flap and turn it down over the cornea you can not see the iris at all. However, that does not disturb me because I rarely perform an iridectomy. In these difficult cases I find the flap method decidedly the best and I have done nothing else, and in an experience of twenty-five cases I have lost only one. The patient promised to be very good, but became violent on the table and destroyed the eye, after the operation was performed, and before the dressing could be applied.

CLINICAL DIAGNOSIS OF THE SYPHILOGENOUS DISEASES OF THE CENTRAL NERVOUS SYSTEM *

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I beg, first of all, to express my acknowledgment of the great honor that has been shown to me in inviting me to speak before a circle of medical men and scientific workers in a country so renowned for its rapid progress in every branch of culture.

Neurology, whose representatives are here assembled, owes much to America, which has largely advanced our knowledge of this department of science on many highly important points.

At the annual meeting of the German Society of Nerve Specialists, held last October in Heidelberg, I summed up our position with reference to the light thrown by recent research on the clinical diagnosis of the syphilogenous diseases of the central nervous system.

To-day I beg to submit to your consideration the question whether and to what extent our views on this subject have undergone change since then.

Hamburg presents copious material for the study of syphilogenous nervous diseases. Within the last six months I had forty-seven cases of tabes dorsalis under observation for the four reactions; that is:

1. Pleocytosis.
2. Increase of globulin (Phase I).
3 and 4. Reaction of deviation of complement in the blood serum and spinal fluid after Wassermann.

How frequently cases of tabes dorsalis imperfecta occur is shown by the fact that out of these forty-seven cases nineteen were imperfecta or rudimentary tabes. By this I mean combinations of single symptoms which occur already in incipient tabes; that is, pupil anomalies, absence of tendon reflexes, gastric crises, etc.; the cases showed no progressive tendency and were of many years' standing.

In these forty-seven cases of tabes dorsalis a distinct lymphocytosis was missing only seven times. Four of these 7 cases were cases of tabes imperfecta, 2 were pronounced tabes and 1 was an incomplete case grafted on hereditary basis. The father had died of general paralysis on a syphilitic basis, and the patient himself showed the hereditary form of keratitis interstitialis.

This tabes data show, in conformity with my former 101 cases and with cases taken from literature by myself on former occasions, that pleocytosis is one of the most regular signs of tabes. It confirms further that pleocytosis occurs just as regularly in the "imperfect cases" as in the advanced cases of tabes; further, that it may be missing in progressed just as in imperfect cases.

The reaction Phase I has been just the same in these data during the last six months. It also was missing only seven times and in the same seven cases in which pleocytosis was absent; namely, in 2 advanced, in 4 imperfect and in the hereditary case. In conformity with my former experiences up to October, 1908, the material examined, it seems to me, shows that reaction Phase I is equivalent to the pleocytosis reaction. This reaction is so absolutely simple that I can warmly recommend it to this circle of competent experts.

During the last six months I examined seventeen cases of general paralysis for pleocytosis and Phase I. Only in one single case did I not find both reactions. This was a case of juvenile hereditary paralysis, with hereditary double lateral chorioiditis disseminata. Plaut also, as well as Sachs, and Noguchi in New York, demonstrated this negative result—each in a case of paralysis. We may say that both reactions exist in paralysis with hardly any exceptions; in this disease, too, the two reactions are equivalent. This is equally true whether the cases are advanced or imperfect—that is, rudimentary—cases. My new experiences are absolutely in line with those of former days. With regard to the many doubtful cases of tabes and paralysis there exists rather a difference in the numerical quantity of cases that come within the practice of neurologists. Here I need hardly say what I mean by this. On the other hand, we have cases in which trifling and uncharacteristic disturbances of the intellect are combined with anomalies in connection with the pupils or with reflex anomalies, cases showing light apoplectiform attacks with anomalies of the pupil, cases of interior ophthalmoplegia with positive history of syphilis; on the other hand, cases with subjective symptoms of spinal neurasthenia with one or two other not fully developed spinal symptoms, such as imperfect pupil reaction, diminution of the tendon reflexes, difficulty in mic-

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

turition, etc. Of these cases, I have seen 10 since October, 1908; in 5 pleocytosis was missing, while Phase I was missing three times and was doubtful once.

I can only repeat what I have said once before, that these cases require further observation, because they must establish the value of the two methods. I have already placed about seventy of these doubtful cases under my further observation and shall not fail in due time to give account of them either personally or through my pupils.

Now follows cerebral and cerebrospinal syphilis, the pure form of which is apparently rare—rarer than has been hitherto assumed. Since October, 1908, I have been able to examine only eighteen cases. Among these eighteen cases, both reactions, pleocytosis and Phase I, were missing only three times, both in the same cases. These statements also confirm my former ones and those in literature.

How do my latest experiences in reference to the occurrence of pleocytosis and Phase I affect those diseases which practically offer the greatest difficulties in differential diagnosis from the diagnosis of syphilogenous diseases of the central nervous system? I am thinking of multiple sclerosis, idiopathic epilepsy, neurasthenia with previous syphilis, pseudotabes alcoholica, tumor cerebri! In cases of multiple sclerosis evidence was again furnished in ten new cases that pleocytosis does occur, though seldom. Formerly I had found it in 23 per cent. of the cases and I had collected 24 per cent. from literature on the subject. I now found marked pleocytosis once and weak pleocytosis twice; that is, together 30 per cent. Formerly I found Phase I in 45 per cent.; now I found it twice among ten cases; that is, in 20 per cent. In multiple sclerosis the occurrence of the two reactions was simultaneous in two cases, whilst in the third case pleocytosis without Phase I was found; here it is confirmed that the two reactions are not the determining factor in the differential diagnosis between multiple sclerosis and cerebrospinal syphilis; for most frequently pleocytosis is marked in cerebrospinal syphilis and is weak in multiple sclerosis; the reverse is not seldom the case.

Idiopathic epilepsy I have examined thirty-one times for both reactions since October, 1908. Pleocytosis I found only once; Phase I, three times, quite weak. I can say, in summing up my former and my recent experiences, that, in cases of idiopathic epilepsy, both reactions prove a rare exception to the rule and that they are missing in the majority.

Cerebral neurasthenia without syphilis I have examined three times and syphilis also three times; only in one case did I find both reactions positive, and this case was rather suggestive of incipient cerebral syphilis. It is again shown that both reactions are of great value for the differential diagnosis between cerebral and spinal neurasthenia, on the one hand, and dementia paralytica and tabes dorsalis, on the other.

A conclusive confirmation of my former statements is afforded by ten further cases of pseudotabes alcoholica. Two of these cases gave a history of syphilis. In all ten cases both pleocytosis and Phase I were absent, which was in marked opposition to the otherwise absolutely positive results in tabes and paralysis.

Now let us take the cases of tumor cerebri which require differential diagnoses. During the last six months I have examined no less than sixteen of these cases; eleven of these were submitted to postmortem examination; the diagnosis was, therefore, conclusive. Among these eleven cases, pleocytosis was positive three times and Phase I four times. In three cases both reactions were positive; in one case only Phase I was positive. In the five cases in which there was no necropsy, lymphocytosis was invariably absent, while Phase I was twice positive. This, in the main, confirms the results of my former research, namely, that pleocytosis and Phase I occur in the small minority of cases of tumor cerebri.

Cases of "pupil-fixation" presenting partly objective or subjective symptoms, but not such as to justify suspicion of tabes or paralysis, are very interesting, as they do not necessarily imply syphilis. As formerly, I also found with four new patients that in cases of unconfirmed syphilis (three cases) the reactions were absent and in the case of syphilis (one case) they occurred.

I shall not touch on other cerebrospinal diseases in which the differential diagnosis between syphilitic and metasyphilitic nerve diseases do not come into question.

It has often been confirmed and may be accepted as proved that pleocytosis and Phase I either do not occur at all in such cases or only in rare instances, and when they do occur, only to a very small degree. Speaking from two of my own cases, I make an exception to this statement as regards idiopathic hydrocephalus. I will also point to one other disease for the diagnosis of which Phase I reaction would prove important, should my experiences, based on three cases, be confirmed by further observations—that is, compressing extramedullary tumors show marked Phase I reaction without lymphocytosis.

On the subject of the value of the complement-fixation reaction which has been applied by Wassermann, Neisser, Bruck and Stern for diagnostic purposes in syphilis, much has been written during the last two years. It may be accepted that this reaction is not specific for syphilis; it is not specific in the sense in which it was held to be by the first classic authors.

This opinion has also been expressed by workers on this subject in the United States—Butler, Fleischmann, Mefford, Lapowski, Fisher, Pedersen, Sachs and Noguchi, among others.

I will not neglect to mention here that the Hamburg scarlet-fever findings, after first lacking confirmation, were later on confirmed in other quarters—above all by Neisser's collaborator, Bruck, and were recently again recognized in Neisser's laboratory by Pürckhauer.

On the one hand, the syphilitic antigen may be replaced by non-syphilitic organ extracts and certain chemical substances, and, on the other hand, the inhibition (*Hemmung*) of the hemolysis which results from "fixation" of the complement may also take place in the case of diseases which are not syphilogenous, but are either certainly or presumably traceable to the presence of protozoa or bacilli.

It is admitted to be reliable in the case of leprosy and malaria; as regards scarlet fever the same is accepted by many as a fact. Muck and Eichelberg, of Hamburg, being the pioneers.

But the explanations offered on the subject differ with different authors (Bruck and Cohn, Klopstock, Seligmann and others).

In one case in my own ward the fact that an attack of scarlet fever had been passed through was first discovered by means of the Wassermann blood reaction, which was verified by further inquiry. I wish especially to point out that in this case all controls were exacted. A report of the case has been published by Holzmann.[1] The same precautionary measures were observed in the remaining scarlet-fever cases, which were accepted as positive by Muck and Eichelberg after the Heidelberg discussion, so that the objections advanced by Plant in his recently published excellent and exhaustive book on the significance of Wassermann's reactions in the department of psychiatry do not apply to these. Since Bruck, the collaborator of Wassermann and Neisser himself has accepted it, the controversy on the subject of the occurrence of the Neisser-Wassermann reaction in scarlet fever may be regarded as closed, in spite of the fact that Wassermann and G. Meier, as also Galewski and Schild, recently again stated that, except in the case of leprosy, the reaction takes place only with syphilis, and in spite of the fact that Wassermann himself upholds the specificity of the reaction.

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[1] Holzmann: München. med. Wchnschr., 1909, No. 14.

Control experiments, which were conducted in Hamburg and Breslau, that is, in the serologic laboratory of the Eppendorf Hospital and in the laboratory of the Dermatologic Clinic in Breslau, resulted as follows: Of scarlet-fever serums, three in Hamburg and three in Breslau reacted positively. The same result was obtained twice out of six malaria serums in Hamburg, and the same in Breslau. The trustworthiness of the Hamburg experiment was also evidenced by the fact that all of the same class of serums, belonging to syphilitic subjects, whether examined in Hamburg or in Breslau, reacted in an equal manner. With this, the statement of Wassermann, made in Heidelberg in connection with Muck and Eichelberg's statements on their positive findings in scarlet fever, namely, that these findings could be accounted for only by faulty technic, may be considered as sufficiently contradicted to satisfy the objective critic.

Holle, so long the collaborator of Wassermann, has declared as follows: The deviation of complement reaction is not specific to syphilis; it is, however, characteristic of it. Hecht, of Prague, has stated the same, and I can only associate myself with these, as my later remarks will show. I say, with Lapowsky: The reaction is not specific in the bacteriologic sense, but is clinically characteristic of syphilis.

A large number of rules must be observed if faulty results are to be avoided. These rules have gradually arisen as the natural outcome of a long series of laborious experiments, as they naturally must with any new method. The absolute necessity for control experiments of more exacting technic for the verifying of early results, as suggested by ripened experience, is obvious to every one who engages in work of this difficult nature.

I will not enlarge on the necessary precautionary experimental measures, as this would lead too far to-day, and because Fleischmann and Butler[2] have described them minutely in THE JOURNAL of the American Medical Association. I will only state here that the most reliable authorities have found no certain difference between the use of watery and alcoholic extracts.

1. The extract and the hemolytic system must also be tested and estimated with several definite and suspected syphilitic serums.

2. For the purpose of controlling the hemolytic test, 0.4 c.c. of the serum to be examined must be used instead of the 0.2 c.c. which is required to produce reaction, in order to be quite sure that the serum in itself does not act antagonistically.

3. As antigen we usually used alcoholic extract derived from the liver of a syphilitic fetus. We dissolved it quickly, not in gradations, as Sachs in Frankfurt does.

4. The blood which is to be examined must be taken in the morning, as experience has taught us that blood serum may become cloudy and milky after a plentiful meal and so as to give too positive results.

5. In practice, reaction with active serum is impracticable, as it too frequently produces a positive reaction. The serum to be examined must, therefore, be rendered inactive; that is, warmed for half an hour at 58 R. (72.5 C.) before using.

6. According to several control researches of ours, serum and liquor remained in good condition about four or five days either at room temperature or on ice, provided they were not shaken too much. Even sending the fluid which was to be examined by rail from Hamburg to Breslau and back or to other remote places did not in every case render the serum useless for examination purposes, while after strong shaking it always gave positive reactions. After four or five days the results become untrustworthy, as in this case, just as after strong shaking, both serum and liquor may themselves act antagonistically. Sheep's blood, amboceptor (sheep blood corpuscles injected into rabbits) and extract (antigen) keep for a considerable time on ice, the amboceptor keeping longer than the extract; but before use they must be always examined.

7. The sheep's red corpuscles must be fresh and thoroughly washed; that is, they must be centrifugalized several times with salt solution.

8. It must be further controlled whether the extract and the hemolytic system are antagonistic as such, and in exercising this control both the exact quantity and double the quantity required for a reaction must be used.

In face of the experimental researches published before autumn, 1908, as well as since then by F. Lesser, Ledermann, Hecht, Behring, Bruck and Cohen, Bauer and G. Meier, Galewski, Rostoski, Blaschko and Kolle, and in face of the results obtained by my newer research, I consider myself to be in a position to state that the reaction is now sufficiently matured for medical practice, in spite of the fact that this is denied by Seligmann, Halberstätter and Fisher (Dresden). The technic is as yet so complicated and is so surrounded by sources of error that it can be undertaken only in a laboratory and by persons who are experts.

I should like to take you again over the material that I have examined in Eppendorf since October, 1908.

TABES DORSALIS

I have hitherto found that the complement deviation reaction took place in the blood in 90 per cent. of the cases and in the spinal fluid in about 50 per cent. On this point I found myself in agreement with early observers. I wish to amend this statement on one point: I missed the Wassermann reaction in 4 of 26 complete cases of tabes; that is, it was missing in 16 per cent.; and in 21 cases of tabes imperfecta the reaction was missing 9 times; that is, in 43 per cent.

My material of the last six months proves that the percentage of positive Wassermann reactions is not always as high as appears according to other statistics, and it also proves that the Wassermann reaction is more often absent in the tabes imperfecta cases than in the complete cases. At the same time the Wassermann reaction of the blood serum was missing just in two longstanding complete cases. This could be accounted for by a previous energetic specific treatment.

Very noteworthy is a case presenting a history of "chill" tabes without syphilis which had developed after a fall into cold water. This case also gave the Wassermann reaction in the blood, as well as pleocytosis and Phase I, while the spinal fluid reacted negatively.

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[2] Fleischmann, Paul, and Butler, William J.: Serum Diagnosis of Syphilis, THE JOURNAL A. M. A., Sept. 14, 1907, xlix, 934.

At all events, according to my experience, pleocytosis and Phase I occur in tabes dorsalis more frequently than the blood reaction of Wassermann, and the harmony displayed by these reactions was not so marked as I was led to conclude in October, 1908.

One quite new result has, however, been demonstrated. In the forty-seven recently examined cases I found the Wassermann reaction positive in the spinal fluid in only two instances, and one of these two cases, a case of imperfect tabes which was stationary for ten years, was complicated with severe morphinism. This is extremely striking. As I mentioned before, I formerly found deviation of complement in the spinal fluid in about 50 per cent. of the cases.[3]

There is little literature on the subject; in almost all publications either the blood serum reaction alone is discussed, or it remains doubtful whether blood serum or spinal fluid is meant. It is urgently desirable that in further work on this subject serum and spinal fluid should be strictly differentiated, for in the autumn of 1908 it was already manifest that the reactions obtainable from these two fluids were by no means the same.

Only Rostoski, Schultz and latterly Plaut declare that the spinal fluid often gave the Wassermann reaction in tabes; it must, however, be pointed out that Plaut did not see clinically the cases of tabes which he examined serologically, or only to a very limited extent, and that in the cases of Schütze several cases of tabes were complicated with paralysis; that in one case there was also a combination with chronic morphinism, and that in several other cases a combination with paralysis was not to be excluded.

Still, Rostoski, speaking from his own experiences, declares that in tabes, paralysis and cerebrospinal syphilis, a positive Wassermann reaction is still forthcoming in the spinal fluid in cases in which the blood reaction may be obscure, or even negative. This assertion remains completely unsupported; agreement already existed on the point that the fluid gave the Wassermann reaction much more seldom than the blood serum. Plaut declares in his new book that he found the Wassermann reaction in the spinal fluid seven times in eleven cases; stress must, however, be laid on the fact that Plaut did not examine these cases himself.

I claim for my present experiences that they are conclusive, for both our research-technic and experiences have essentially matured and widened. I also wish the fact to be taken into account that my results in regard to the other organic nervous diseases are in accordance with those of other authors, as I will demonstrate later on. I would here like most earnestly to point out the necessity for further research. I feel firmly convinced that he who employs methods absolutely free from objections will attain results identical with mine. It was known from the first that the complement deviation reaction occurred with considerably less frequency in the spinal fluid than in the blood serum, but that the occurrence of the reaction in the fluid is such a rare exception that its absence may be regarded as characteristic of tabes dorsalis, is an entirely new conception and is attended with considerable influence in medical practice.

We then made control experiments with watery extract, because we usually employed alcoholic extract. In some few instances it was found that the utilization of watery extract of syphilitic liver gave so faint a trace of a positive reaction in blood serum, whereas the *alcoholic* extract had given a negative Wassermann reaction, that it could not be registered as certainly positive. At all events this much is certain: that in tabes the Wassermann reaction occurs very seldom in the spinal fluid, and when it does occur is very weak, indeed. The case bears an entirely different aspect from that of dementia paralytica. Formerly I found the Wassermann reaction in the blood and in the spinal fluid in 90 per cent. of the cases. During the last six months I have found in twenty cases that the blood reacted positively in every single case, and the spinal fluid I found only once negative. These results are in absolute accordance with Plaut's experiences. It is desirable that further research should be made in regard to this discrepancy between the behavior of the spinal fluid in the case of paralysis, on the one hand, and in the case of tabes, on the other. That my findings will meet verification I feel convinced from the perfect constancy of my results.

It appears to be the future mission of the Wassermann reaction as applied to the spinal fluid to act as an important diagnostic factor in arriving at a differential diagnosis between paralysis and tabes, while the remaining three reactions are common to both diseases.

In the case, however, of hereditary paralysis—that is, of dementia paralytica on a hereditary syphilitic soil—the Wassermann reaction appears to fail at times. At all events, I failed to obtain it in three out of the four cases which I have encountered since I first began to examine for the Wassermann reaction. In Heidelberg I referred to the fact that Stertz and Plaut had confirmed this.

To the two cases of hereditary syphilis of the central nervous system which likewise only gave negative spinal fluid reaction after Wassermann, I can add a further case. This was that of a child with paralysis accompanied by hereditary syphilitic interstitial keratitis. The father had died of paralysis on a syphilitic soil.

It is true that the objection may be advanced that these cases are not cases of paralysis at all, but of congenital cerebral syphilis. This can be decided only by necropsy, and then only with careful microscopic examination.

Plaut says in his book that the absence of the Wassermann reaction in the blod almost absolutely excludes the diagnosis of paralysis, and its absence in the spinal fluid does the same. Speaking from my own experience, I can only reaffirm this statement.

A special case under my own observation proved to me the importance of the simultaneous appearance of all four reactions for the differential diagnosis of paralysis. The case is that of an actor, aged 66, who had suffered from syphilis thirty years previously.

He presented the typical clinical picture of senile feeble-mindedness and did not display a single somatic symptom of paralysis, but all four reactions were exquisitely positive. The necropsy demonstrated chronic leptomeningitis, granulation of the ependyma of the lateral ventricles; in other words, suspicious evidences of paralysis. Dr. Ranke, privat docent of Nissl's clinic of psychiatry in Heidelberg, was kind enough to examine the brain microscopically. The characteristic changes of paralysis were very marked and very diffuse. Dr.

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[3] I again went over the cases which were at the time registered by me as positive. These were nine cases. With the most searching and far from partial criticism, only one case remains of which it can be said that no grounds for the diagnosis of an incipient paralysis exist. A really classic complete case of paralysis was altogether wanting among the nine cases. In 4 instances the failure of the pupil-reflex was unilateral; 4 cases showed tendon-reflexes of the lower extremities—in 3 cases these were even exaggerated; one case was complicated with chronic anterior poliomyelitis; in 2 instances there was absence of tendon-reflexes in the lower extremities with a syphilitic history.

Ranke laid special stress on the fact that there were no signs of cerebral syphilis, but that it was a clear case of paralysis.

On the other hand, two cases showed me the value of the failure of the Wassermann reaction to appear in the blood and the spinal fluid as giving grounds for refusing to accept the diagnosis of paralysis. In the first case a man was brought into my ward, suffering from disordered intellect and slight delirium with signs of megalomania. The pupils were unequal and did not react to light, and the tendon reflexes were exaggerated; furthermore, he gave a history of syphilis and displayed specific scarring of the skin. Of the four reactions, only lymphocytosis and Phase I were positive, while blood and spinal fluid gave negative Wassermann reactions. An exact history was wanting. The patient lay about a week in this state. The autopsy demonstrated meningitis tuberculosa. In the second case the history of syphilis was doubtful. The patient presented a case of simple dementia with delusions of grandeur. His tendon reflexes were exaggerated, his pupils did not react to light and convergence tests, there was weak innervation of the right facialis and indistinct speech; in this case all four reactions were negative. Necropsy demonstrated a large tumor in the left frontal lobe.

One case which presented appearances strongly suspicious of incipient paralysis, yet giving no spinal fluid reaction after Wassermann, developed later on left interior ophthalmoplegia, which tipped the scale in favor of a diagnosis of cerebral syphilis. Plaut also reports a case which, from the clinical appearance, he took to be alcoholic dementia, yet it gave positive Wassermann reactions both in the blood and in the spinal fluid; the case then developed into an unmistakable paralysis.

In the same way the two reactions of two cases which were held to be cases of maniacal depression pointed to paralysis; and another one with syphilitic history and insufficient pupil reaction without Wassermann reaction in the blood and in the spinal fluid, pointed to simple mania in a syphilitic person.

In sixteen cases which presented suspicious symptoms of tabes and paralysis, the Wassermann reaction was positive ten times in the blood and three times in the spinal fluid. These cases I have placed together with over seventy other cases for further observation. The course of these cases will retrospectively furnish us with valuable experience as regards the diagnostic value of lymphocytosis and Phase I.

Among my collected data of tabes I have only seen three cases in which all four reactions were negative. All three cases presented the picture of tabes imperfecta, and the diagnosis was, moreover, open to doubt; so that these three cases were not calculated to disprove with certainty the statement that the absence of all four reactions practically never occurs in tabes dorsalis.

In imperfect cases of paralysis I never obtained negative results in all four reactions. What I twice observed in such cases was the absence of the Wassermann reaction in the spinal fluid.

I sum up, therefore, as follows: The Wassermann reaction in the blood and in the spinal fluid is as delicate a test for acquired paralysis as pleocytosis and Phase I; and equally characteristic of tabes is the absence of the complement deviation in the spinal fluid with positive pleocytosis, Phase I and Wassermann reaction in the blood serum.

I have also examined four children whose parents presented a past history of syphilis. These children merely exhibited the general constitutional signs of a high degree of nervousness without displaying any objective somatic abnormalities in the nervous system. In one case the mother suffered from an aortic aneurism; in another case the father had died of paralysis. In one case the mother had tabes imperfecta, and in the fourth case both parents had tabes imperfecta. Only in one case, the second of this series, the child's blood showed a positive Wassermann reaction. No tests were made with the other three reactions.

With the Wassermann reaction in tabes and paralysis I had the same experience as with the pleocytosis and Phase I: the reaction was the same in complete cases as in incipient cases, the same in rapidly progressing as in slowly progressing and stationary cases. In this connection, the reactions are useless for purposes of prognosis—herein I quite agree with Plaut.

Experiments for the purpose of comparing the intensity of the Wassermann reaction in the blood and in the spinal fluid have demonstrated that no constant relation exists on this point. I believe that further experiments will show the same negative result.

Plaut gives expression in his book to the hope that a want of harmony between the Wassermann reaction in the blood and in the spinal fluid may perhaps be utilized for diagnostic purposes. I myself can not share this hope, as my experience hitherto gives me no grounds for doing so.

For paralysis I have never seen a change of the positive Wassermann reaction in the blood and in the spinal fluid following on antisyphilitic treatment. A case which showed this reversal, which was first held by me to be paralysis, proved afterward to be that of a syphilitic suffering from alcoholic paralysis (Korsakow's psychosis with chronic polyneuritis).

Now I must touch on cerebrospinal syphilis. Among my ten cases observed since October, 1908, the spinal fluid reacted only once positively, and in this case the reaction changed to negative after an inunction treatment. The blood serum reacted negatively only twice. These two cases, however, were not quite homologous. I must not neglect to emphasize the fact that in two of the above-mentioned sixteen cases, autopsy in one case and trephining in the other, confirmed the diagnosis of gummatous cerebral syphilis.

I must emphasize still more strongly than I have done before, or than Stertz and Wassermann and Plaut[4] did in 1908, that the typical result of the four reactions in the different forms of cerebrospinal syphilis (meningitis, arteritis and gumma) is this: that along with pleocytosis and Phase I the Wassermann reaction is positive in the blood and negative in the spinal fluid. Hence it follows that the same result is shown in cerebrospinal syphilis as in tabes, which, owing to the negative result of the Wassermann reaction in the spinal fluid, differs from the result obtained in paralysis. The opinion to which I inclined formerly was that the negative result of the Wassermann reaction in the spinal fluid would, in many cases, guide us in the differential diagnosis between tabes and spinal or cerebrospinal syphilis. This hope, however, has not been confirmed by later experiences. In this I am in opposition to Plaut, who still upholds the differential diagnostic value of the spinal fluid reaction in tabes, on the one hand,

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[4] Plaut now states that the Wassermann reaction in the spinal fluid is as rare in syphilis of the nervous system as it is frequent in paralysis. He obtained positive Wassermann reactions 19 times in the blood of 20 cases, and 3 times in the spinal fluid. We must therefore conclude that in syphilis of the nervous system in rare cases the blood can react negatively and the spinal fluid positively.

and in cerebrospinal syphilis, on the other. Further researches must elucidate this point; but it must be insisted on that in the examination of the cases selected both the neurologists and the serologists are trustworthy.

I must briefly mention that all six examined cases of pseudotabes alcoholica without a history of syphilis gave a negative Wassermann reaction in the blood and spinal fluid. I am bound, therefore, to acknowledge that in Wassermann's reaction we have the same valuable additional factor for the differential diagnosis in the case of tabes as we have in pleocytosis and Phase I.

In the same way, in all nine cases of cerebral arteriosclerosis, whether associated with senility or presenility, the blood and spinal fluid reacted negatively.

I now come again to those three diseases which are of particular interest, not only because they offer special difficulties in the way of the differential diagnosis for cerebrospinal syphilis, but because they also differ *inter se.* These are: (1) multiple sclerosis, (2) idiopathic epilepsy, and (3) cerebral tumor.

As I had formerly with all these diseases obtained no results which afforded striking evidence in favor of the differential diagnostic value of the Wassermann method, I felt myself bound to institute further researches in this connection. These have been productive of essentially satisfactory results for us medical practitioners. In ten cases of multiple sclerosis I obtained only one positive Wassermann reaction, and this only in the blood. As both pleocytosis and Phase I were also present in this case, the four reactions together presented the typical phenomena of spinal or cerebrospinal syphilis. This case confirms a former observation of my own which also presented the Wassermann reaction in the blood, whereas my newer observation did not confirm my former one as regards the occurrence of the Wassermann reaction in the spinal fluid.

Plaut also found in one case of multiple sclerosis that the blood serum reacted positively. Sachs found cerebral syphilis in the postmortem examination of two cases, which he had diagnosed as multiple sclerosis in spite of the fact that he had obtained a Wassermann reaction.

At all events, we now can state that in a case of doubtful differential diagnosis the occurrence of the Wassermann reaction in the blood as well as in the spinal fluid should nearly exclude the diagnosis of multiple sclerosis.

According to my further experiences, the case for the practical value of the Wassermann reaction is still more favorable in connection with idiopathic epilepsy. I examined thirty-two cases of idiopathic epilepsy free from any discoverable syphilis for the Wassermann reaction. The reaction was not once positive in the spinal fluid of these thirty-two patients. In the blood serum I found it positive five times. In the formerly examined nine cases I found that the spinal fluid never once reacted positively, but the blood reacted positively five times. But the material now presented for examination is most instructive. I will, therefore, shortly describe the five cases presenting positive blood serum reactions.

In the first case the father had been syphilitic prior to marriage and his blood still gave the Wassermann reaction.

The second patient in course of time developed a pronounced ataxia of the lower extremities with hypotanys; this became associated with double olfactory failure. These cerebral symptoms gave way to a course of inunction treatment. It may, therefore, be taken as certain that the diagnosis of cerebrospinal syphilis was the correct one, the more so as pleocytosis and Phase I were also present.

In the third case severe epilepsy had likewise developed in a hitherto perfectly healthy young man of 17. Bromid did no good, but *traitement mixte* effected a cure, and it was later on discovered that the father had a history strongly suggestive of syphilis.

In the fourth case, in which out of the four reactions only the Wassermann reaction in the spinal fluid was negative, in spite of the fact that there were no somatic symptoms, the suspicion that it was a case of developing organic syphilogenous disease could not be rejected, owing to the presence of severe headaches and owing to the fact that epilepsy had not set in until the thirty-eighth year of life.

Only the fifth case afforded nothing noteworthy.

These experiments have led me to hold the opinion that in cases of idiopathic epilepsy which are free from syphilis, the complement reaction in the blood is absent, while where the reverse is true this fact indicates the syphilogenous nature of the epileptic attacks, or indicates that the epileptic attacks are precursory symptoms of a developing cerebrospinal syphilis. I am in agreement with the statement of Plaut in his book on this point.

As regards the non-occurrence of the Wassermann reaction in the blood in cerebral tumor without a syphilitic history, I maintained a skeptical attitude six months ago toward the statements of Stertz and others, which was justified by our own experience in eight cases; I have made further researches on these lines. I hold it to be correct to confine statements to such cases of cerebral tumor, in which the postmortem examination has confirmed the diagnosis. Since October, 1908, I have had eleven postmortem cases of cerebral tumor placed at my disposal. In all eleven cases the reaction had been negative in the spinal fluid and was positive only once in the blood serum, and this case is especially instructive, because we had during life taken hers for a case of cerebral syphilis, as she exhibited a periosteal node on the forehead which had shown rapid retrogression after inunction treatment.

The following three cases are also very instructive:

Case 1.—A woman of 40 had become blind twenty years before the time of observation as a result of gradual optic atrophy; the pupils did not contract to light, the tendon reflexes were absent and the history pointed suspiciously to syphilis. I felt firmly convinced that we were dealing with a case of stationary tabes; all four reactions were, however, negative. The autopsy revealed an anatomically benignant cerebral tumor in the hypophysis.

Case 2.—The case of a middle-aged man showing a history pointing to syphilis was diagnosed as a possible case of paralysis because the patient was in a state of chronic bewilderment, had indistinct speech and his pupils did not react to light and convergence; there was no swelling of the optic disc. All four reactions were negative. The autopsy showed a large infiltrating tumor in the left cerebral hemisphere.

Case 3.—A man of 30 suggested the diagnosis of tumor in the right lateral motor area of the cortex. There was no history of syphilis. In this case pleocytosis, Phase 1, and the Wassermann reaction in the blood-serum were positive. The trephining of the skull demonstrated, both macroscopically and microscopically, that the supposed tumor was a gumma.

The summary of my conclusions to-day is as follows: In the case of cerebral tumor without the complication of syphilis, the blood serum and spinal fluid react negatively as to the Wassermann reaction.

All the cases which I examined of neurasthenia without past history of syphilis were negative to all four reactions. My experiences during the last months only confirmed my former ones. Those cases showing a syphilitic history exhibited feeble pleocytosis; half of them gave positive Wassermann reaction in the blood, none of them in the spinal fluid, and none of them showed Phase I.

I should like to enumerate here several interesting and important single observations, as we have yet much to learn in this comparatively new field of research.

In cases of conjugal tabes I twice found that the blood reaction occurred positively in only one of the married couple, once in the man and once in the woman.

Twice I encountered a negative condition of pleocytosis and Phase I in a case of dementia paralytica, and a week later found both to be positive on examination. I twice experienced the same thing with the Wassermann reaction in the spinal fluid in cases of paralysis. Plaut mentions the same experience. From this we draw the conclusion that it will be expedient to repeat the puncture in cases in which the reaction is contrary to expectation—a proceeding which, however, would often be attended with difficulties.

In one case of very severe syphilis of the spinal cord, which gave the typical result—that is, pleocytosis and Phase I and blood reaction after the Wassermann—and which had cleared up perfectly from a clinical point of view, it was found, when the patient came, after a year's interval, to report herself, as perfectly healthy and normal that all four reactions were now negative. This case might be used to demonstrate an ideal case of cerebrospinal syphilis which had responded to treatment.

It would be well if, in the near future, research were done on a large scale with the object of deciding the relations existing between pleocytosis and Phase I and the Wassermann reaction in the spinal fluid. In the meantime we must accept as true that no reciprocal relations exist between them. It is true they occur simultaneously in dementia paralytica. Still, the cases of paralysis (which, it must be admitted, are very scanty) in which lymphocytosis and Phase I, or one of the two reactions, are missing, but above all the absence of the spinal fluid reaction in tabes and in cerebrospinal syphilis, prove that the occurrence of pleocytosis and Phase I does not necessitate the occurrence of the spinal fluid reaction, and *vice versa*.

It would be a further task to work out the family groups, the numbers of which will increase in the course of research directed to this point, in regard to the reactions. Plaut and I have made the beginning of this work.

Working with more copious material, it must be further decided whether the cases of syphilogenous nervous diseases on a hereditary syphilitic basis are different with regard to the four reactions from the cases of acquired syphilis. A series of observations conducted by Stertz, by Plaut and by myself allow this to appear possible. Above all, search must be made for the reason why the spinal fluid reacts so differently in tabes and in paralysis.

I believe that I have shown the practical use that neurology has so far made of these four reactions.

SUMMARY

I sum up once more as follows:

Paresis gives almost invariably all four positive reactions.

Tabes shows almost invariably pleocytosis, Phase I and Wassermann reaction only in the blood; the same is true of the different forms of cerebral and cerebrospinal syphilis.

In these enunciations is expressed the value of the four reactions as applied to the differential diagnoses between neurasthenia with and without a syphilitic history.

For the differential diagnosis between cerebrospinal syphilis and cerebral tumor without a syphilitic history, the Wassermann reaction is of extreme value—yes, even conclusive in that it is negative both in the blood and in the spinal fluid in the latter. Where the patient with cerebral tumor has a syphilitic history, the Wassermann reaction is valueless. Pleocytosis and Phase I play no decisive part in the differential diagnosis between cerebrospinal syphilis and cerebral tumor. The Wassermann reaction occurs in multiple sclerosis in the spinal fluid not at all and in the blood serum so very rarely that this fact does not come into consideration.

On the other hand, the appearance of pleocytosis and Phase I is not so rare in multiple sclerosis as to render this reaction of value in the differential diagnosis of syphilis.

The occurrence of the Wassermann reaction in the blood in presumable idiopathic epilepsy should give rise to grave doubts against the diagnosis and should render it extremely likely that the condition is a syphilogenous one (paralysis or cerebrospinal syphilis or epilepsy with syphilitic history). The same holds good for pleocytosis and Phase I.

In the case of pseudotabes alcoholica without a syphilitic history, the four reactions practically never occur. Their absence may, therefore, be safely regarded as conclusive in the case of tabes.

All remaining organic diseases of the brain and spinal cord I can consistently pass over, as none of these diseases enter into diagnostic conflict with the syphilogenous diseases of the nervous system.

At Heidelberg last October I stated that I could give only an abstract of my views, but that further research would either confirm or modify them.

Time has already proved me to be right in my conclusions; the greater part have been confirmed; many, including some very important points, have become modified.

I think, however, that I am to-day in a position to state that the essential points will not become obliterated and that we can now state what the four reactions are capable of doing and what they can not do.

Whoever has experience of the results obtainable from these four reactions will not now demand from them that they shall under all circumstances enlighten him on the following points:

Whether the dubious complex of symptoms presented by a patient with a syphilitic infection is derived from the presence of cerebrospinal syphilis or multple sclerosis, or whether, in the case of a patient with a syphilitic record, the dubious symptoms owe their presence to a specific cerebral syphilis or to a cerebral tumor. This is possible only when all four reactions are negative. In both instances, however, the ensemble of pleocytosis and Phase I and the positive Wassermann reaction in the blood would not solve the diagnostic problem.

As little would the experienced worker demand from the four reactions that they should inform him whether the case in question was tabes alone or a case of tabes in conjunction with spinal syphilis.

More is to be demanded from the differential diagnosis between paralysis and tabes, on the one hand, and neurasthenia (either with or without a past history of syphilis), idiopathic epilepsy or the pseudotabic form of chronic alcoholism (either with or without a syphilitic history), on the other hand.

If at present our conclusions on the subject of the behavior of the four reactions in the course of clinically diagnosticable organic diseases of the brain and spinal cord are established, further research must be directed toward the examination of the doubtful cases; that is, it must follow them up until their diagnosis is conclusive or until the autopsy reveals the truth.

CASE 4.—Syphilis eight years ago; severe headaches during last six months without any discoverable cause; neuropathic picture; no somatic abnormalities. All four reactions negative. The balance inclines in favor of the diagnosis of functional headache of syphilis.

CASE 5.—A spastic complex of symptoms not pointing to multiple sclerosis in the case of an elderly man, in all four extremities; no evidence of syphilis. All four reactions negative. Here one would expect no signs that the spastic complex of symptoms was the expression of syphilis in the brain and spinal cord.

CASE 6.—An otherwise healthy subject with no syphilitic history, suffering from severe headaches, which do not respond to any form of treatment. The somatic nerve condition is negative. Pleocytosis and Phase I show negative results; the Wassermann reaction negative in the spinal fluid but positive in the blood. The case directs suspicion to syphilis on account of the headaches.

CASE 7.—Patient had syphilis ten years ago; seeks advice on account of depression and insomnia. The only objective symptom is miosis, and the pupils do not react to light. Lymphocytosis and Phase I are markedly positive, the Wassermann reaction negative in the blood and in the spinal fluid. What will this prove to be? Can we here exclude paralysis and tabes? Paralysis with a great degree of probability, but not tabes.

CASE 8.—Dementia. The patient had syphilis ten years ago. Symptoms suggest paralysis of basal nerves. Of the four reactions only Phase 1 is positive. Improvement of dementia and of the paralysis after specific treatment. Is this a specific or non-specific basal process of the brain?

Up to now I have placed over seventy cases under control. I believe that the patient recording of just such cases will help us in the diagnostic application of the four reactions, until the necessary experience has been gained, even though this may extend over many years.

Plaut, with his extensive experience, emphasizes the same in his book, which is written in an objective and sound critical spirit. He also says that the diagnostic value can be really established only after many years of careful work; he is, therefore, like myself, entirely free from an overhasty optimism.

In medical practice it has been shown that all four reactions have their value, but only in the sense that no single one can be taken as conclusive by itself. Used, however, in combination, and then only when all factors which have any bearing on the subject are taken into consideration, they are of value in individual cases.

In their combined application the four reactions represent an exceedingly valuable implement which we can not wish nowadays to miss, the less so as their application enables us to arrive at a diagnosis in an earlier stage than heretofore of just those syphilogenous diseases of the nervous system that are so significant in medical practice.

[THE DISCUSSION ON THIS PAPER WILL APPEAR LATER WITH THE OTHER ARTICLES IN THE SYMPOSIUM.]

BENIGN TUMORS OF THE TURBINATED BODIES CLINICALLY AND PATHOLOGICALLY CONSIDERED *

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Excluding nasal polypi, which are really edematous hypertrophies, partaking of the character of soft fibromata, benign tumors of the turbinated bodies are very rare. In speaking of true papillomata of the nasal cavities Wright says that he doubts if more than twenty cases thus differentiated from papillary hypertrophies can be found in rhinologic literature. "I have seen less than half that number, though a much larger number of specimens, referred to me with that clinical diagnosis, subsequently proved to be fibrous hyperplasia rather than epithelial hyperplasia." He also says:[1] "While it occasionally occurs in and about the nasopharynx, fibroma springing from the nasal structures is exceedingly rare. In 32,997 patients examined, only 2 fibromata of the nose appeared." In five years M. Schmidt, in the examination of 16,244 patients, found 4 fibromata of the nose, all in males; 14 papillomata (8 men, 6 women); 11 cysts (5 men, 6 women); 2 lymphomata (1 man, 1 woman), and 2 angiomata (1 man, 1 woman). In seven years Auerbach saw 3 nasal adenomata, 2 of which sprang from the anterior end of the middle turbinated body; all 3 tumors completely filled the nostrils and had to be removed piecemeal. Heyman describes 6 such cases under the name *"gutartiges Epitheliom"* and emphasizes their rarity. In a special practice of eight years I have seen clinically 3 benign tumors of the turbinated bodies; I have examined pathologically 3 more benign growths referred to me by other rhinologists. Of the 6 patients 4 were females and 2 males; their ages ranged from 12 to 60 years. Because of the infrequency of such growths I shall refer to them briefly:

CASE 1.—A woman, aged 60, consulted Dr. H. Harlan for nasal obstruction and persistent headache. Examination of the nose revealed a large irregular growth attached the entire length of the middle turbinated body. Under cocain anesthesia, the mass was removed *in toto*.

Tumor.—The actual dimensions of the tumor after remaining in alcohol for some time were as follows: Length 4.5 cm., width 3 cm., thickness 1 cm. Dr. Harlan referred the growth to me for microscopic examination. When small pieces were removed for hardening, the knife gave the impression of a fibroma. Sections stained with hematoxylin and eosin and examined with low power showed essentially an outer epithelial covering and an inner structure of fibrous tissue surrounding islands of glands. With the high power the epithelial covering was seen to consist of columnar ciliated cells; the fibrous tissue was thick and ran in different directions and at some points invested the glands so closely as to give the impression of a carcinoma. So numerous were the glands that it was difficult to decide whether they or the fibrous tissue predominated. The microscopic diagnosis was fibroadenoma of the middle turbinated body.

CASE 2.—A woman aged 50, had difficulty in breathing through the nose and severe asthmatic attacks. In the nasopharynx was a large, round, grayish tumor imparting a doughy sensation to the probe. The color and general appearance reminded one of a fibroma, but the age of the patient was against such diagnosis. The point of attachment could not be seen. In introducing the index finger into the nasopharynx to work the snare around the mass, there was a sudden rupture of the tumor with the escape of a dark, grumous fluid. The walls of the cyst were then removed as well as possible with cutting forceps. A few days later the attachment of the cyst was found to be the posterior end of the right, inferior turbinated body.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] American Text-Book of Diseases of the Eye, Ear and Throat.

Tumor.—The pieces removed were hardened in alcohol. Sections were stained in hematoxylin and eosin; they were made up of connective tissue covered internally and externally with cylindrical epithelium.

CASE 3.—A girl, aged 12, was referred to me by Dr. Hiram Woods for nasal obstruction. Examination of the nasopharynx showed a tumor which seemed to fill the left posterior naris. In the nostril the growth sprang from the posterior, internal surface of the inferior turbinated body. After removal the specimen was misplaced and was not examined microscopically. It was probably a fibromyxoma. The attachment of the growth to the inferior turbinated body would seem to contradict Killian's claim that all such tumors have their origin in the antrum and grow out into the nostril.

CASE 4.—A club shaped tumor, attached by a small pedicle to the posterior end of the right, inferior turbinated body, was removed by Dr. J. F. Crouch and referred to me for microscopic examination. Sections were made by Dr. L. J. Goldbach. The outer covering was columnar epithelium; internally the tumor was made up of fibrous tissue and blood vessels of various sizes. The tumor was a pure fibroma.

CASE 5.—A tumor as large as a sparrow's egg, attached to the inferior turbinated body by a small pedicle, was removed by Dr. J. R. Winslow. Microscopically, the outer covering was columnar epithelium; the growth proper was made up of connective tissue, glands and venous sinuses of various shapes and sizes filled with blood. No bone was present. From the formation of the tumor it could only be classed as a supernumerary turbinated body.

CASE 6.—A girl, aged 17, had long been unable to breathe through the nose. Examination of the nasopharynx revealed adenoids and a long tumor springing from the posterior end of the left inferior turbinated body and extending to the border of the soft palate. The growth externally was covered with columnar epithelium while internally fibers running in different directions were seen. The diagnosis was fibroma.

Papillomata of the nasal structures are usually small and cause few or no symptoms. That at times they may simulate the stubbornness of such growths in the larynx is proved by three cases reported by Wright:

Case 1 was seen by Verneuil in 1886. A woman of 42 had papillomatous masses projecting from the nostril; the nasal arch was widened into the frog face. The growths were repeatedly cleaned out by intranasal procedures and as promptly recurred. An external incision opened up the nasal cavity; the mucous membrane was thoroughly curetted and much of the turbinated tissue removed. There were multiple recurrences and operations.

In Case 2 a woman of 45, five months after an injury, had growths projecting from the nostril. On examination sessile, papillary growths covered the upper and anterior surface of the right nasal chamber extending over the middle turbinated body. The tumors were removed with the curette many times. Histologically, the tissue did not differ from a typical papilloma except in the profusion of epithelial proliferation.

Case 3 was similar to Case 2.

Blood tumors of the turbinated bodies may become dangerous from frequent and severe hemorrhages. Juracz saw such a growth about the middle of the inferior turbinate which caused frequent hemorrhages. Shaffer operated on seven cases of *"teleangiektatischen Tumoren der Nasenschleimhaut,"* all of which sprang from the anterior end of the inferior turbinate and gave rise to severe hemorrhages. Hamm saw a patient, 17 years old, with a tumor the size of a cherry on the anterior end of the inferior turbinate which bled freely; histologically it was a lymphangioma. Baurowicz saw a similar growth in a patient 19 years old. A. Schmidt records a bluish-red tumor about the tize of a pea on the anterior end of the right inferior turbinate which proved to be a cavernous angioma.

When we consider the etiology of nasal tumors we have to admit that we are no farther advanced than when Cohnheim gave his theory to the world. Chronic inflammation has been blamed as an etiologic factor; we see this condition in the nose more frequently than in other parts of the body, but all varieties of tumors are comparatively rare. The nose is exposed to all manner of injuries so that trauma can scarcely be given a place in the etiology. A few years ago Williams advanced a modification of Cohnheim's theory which is original and plausible. He believes that certain cells are stored up in the body as reserve cells and are controlled by a definite force which is always active, provided the body is in good physical condition. If, however, the organ suffers from malnutrition from any cause the cells are no longer under control but grow, not reproducing their kind but forming neoplasms. He holds that all tumors are cellular in character, not inflammatory.

If the symptoms of benign growths in the nose are analyzed carefully it will be found that not infrequently they simulate certain phenomena seen in malignancy. Thus there may be complete obstruction, pain from pressure, hemorrhage and occasionally frog-face deformity in both classes of tumors. In some cases it is not possible to make the diagnosis from the clinical symptoms. A few months ago a patient was referred to me with a large growth in the left nostril. Another rhinologist had made the diagnosis of fibroma from the clinical symptoms; microscopic examination showed that the tumor was a small round-celled sarcoma. In this case the only clinical symptoms were nasal obstruction and the presence of a growth, both of which were found in Case 1 of my series.

In the diagnosis of nasal tumors the microscope is of such importance that I believe it can not be too strongly emphasized that all tissue removed from the nose should be examined microscopically. By so doing we will not only increase the statistics of benign tumors, but will occasionally be surprised to find that a growth clinically benign and harmless is really malignant. Wright, Douglass, Rosenheim, Winslow and others have added their testimony as to the value of the microscope. Rosenheim aptly says: "The use of the microscope as a means of diagnosis has been much neglected by those especially interested in the diseases of the nose and throat. Jonathan Wright has recently called attention to its value as a routine measure."

In conclusion, I wish to call attention briefly to the possibility of the transformation of benign into malignant growths. There is much to be said on both sides of the question. M. Schmidt believed that the change was possible but very infrequent. Cobb and Semon claim that no case has been reported which proves the transformation. Watson collected 150 cases of sarcomata of the nasal passages, among which there was a previous history of polypi in 24. On the other hand, sarcomata have been found on the septum, where polypi almost never occur. In the cases of transformation reported there is always a lack of data concerning the growth from its inception or all parts of the tumor were not carefully examined; hence it is impossible to say that the tumor was not malignant from the beginning. Though we can not deny that transformation may occur, we can still apply to it the Scotch verdict "not proven."

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ABSTRACT OF DISCUSSION

Dr. Sylvan Rosenheim, Baltimore: I agree with Dr. Johnston regarding the importance of a microscopic examination of nasal growths as well as of those occurring elsewhere in the body. It is impossible to say anything definite about the character of the growth in the nose from macroscopic examination or from the history early in the case. Recently I was asked to examine a small growth supposedly benign, which had been removed from the septum of the nose by Dr. Samuel Johnston of Baltimore and found it to be a small round-celled sarcoma. It is only in this way that we can learn anything about the etiology and early diagnosis in this class of cases and prevent recurrence of the growth by complete operation. It furnishes often the only hope of cure.

Dr. George Keiper, LaFayette, Ind.: We should examine every growth that we remove from the nose microscopically, and that has been my custom for some years. By so doing we will change some of our ideas of pathology, which at present is somewhat misleading. I have found for instance, a great many more cases of angioma of the turbinate than we are supposed to have. The same is true with reference to keratosis and hyperkeratosis. We are sometimes able to make a diagnosis in this way when it is impossible by the clinical or macroscopic appearance. In making the examination we should have a piece of the normal tissue adjacent to the growth in order to compare the two; otherwise we will sometimes make great errors.

Dr. J. E. Logan, Kansas City: I agree with Dr. Johnston in his statements regarding the use of the microscope as a diagnostic agent in determining the kind of growths presented for operation. We often find apparently benign growths to be really malignant. This fact has come to my notice more than once. We should take from these growths a large piece for examination being sure to reach beyond the cortex. I had one case in which a growth was diagnosticated a spindle-cell sarcoma by one pathologist and a fibroma by another, after a very small piece had been removed for examination.

Dr. Otto Glogau, New York: It is important to make a proper examination of the growths removed from the nose. I remember one dispensary case of turbinal hypertrophy in which the malignancy of the growth was not suspected, but in which microscopic examination showed that it was a sarcoma of the inferior turbinate. The patient, who had only complained of nasal obstruction and occasional nose bleeding, did not return and we felt very sorry because we had left perhaps part of the growth by removing only the hypertrophied part of the turbinate.

Dr. Roy P. Scholz, St. Louis: I believe that tumors of the turbinates occur much more frequently than is ordinarily thought. This I attribute to the fact that tissue removed from the turbinates seldom receives the proper examination. Recently I was called to attend a case of severe hemorrhage, following a nasal operation. The operator asserted that he had removed a piece of hypertrophied tissue from the posterior end of the inferior turbinate. It was with difficulty that the hemorrhage was checked, and this only by means of a tampon. Something struck me as being peculiar about the case. Hunting up the tissue removed I had it examined and found it to be a lymphangioma. With removal of the tampon there was again bleeding. I then thoroughly removed the remainder of the growth and had only slight hemorrhage. I recall another case in which a tumor springing from one of the turbinates gave a misleading picture. A large tumor mass completely filled the nasopharynx and obstructed the choana, protruding further anterior in the left, then in the right nasal cavity. Even after thorough shrinkage of the parts I was unable to pass a probe between the mass and posterior endge of the septum, so firmly was the tumor pressed in place. On removal (piece-meal with a snare) there was no question as to origin of the tumor, the growth having sprung from the inferior turbinate on the left side, growing over the soft palate into the nasal cavity on the other side. Microscopic examination showed the tumor to be fibroma. In the past year I have had two other cases of small tumors of the turbinates, one a small cavernous angioma; the other specimen was lost in preparation.

Dr. J. J. Holinger, Chicago: There is no question that careful microscopic examinations are sometimes of great value, but on the other hand I think our clinical diagnosis is at least important. A woman had her nose completely obstructed by a tumor mass which at the least touch bled, and I at once had the impression that it was sarcoma. I removed a piece large enough for an examination. The answer from the laboratory was inflammatory swelling. I didn't blieve it. I took out another piece, away up in the region of the middle turbinate, and again I got the answer from the laboratory, inflammatory hypertrophy, this time from a different pathologist. I entered the antrum of Highmore and opened up toward the eye and found then there was no question as to the nature of the growth as the tumor went through the bone and invaded every different class of tissue. A fresh section was made, a frozen specimen, and then a diagnosis of sarcoma was made. In another case I had removed several pieces from the anterior end of the middle turbinate and always got the answer, non-malignant. The frontal sinus had to be opened, but there was no tumor. A year afterward the man died of carcinoma of the frontal sinus which had invaded the meninges and the orbit. There was certainly no tumor at the first operation but only inflammatory changes which would not have been expected to lead to the development of a malignant tumor.

Dr. Emil Mayer, New York: That it is necessary for us always to confer with the pathologist I think no man who has had any experience at all will for a moment gain-say. I agree with Dr. Holinger, however, that it is very important to make one's own clinical diagnosis before conferring with a pathologist. It is but right that we should express our own opinion. Pathologists are just as human as others and one may get from them a second time statements that are at variance with their first ones. I recall a case that was referred to me for examination as to whether an operation should be performed or not. The patient had an intranasal growth. I learned that Dr. Welch had made a diagnosis of rhabdomyoma which was confirmed by another pathologist, while a third pathologist denied that diagnosis and made an entirely different one. It was proved, however, that the first two pathologists were right. A most interesting case of rhinoscleroma appeared in the wards of Mt. Sinai Hospital some time ago. I found thickening below both vocal cords, general induration, and an exudate in the anterior nares which when wiped away, showed some small growths lodged apparently in the upper portion of the inferior turbinate. It seemed to me to be a case of rhinoscleroma and I so stated. I sent a specimen to the pathologist and he reported that he found nothing. I sent a second specimen and he reported rhinoscleroma. What had happened was that at the first time I had not gone deep enough. In the diagnosis of these cases we need the pathologist and he needs our opinion.

Dr. S. G. Minor, Detroit: I think we must all recognize the difficulty that confronts the pathologist in making a diagnosis in these cases, especially as between round celled sarcoma and simple inflammatory tissue. I saw a case about six weeks ago which presented clinically (and in that respect I want to corroborate Dr. Holinger's words about the importance of the clinical appearance) the appearance of sarcoma of the left inferior turbinate and yet the microscopic examination after removing pretty nearly all of the inferior turbinate was that it was a benign growth; yet it recurred in a very short time and then with the clinical history of the case the pathologist switched around and said sarcoma. That was very satisfactory to me but was not so to the relatives, for I had said to them that it was a benign growth. The growth was again removed and the patient put on Coley's mixture and there has been no return. We should not give too much importance to the microscopic findings and disregard the clinical appearance. The pathologist can not always distinguish accurately between inflammatory tissue and round-celled sarcoma.

Dr. T. W. Corwin, Newark: Last winter I saw one case reported as fibroadenoma; a tumor about the size of a hickory nut, occupying the anterior end of the inferior meatus, on the anterior end of the inferior turbinate, which had been largely eroded. When the tumor was removed there was a large cavity at this point but healing was free of any symptoms. Another case I saw was one of a large firm mass occupying the nares of the right side near the vestibule, from the anterior end of the middle turbinate. It appeared as a reddish mass and was diagnosed by the pathologist as fibroma. A large part was removed through the anterior nares. Hemorrhage was very free and the remainder of the operation was postponed. I also encountered a case of what appeared clinically to be an angioma of the inferior turbinate on the left side. The case coming to me first presented a deflection of the septum which was corrected. It was first reported as simple connective tissue. I have since had it reported on as a hemiangiosarcoma. I have also encountered a large mass bleeding exceedingly on the slightest touch, projecting into the nasopharynx, which was supposed to be a sarcoma. In this case I tied the external carotid artery and removed the growth in November, 1908. There was pretty severe hemorrhage. The tumor was an endothelioma of the septum. I have had another case under observation of papillomata, but it has not yet been subjected to microscopic examination.

Dr. W. E. Sauer, St. Louis: I desire to report a case of nasal polypi which I removed; the removal was followed by a very free hemorrhage. I suspected a malignant condition and sent a specimen to the pathologist who reported simple polypi. I sent a section to another pathologist and after diligent search he found cell nests, the tumor proved to be a very malignant carcinoma. The result does not always depend on the amount of tissue that has been furnished, but on how carefully the pathologist does his work.

Dr. Lee Cohen, Baltimore: Some years ago I was interested in a remark made by Dr. Bloodgood in speaking of differentiation of nasal tumors. He spoke of the great difficulties and absolute impossibility of differentiation in many cases. A few months later I had this unpleasantly brought home to me in a case of a man of 50 who came to me with the left nostril completely occluded with a large mass, the site of which I could not determine. It had the clinical appearance of malignant growth. I had a piece examined by the pathologist, and the report sent back that it was round-cell sarcoma. It was subsequently examined by a second pathologist who confirmed the diagnosis of the first. The patient having a son living in a western city, went there on a visit, and while there consulted a specialist in that city, and the growth was considered by that specialist also as a malignant growth. The patient said that if he had to be operated on he would come back to Baltimore. The growth was removed and the base scraped and cauterized with trichloracetic acid. After several days further examination proved the presence of antrum suppuration on that side. The antrum was thoroughly opened and there has been no trouble since and that was five years ago. The pessimistic prognosis, however, that I gave was a great source of annoyance for some time.

Dr. B. Alexander Randall, Philadelphia: I have no personal contribution to make to this subject, nor is the point I wish to bring forward strictly germane to that of non-malignant growths; but I have been interested in the observations of Goodale of Boston, which I think are not sufficiently well-known. The question of Coley's serum has been brought up in the discussion and I would say that while that may have great value in cases of spindle-celled sarcoma we should recognize the point brought out by Goodale that in the round-celled variety he has had some brilliantly good results with staphylococcus inoculation. I think it is a subject of very great importance to us and that it should be better known.

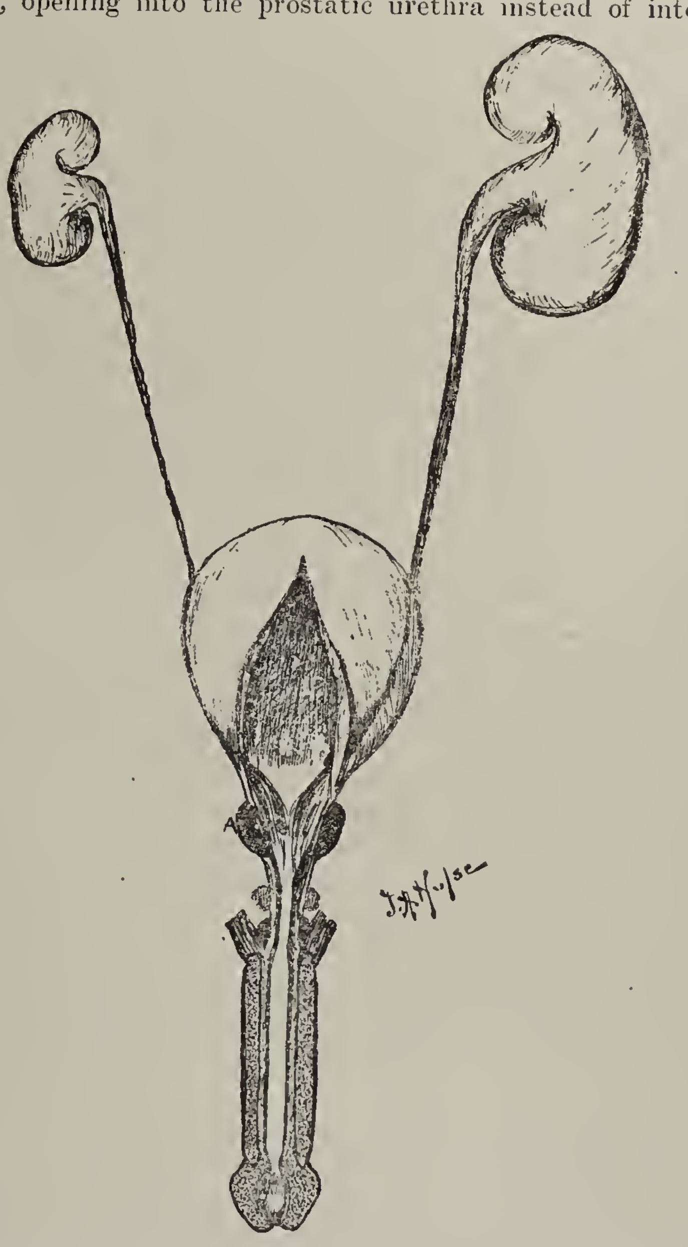
Dr. R. H. Johnston, Baltimore: At the Presbyterian Hospital in Baltimore we examine carefully all tissues removed from the nose and have found that our statistics of these growths are gradually increasing. The reason I presented the matter was to get the opinion of other men as to the frequency of benign growths and the probability of transformation into malignant growths. Of course, I do not mean that the pathologist should make the diagnosis, but he must help us. We must remove the tissue very deeply and should give the pathologist the history of the case as to the development, whether slow or rapid, and help him in any way we can. I have had some experience in pathologic work and know that it is sometimes very difficult to differentiate between sarcoma and inflammatory tissues, but with a careful study of many sections it is possible to make a positive diagnosis. Dr. Mayer is certainly right—we should give the pathologist every chance; if necessary remove several pieces from time to time and allow him to make a thorough examination before giving an opinion.

Clinical Notes

ANOMALY OF THE GENITOURINARY TRACT

JUDSON A. HULSE, M.D.
AKRON, OHIO

The patient, Mr. J. S., aged 61, died of carcinoma of the intestines. Among the postmortem findings was the following anatomic anomaly of the genitourinary tract: The right kidney was small and undeveloped, the ureter non-patulous and truant, opening into the prostatic urethra instead of into the base of the bladder. The left kidney was somewhat larger than normal and evidently did the work of two in a satisfactory manner throughout life.



Genitourinary anomaly. Diagrammatic representation of the comparative size of the kidneys and the position of the ureteral openings. A, opening of right ureter into prostatic urethra.

Had the right kidney been functionating and had this patient undergone a prostatectomy, the surgeon would have been confronted by a perplexing and perhaps serious condition.

The accompanying illustration represents, in a diagrammatic way, the comparative size of the kidneys and the relative position of the ureteral openings.

A REMEDY FOR PAROXYSMAL TACHYCARDIA

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What is meant by the term paroxysmal tachycardia is probably pretty well understood by the profession. It is not the purpose of this article to go into the study of the subject, but only to give the remedy. The name essential paroxysmal tachycardia has been given by recent authors to make the meaning more definite. By this term is meant a sudden jump of the heart beat from the normal to two or three times the normal rate. This rapid rate is maintained for a period of from a few minutes to many hours, and usually without any known cause, and is attended with a feeling of languor, lassitude, weakness and exhaustion. Up to the present no remedy has been discovered for this malady. In Nothnagel's Encyclopedia of Practical Medicine, in the volume on diseases of the heart, the author states: "Since we do not know what constitutes the disposition of these attacks we have no means of combating them."

Now I have been a sufferer from this malady since my earliest recollections. In my earlier life the paroxysms averaged about one a month, but, for the past twenty years, about once a week. Their duration has varied from a few minutes to twenty-four hours, the heart-beat rising from 72 to from 140 to 200 a minute, attended by a diminished blood pressure, and such a feeling of languor and exhaustion as to render mental or physical activity extremely difficult. I have sought relief from every available source. The long list of heart remedies has been tried in vain. The most reliable authors have been read and the most eminent of our profession consulted, but no relief found.

The advice most generally given, and that which was most in accord with the natural feelings during such attacks, was to seek rest—rest of body and mind—as complete as possible, not only to favor a cessation of the paroxysm, but to avoid the danger of cardiac paralysis, which might result from exercise. This advice I had followed, so far as practicable, all my life (and I am now 64 years of age), until I found, by accident, that it was a mistake. On July 14, 1908, during one of these paroxysms, while going in some haste to make a professional call, I discovered that, unless I ran, I would fail to catch a street car. Notwithstanding the feeling of weakness, and also of danger, I made the run of about one city block and jumped on the car. To my great surprise and delight I felt the sudden pang (which is sometimes experienced) indicating the end of the paroxysm. Now, as the attack had been continuing for two or three hours previously, I was not sure but that it might have stopped had I not taken this active exercise, but the inference was so strong as to cause the determination to try the effect of running in the next attack that might occur. In due time the paroxysm returned and I immediately started out on the street in a very rapid walk—almost a run—and when I made the circuit of one block the heart beat dropped down to the normal. I repeated this "treatment" in recurring attacks, and always with uniform success, although, on some occasions, I was compelled to make the second circuit around the block. But I learned an improvement on this mode of exercise. Instead of walking or running on the street, which was sometimes an awkward performance, I remained in my office or study and obtained the exercise by springing upward from the floor, like a girl skipping the rope. This I found more effective than running. On the occurrence of a paroxysm by actively performing this exercise the average time of its continuance is one minute. Usually, after from 60 to 100 of these upward springs from the floor, there is a cessation of the paroxysm. In a few instances the exercise has been required to be repeated, at intervals, for five minutes. It is simply the producing of a sufficient volume of blood in the heart to overcome the nerve-tangle which is the cause of the trouble. Now, as I have followed this practice, with invariable success, for almost an entire year, and covering about fifty attacks, I feel safe in giving it to the profession as a remedy.

Therapeutics

TUBERCULIN REACTIONS IN DIAGNOSIS OF TUBERCULOSIS

Although the continued discussion of this subject is almost wearisome, as the treatment and prevention of this disease is brought constantly before the general public and the profession, still it is, now, not only a matter of importance, but a matter of necessity, that the disease should be early diagnosed. Any method that will make the diagnosis possible in its incipiency will be the cause not only of the occasional successful treatment of this disease, but of its generally successful treatment. In other words, an early diagnosis, followed by the proper treatment, generally means that the disease will be stayed.

As a positive reaction to scientific tests for tuberculosis occurs in such a large number of patients who are considered healthy, and as signs of tuberculosis are found so frequently in autopsies on patients who have died of some other disease, a patient who is not well and does not present definite signs of other lesions should always be suspected of having tuberculosis.

The oldest and surest test for tuberculosis is made by tuberculin subcutaneous injections. This is the most certain test, and will almost always give a reaction in tuberculous patients, and may give it in a few other conditions. The disadvantage of this test and consequent reaction is that it should not be used when the symptoms are acute, and that it always increases the irritation and inflammation of the parts where the disease is located. In other words, a latent or quiescent tuberculous focus may be made active by an injudicious tuberculin injection or by a dose of tuberculin that is too large. It may be necessary, however, in suspected and hidden tuberculosis and when there is no definite localization to seek a definite indication of where the trouble is located. Any treatment that would cause such a local reaction would seem contraindicated when there is acute fever, pulmonary hemorrhage, severe pain, and other local signs of an active tuberculous process.

The advantage of giving tuberculin subcutaneously in minute doses as a treatment of the disease will not now be discussed.

If it is advisable, for diagnostic purposes, to use the tuberculin injection, Koch's old tuberculin is used, and the initial dose should not be more than 0.0005 c.c. in physiologic saline solution. If no reaction occurs after two or three days, the injection may be repeated and the dose increased, and if the reaction is negative it may be even run up as high as 0.005 c.c. The part where the injection is to be made should be thoroughly cleansed with soap and water and then with alcohol or ether. Injection is often made in the interscapular region, but perhaps as well in the lower axillary region or in the upper abdominal region. The injection should be given at night. If there is reaction the patient will show the next morning, or during that day, generally from 1.5 to 3 degrees of temperature, with some headache, backache, and general feeling of disability, and the region of injection will show swelling and redness. The region where the tuberculosis is located will also show signs of increased inflammation. The patient should be kept at rest for from one to three days after such an injection.

The next most positive test for tuberculosis is that known as the Calmette test, and Koch's old tuberculin seems to be the best tuberculin for this purpose. This test is made by putting a drop of a 0.5 per cent. solution of the old tuberculin into the conjunctival sac of the lower lid of a normal, healthy eye. If tuberculosis is present, there should be signs of conjunctivitis in from six to twenty-four hours. The percentage of successful reactions in tuberculous patients is so large that a negative reaction is almost presumptive that tuberculosis is not present. A positive reaction can probably occur occasionally in non-tuberculous patients. Rarely a severe inflammation of an eye has been caused by this instillation, but it is probably because the eye became otherwise infected.

In May, 1907 (*Berl. klin. Wchnschr.*), C. F. von Pirquet described his skin test for tuberculosis. Koch's old tuberculin seems also to be the best for this test. Any part of the body may be used, but the arm and often the forearm is perhaps the most frequently selected. The part to be vaccinated is cleaned as for the subcutaneous test, then a drop of the undiluted old tuberculin is placed on the part selected, and four or five inches down the arm is placed another drop. Midway between the two drops a small spot is scarified with an instrument that has never been contaminated with tuberculin. The scarification should be just through the epidermis to the point of causing an oozing of serum. Now the skin under the tuberculin drop should be gently scarified until the tuberculin is really scarified into the skin. The aim of the scarification should be not to draw blood. The parts are then left to dry in the air. They may then be left uncovered, or a linen handkerchief may be gently fastened over the part to prevent chafing.

A typical reaction is shown by a raised papule surrounded by an inflammatory area which appears in from twenty-four to forty-eight hours. This papule is surrounded by a reddened areola of from one-eighth to one-fourth of an inch. The control scarification should not show such a reaction. The susceptibility to this skin reaction seems to be decreased in tuberculous patients from childhood to the adult age, although the reaction is generally positive in all tuberculous patients. It may be positive in patients who are suffering from some other disease. A negative reaction to this skin test is of great value in excluding tuberculosis. If the reaction is positive, the ocular, or Calmette, test should be tried. If both the skin and the conjunctival tests are positive in patients, tuberculosis can be declared almost positively to be present. A recent article by von Pirquet on the cutaneous tuberculin reaction will be found in the *Journal of Pharmacology and Experimental Therapeutics*, June, 1909.

Early in 1908, Moro described a tuberculin skin test without scarifying. This test consists of rubbing into a small area of the skin a little (about 0.3 gm. or 5 grains) of an ointment composed of six parts of the old tuberculin in five parts of lanolin. The test is also as well made by gently rubbing into the skin a drop of the old tuberculin undiluted. It is well to protect the finger while rubbing with a rubber cot. A portion of the skin of the abdomen is generally selected, and is cleansed in the usual manner. The part treated is covered with gauze to prevent friction from the clothing, and a positive reaction should appear within from twelve to twenty-four hours, and consists of a general redness and the appearance of a number of small papules. This test seems to be almost if not quite as satisfactory as the von Pirquet vaccination test.

The advantage of these skin tests, i. e., the von Pirquet and the Moro, is that general systemic reaction is not caused by them, fever does not seem to be increased, and nausea, vomiting, and muscle pains do not occur. These cutaneous tests seem more diagnostic in young children than when used in adults. Both a latent and an active tuberculosis seem to react similarly to the cutaneous test.

The cause of the reaction to tuberculin applications and injections seems to be a hypersensitizing of the patient by the tubercular infection to which the name of "anaphylaxis" has been given. This ability to react is prognostically of good omen, and a tuberculous patient who can not react has lost his ability to fight the disease.

Tuberculin reactions may occur in acute infections such as typhoid fever, diphtheria, scarlet fever, rheumatism, and septic processes, and may occur in some chronic conditions as diabetes and syphilis. On the other hand, some eruptive diseases of childhood, as measles, have seemed to inhibit the reaction from the tuberculin cutaneous tests.

All the tests may show a latent or quiescent tuberculosis or a condition that needs no active treatment. Negative reactions seem to point to the entire absence of tuberculous lesions or infection. Positive reactions, especially if confirmed by more than one test (for instance, the skin and ocular tests), combined with suspicious localizations, seem to point positively to tuberculous processes, and if the symptoms are acute the disease is active, and if the lungs are affected, even if the sputum is absolutely negative, and even if the cough is not present, proper rest and fresh-air treatment should be instituted. The conjunctival test seems to be the one that is the least likely to show a latent or quiescent tuberculosis, but ordinarily the skin test should be first selected.

To sum up, the first test should be either the Moro or the von Pirquet. If these are negative, the patient may be considered to have no tuberculosis. If the skin test is positive he may have an active or a latent tuberculosis. The conjunctival test should then be tried. If this is negative his tuberculosis is doubtless latent and the reaction has probably occurred from some healed lesion. If it is positive, the patient may be considered to have an active tuberculous process, and should be treated accordingly.

The greater the intensity of the reaction and the sooner it makes its appearance probably shows the more acute nature of the tuberculous process, and also indicates that the fighting powers of the individual are actively at work.

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[*For other information see second page following reading matter*]

SATURDAY, JULY 24, 1909

THE HYPOPHYSIS CEREBRI

Our knowledge of the physiology of the hypophysis and of the symptomology of its diseases is largely a matter of recent years. It is satisfactory to know that so large a portion of it is due to work that has been, and is being, done in this country, as is shown by the Oration on Surgery by Dr. Cushing in this issue. As he says, our first insight into a possible functional activity of the gland is due to the modern comparative anatomists and embryologists and it seems a little surprising now, in the light of recent discoveries and considering the large number of castrated animals that must have been used in their investigations, that some suggestions of the function were so late in occurring to the observers. However this may be, within the last decade or two the progress has been eminently satisfactory, considering the difficulties in the way. The successful surgery of the hypophysis is one of the marvels of modern medicine, imperfect as the results have been as yet, and while, as Cushing admits, we are still very far from a satisfactory organotherapy of the hypophysis, the prospect seems hopeful that we may in the near future find something in this line also that may be of medical value. We can not reasonably prophesy any such brilliant results as have been obtained with the thyroid, but one or two observers have reported success with hypophyseal extract in the treatment of disorders of its normal function or those of closely related glands, like the ovaries, probably secondary to disease of the hypophysis. The surgery of the pituitary gland will necessarily be always attended with considerable risk and be justifiable only as a life-saving operation and for the preservation of the most important functions.

Notwithstanding the fact that Cushing finds that the entire removal of the gland is always fatal in dogs, it does not appear to be necessarily so in man, as Hochenegg's case proves. The real difficulty is in the inaccessibility of the gland, the danger of infection if the transsphenoid route is used, and the extreme handling of the brain which the intracranial approach requires; and these conditions exist, no matter how much or how little of the gland is to be removed. It may be that in the near future the technic will be so improved that these difficulties will be largely overcome, a much to be hoped for result.

Cushing's suggestion, that symptoms of hypophyseal origin probably occur in association with many other diseases in which they are overlooked, seems exceedingly probable in view of the fact that he himself reports finding frequent histologic alterations in glands taken at random from autopsy material. If our attention were more definitely centered, he says, on the activities of this gland, the symptoms attending such alterations would be more frequently observed. The known functional interrelations of the ductless glands would lead us to infer a possible and indeed a probable relation in the pathologic conditions. The disorder of one gland may well affect the function of another, and from this the hypophysis—unless we consider it a higher organ affecting others and not being affected itself—would not escape. There is a wide field for observation here which has not, to say the least, been so far over-cultivated. It is possible, though Cushing does not specially suggest it, that a number of abnormal conditions of delayed or morbid adolescence may have their origin in some perversion or alteration of the function of the anterior lobe of the hypophysis.

Since this organ is present in all vertebrates except the very lowest fishes or chordates, comparative anatomy, which, as said before, gave us the first insight into the possible function of this organ, may yet, when a more comprehensive knowledge is obtained, throw still new light on the subject. Even paleontology may yield some suggestive facts to supplement the data afforded by comparative anatomy and physiology. It is, however, from the experimental methods combined with clinical observations and experience that our main acquisitions on this important subject, so well discussed by Cushing, will have to be obtained.

TRICHINA EMBRYOS IN THE CIRCULATING BLOOD

A controversy has long existed as to the manner in which trichina embryos are distributed after leaving the intestine, some writers contending that they migrate chiefly through the lymph spaces; others that they are distributed by the blood stream. In an experimental study in 1894, Graham observed the embryos in the arteries of rats and in hemorrhagic lesions in the lungs, and Stäubli,[1] in 1905, by a special method succeeded in finding them in the heart's blood of infected guinea-pigs and more recently in the blood from the ear of these animals. His method consisted in laking the blood with 3 per cent. acetic acid, centrifugating and examining the sediment. At that time he predicted the use of this method for finding trichina in the blood in human cases for diagnostic purposes, but reported no cases.

Recently Herrick and Janeway,[2] using Stäubli's method, have fulfilled his prediction, finding the parasites in the human blood in a case of trichiniasis. The blood may best be obtained from a vein at the elbow by means of a small syringe. Three cases were examined, and in one they were found after a brief search. The fact that they occur in the circulating blood proves conclusively that this is one way in which they are distributed, though it does not prove that they are not also distributed through lymphatics. Indeed, it is certain they do migrate along the connective tissue spaces, since they are commonly found here and at some distance from blood vessels. It is, therefore, probable that they are distributed by both methods, passing through the various tissues, spaces and vessel walls indifferently.

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[1] Verhandl. d. Kong. f. klin. Med., Wiesbaden, 1905, p. 354.

[2] Arch. Int. Med., April, 1909, iii, 263.

A more extensive study of the blood in these cases is necessary to determine in how large a percentage of cases positive results may be obtained, and on this the value of the method for diagnosis will depend. Should it prove satisfactory, it will be an improvement on the common method of excising or "harpooning" a piece of muscle from some part of the body for microscopic examination—an ordeal not permitted in all cases.

THE HARMFUL EFFECTS OF ACETANILID, ANTIPYRIN AND PHENACETIN

One of the most interesting and, for physicians, most instructive bulletins published by the Bureau of Chemistry at Washington has recently been issued[1] on "The Harmful Effects of Acetanilid, Antipyrin and Phenacetin," by Dr. L. F. Kebler, with the collaboration of Drs. F. P. Morgan and Philip Rupp. For some time THE JOURNAL and a few other medical journals have been warning physicians of the dangers of the indiscriminate use of these valuable drugs; likewise a few of the better lay journals, among which *Collier's* and the *Ladies' Home Journal* take first rank, have carried the same warning to the public. The authors of this bulletin say regarding the *raison d'être* of the investigation made by the government on this subject: "The purpose of the inquiry was not to depreciate in any way the value of these substances as medicinal agents, but rather to furnish information to the public which would enable them to understand that these remedies should be employed with caution in the absence of reliable medical advice. . . ." And further: "The harm done by acetanilid does not result from its proper use under the direction of the physician, but is mainly the result of the promiscuous and indiscriminate use of the product by the laity."

With regard to the habit-producing qualities of acetanilid, antipyrin and acetphenetidin (phenacetin), the bulletin states that "the habit is acquired in most instances through the use of the remedy without the supervision of the physician for the relief of the minor aches and pains, especially headache." This fact was further emphasized by the statistics collected which showed that "proprietary preparations were used in at least 50, or 44.6 per cent., of the 112 instances of the habitual use of acetanilid." As to the toxic qualities of acetanilid the following is instructive: Of the total number of cases of poisoning recorded, "more than one-third were reported during the year and a half following the advent of acetanilid as a medicinal agent in August, 1886. . . ." These cases were, doubtless, nearly all due to physicians' lack of knowledge regarding the toxic properties of what was then a new drug. As physicians learned of the danger "the number of cases of poisoning fell off rapidly, and during the thirteen years following 1891 the number averaged but six annually."

Then came the innings of the nostrum exploiter and "headache cures," "brain foods" and fake synthetic analgesics flooded the market and were indiscriminately used by the public. The result was a large number of cases of poisoning reported during this later period—since 1904. The "notable increase," both in the number of cases and in the number of deaths, is accounted for by the government investigators as follows: "This can be adequately explained by the fact that during recent years the control of acetanilid as a remedial agent has rapidly passed from the hands of the medical profession to those of the laity, *owing largely to the advertising efforts of the manufacturers of proprietary medicines.*"[1] The use of nostrums containing acetanilid has increased enormously during the past few years. We read, in fact, that, while proprietary preparations containing acetanilid are not mentioned in the reports from 1897 to 1904, inclusive, yet in 1905 proprietaries were responsible for 55.5 per cent. of the cases of poisoning reported, in 1906 for 63.1 per cent., and in 1907 for no fewer than 87.5 per cent. THE JOURNAL has been accused of being too severe on the "headache powders" and similar preparations; this, too, not only by the proprietary interests, but occasionally by its friends. Certain it is that THE JOURNAL has never made such a scathing arraignment as that of this government document.

When Samuel Hopkins Adams published, in *Collier's Weekly*, an appalling acetanilid death record, an attempt was made to discredit this report by an "editorial" in the *St. Louis Medical and Surgical Journal* for December, 1905, entitled "Collier's Methods Exposed"; fortunately for the name of medical journalism, this journal went out of existence very shortly thereafter. Reprints of the "editorial" (undated, however) have been industriously circulated since, presumably by those interested in the sale of coal-tar remedies. We may confidently expect, since the government has now issued a bulletin on the same subject, that some other renegade medical journal will come to the rescue with an editorial on "Government Methods Exposed." In this it will be demonstrated, no doubt, not only that the bulletin itself is a tissue of falsehoods, but also that acetanilid-, antipyrin- and acetphenetidin-containing nostrums "do not depress the heart," are a good "brain food" and are, in fact, the most harmless and innocuous "patent medicines" on the market. Meanwhile, we advise every physician to write to Washington for Bulletin 126 of the Bureau of Chemistry, entitled "The Harmful Effects of Acetanilid, Antipyrin and Phenacetin."

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[1] Italics ours.—Ed.

BUTTERMILK THERAPY

Metchnikoff, Massol and several other authors have recommended fermented sour milk as prepared in Bulgaria, or a similar product, prepared according to Metchnikoff's method from pure cultures of bacteria, as a panacea for many ills. Appendicitis, tropical dysentery, typhoid fever and other diseases are said to be cured or at least benefited by the treatment with sour milk or buttermilk. Intestinal putrefaction, intestinal autointoxication and some nervous and digestive derangements said to be brought about by these conditions are supposed to be favorably influenced by sour-milk therapy, and consequently, according to Metchnikoff, the habitual use of sour milk prepared with the Bulgarian bacillus is conducive to long life. As support to this last suggestion it is stated that in Bulgaria there are relatively more centenarians than in other countries of Europe. Other factors, however, such as race predisposition, outdoor life and absence of effeminating luxuries, which might contribute to a similar result, have not been given due consideration.

The influence of sour milk on intestinal putrefaction and intestinal bacteria has been investigated by many observers. Thus Combe, Cohendy, Löbel and other French, German and English authors have published the results of experiments and clinical studies, from which they conclude that the extensive consumption of sour milk is decidedly beneficial. The success of the treatment is universally ascribed to the lactic acid in the milk or the lactic acid assumed to be produced by the bacteria in the digestive tract. The evidence, however, is by no means convincing. The work of many is characterized by lack of proper control and by neglect of the possibility that other factors might have influenced the results, and it is not altogether safe to accept the sanguine conclusions published. It has been recognized before the present era of sour-milk therapy that a liberal amount of sweet milk and carbohydrates, and a reduction of meat in the diet were beneficial in reducing intestinal putrefaction. It has never been shown conclusively that lactic acid bacteria produce lactic acid in the digestive tract in sufficiently large quantity actually to inhibit putrefaction. The experiments of some observers, who have made deductions from the results of a sour-milk diet to the exclusion of all other food, are of little value, since it is not likely that any one would live on such a diet except for experimental purposes. Some experimenters who have taken sour milk prepared with the Bulgarian bacillus have found this organism in the feces after five to six days. Hall and Smith found it under similar conditions after one day, and Heinemann and Hefferan have found it regularly in human feces (and in market milk) without artificial introduction. Most observers seem not to have examined normal feces before the ingestion of sour milk.

Some rather absurd statements are found in the literature on the subject. For instance it is stated that milk should not be heated before using lactic ferments, since heating destroys the natural lactic acid bacteria present, and that consequently their restraining influence on injurious bacteria is lost. The inhibition exerted by the few lactic acid bacteria in fresh milk is negligible as compared with the antagonistic influence of the enormous numbers of lactic acid bacteria in artificial cultures which are used for inoculation of the heated milk. The bold assertion that the intestinal flora can be changed at will by introducing lactic acid bacteria seems to be without sufficient evidence. The reduction of putrefactive products when sour milk is taken is ascribed solely to the activity of lactic acid bacteria or the lactic acid produced by them. It has not been considered that sweet milk and carbohydrates with a simultaneous reduction of meat in the diet might possibly have a similar effect. In regard to buttermilk, it does not seem to have been taken into account that the precipitation and fine distribution of the casein, the reduction of the amount of fat and the partial conversion of the milk-sugar into acid may be factors largely responsible for beneficial results.

Recently pure cultures of lactic acid bacteria, especially of the *B. bulgaricus,* have been recommended for reducing and curing abscesses, catarrh and other troubles caused by pyogenic bacteria. The principle involved is the antagonism of lactic acid bacteria to pyogenic bacteria, the acid produced by the former inhibiting the latter. This theory is attractive, but the evidence in its favor is, as yet at least, meager and unscientific, because of the absence of control observations.

The benefits derived from the use of buttermilk, sour milk and cultures of lactic acid bacteria for digestive and suppurative troubles are doubtful, and too much confidence should not be placed in the application. More evidence and that, too, of varied nature is required before reliable conclusions can be drawn. If this form of treatment is resorted to, the physician should not place too much dependence on commercial preparations in tablet or powder form. When possible, it is better to obtain pure cultures from reliable laboratories where frequent transfers are made so that the purity and activity of the organisms are preserved.

BENZOATE OF SODA AND TOMATO CATSUP

The statement that chemical preservatives in general, and benzoate of soda in particular, are used by many manufacturers of foodstuffs to cover inferior material, has been frantically denied by the makers and users of such preservatives. A recent judgment of the United States court throws some light on this vexed problem. Over six hundred cases of tomato catsup prepared by S. J. Van Lil, of Baltimore, were seized by the government and subjected to examination. The cases were labeled in part "Navy Brand Catsup. Prepared with one-tenth of 1 per cent. Benzoate Sodium. . . . . This catsup is superior on account of its Fine Zest and True Tomato

Flavor. Made from Choice Ripe Tomatoes. . . .” Examinations of the product, verified by a previous inspection of the factory where it was made, showed that the “Choice Ripe Tomatoes” consisted in fact of the “pulp screened from peelings and cores of tomatoes” and the “waste material of canning factories.” This nasty mess had been embalmed with the benzoate of soda. The S. J. Van Lil Company entered its claim to the goods, but did not contest the allegations made by the government; the court, therefore, decreed that the catsup should be destroyed. We may now presumably look for a fresh batch of articles from the press agents of the preservative manufacturers, and such advocates of embalmed foods as the *American Food Journal* may be relied on to come promptly to the rescue of those interests which live and move and have their being in the “doping” of foods.

Medical News

ARKANSAS

Society Meeting.—At the annual meeting of Nevada County Medical Society, held in Prescott, Dr. Albert S. Buchanan was elected president and Dr. William W. Rice, secretary, both of Prescott.

Personal.—Dr. J. S. Shibley, Paris, president of the Arkansas Tuberculosis Association, has been selected as superintendent of the State Tuberculosis Sanatorium.——Dr. A. E. Tatum has been appointed chairman, Dr. Henry Pase secretary, and Dr. L. K. Charles a member of the board of health of Eureka Springs.

CALIFORNIA

Medical Society Reorganized.—Kings County Medical Society was reorganized at Hanford, June 12, with the following officers: President, Dr. M. J. H. Woolf; vice-president, Dr. J. Allen Crawshaw; secretary-treasurer, Dr. Robert W. Musgrave, and censors, Drs. Charles T. Rosson, Lucius E. Felton, and Charles L. Scott.

Salaries Raised.—The State Commission in Lunacy, at its meeting in Sacramento, June 10, decided to raise the salaries of the superintendents of the six state hospitals from $3,000 to $3,600 a year; to increase the salaries of first assistant physicians $300 a year; of second assistant physicians $200 a year, and third assistant physicians, $300 a year. Salaries of the fourth assistant physicians will begin at $90 per month and increase with length of service.

IOWA

Sanitarium Burns.—Storm Lake Sanitarium, a private institution owned by Dr. David H. Nusbaum, was entirely destroyed by fire June 18, with a loss of about $16,000. The patients escaped without casualty.

Suggestive Healer Found Guilty.—Bruce Hedberg, a practitioner of “suggestive therapeutics and psychology” is said to have been found guilty at Des Moines, May 27, of practicing medicine without a license, and sentenced to pay a fine of $300. On his failure to pay the fine he is said to have been committed to the county jail June 18, where he will be imprisoned for fifty days.

KENTUCKY

Personal.—Dr. L. S. McMurtry, Dr. and Mrs. Joseph M. Mathews, and Dr. James M. Ray, Louisville, have gone to Europe.

New Faculty Appointments.—Announcement has just been made that the board of trustees of the University of Louisville has declared vacant all the chairs of the medical department and has made appointments as follows to fill the vacancies: J. M. Bodine, Thomas C. Evans, C. W. Kelley, William H. Wathen, J. B. Marvin, L. S. McMurtry, H. H. Grant, H. B. Ritter, I. N. Bloom, J. M. Ray, W. E. Grant, Louis Frank, Garland Sherrill, William A. Jenkins, T. L. Butler, S. G. Dabney, William Cheatham, W. O. Roberts, P. F. Barbour, A. O. Pfingst, George A. Hendon, Hugh N. Levell, Edward Speidel, E. R. Palmer, Bernard Asman, Charles W. Hibbitt, Irvin Abell, V. E. Simpson, Granville Hanes, B. F. Zimmerman, Carl Weidner, Henry Enos Tuley, John G. Cecil, William C. Dugan, Cyrus Field, and Harris Kelly.

MARYLAND

Hospital Addition.—St. Joseph’s Hospital, Baltimore, will erect a two-story addition at an expense of $10,000, to be used as a dispensary.

Personal.—Dr. H. Barton Jacobs, Baltimore, has returned from Europe.——Dr. Thomas C. Gilchrist and James J. Mills, both of Baltimore, sail for Europe shortly.

Instruction of Militia Officers.—A camp of instruction for medical officers of the militia was begun at Antietam July 16. There are 82 officers in camp under the instruction of eleven members of the Medical Corps of the Army who give instruction in sanitation and conduct of camps and hospitals. The camp will close August 11.

Pure Food Law.—The Baltimore Drug Exchange, composed of wholesale druggists of Baltimore, has decided to make another strenuous fight for the passage of the pure food and drugs act by the legislature. At the last session of the legislature, all the food and drug manufacturers advocated the passage of the bill prepared by the drug exchange, but it failed to pass because of the disagreement of the house and senate whether the State Board of Health or the Maryland Agricultural College should have charge of the execution of the law.

MASSACHUSETTS

Honorary Degrees Conferred.—At the commencement exercises of Harvard University, June 29, the honorary degree of master of arts was conferred on Dr. Wilfred Thomason Grenfell of Labrador, and the honorary degree of doctor of medicine on former President Charles William Eliot of Harvard University.

Personal.—Dr. Charles H. Cook, Natick, has been appointed a member of the State Board of Registration in Medicine, vice Dr. Augustus C. Walker, Greenfield, who declined reappointment.——Drs. Walter D. Riordan, John J. Sullivan, Thomas F. Walsh, Bernard Mulholland, Thomas H. Redmond, and Emile E. Cyr have been elected ward physicians of Lawrence.

City Bacteriologic Laboratory Prepared.—The bacteriologic laboratory in connection with the Lawrence Health Department is practically completed and Dr. H. H. Nevers is ready to carry out the duties of his office. He announces that outfits for tuberculosis, Widal reaction, gonorrheal and other infections may be secured at certain stations in the city where antitoxin and vaccine may be obtained.

Assigned to Duty.—The following officers having passed the medical and examining boards of the Massachusetts Volunteer Militia, have been assigned to duty: Drs. Malcolm Seymour, D. M. Rust, G. C. Squire, A. A. Brigham, O. D. Dickerman, H. J. Kane, F. J. Young, R. D. Hood, F. H. Whittier, and H. N. Kelley.

Hospital News.—The dedication exercises of the new Charles Choate Memorial Hospital, Woburn, given by the daughter and granddaughter of the late Charles Choate to the town, were held June 29. The hospital will accommodate 15 patients.——By the will of the late Mary J. Heyward, Chelsea, a bequest of $1,500 is made to the Frost Hospital, Chelsea.

Boston Floating Hospital.—On June 30 the Boston Floating Hospital made its first trip for the season with 54 infant patients. Dr. J. Warren Ball is resident physician; Henry C. Marble, chief of the food laboratory; Miss Isabel T. Chapman, day superintendent of nurses; Miss Hildegarde O. Lawson, night superintendent of nurses, and Miss Aesha A. Dorsey, superintendent of day patients’ deck, and a number of physicians as house officers. There are also a visiting, consulting, and auxiliary staffs.

MISSOURI

Hospital Officers Elected.—At the annual meeting of the stockholders of the Springfield Hospital, Drs. Dexter B. Farnsworth, Frank B. Fuson, R. L. Pipkin, and John R. Boyd were elected directors. The directors then elected the following officers: Dr. Norman F. Terry, president; Drs. Theodore A. Coffelt and Herbert S. Hill, vice-presidents; Dr. R. L. Pipkin, secretary, and Dr. Lee Cox, treasurer.

Changes in University Faculty.—The board of directors of the University of Missouri, Columbia, have appointed Dr. C. M. Jackson, junior dean, as dean to succeed Dr. Andrew W. McAlester, resigned. Drs. Max Meyer, William J. Calvert, George LeFever, and Woodson Moss have resigned from the faculty. The board also appointed a committee to take up the matter of locating the work of the junior and senior years in St. Louis.

Society Meeting.—The seventeenth annual meeting of the Northeast Missouri Medical Society was held in Moberly, June 18, and the following officers elected: Dr. Chalmers B. Clapp, Moberly, president; Drs. Godfrey O. Cuppaidge, Moberly, and C. R. Dudley, Hannibal, vice-presidents; Dr. E. C. Callison, Kirksville, corresponding secretary; Dr. Oliver C. McEuen, Salisbury, recording secretary, and Dr. Robert Haley, Brookfield, treasurer.

St. Louis

Work Against Tuberculosis.—The Centennial Committee of the St. Louis Society for the Relief and Prevention of Tuberculosis has placed on sale 1,000,000 stamps to aid in maintaining the visiting nurse work, the provision of special diet, and the attempt to provide a day and night camp for consumptives, with special provision for tuberculous children. Fifty thousand stamps were sold in the first five days.

NEBRASKA

Child-Saving Institute.—The new plans for the Child-Saving Institute, Omaha, provide for a fire-proof building three stories and basement in height, to cover 70x100 feet of ground.

County Medical Society News.—Cedar County Medical Association met in Laurel last month and decided to merge with the Medical Association of Dixon and Dakota counties, thus forming a tri-county association.

Personal.—Dr. Henry Baldwin Ward, dean of the College of Medicine and professor of zoology in the University of Nebraska for many years, has accepted the position of professor of zoology at the University of Illinois, Champaign, to succeed Prof. Stephen A. Forbes.

State Health Officers Organize.—At the call of Dr. D. T. Quigley, North Platte, a number of health officers of the state met June 7 and 8 in Omaha and formed the Nebraska State Health Officers' Association, and elected the following officers: President, Dr. D. T. Quigley, North Platte; vice-president, Dr. Ralph W. Connell, Omaha; secretary, Dr. G. H. Marvel, Aurora; and treasurer, Dr. J. H. Mackay, Norfolk. The *Western Medical Review* was chosen as the official organ of the association. The next meeting will be held in Lincoln August 10 and 11. The association adopted resolutions recommending the adoption of uniform health ordinances for cities of 5,000 population or over with a medical practitioner as health officer, and in cities of less than 5,000 population, uniform health ordinance, creating a board of health, one member of which shall be a regular licensed physician. Other resolutions deal with the care to be taken of sputum of tuberculosis patients and the prevention of that disease, the enforcement of the ordinance of the State Board of Health regarding infectious and contagious diseases and quarantine, enlightenment of the public regarding venereal diseases, the medical inspection of school children, school houses, prevention of rummage sales, the carriage of disease by pet animals and vermin, disposal of garbage, pollution of railroads by the right of way, the pollution of ice, the disposal of scrubbings and slops, the installation of fly-proof garbage cans, the care of stable manure, and the disinfection of earth closets.

NEW JERSEY

Hospital News.—The new $2,000,000 hospital for the insane at Overbrook was formally inspected June 11 by the County Board of Freeholders. The institution will accommodate 1,300 patients.——The new public hospital in West Millville was formally opened June 15.

Creameries and Dairies Inspected.—The total number of creameries inspected during June numbered 73. Of this number 3 were for the first time inspected and 70 reinspected. Fifteen letters were sent to creamery operators and 26 water samples were collected from creamery premises. The total number of dairies inspected was 11. Of these the number scoring above 60 per cent. amounted to 6, the number scoring below 60 per cent. was 5; the number of dairies first inspected was 6; the number of dairies reinspected was 5, the number to which letters were sent was 14, and the number of water samples collected from dairy premises was 14.

Vital Statistics for June.—During the month ended June 15, there were reported to the Bureau of Vital Statistics 2,937 deaths, a decrease of 18 from the previous month. The deaths under one year numbered 446; over one year and under five years, 268; and sixty years and over, 894. Chief among death causes were tuberculosis, 406; diseases of the circulatory system, 402; diseases of the nervous system, 359; pneumonia, 292; Bright's disease, 193; diseases of the digestive system, 169; diseases of the respiratory system, 165; cancer, 151; infantile diarrhea, 51; suicide, 40; diphtheria, 38; scarlet fever, 36; whooping cough, 29; measles, 23; typhoid fever, 16; cerebral spinal meningitis, 19; and malarial fever, 2.

NEW YORK

Lunacy Boards Get Options.—Options have been obtained on 550 acres of land in Westchester county, near Yorktown, for an asylum for the insane. The total amount of the consideration is $132,000.

A Farm for Convalescents.—The Holiday Farm of Staatsburg, Dutchess county, has received the approval of the State Board of Charities for its work as a convalescent home for children from New York City hospitals.

Memorial to Philanthropist.—In the presence of the employés of the Bausch and Lomb Optical Company, a bronze and marble testimonial in honor of the late Henry Lomb was unveiled in the factory of the company July 8. The memorial is a bronze tablet resting on a polished pedestal of marble. The tablet bears as its inscription the last public utterance of Captain Lomb, "Think of Others First, Yourselves Afterward."

To Protect West Point.—As the result of a recommendation by Major Charles M. Gandy, the residents of West Point have been cautioned against using ice cut outside West Point. This step was taken in order to guard against typhoid. During the past winter typhoid existed in some of the neighboring towns and as much of the drainage is imperfect it is feared that some of the ponds from which ice has been cut may have been infected.

Newburg to Have Hospital.—Ex-Gov. Benjamin B. Odell, Jr., has presented the tuberculosis committee of Newburg with a hospital and camp for the treatment of patients suffering from tuberculosis. He has given a four-acre plot of ground, the dwelling to be used as an administrative building, and will erect an infirmary costing $25,000, to which he will add as demands may require. It is expected that the hospital will be ready for occupancy by the middle of August.

Suicides on the Increase.—Statistics received by the State Department of Health show that self-inflicted deaths are on the increase. In 1907 there were 1,207 suicides in the state and last year there were 1,419, an average of 117 a month. The first five months of 1909 show an average of 124 a month, and on the present basis there will be 1,550 suicides for 1909. The number of those who destroy themselves is greater than the number dying from typhoid, diabetes or rheumatism. Although there has been an increase of suicides in the state there has been a decrease in New York City. The total in Manhattan for the first five months of this year is 201, while for the same months last year there were 231. The statistics show that the most frequent method used is poison, and gas is the second most frequent.

New York City

Personal.—Dr. Ramon Guiteras has returned from a hunting expedition in Africa.——Dr. Ernest V. Hubbard has been appointed police surgeon.——Dr. and Mrs. Ludwig Kast have sailed for Europe.——Dr. and Mrs. Walter E. Lambert and Dr. Henry H. Tyson have sailed for Europe.

Medical School Enlarged.—Dr. Herman M. Biggs, of the health department, has transferred to the New York University, three buildings on First avenue and Twenty-fifth street, adjoining the New York University Medical School. The buildings will be torn down and an addition to the school erected.

Fight for Health Inspectors.—The Civil Service Protective Association will support the Medical Protective Association in its fight for restoration to office of 105 health inspectors in Brooklyn. It is reported that the case will be carried to the Court of Appeals. An epidemic of measles is thought to have been improperly handled as a result of the discharge of these men.

"Typhoid Mary" Denied Her Freedom.—The Supreme Court has decided that "Typhoid Mary," as she is called, must return to North Brother's Island, where she has been detained for the past two years, because she had been shown to be a typhoid carrier. The court expressed the opinion that she should have every opportunity to establish, if she can, that she is fully cured. After further examination she may renew her application for freedom.

Fewer Accidents.—Accidents on traction lines in this city for the month of June show a marked falling off from the figures of the same month of the year 1908. The number of deaths this year was 29, as compared with 42 last year. The total number of accidents fell off 856. These favorable results are attributed to the work of the Public Service Commission, which has insisted on the lines being properly equipped with air-brakes, fenders and wheel guards.

City Makes a New Low Record.—The week ending July 10 showed the lowest death rate ever recorded for a summer month. This rate was 14.37 per thousand population as compared with 17.88 for the corresponding week of last year. The health department attributes this reduced mortality to the cooler weather and to a better milk supply and better education in regard to the care of infants. Last week 303 infants under 1 year of age died, while 508 died during the corresponding week of last year. During the first six months of this year only 414 babies died from diarrheal disease compared with 773 for the same period of 1908. Prior to July 1, nurses had visited 15,000 babies. About sixty private agencies are cooperating with the health department in the endeavor to reduce infant mortality.

NORTH CAROLINA

Hospital Opened.—The new Harrill Hospital, recently built at Caroleen, was formally opened for patients July 6.

Personal.—Drs. Edward Jenner Wood and Robert Harlee Bellamy, Wilmington, have been appointed a special committee by the State Board of Health to study and report on pellagra in North Carolina.——The following physicians have been designated to represent the Medical Society of North Carolina in the coming decennial revision of the U. S. P.: William L. Dunn, Asheville; William D. MacNider, Chapel Hill; and Edward Jenner Wood, Wilmington.——Dr. Richard H. Lewis, Raleigh, has gone to Alaska.——Dr. James W. Peacock has been elected health officer of Thomasville.——Dr. Benjamin K. Hays, Oxford, secretary of the State Board of Medical Examiners, is spending the summer at Buffalo Lithia Springs, Va.——Dr. Joseph Graham, Durham, has retired from general practice and will devote himself to the practice of surgery.

PENNSYLVANIA

April Deaths and Births.—The total number of deaths, exclusive of stillbirths, during the month from all causes was 9,960, distributed as follows: pneumonia, 1,456; tuberculosis, 986; Bright's disease and nephritis, 502; diseases of early infancy, 471; violence, 390; cancer, 372; influenza, 230; accidents, 211; diarrhea and enteritis of children under 2 years of age, 191; measles, 170; diphtheria, 130; scarlet fever, 121; typhoid fever, 114; suicide, 111; whooping cough, 107; diabetes, 82; diarrhea and enteritis, of children over 2 years of age, 81; meningitis, 76; and all other diseases, 4,159. The total number of births recorded in the state during the month, exclusive of stillbirths, was 15,511, the total number of stillbirths being 819.

Philadelphia

Smallpox Case Reported.—A case of smallpox was discovered in the northwest section of the city July 12, and the immediate neighborhood was roped off, temporarily quarantined, and the residents to the number of 1,000 were vaccinated by the city's medical inspectors. The patient was removed to the new Municipal Hospital.

New Dispensary for German Hospital.—A contract has been awarded for the erection of a basement and a one-story dispensary building for the German Hospital. The dimensions of the new structure are 50x130 feet, and it will be erected at a cost of $47,000, and will be so arranged that additional stories may be added in the future.

Personal.—The following physicians have gone to Europe: David B. Kyle, William Zentmayer, Donnel Hughes, Albert P. Francine, Milton B. Hartzell, John H. Musser, George E. Pfahler, Warfield T. Longeope, J. H. Gaskill, James M. Anders, William G. Winder, Herman Heller, Ross H. Skillern, John Bacon, Charles W. Bonney, and Henry D. Jump.——Dr. Aristides Agramonte, president of the Commission on Infectious Diseases of the Republic of Cuba, visited this city July 13, with the purpose of studying the methods as practiced by the local health department.

SOUTH DAKOTA

State Home for Consumptives.—The members of the State Board of Charities and Corrections have decided to establish a state sanatorium for tuberculosis in Custer county in the Black Hills, the site to be selected.

Election of Officers.—At the annual meeting of the Davison County Medical Society, held in Mitchell recently, Dr. John A. Howard, Ethan, was elected president, and Dr. Elwin F. Reamer, Mitchell, secretary-treasurer.

Hospital News.—A stock company has been organized at Hetland by the farmers. The entire sum necessary for the erection of a hospital at Hetland has been subscribed and the building will be put up at once.——The directors of the Fort Pierre Hospital have leased that institution to Drs. Charles J. Lavery and Mark Walsh for five years from July 1, for $7,500. Dr. William Schroeder and his wife will conduct the hospital until permanent arrangements are made.

TENNESSEE

Found Not Guilty.—Dr. J. Herman Feist, Nashville, charged with the murder of Mrs. Rosa Mangrum more than two years ago, was found not guilty at the trial, June 9.

Personal.—Dr. John A. Witherspoon, Nashville, has gone to Europe.——Dr. G. Frank Russell will, after an absence of about a year in Memphis, Tenn., and Baltimore, Md., return to his old home in Louisville, Ky., about August 1.——Dr. S. Walter Woodyard has been elected alderman of Greeneville.——Dr. William F. King has been appointed a member of the Jefferson City Board of Health.——Dr. Samuel B. Boyd will fill the position for the present of physician at the Tennessee Deaf and Dumb School, Knoxville, formerly held by the late Dr. John M. Boyd.——Dr. William M. McCabe has been elected superintendent and surgeon of the Nashville City Hospital.

Reorganization of Medical School.—The medical and dental departments of the University of Tennessee at Nashville will hereafter be conducted from Knoxville, but under the immediate direction of the University of Tennessee, Dr. Brown, Ayres, and the trustees of the institution. The equipment of the department was owned by the members of the faculty, but has been donated to the state institution. Dr. Robert O. Tueker, Nashville, has been appointed dean of the institution, and Dr. Daniel B. Blake, Nashville, a member of the faculty. The transfer of the Tennessee Medical College to the Lincoln Memorial Hospital to the trustees of Lincoln Memorial University has been made. The faculty of the Tennessee Medical College will be retained but will be greatly increased. The suit in chancery brought by Dr. Claudius M. Capps, Knoxville, against the Tennessee Medical College and others has been dismissed.

TEXAS

Personal.—Dr. Charles E. Cantrell, Greenville, trustee and chairman of the judicial council of the American Medical Association, was thrown from his buggy while making a call July 14, sustaining a fracture of the left leg.

VIRGINIA

Graduation Exercises.—A class of eighteen was graduated from the Medical School of the University of Virginia, Charlottesville, June 5.

Dispensary Incorporated.—The Roanoke Free Medical Dispensary has been incorporated at Roanoke without capital, to operate a free medical dispensary for the benefit of the poor.

Faculty Changes.—At the annual meeting of the University College of Medicine, Richmond, Dr. Alfred L. Gray was chosen dean of the department of medicine, vice Dr. Paulus A. Irving, who declined re-election. Dr. Paul W. Howle was elected lecturer on materia medica and therapeutics; Dr. E. Guy Hopkins, lecturer on clinical diagnosis; Dr. Robert T. Ferguson, instructor in obstetrics; Dr. F. G. Simmons, instructor in pediatrics; Dr. Charles M. Edwards, instructor in clinical diagnosis; Dr. Charles H. Lewis, assistant in the chair of clinical medicine; Dr. Paul W. Howle, bedside instructor in surgery; Dr. William B. Hopkins, clinical assistant to the chair of diseases of the nose and throat, and Dr. W. W. Gill, clinical assistant to the chair of diseases of the eye.

Personal.—Dr. Albert A. Cannaday and wife, Roanoke, and Drs. Herbert Old and Lomax Gwathmey, Norfolk, have gone to Europe.——Dr. Lewis C. Bosher has been appointed chief of the visiting staff of Memorial Hospital, Richmond.——Dr. Clarence W. Cowper has been elected alderman of the third ward, Norfolk, to fill a vacancy.——Dr. Charles M. Byrnes, for three years adjunct professor of anatomy and assistant in neurology in the University of Virginia, Charlottesville, has resigned to accept the position of instructor in neurology in the Medical Department of Johns Hopkins University.——Drs. John G. Trevilian and William S. Gordon have resigned as members of the medical staff at the City Home, Richmond, and Drs. John Garnett Nelson and Isaae T. Gorsline have been elected to fill the vacancy.

GENERAL NEWS AND COMMENT

Individual Cups.—The Boston and Maine System has adopted the use of individual paper drinking cups in its cars.

American Pharmaceutical Association Meeting.—The American Pharmaceutical Association will hold its annual meeting in Los Angeles, Cal., August 16-20. It is announced that there will be reduced railroad rates, the rate for the round trip from Chicago being $72.50, via the direct route, and $77.25 for return via Seattle.

Negro Baptist Hospital.—The negro Baptists of West Tennessee, North Mississippi and East Arkansas have completed at Memphis a hospital with a capacity of 50 beds. The faculty of the University of West Tennessee Medical College will have entire control of the clinical wards. The building has cost about $20,000.

Society News.—The Medical Society of Northern Virginia and District of Columbia met in Warrenton, Va., June 24, and elected Dr. Stephen Harnesberger, Catlett, Va., president; Dr. Charles S. White, Washington, D. C., secretary-treasurer, and Dr. Tunice C. Quick, Falls Church, Va., councilor.——The annual meeting of the Baltimore and Ohio Association of Railway Surgeons was held in Cincinnati, July 2. St. Louis was selected as the place of meeting for 1910. The following officers were elected: President, Dr. James O. Howells, Bridgeport; vice-presidents, Drs. Summerfield B. Bond, Baltimore, and Newton R. Eastman, Mount Vernon; secretary-treasurer, C. E. Johnson, Baltimore, and executive committee, Drs. John Palmer, Wilmington, Del., and Frank C. S. Blessing, Pittsburg.

New British Periodical on the Heart.—The first number of *Heart*, a medical magazine to be devoted entirely to the study of the heart and circulation, has just appeared. The editor is Thomas Lewis and on the editorial staff are many well-known men from this country and abroad, therefore bespeaking for this publication a high standard of excellence. It is intended that this journal will focus together the work of the laboratory and of the hospital ward, presenting the physiologic and clinical aspects of all problems concerned with the circulatory apparatus. In the present number there appear articles by Cushny, MacKenzie, Lewis and Hill. The mechanical work is excellent, although, owing to the size of the page, a little more space between the lines would be of great help to the reader. Apparently only original contributions will be published. Even no editorials appear in this issue. *Heart* is published in London by Shaw and Sons, Fetter Lane, Fleet street, E. C., at $5.00 a year. We are unable to find any indication on the copy in hand as to whether the intention is to publish it weekly, monthly, quarterly or otherwise.

FOREIGN

New Insane Asylum in Italy.—The corner-stone of a new insane asylum was recently laid three miles outside of Rome. It is to have a capacity of 1,000 beds, and be built with a number of separate buildings and farm colony.

Schaudinn Medal Awarded to Prowazek.—The prize founded as a memorial to Fritz Schaudinn, the Schaudinn medal for achievements in microbiology, was awarded on the anniversary of his death, June 22, to his successor, S. von Prowazek, at the Hamburg Institute for Marine and Tropical Diseases. The committee in charge of the awarding of the prize consists of twenty-four scientists in various countries, including Blanchard, Ehrlich, Golgi, Kitasato, Koch, Laveran, Manson, Novy, Nuttall, Ross, Wilson, Metchnikoff and Wladimiroff.

Terres Appointed Director of Mexican Medical Institute.—The President of Mexico has recently appointed Prof. Jose Terres director of the Instituto Medico Nacional, one of the leading medical institutions in Mexico. Terres has been professor of pathology and clinical medicine since 1897 until he resigned last year. He founded the *Sociedad de Medicina Interna* and was instrumental in the organization of the *Sociedad Sanitaria y Moral de Profylaxis*. One department of the medical institute has long been engaged in compiling a list of indigenous herbs and studying their therapeutic possibilities.

British Medical Association Meeting.—The British Medical Association is at present holding its seventy-seventh annual meeting in Belfast. The annual meeting of the representatives was to begin Friday, July 23. The scientific program, which will be conducted in fifteen sections, begins with the president's address on Tuesday, July 27, and continues for the three days following. The address in medicine will be delivered by R. W. Philip, M.D., F.R.C.P., Edin., while A. E. J. Barker, F.R.C.S., will give the address in surgery. The address in obstetrics will be delivered by Sir John W. Byers, M.D., and Dr. J. A. Macdonald will give the annual popular lecture.

International Congress of the Medical Press.—The fourth congress is to be held, as previously announced, just before the International Medical Congress at Budapest. The first general meeting is open to all connected in any way with the medical press, but the second is for members of the International Medical Press Association only. Among the questions to be discussed are the control of advertising, the exclusion of paid write-ups, the struggle against free medical journals, the creation of a permanent international committee, the unification of medical terminology, the unification of table of contents in medical journals, obligation for summary to be supplied with a medical article, and organization of a central international agency to publish these summaries for the exclusive use of medical journals. Schwalbe and Posner of Berlin will introduce the subject of the publication of the same article in different journals and different countries.

LONDON LETTER

(From Our Regular Correspondent)

London, July 10, 1909.

Food Adulteration

The annual report of the medical officer of the local government board for the year 1907-1908, which has just been issued, contains several matters of interest. Dr. Buchanan, chief inspector of foods, has investigated the contamination by lead and arsenic of tartaric acid, citric acid, and cream of tartar. In several instances these impurities were found. Much of the tartaric acid had not been prepared with the care which its use as a food ingredient demands. A recommendation was made in 1907 that legal limits of impurity should be established. The limits recommended were for tartaric acid, citric acid, and cream of tartar, one-seventh of a grain of lead per pound and one-hundredth of a grain of arsenic, as arsenious oxid, per pound. These limits of impurity have been found of practical utility in the trades concerned. The adulteration of vinegar with sulphuric acid is found to be still carried on.

Bacteria in Sewer Air

Dr. Andrews publishes in the report some very important researches which show that under ordinary conditions characteristic sewage bacteria are demonstrable in sewer and drain air. Bacilli of the colon group, while absent from fresh air, could be found easily in drain air and corresponded exactly with the various bacilli of this group present in sewage.

The Preservation of Dead Bodies

Dr. Reichter's apparatus for the preservation of corpses has been installed in the mortuary of the city of London and has been found most satisfactory. The body of an unknown man found drowned was brought to the mortuary on March 10 and, after a necropsy had been made, was kept in the apparatus from March 16 to April 29. It remained in a perfect condition for identification. As a month is the limit of time necessary to preserve bodies for identification, this result is considered excellent. The apparatus consists of an air-tight case in which a saturated solution of formaldehyd is allowed to evaporate and the air meanwhile is kept in circulation by a small fan.

The Retirement of Sir Felix Semon

A complimentary banquet has been given to Sir Felix Semon, the eminent laryngologist, on his retirement from practice. Mr. H. T. Butlin, surgeon of St. Bartholomew's Hospital, presided, and the company included many names distinguished in medicine and other professions. The chairman in proposing Sir Felix Semon's health reviewed his life. He referred to the fact that in the seventies of the last century specialists were abhorred by the leaders of the medical profession. Then Semon came to London from Germany armed only with his German medical degree and not knowing a word of English. He spent much of his time at the Hospital for Diseases of the Throat in Golden Square and was appointed clinical assistant. In 1876 he obtained the qualification of M.R.C.P. and began to practice in London. He procured the recognition of laryngology as a subject at the International Medical Congress held in London in 1880 and in 1881 he was appointed physician for diseases of the throat at St. Thomas's Hospital. He took an active part in founding the Laryngological Society of London. Letters, telegrams and addresses to Sir Felix Semon were received from America, Germany, Hungary, Austria, Russia, Scandinavia, Denmark, Holland, France, Italy and Spain, all paying tribute to his great services to laryngology.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 8, 1909.

A New Sign of Hydatid Cysts of the Convex Surface of the Liver

Before the Academy of Medicine, July 6, Professor Chauffard described a new sign of ascending hydatid cyst of the convex surface of the liver which he established in two cases. In laying the left hand below the point of the right shoulder-blade while the right hand percusses lightly and on the same level the anterior thoracic wall, one feels a very distinct vibratory undulation. One of the two patients even perceived it himself. Pleuritic effusions did not give any vibratory sensation; neither did a large dysenteric abscess of the liver containing two liters of pus. In the hydatid cysts, on the other hand, the tension of the liquid and the smooth, supple and elastic condition of the cystic membrane were favorable to the production of vibratory waves. The new sign, which Chauffard calls the "transthoracic undulation," may then be valuable to facilitate the differential diagnosis of ascending hydatid cysts of the convex surface of the liver from large abscesses in the same locality and from effusions of the right pleura.

Congress of Social Hygiene

At the national Congress of Social Hygiene which was just held at Agen Dr. Calmette of Lille, speaking of hygiene in the country and of the struggle to be carried on against tuberculosis, recommended the creation of movable disinfection posts and of a kind of sanitary police among the rural populace.

Death of Dr. Henry Cazalis

Dr. Henry Cazalis, known in literature under the pseudonym of Jean Lahor, has just died of uremia at Geneva, aged 69. He had published several volumes of verse, a history of Hindu literature, and several studies on marriage, considered from the medical point of view ("Science and Marriage," "Pathologic Risks of Marriage"); he advocated the idea of an examination of health before marriage. Quite recently, in collaboration with Dr. Lucien Graux, he published a treatise on cheap and rational alimentation.

Election at the Academy of Medicine

During its session of July 6 the Academy of Medicine elected two national associate members, Dr. Lacassagne, professor of legal medicine at the College of Medicine at Lyons, and Dr. Queirel, director of the School of Medicine at Marseilles and professor of clinical obstetrics.

A Prize of the Academy of Moral and Political Sciences

The Academy of Moral and Political Sciences has awarded the Stassart prize (3,000 francs, or $600) to Dr. Jacques Bertillon, head of the service of municipal statistics of Paris. The subject was "The Moral and Social Causes and Consequences of the Diminution of the French Birth Rate and the Recent Theories and Propagandas Which May Increase Its Dangers."

Personal

Dr. Arnozan, professor of therapeutics in the College of Medicine at Bordeaux, has been named at his own request professor of clinical medicine to fill the place of Dr. Picot. At the same college Dr. Villar, professor of operative medicine, has been nominated at his own request professor of clinical surgery to replace Dr. Lannelongue.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 7, 1909.

Death of Pfannenstiel

Professor Pfannenstiel, the director of the gynecologic clinic at Kiel, died July 2, from blood poisoning, at the age of 47. In 1902 he became successor of Professor Löhlein, and in 1907 came to Kiel as the successor of Professor Werth. He has been a successful worker in his specialty and, as I understand, was looked on as the probable successor of Professor Olshausen of our university. Olshausen has not only survived him but continues to hold his position in spite of his advanced age (74 years), as we have no law limiting the period of a professor's activity.

Vaccination in Russia

The Russian correspondent of the *Deutsche medizinische Wochenschrift* reports on the status of vaccination in that country which is characteristic of the intellectual condition of our eastern neighbor. The government has brought forward a bill for general compulsory vaccination, but this has been rejected by the commission appointed to consider the matter. The reason for this rejection is not known but the correspondent believes that no mistake would be made if the chief reason for this action were sought in religious objections, which are brought out by the fact that the strong sect of "old believers" (*Altgläubigen*), which includes some 10,000,000 members, oppose vaccination on the ground that they see in the vaccination scarification the sign of Antichrist. In the opinion of the correspondent the superstitious Russian people would treat physicians attempting to carry out compulsory vaccination no better than they did last summer when they set fire to a cholera hospital and cudgelled the physicians out of the village. There still remains an indirect method of compelling vaccination which consists in the requirement that every child on entering school shall furnish a medical certificate of vaccination. In addition during an extensive smallpox epidemic, all of the pupils must be vaccinated. Finally a yearly compulsory vaccination occurs on an occasion of enlistment of recruits for the army. How well these regulations are carried out in a country in which the rabble may overcome the most sacred law is uncertain.

Pharmacology

Vanadium and Its Therapeutic Uses

To the Editor:—(1) Of what therapeutic value is vanadium or any of its preparations? (2) In what form is it used? (3) What literature can be had on this subject?

E. A. W.

Answer: 1. The therapeutic value of vanadium was discussed in The Journal, May 9, 1908, page 1549. In addition to the statements there made, we may refer to the careful study of this substance by Lyonnet, Martz and Martin. These authors could not demonstrate any antiseptic power, since they found that in the proportion of 1 to 1,000 sodium metavanadate only slightly hindered the growth of the typhoid bacillus. The remedy appears to act much like arsenic and is regarded by Lyonnet, Martz and Martin as a "spur to nutrition." They state that *in vitro* sodium metavanadate has very little action on digestive ferments, on the sugar in the blood, on yeasts or on microbes. The claims made for vanadium have not led to its wide use; in fact until the investigations have been confirmed by reliable clinicans, the remedy must be regarded as in the experimental stage.

2. Lyonnet, Martz and Martin used sodium metavanadate, $NaVO_3$, in doses of 1 to 5 mg. (1/60 to 1/12 grain) in twenty-four hours given per os. They recommend giving the salt intermittently only two or three days a week. Le Blond and David used for internal use a solution containing 0.0015 gm. of vanadic acid, HVO_3 (1/40 grain to the quart), which they gave in doses of 2 tablespoonfuls a day. The remedy is not proprietary, although the attempt is being made to put on the market proprietary preparations for which extravagant claims are made and which are sold at a high price. The name of one of these—Vanadioserum Hélouis—suggests the idea of its being some sort of animal serum, which is misleading. The use of this rare element does not appear to be a promising field for experimentation, but if the physician desires to try it, we recommend that he obtain the pure substance through a dealer in chemicals, instead of using the proprietary preparation, the composition and strength of which are uncertain.

3. The following chronologic list includes practically all the references to vanadium in medical literature since its introduction into therapeutics:

Platt: *Lancet*, Jan. 15, 1876.

Dowdeswell: Changes in Liver. *Jour. Physiol.*, 1878, I, pp. 251-261.

Gamgee, A., and Larmuth: *Jour. Anat.*, ii, Part 2, 1879, p. 235 and 253.

Priestly, J., and Gamgee, A.: *Phil. Tr. Roy. Soc.*, Lond., 166, p. 2.

Laran: Le vanadium et ses composées, leur propriétés chimiques applicables à la therapeutique, nouveaux remédes, 1898, xiv, pp. 130-135.

Weber, A.: De emploie des sels de vanadium en therapentique. *Rev. gén. de clin. et de thérap.*, 1898, xii, pp. 339-341.

Lyonnet, Martz et Martin: De l'emploie des sels de vanadium. *Lyon méd.*, 1899, xc, pp. 289-302.

Luzzatta, R.: Contributo alla studio farmacologica del vanadio. *Arch. di farm. e terap.*, 1903, xi, pp. 42-82.

Le Blond, A., and David, C.: Recherche sur la proprietés de l'acide vanadique en particulier topique. *Jour. de méd. de Paris*, 1903, 2 S. xv, pp. 191-193; *Répert. de thérap.*, 1903, xx, pp. 120-123; *Rev. prat. d'obst. et de gynéc.*, 1903, pp. 175-178.

Boguslawski, S.: Preparaty vanadinm. *Medycyna*, 1904, xxvii, pp. 340-344.

Perlemann, A.: Contribution a l'etude du vanadium an point de vue therapeutique et clinique. Geneve, 1904, C. Zoelner, p. 88.

Le Blond and David: *Progrès méd.*, July 14, 1906.

Correspondence

Contagion and Consistency

To the Editor:—We are going through a period of health revival and it is good to look a little at our inconsistencies: we may derive benefit from so doing. We all admire the noble, scientific and disinterested work done by investigators. From their researches we know how diseases are disseminated, carried through or by this or that insect; we understand the germ theory and the methods of proliferation of these parasites. We wage war on disease by waging war on flies, mosquitoes, rats, etc. We are extremely careful about keeping everything clean around us—at least we believe we are. Laws have been passed to quarantine (?) infected people or cause a segregation of diseased from healthy ones. In large cities isolation hospitals have been built and their construction for small towns is being agitated.

To all appearances we could well rest on the work done; but let us see to it that books, newspapers, magazines, etc., do not accumulate on tables in our waiting-rooms, because of the danger of skin and other diseases being carried from one patient to another. Having done this we could work towards having a complete sterilization of all public library books as soon as returned. Clothing and other fomites are great carriers of infection; infected clothing that has been unused for years has been the cause of epidemics. Why not, therefore, make it compulsory for physicians to wear special clothes when attending cases of contagious disease? Such clothing could be made of material easily disinfected before being worn from house to house. Did we thus set a good example ourselves and show more consistency, quarantine regulations, which in very many places are a farce, could be more easily enforced. EMILE ROY, M.D., Wausau, Wis.

Filter Paper Test for Bile in Gastric Contents

To the Editor:—Since the publication of my article entitled "A Delicate Test for Bile in the Gastric Contents," in THE JOURNAL, May 20, 1909, p. 1758, my attention has been called to Rosenbach's test for bile in the urine. This consists in filtering the urine several times through the same filter paper and applying nitrous acid to the filter paper after drying, to obtain the reaction for bile. I have never used the Rosenbach test for bile in the urine, but, working entirely independently of that method or other methods, I have found that the filter paper test for bile in gastric contents as described by me, will detect the presence of bile, when no reaction for bile will be obtained when nitrous acid is applied to the filtered gastric contents themselves.

ALBERT WOLDERT, M.D., Tyler, Texas.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HYPODERMATIC ADMINISTRATION OF PURGATIVES

To the Editor:—What medicine can be used hypodermatically as a purgative? C. M. WASSELL, Tillar, Ark.

ANSWER.—Podophyllo-toxin, aloin, cathartic acid, colocynthin, and citrullin are capable of producing purgation when administered hypodermatically, but they are all too irritant for practical use. Physostigmin is also not safe or satisfactory. Apocodein appears to be the only known substance which has practical value for this purpose. It produces soft but not numerous or very watery stools. From 0.02 to 0.06 gm. (⅓ to 1 grain) of the hydrochlorate may be injected with proper antiseptic precaution. The dilution should be from 3 to 1 per cent. It sometimes produces distinct irritation at the place of injection.

TENOTOMY FOR PIANISTS

To the Editor:—Please give some information about tenotomy as used to increase or allow freer movements of the "ring" finger in musicians. What results, if any, have thus been accomplished?

J. H. H., Chicago.

ANSWER: Formerly the bands connecting the extensor tendon of the ring finger to those of the little and middle fingers were frequently divided by either the open or the closed method. One or both were cut, depending on the freedom of motion desired and on the amount of faith placed in the procedure. The results were disappointing as no greater increase in freedom of motion was obtained. The best evidence of the inefficiency of this procedure is the fact that the operation is now rarely performed.

The Public Service

Medical Department of the Army

Changes of stations and duties of medical officers, during the week ended July 17, 1909:

Le Wald, Leon T., capt., granted leave of absence for 25 days.

Gosman, George H. R., capt., granted leave of absence for one month, August 1st.

Shaw, Henry A., major, granted leave of absence for one month.

Loving, Robert C., capt., granted leave of absence for four months.

Birmingham, Henry P., lieut.-col., granted leave of absence for two months.

Laframme, Frank L. K., dental surgeon, ordered to Rock Island Arsenal, Illinois, for temporary duty.

Ames, John R., dental surgeon, granted leave of absence for one month.

Ryan, Edward P. R., dental surgeon, relieved from duty at Fort Leavenworth, Kansas, and ordered to Fort D. A. Russell, Wyo., for duty.

Medical Corps of the Navy

Changes for the week ended July 17, 1909:

Smith, H. W., P. A. surgeon, detached from duty at the Naval Medical School Hospital, Washington, D. C., and ordered to temporary duty at the navy yard, Boston.

Reeves, I. S. K., P. A. surgeon, ordered to treatment at the Naval Medical School Hospital, Washington, D. C.

Odell, H. E., surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Naval Station, Guam, M. I.

Angenry, G. L., surgeon, detached from the Naval Station, Guam, M. I., and ordered home to await orders.

Winn, C. K., asst.-surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to the Naval Station, Key West, Fla.

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended July 14:

Bailhache, P. H., surgeon, granted three months' leave of absence from Aug. 1, 1909.

Gasaway, J. M., surgeon, directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of examining keepers and surfmen of the life saving service.

Guiteras, G. M., surgeon, directed to proceed to Austin and other points in Texas on special temporary duty.

Wickes, H. W., passed assistant surgeon, granted one month's leave of absence from Aug. 1, 1909.

Cumming, Hugh S., passed assistant surgeon, granted one month's leave of absence from Aug. 1, 1909.

Clark, T., passed assistant surgeon, granted thirty days' leave of absence from Aug. 16, 1909.

Bahrenburg, L. P. H., passed assistant surgeon, directed to proceed to Point Pleasant, N. J., for the purpose of examining keepers and surfmen of the life saving service, July 12, 1909; granted fifteen days' leave of absence from Aug. 1, 1909.

Warren, B. S., passed assistant surgeon, granted three days' leave of absence from July 6, 1909.

Ebersole, R. E., passed assistant surgeon, granted six days' leave of absence from March 6, 1909. Paragraph 191 Service Regulations.

Roberts, Norman, passed assistant surgeon, directed to proceed to Ocean City, Md., and Chincoteague, Wachapreague and Cape Charles City, Va., for the purpose of examining keepers and surfmen of the life saving service.

Mullan, Eugene H., passed assistant surgeon, granted two days' leave of absence from July 12, 1909.

Preble, Paul, assistant surgeon, relieved from duty at Baltimore, Md., and directed to report at Bureau for duty; assigned for duty in charge of the miscellaneous division.

Hunt, Reid, chief, division of pharmacology, hygienic laboratory, detailed to attend the twelfth international congress on alcoholism to be held in London, July 18-24, 1909, and the sixteenth international medical congress to be held in Budapest, Hungary, Aug. 29-Sept. 4, 1909.

Earl, F. D., acting assistant surgeon, granted seven days' leave of absence from July 20, 1909.

O'Reilly, W. J., acting assistant surgeon, granted ten days' leave of absence from July 27, 1909.

Safford, M. V., acting assistant surgeon, granted seven days' leave of absence from July 7, 1909. Paragraph 210 Service Regulations. Granted three days' leave of absence from July 15, 1909.

Schmitt, L. S., acting assistant surgeon, granted thirty days' leave of absence from July 2, 1909, without pay.

Storrs, Henry R., acting assistant surgeon, granted four days' leave of absence from July 20, 1909.

Tarbell, B. C., acting assistant surgeon, granted thirty days leave of absence from Aug. 1, 1909, with pay, and fourteen days' leave from Aug. 31, 1909, without pay.

Weeks, Alamson, acting assistant surgeon, granted thirty days' leave of absence from July 10, 1909.

Weldon, Wm. A., acting assistant suregon, granted one month's leave of absence from Aug. 15, 1909.

APPOINTMENTS

Dr. Walter R. Brinckerhoff reinstated and appointed assistant director of the leprosy investigation station at Molokai, T. H.

Dr. Harry T. Hollman appointed an acting assistant surgeon for duty at the leprosy investigation station at Molokai, T. H.

Dr. H. B. Ross appointed an acting assistant surgeon for duty at Del Rio, Texas.

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 16, 1909:

SMALLPOX—UNITED STATES

Illinois: Chicago, June 27-July 3, 2 cases; Danville, June 28-July 4, 2 cases; Springfield, May 28-June 11, 2 cases.
Kansas: Kansas City, June 27-July 3, 1 case.
Kentucky: Covington, June 27-July 3, 2 cases; Lexington, 2 cases.
Louisiana: New Orleans, June 27-July 3, 3 cases.
Massachusetts: Lawrence, June 27-July 3, 1 case.
Missouri: St. Louis, June 19-26, 2 cases.
New York: General, May 1-31, 411 cases.
Ohio: Cincinnati, June 26-July 2, 1 case.
Texas: San Antonio, June 27-July 3, 3 cases.
Washington: Spokane, June 19-26, 1 case; Tacoma, June 20-27, 2 cases.
Wisconsin: Appleton, June 19-26, 1 case; Milwaukee, June 20-27, 2 cases.

SMALLPOX—INSULAR

Philippine Islands, Manila, May 22-29, 5 cases, 1 death.

SMALLPOX—FOREIGN

Argentina: Rosario, April 1-30, 1 death.
Brazil: Pernambuco, March 20-May 15, 26 deaths.
Canada: Halifax, June 19-26, 2 cases.
China: Amoy, June 1-5, 3 deaths; Hankau, May 8-15, present; Hongkong, May 15-29, 7 cases, 5 deaths; Shanghai, May 15-June 5, 2 deaths; Tientsin, May 1-8, 1 case, 1 death.
Ceylon: Colombo, May 22-29, 2 cases.
Egypt: Cairo, May 27-June 3, 3 cases, 4 deaths; Suez, May 20-June 17, 42 cases, 3 deaths.
India: Bombay, June 2-8, 10 deaths; Calcutta, May 15-29, 64 deaths; Madras, May 29-June 4, 3 deaths; Rangoon, May 22-29, 2 deaths.
Indo-China: Saigon, May 8-15, 6 cases, 3 deaths.
Italy: General, June 13-20, 14 cases; Naples, 8 cases, 4 deaths; Rome, March 6-13, 1 case, 1 death.
Java: Batavia, May 22-29, 2 cases.
Mexico: Aguascalientes, June 20-27, 1 death; Guadalajara, June 10-17, 1 death; Mexico City, May 15-22, 17 deaths; Monterey, June 13-27, 10 deaths; Veracruz, May 20-June 19, 1 case, 1 death.
Portugal: Lisbon, June 19-26, 3 cases.
Russia: Moscow, June 5-12, 43 cases, 7 deaths; Odessa, May 29-June 19, 7 cases; Riga, June 12-26, 10 cases; St. Petersburg, May 29-June 5, 19 cases, 1 death; Warsaw, April 24-May 8, 6 deaths.
Siam: Bangkok, May 1-28, 1 case, 1 death.
Switzerland: Geneva, June 5-12, 1 case.
Siberia: Vladivostok, May 14-21, 1 case.
Spain: Barcelona, June 7-21, 8 deaths; Valencia, May 29-June 19, 22 cases, 1 death; Vigo, 4 deaths.
Turkey in Europe: Constantinople, June 6-13, 4 deaths.
Turkey in Asia: Bassorah, June 5-12, present.

YELLOW FEVER

Barbados: Parish St. Joseph, June 12-19, 1 case.
Brazil: Manaos, June 5-12, 2 cases; Pernambuco, March 20-May 15, 7 deaths.

CHOLERA—INSULAR

Philippine Islands, Provinces, May 22-29, 14 cases, 5 deaths.

CHOLERA—FOREIGN

India: Bombay, June 2-8, 11 deaths; Calcutta, May 15-29, 117 deaths; Madras, May 29-June 4, 1 death.
Indo-China: Saigon, May 8-15, 1 case.
Russia: Bachmatschowo, June 24, 1 case, 1 death; Cronstadt, June 18, 2 cases; Mariechamn, June 23-24, 1 case, 1 death; St. Petersburg, June 18-24, 379 cases, 105 deaths; St. Petersburg Government, June 23-24, 8 cases, 1 death.
Siam: Bangkok, May 1-28, 1 case.

PLAGUE

Chile: Iquique, June 2, 10 cases in the lazaretto.
China: Amoy, June 1-5, 25 deaths; Canton, May 1-29, 110 cases, 85 deaths; Hongkong, May 15-29, 24 cases, 23 deaths; Pollam, May 22-29, 8 cases, 7 deaths; Touchowfu, present; Yin Shan, present.
India: Bombay, June 2-8, 56 deaths; Calcutta, May 15-29, 174 deaths; Rangoon, May 22-29, 13 deaths.
Indo-China: Saigon, May 8-22, 5 cases, 2 deaths.
Japan: Kobe, June 5-12, 1 case, 1 death.
Peru: General, May 5-19, 13 cases, 8 deaths.
Siam: Bangkok, May 1-28, 1 case, 1 death.
Trinidad: June 12-19, 2 cases.

Marriages

Louis E. Love, M.D., to Miss Rena Hall, both of Dardanelle, Ark., June 30.

John A. Mohlenhoff, M.D., to Miss Mary E. Seward, at Baltimore, June 29.

Ethel S. Mitchell, M.D., and Earl Newton, both of Concord, N. H., June 17.

William E. Buist, M.D., to Miss Ethel Powell, both of Nashville, Tenn., July 4.

Charles Floyd Jump, M.D., to Miss Genevieve Benepe, both of Bozeman, Mont., July 1.

H. Montague Francis, M.D., Gilbert, Minn., to Miss Nellie Hazel Ham, of Chicago, June 24.

Stanley J. Briggs, M.D., Sun Prairie, Wis., to Miss Selma Toepfer, of Madison, Wis., July 1.

Walter B. Hotchkiss, M.D., to Miss Winifred Godfrey, both of Chehalis, Wash., June 23.

J. George Smetzer, M.D., Baltimore, to Miss Cora O'Donovan Caldwell, at Baltimore, July 8.

Clyde McKay Beck, M.D., Coahoma, Miss., to Miss Dorothy Brema Coors, of Memphis, Tenn., June 29.

Arthur W. Swann, M.D., New York City, to Miss Susan R. Sedgwick, of Stockbridge, Mass., July 3.

Erria D. Stump, M.D., Charleston, W. Va., to Mrs. Edna Crawford Cunningham, of Cincinnati, July 3.

Harold Henderson Meanor, M.D., Coraopolis, Pa., to Miss Mary M. Baker, of Centerville, Pa., June 22.

Thomas Pollock Ranney, M.D., Chicago, to Miss Bertha Kuehn, of Eveleth, Minn., at Duluth, June 26.

Francis Stapleton Chambers, M.D., Mount Airy, Philadelphia, to Miss Mary Catherine Schley, at Lake Shore, Adirondacks, N. Y., July 3.

Deaths

Eugene Beach, M.D. Long Island College Hospital, Brooklyn, 1866; a member of the Medical Society of the State of New York; a member of the staff of the Nathan Littauer Hospital, Gloversville, and mayor of that city from 1904 to 1907; for many years a member of the local board of education, and health officer; a member of the State Board of Medical Examiners; died at his home July 7, from cerebral hemorrhage, aged 70.

William Herbert Powers, M.D. Vanderbilt University, Nashville, Tenn., 1900; a member of the American Medical Association; president of the Marion County (Fla.) Medical Association; surgeon to the Marion County Hospital; local surgeon to the Atlantic Coast Line Railroad; a member of the Ocala Board of Health; died at his home, July 4, from tuberculosis, aged 33.

Matthew Stuart Caldwell, M.D. New York University, New York City, 1879; of Far Rockaway, N. Y.; a member of the Medical Society of the State of New York; visiting physician to and president of the staff of St. Joseph's Hospital, Far Rockaway; died in St. Francis' Hospital, the Bronx, July 6, from pleurisy, aged 59.

Richard Cummings Stockton Reed, M.D. Cincinnati College of Medicine and Surgery, 1860; and at one time president of the college; formerly a member of the American Medical Association and one of the best-known practitioners and medical teachers of Cincinnati; died at his home in Stockton, Cincinnati, July 8, aged 84.

Andrew Joseph Dower, M.D. Bellevue Hospital Medical College, New York City, 1878; a member of the American Medical Association; formerly a member of the board of education of Brooklyn; died at his home in South Brooklyn, July 10, from pneumonia, aged 59.

John C. Pannenborg, M.D. University of Louisville (Ky.), 1894; a member of the American Medical Association; and first president of the Lake County (Ind.) Medical Society; organizer of the Hammond Hospital; died at his home in Hammond, July 9, aged 54.

Maurice Lowell Baum, University of California, San Francisco, 1904; of San Francisco; a member of the Medical Society of the State of California; was found dead in a hotel in San Francisco, July 7, from poisoning by chloroform and morphin.

Gerald Paul Garrigan, M.D. College of Physicians and Surgeons, New York City, 1902; of New York City; a member of the American Medical Association; died suddenly in Troy, N. Y., July 4, from heart disease, aged 29.

Philip L. Green, M.D. Western Reserve University, Cleveland, Ohio, 1867; of Vermontville, Mich.; died at the home of his niece in Allentown, Ill., July 7, from cancer of the stomach, aged 72.

Melvin F. Howe, M.D. Hahnemann Medical College, Chicago, 1888; of Lake Charles, La.; died at the home of his brother near Marion, Iowa, July 5, aged 43.

Russell G. Andrews, M.D. Albany (N. Y.) Medical College, 1866, for more than forty years a resident of Navesink, N. J., died at his home, July 6, aged 68.

H. Earle Grizzard, M.D. Vanderbilt University, Nashville, Tenn., 1907; died at his home near Goodlettsville, Tenn., July 4, from typhoid fever, aged 26.

James Campbell McClure, M.D. University of Georgetown, D. C., 1899; died at his home in Williamstown, N. J., July 5, from septicemia, aged 35.

James McRuark, M.D. McDowell Medical College, St. Louis, 1852; died at his home in Willisville, Ill., Jan. 20, 1908, from senile debility, aged 84.

Andrew P. Daughters (license, Ind., years of practice, 1897); died at his home in Moore's Hill, Ind., July 7, from cerebral hemorrhage, aged 79.

John S. Holland, M.D. Charity Hospital Medical College, New Orleans, 1875; of Bernham, Texas; died May 10, at Beaumont, Texas, aged 73.

Andrew Easley, M.D. Jefferson Medical College, Philadelphia, 1866; a Confederate veteran; died at his home in South Boston, Va., July 27.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

California: San Francisco, August 3. Sec., Dr. Charles L. Tisdale, Butler Bldg.

Georgia: Regular, Capitol Bldg., Atlanta, August 3-4. Sec., Dr E. R. Anthony, Griffin.

Nebraska: State Capitol, Lincoln, August 11-12. Sec., Dr. E. J. C. Sward, Oakland.

University of Missouri Abandons Clinical Teaching

The announcement of the School of Medicine of the University of Missouri for 1909-10 states that, owing to the limited clinical facilities at Columbia, the teaching of the last two years of the medical course will be temporarily suspended, to be resumed as soon as adequate clinical facilities are available. In the meantime the curriculum of the first two years is being strengthened. Beginning in September, 1910, two years of college work, including courses in physics, chemistry, zoology, English and German, will be required for admission.

State Board Contest in Nebraska

The establishment of a new State Board of Health by the recently elected governor of Nebraska has been contested. Until the matter is settled in the courts all examinations will be conducted by the former board, of which Dr. E. J. C. Sward, Oakland, Nebraska, is secretary. All of the state records and papers will remain in the hands of the old board until the final decision by the Nebraska Supreme Court is rendered.

Delaware June Report

Dr. Henry W. Briggs, secretary of the Medical Council of Delaware, reports the written examinations held at Dover and Wilmington, June 15-17, 1909. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 14, of whom 13 passed and 1 failed. One reciprocal license was issued. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Baltimore University	(1900)	77.8
University of Maryland	(1908)	78.3, 79.7
Atlantic Medical College, Baltimore	(1909)	93.4
Albany Medical College	(1909)	78.4
Jefferson Medical College	(1909)	85.8, 91.
Medico-Chirurgical College of Philadelphia	(1909)	82.9
University of Pennsylvania	(1909)	88.6, 89.9, 91.5
Hahnemann Medical College and Hospital, Philadelphia,	(1899) (1909)	90.5; 89.3.

FAILED

College	Year Grad.	Per Cent.
Maryland Medical College	(1907)	72.7

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Bellevue Hospital Medical College	(1894)	New York

Book Notices

Modern Medicine. Edited by William Osler, M.D., Regius Professor of Medicine in Oxford University, England. Assisted by Thomas McCrae, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vol. VI. Diseases of the Urinary System—Diseases of the Ductless Glands—Diseases of Obscure Causation—Diseases of the Muscles—Vasomotor and Trophic Disorders—Life Insurance. Cloth. Pp. 799, with illustrations. Price, $6. Philadelphia: Lea & Febiger, 1909.

This volume of "Modern Medicine" is divided into six parts. Part I deals with diseases of the urinary system. An instructive chapter introductory to diseases of the kidneys is contributed by John McCrae of Montreal, who also writes on malformations and circulatory disturbances of the kidneys. Garrod of London contributes two excellent chapters on anomalies of the urinary secretion and on uremia. Herrick of Chicago is the author of the chapters on nephritis (acute, chronic parenchymatous, chronic interstitial) and of the chapter on amyloid disease of the kidney. Thomas R. Brown of Baltimore discusses the bacteriology of the urinary tract, the pyogenic infections of the kidney, ureter and perirenal tissue and tuberculosis of the kidney, and H. H. Young of Baltimore writes on tumors of the kidney, on renal and ureteral calculi, on genitourinary diagnosis. While the treatment of all these subjects merits only praise, the chapters on nephritis deserve special commendation for their clearness and thoroughness and for the careful directions as to treatment.

Part II comprises the diseases of the ductless glands (the adrenals, the thyroid, including the parathyroids, and the pituitary body). It is written by G. Dock of New Orleans, and is a painstaking and complete summary of our knowledge in regard to these structures and their diseases, including exophthalmic goiter, cretinism, myxedema and acromegaly.

Part III, "Diseases of Obscure Causation," includes Hodgkin's disease by Longcope of Philadelphia, arthritis deformans by Thomas McCrae, osteomalacia by Dock, and astasia-abasia and adiposis dolorosa by D. J. McCarthy of Philadelphia—all excellent presentations.

Part IV deals with diseases of the muscles. Myositis, Thomsen's disease and myotonia congenita are discussed by W. R. Steiner of Hartford; myasthenia gravis, paramyoclonus multiplex and periodic paralysis by D. J. McCarthy. Both acquit themselves with credit.

Part V, "Vasomotor and Trophic Disorders," contains chapters on Raynaud's disease, angioneurotic edema, and diffuse scleroderma and erythromelalgia by William Osler, in which his usual grasp of the subject and charm of presentation are fully evident, and also a well-balanced and rich chapter by Charles P. Emerson of the Clifton Springs Sanitarium on achondroplasia, hypertrophic pulmonary osteoarthropathy, Paget's disease, osteogenesis imperfecta, osteopsathyrosis, leontiasis ossea, microcephalus and facial hemiatrophy.

Part VI is a valuable and instructive discussion of the medical aspects of life insurance by Charles Lyman Greene of St. Paul.

The volume maintains fully the high standard of its predecessors in the system. The parts on diseases of the urinary system and on diseases of the ductless glands in a way constitute a series of monographs in which the knowledge in these fields is presented by authoritative writers and teachers. Many of the other diseases considered are rare diseases, and consequently barely mentioned in the text-books. In this volume our present knowledge of these diseases is given in detail by authors who in almost every instance are specially qualified to do so by reason of exceptional opportunities for observation and of special study.

Studies on Immunity. By Robert Muir, M.A., M.D., Professor of Pathology, University of Glasgow, in Collaboration with Carl H. Browning, M.D., Alexander R. Ferguson, M.D., and William B. M. Martin, M.B., Ch.B. Cloth. Pp. 216. Price, $3.00. New York: Oxford University Press, 1909.

This volume of 216 pages is a revised reprint of eleven papers originally published in various journals by Muir alone, or by Muir in collaboration with Browning or Martin. They appeared from the years 1903 to 1909 and treated of such subjects as "The Action of Hemolytic Sera," "The Combining

Properties of Serum-Complements and on Complementoids." "Chemical Combination and Toxic Action as Exemplified in Hemolytic Sera," "The Hemolytic Receptors of the Red Corpuscles," "The Properties of Anti-immune Bodies and Complementoids," "The Action of Complement as Agglutinin," "The Deviation of Complement . . . and Its Relations to the Precipitin Test," "The Combining Properties of Opsonins of Normal Serums," "The Combining Properties of the Opsonin of an Immune Serum," "The Bactericidal Action of Normal Serum," "The Filtration of Serum Complement."

The subject-matter is divided into three parts: Part I: "Properties of the Hemolytic Sera;" Part II: "The Properties of an Anti-Serum to a Serum-Deviation of Complement and Its Relation to the Precipitin Test;" Part III: "The Antibacterial Properties of Serum."

Inasmuch as discoveries which were made subsequent to the publication of some of the papers necessarily modify some of the conclusions expressed, certain addenda have been made for the purpose of correcting the original interpretations. The material has been so modified and arranged as to secure a consecutive presentation.

The volume represents a type of publication which ought to be encouraged. A number of laboratories in this country and abroad have each followed some particular line of investigation for a series of years, and they may safely be considered as experts in their respective lines of work. Consequently, a volume which presents the work which one of them has actually covered, and which treats analytically of the work of others in the same line, should stand as an authoritative treatise on the subject. Such a publication, furthermore, provides a monument to the men and the laboratory concerned in the original work. The "Collected Studies on Immunity" by Ehrlich and his co-workers is a splendid example of this type of publication.

GYNECOLOGIC DIAGNOSIS. By George Winter, O. O. Professor and Director of the Klg. Universitäts Frauenklinik in Königsberg, Prussia, with the Collaboration of Dr. Carl Ruge, of Berlin. Edited by John G. Clark, M.D., Professor of Gynecology, University of Pennsylvania. After Third Revised German Edition. Cloth. Pp. 670, with illustrations. Price, $6.00. Philadelphia: J. B. Lippincott & Co.

This is a translation of a well-known German work, but, unlike many translations, it would be difficult to distinguish it from an original work in English. This edition has been entirely rewritten and the text has been brought up to date. The number of illustrations of the original is almost doubled and many old drawings have been replaced by photogravures. The work is arranged in three parts, comprising general diagnosis, specific diagnosis and analytic diagnosis. The first part deals with the modern methods of diagnosis, external and internal, including the methods of using vaginal and rectal specula, cystoscopy, bacteriologic methods and radiography. Obsolete methods have been excluded. The second part, on specific diagnosis, is probably the most important of the three. It starts with the description of normal findings and then takes up deviations, abnormalities and diseased conditions. The third part deals with the methods of arriving at diagnosis by reasoning from the history given by the patient and by exclusion. In this part of the book are discussed the various disorders of menstruation, hemorrhage, sterility, abdominal tumors, etc. This valuable book is to be commended.

GOLDEN RULES OF DIETETICS. By A. L. Benedict, A.M., M.D., Buffalo. Author of Practical Dietetics. Cloth. Pp. 407. Price, $3.00. St. Louis: C. V. Mosby, 1908.

The importance of the science and art of dietetics is coming to be more generally recognized by the medical profession and a knowledge of at least the fundamentals of the science is essential to the intelligent practice of medicine. Many of the books that have appeared on the subject are open to one of two criticisms: they are either so exhaustive as to repel the general practitioner, or, in an attempt to be succinct, they are superficial to the point of uselessness. Dr. Benedict seems successfully to have avoided both extremes and if for no other reason this book is a welcome addition to the literature of dietetics. While the subject has been handled conservatively the author is evidently alive to the advances that have been made in recent years in the science of feeding. The eminently sane tone that pervades the work is noticeably present in the chapter dealing with diet in diabetes. In the first part of the book are chapters on physiologic chemistry, standard diet in health, the preparation and composition of food, and Dr. Benedict's condensation of Bryant and Atwater's analysis of foodstuffs. The last half of the book is given over to the consideration of diet in special pathologic conditions.

JAHRESBERICHT ÜBER DIE FORTSCHRITTE DER INNEREN MEDIZIN IM IN- UND AUSLANDE. Redaktion: Dr. Schreiber, in Magdeburg, Dr. Rigler in Leipzig. Bericht über die Jahre 1902 und 1903. 1. Band. Paper. Pp. 776. Leipzig: Verlag von Dr. Werner Klinkhardt, 1909.

This volume presents a complete review of the world's literature on internal medicine for the year 1902 and 1903. Owing to its late appearance it naturally will serve chiefly as a source of reference to authors. This defect is to be partly made good in the publication of subsequent volumes which will follow, so that the literature of 1908 will be reviewed in a short time and that of 1904 and 1905 also before the end of the year. Next year the volumes for 1906 and 1907 and 1909 will be published, thus bringing the series up to date.

Miscellany

Drugs of the Olden Time

The general belief is that almost all of the substances used in old-time medicine were practically useless and that their employment was due to tradition, supported by the fact that most diseases and injuries have a tendency to recovery of themselves. Yet it is surprising how much of the old empirical medicine has survived in the practice and is confirmed by the theory of the present day. Sir William R. Gowers, in his second series of lectures on the nervous system ("Subjective Sensations of Sight and Sound, Abiotrophy and Other Lectures," Philadelphia, Blakiston, 1904) has a very striking passage on this subject:

"It is strange, indeed, to note how far back goes the use of the drugs on which we most rely. Most of them can be traced far back into the distant past until they are lost in the blue mists which shroud alike the hills of Greece and the deserts of Arabia, or to the time when the world learned its wisdom from the land where now the symbols of man's thought lie deep beneath the desert sand or stand silent in the cold moonlight of a long dead past. We smile at the popular herbal remedies. But it is to these that we owe the majority of our most useful drugs. I can not conceive a therapeutist surveying a list of the chief drugs on which we depend in our daily work—and do not depend in vain—without a sense of wonder and perhaps of humiliation. We disinfect our rooms with burning sulphur; and so men did before the time of Homer. We purge sometimes with rhubarb, especially when some subsequent astringent influence is desirable, and so did the old Arabians for the same special reason. The value of castor oil in its chief use was familiar, probably for ages, to the natives of the East and of the West Indies before it was made known in Europe by a physician from Antigna one hundred and fifty years ago. Aloes was employed in the same way long before the time of Dioscorides and Pliny. The knowledge of the influence of ergot in parturition we owe to the peasants of Germany, and the use of male-fern for tapeworm goes back to the old Greeks and Romans. The employment of mercury in syphilis by inunction and fumigation, which our nineteenth century therapeutists regard with such satisfaction, seems to go back to the time of the crusades, and it is said that its use can be traced in Malabar as far back as the ninth century. Podophyllum as a purgative we owe to the North American Indians."

John Russell's "Book of Nurture," a Harleian manuscript, which dates from the fifteenth century, and which was first printed for the Early English Text Society by Dr. Furnivall about forty years ago in a collection of hitherto unedited texts called "The Babees' Book" (recently republished by Duffield, New York), has an account of some of the herbs that were commonly used at that time for the treatment of injuries and ailments of various kinds. As here suggested, they were used in a bath, but they were evidently the ordinary simples of the time. Among them fennel, pellitory, which contains nitrate of potash, and camomile are still used as home remedies. Centaury, so named from the legend that by a decoction of it Chiron, the centaur, was cured, is a plant of the gentian family, which is still considered valuable as a bitter. Heyriff is said to be still used in France as an internal remedy for epilepsy. Herb-bennett—a name derived from the term "herba benedicta," or the blessed herb—was supposed to be particularly efficacious in driving away the devil. This was very probably one of the forms of valerian; we still use it in driving out devils, though we often are not very successful because the blue devils of hysteria do not yield readily. As external applications the common daisy and mallow from the marshmallow were used. The main virtue of these undoubtedly lay in the fact that they were thoroughly boiled before being applied, and therefore were probably aseptic. As they made a coating over the wound, they served—and this was especially true of the marshmallow—as a protective almost as efficient as the modern collodion.

Apparently, they had many "blood purifiers" in the old days which we still have with us, their efficacy being due in part to suggestion and in part to their laxative effect. Danewort, a dwarf elder, for instance, was traditionally thought to have sprung up by a sort of spontaneous generation wherever there had been an encounter between the English and the Danes. The mixture of these two virile bloods was supposed to make for wonderful blood-purifying properties in the herb that resulted; it is still employed sometimes because of its purgative properties. Flaxseed was employed for its supposed power over coughs; flaxseed tea was usually taken three cupfuls a day. The most efficient cough remedy that we have even at the present day when coughs are hard, is an abundance of fluid. Besides, flaxseed tea was a mucilage and all of the mucilages are valuable for their protective property for the throat irritated by the explosion of coughing. Evidently the drugs of our forefathers deserve less scorn than we have given them.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

DIVISION OF FEE AND COMMISSIONS TO PHYSICIANS *

AUGUSTUS A. ESHNER, M.D.
PHILADELPHIA

Articles of commerce pass, as a rule, through several hands before they reach the consumer. A certain profit or commission properly accrues to each of those that effect a sale. The price of such articles varies in accordance with the laws of political economy, being affected especially by the cost of production and of marketing, as well as by conditions of supply and demand. Occasionally, for reasons of expediency, goods are sold at a loss; but rarely are they given away gratuitously.

The profession of medicine, while it has certain business aspects, differs radically from the various forms of commercial and industrial activity. It is, however, neither a business nor a trade. The medical man, like his neighbors in the community, must pay taxes and rent, and he must provide the necessities of life for himself and his family, and to meet these obligations he must have a definite source of income. From esthetic considerations his expenses are greater than those of laymen occupying a corresponding social position. His work requires his personal attention, and he can not readily delegate it to others as can the business man; nor can he, like the manufacturer, multiply the product of his activity through the agency of machinery and subordinates. His opportunities for relaxation, diversion and entertainment are restricted by the demands that may be made on his time at any hour of the day or night, and he can indulge in protracted holidays only at the sacrifice of income and practice.

Throughout his entire professional career the physician renders without pecuniary compensation a large measure of service in hospital and dispensary, in his office and in the homes of the poor. In addition he does a not inconsiderable amount of work for which he fails to receive the material reward to which he is morally and lawfully entitled.

Physicians' fees necessarily differ in accordance with the nature of, and the time required in, a given case on the one hand and the skill and experience of the individual practitioner on the other hand. In every case the service, wholly apart from considerations of gratitude or other emotional factor, should be adequately compensated. The situation is in no wise changed if the exigencies of the case demand the reference or the transfer of the patient to a second physician or the calling of such a physician in consultation, with a view to clearing up an obscure diagnosis or formulating the prognosis or obtaining aid and suggestion in treatment, medical, surgical or otherwise. In each instance the physician gives his best skill and judgment in the interest and for the welfare of the patient, and the latter in turn should be ready and willing to compensate adequately each and all of those on whose service he makes demand.

From the foregoing considerations it does not seem that there can be any fair or honorable division of the physician's fee. For one physician to make such division with another or to pay a commission, would mean the alternative of surrendering a part of the compensation to which the first physician is fully and deservedly entitled for the service rendered by him or the making of an excessive charge against the patient and out of which the second physician receives his remuneration. Such a course would be compromising to both parties to the transaction and it could result only in the demoralization of both donor and recipient and the eventual commercialization of medicine. The physician who expects a commission or a division of the fee will be tempted to select that consultant or operator or specialist who yields the largest pecuniary return, and who for this reason may charge the largest fee, or at times to advise consultation or operation when it is not actually demanded by the requirements of the case, while such a keen rivalry might develop among physicians who divide fees or pay commissions that one outbids the other in the desire to secure new business and more fees. Out of this situation no advantage could redound to the benefit of the patient.

What has been said with respect to the relations among physicians applies equally to druggists, instrument-makers and other tradesmen. The payment and acceptance of commissions for articles purchased by patients merely puts an added burden on the latter, entirely without their knowledge and consent.

Society Proceedings

STATE MEDICAL SOCIETY OF WISCONSIN

Sixty-third Annual Meeting, held at Madison, June 30-July 2, 1909

The President, Dr. Gilbert E. Seaman, Milwaukee, in the Chair

Proceedings of the House of Delegates

The officers elected were given in The Journal, July 17, page 215. Milwaukee was selected as the meeting place for 1910.

A vote of thanks and appreciation was extended to Dr. E. L. Boothby, of Hammond, for his past work in behalf of the society.

Dr. O. T. Hougen of Grand Rapids was elected councilor for the Ninth District and Dr. R. U. Cairs of River Falls councilor for the Tenth District. The resignation of Dr. C. J. Coombs of Oshkosh, Sixth District, was accepted, and Dr. H. W. Abraham of Appleton was elected to succeed him.

The date of the ending of the fiscal year of the association was changed to April 15.

The president was instructed to appoint three delegates to represent the society at the United States Pharmacopeial Convention of 1910.

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* Read before the American Academy of Medicine, June 7, 1909.

The consideration of the resolution passed by the American Medical Association recommending that advertisements of medical preparations be limited to those approved by the Council on Pharmacy and Chemistry was postponed.

The president was authorized to appoint a "Committee on History of Medicine in Wisconsin," to collect data on the early history of physicians and medicine in Wisconsin. He appointed Dr. W. S. Miller of the University of Wisconsin, and Dr. G. P. Barth of Milwaukee.

PROPOSED PURCHASE OF WISCONSIN MEDICAL JOURNAL

Dr. C. R. Bardeen, chairman of the committee appointed to consider the offer of the Wisconsin Medical Journal Company to transfer its entire property to the society, presented the report of the committee as follows:

> Whereas, We recognize that the establishment and maintenance of the *Wisconsin Medical Journal* has been of great benefit to the medical profession of the state, and
>
> Whereas, The proprietors of the *Journal*, after conducting it for five years, now offer it to the State Medical Society of Wisconsin on what appears to your committee to be unusually generous terms, and
>
> Whereas, The present proprietors of the *Journal* are unwilling longer to assume these responsibilities and believe that it would be to the benefit of the state society to own its own journal.
>
> The committee respectfully recommends that a special committee be appointed to consider more at length the feasibility and details of such change of management and to report the same to the council with power to act.

The report was unanimously adopted and the president was instructed to appoint a special committee of five delegates for the purposes named, with power to act.

A motion was unanimously carried that it was the sense of the house that the society should take over the ownership of the *Wisconsin Medical Journal* if in the judgment of the committee such action is deemed feasible. It was also voted that society again contract for the publication of the proceedings on the same terms as last year and for such time as may be necessary to complete the proposed transfer of the ownership of the *Journal*.

REPORT OF DELEGATES TO CONFERENCE ON MEDICAL EDUCATION OF AMERICAN MEDICAL ASSOCIATION

The report of delegates to the Conference on Medical Education of the A. M. A. showed that the meeting was well attended. The report showed a marked tendency to lessen the number of medical schools in operation; that the movement for higher entrance requirements is well under way, and that ideal courses were reported by the committee on curriculum designed to encourage uniformity in the hours devoted to the various branches of study in medical schools. The report was unanimously adopted as read.

REPORT OF THE COMMITTEE ON PREVENTION OF TUBERCULOSIS

Dr. A. C. Harper, Madison, presented this report detailing the work done in Wisconsin along the lines of the prevention of tuberculosis. The state organization is endeavoring to organize local associations to act in conjunction with the state association to spread knowledge concerning tuberculosis and its prevention; the report suggests that the state association and state committee on prevention and cure of tuberculosis work together so that no division of labor and no cause for dissention will arise. The report was adopted as presented.

THE REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. A. J. Patek, Milwaukee, presented this report. It showed that the following bills were killed: A bill for the licensing of chiropractics; a bill creating a board for the examination and licensing of opticians; a bill to amend the present laws governing the appointment and organization of the state board of medical examiners. The committee also reported the passage of a law providing for the registration and licensing of midwives, the bill being the best law on the subject in force in any state of the Union. The report was unanimously adopted.

REPORT OF DELEGATE TO THE NATIONAL LEGISLATIVE COUNCIL

Dr. Byron M. Caples, Waukesha, presented this report, which showed that the matters taken up there embraced uniform state laws on vital statistics; the matter of the revision of the tariff in so far as it affected the medical profession; a discussion of the enforcement of pure food acts; a recommendation that there be a central body to formulate a single law applying to each state in the matter of the regulation of the practice of medicine; that the matter of expert medical testimony was referred to a special committee, to report at the next meeting of the national committee; that a hearing was arranged before the House Committee on Interstate and Foreign Commerce with reference to the Public Health Bill; that the matter was presented by Dr. Reed, who made the suggestion that there be established a bureau of health to deal with matters of public health. The report was unanimously adopted.

Address of Welcome

Hon. John A. Aylward, Madison, stated that the people of Madison were proud of their own physicians, both because of their high rank in the profession and because of their character as men and citizens; that Madison welcomed the convention because it believed that the men in the medical profession in their own communities were doing grand work; that the doctors and lawyers were doing more work for the state than all other classes and professions together.

Address of Welcome on Behalf of the University of Wisconsin

President C. R. Van Hise, University of Wisconsin, stated that his appreciation of the work of the State Medical Society of Wisconsin had steadily grown through recent years, as his knowledge had extended of their work in the state. He stated that traditionally the physician of the town was one with the clergyman and the lawyer; that in the past, until comparatively recently, the work of the physician had been regarded mainly as personal, in the cure of disease, but that in the past 25 years, and especially during the past decade, there had been a great transformation; that the physician had realized that his function included not only the cure of disease, but the prevention of infectious and contagious diseases in his community, and prevention of their spread once they had gained a foothold, and that he believed that in the future this would be the most important duty of the physician. It formerly was said, in some cases at least, that the practice of medicine was a mercenary profession; this charge was never true in a general way, the physician who added to his duties of curing the sick the duty of an active interest in the welfare and the health of his community was certainly above any such charge. He spoke of the great responsibility resting on the physician by virtue of his knowledge of the possibilities of eliminating infectious and contagious diseases; that in a democratic community the enforcement of such laws as could be framed to accomplish this result would be impossible, but that by education and carrying out to the people the knowledge which scientific medicine had gained during the past 25 years this could be accomplished. On each physician was imposed the duty of becoming a center of education in reference to sanitation and hygiene and the elimination of infectious and contagious diseases. This duty was being promoted by the State Medical Society.

The University of Wisconsin would cooperate in this work, but owing to the small fund at hand, it could do comparatively little without the help of the medical profession. It was as a force of men realizing their great public responsibility that he especially welcomed the society to the university. The laboratories of the university were open for inspection and examination throughout the meeting, and assistance was glady offered.

The response to the addresses of welcome was fittingly made by President G. E. Seaman.

President's Address: Medicine in Wisconsin

Dr. G. E. Seaman, Milwaukee: The State of Wisconsin, through its university, is doing much for medicine, and the establishment five years ago of the State Hygienic Laboratory was a long step in advance toward the more effective study of preventable diseases. There is the greatest necessity for the wide dissemination of the plain facts of preventive medicine and there should be no mystery in medical science.

Preventive medicine is to-day the strongest current in medical progress. The medical department of the University of Wisconsin should seriously consider the development of a school of public health and sanitary science to fit men for public health positions. No such school is now in existence in this country, although two universities have made a start in this direction; and many foreign countries have made great progress along these lines. The recent reorganization of the State Medical Society of Wisconsin has been distinctly beneficial, there being distinct gains in membership and in quality of work, but it would be well to eliminate the district society and devote our energy to the upbuilding of the county society, and county secretaries should be *ex officio* members of the House of Delegates. The establishment of a committee on medical defense has proved an excellent thing.

Eddyism, Dowieism, the new thought, the Emmanuel movement and the holy jumpers owing their temporary success to the worship of the novel and the mystic and the glamour of strong personality, will not seriously affect rational medicine, founded as it is on the solid rock of scientific experimentation and demonstration. But psychotherapy and every other variety of therapy is the particular property of the skilled medical man, and physicians should make use of the potent influence of suggestion when indicated in their daily practice. There is no occasion for quarrel with any pseudo-religio-medical cult or the worshippers of mawkish sentimentality as exhibited by the antivivisectionists and their kind, for the achievements of rational medicine stand to-day as an imperishable monument to the genius and devotion of her followers.

(*To be continued*)

AMERICAN NEUROLOGICAL ASSOCIATION

Thirty-fifth Annual Meeting, held in New York, May 27-29, 1909
(Continued from page 228)

Type and Distribution of Sensory Disturbances Following Cerebral Lesions

Dr. **Carl D. Camp**, Ann Arbor, Mich.: Dissociation of sensation frequently follows cerebral lesions. The type of dissociation is not constant, but probably depends on the location of the lesion. The disturbances of sensation are usually confined to one side of the body, but some cases apparently show that there is rerepresentation in the cerebral cortex of the sensory distribution of spinal segments. A case which I have observed showed marked dissociation of sensation and strongly suggested spinal segmental sensory representation in the brain.

Inversion and Interlacing of the Color Fields an Early Symptom of Brain Tumor

Dr. **Harvey Cushing**: This report is a preliminary one and is based on observations made in conjunction with Dr. James Bordley, Jr. The history of most brain tumors extends over a period of years rather than months. It is perhaps not surprising to find that almost every patient brought for operation after the diagnosis of brain tumor has been finally certified by the often long-delayed ophthalmoscopic changes, has at an early stage of the trouble been regarded as hysterical or the subject of some psychoneurosis. Following Charcot, an impression still holds sway that more or less contraction of the field for form with partial or complete color reversal (dyschromatopsia) is the great "essential sign of hysteria." These alterations of the visual fields are no less characteristic of brain tumors. We have found no definite relationship between the contraction of the field for form and that of the color field. Some patients have shown the typical hysterical concentric contraction with color reversal, but in many of them there has been a prompt return to the normal relations after a simple decompression. Others have shown peripheral limitations greater in fields for form than in color fields, the red being less affected than the blue. There have been other cases in which contraction for colors and form go hand in hand, though the blue is usually much more affected than the red field. The prominent feature of most of our charts is not so much the preservation of the red field as the alteration of the blue. In several instances there has been a total achromatopsia and a more or less definite hemiachromatopsia for blue alone. The changes in the color fields often foretell alterations that are to take place subsequently in the fields for form. Thus in a few instances quadrantal defects in the color fields have been followed by corresponding form changes; in others hemiachromatopsia has been followed later by complete homonymous hemianopsia. The process seems to be one related in some way to increased intracranial tension, the relief of which usually causes an early subsidence of the dyschromatopsia. These visual disturbances do not seem to be dependent upon neuroretinal edema, since in a number of patients they preceded any appreciable ophthalmoscopic changes.

DISCUSSION

Dr. **M. Allen Starr**, New York: Has the interlacing of the color fields been observed in ordinary choked disk following nephritis?

Dr. **C. K. Mills**, Philadelphia: For many years I have noticed the occurrence of changes in the visual field similar to those to which Dr. Cushing has called attention in cases of brain tumor, and not only in cases of brain tumor, but in a few cases of other organic lesion. In 1898 Dr. Keen operated on a parietal tumor, the report of which was presented to the American Neurological Association in the same year or the year following, in which I contended for the existence of a brain tumor in the parietal lobe, but some of the consultants believed that the case was hysterical, one of the reasons for this belief being the observation of the ophthalmologist, Dr. Risley, that the reversals in the field and the contractions in the visual field were similar to those observed in hysteria, and a note of this fact was made in the report which was published years ago. In other cases this has been observed. Dr. de Schweinitz on two or three occasions presented papers on hysteria in which the matter was referred to Dr. Cushing indicates his belief that these changes should be ranked as among the general symptoms of brain tumor. I note that most of the cases were of growths in a region where one would naturally expect them to be, so that we might regard the symptom as in part at least a focal symptom. It is a matter of some importance whether the symptom is to be regarded as a focal or as a general symptom. Tumors and other lesions situated in the parieto-occipital and temporal regions are very likely, in my experience, to produce conditions similar to those to which Dr. Cushing has called attention, although I have never gone into the subject so fully as has Dr. Cushing.

Dr. **B. Sachs**, New York: In the five or six weeks since Dr. Cushing has called my attention to his work in color fields I have had five cases of intracranial tumor in which it was put to a careful test. The eye examinations were made by ophthalmologists who had not been told of my desire to test Dr. Cushing's work, but in every case what Dr. Cushing claimed was found. In two cases the tumor was found at operation. This work of Cushing's will in all probability have to be taken as one of the general symptoms of brain tumor and not a symptom which must necessarily have to do with the visual tract. The importance of this symptom can not be overestimated, and, as it appears long before other symptoms, we should be doubly grateful for this contribution.

Dr. **George L. Walton**, Boston: The importance of this communication can hardly be overestimated as offering practical aid in the diagnosis of organic from so-called functional cases. I have not studied the reversal and interlacing of fields in brain tumor, but I have seen, long-standing hemianopsia with achromatopsia with the field for form preserved in a case of tumor of the pituitary body. The visual symptoms long preceded those suggesting tumor and appeared many years before changes discoverable by the ophthalmoscope. They had been mistaken for an unusual form of ocular disturbance accompanying migraine, for the patient had been subject to recurring one-sided headaches for a long term of years.

Dr. **James J. Putnam**, Boston: The peculiar distribution of disturbances in cerebral lesions may in reality be due not to the anatomic lesion but to an attempt of the organism to reestablish equilibrium which has been disturbed by lowering of function due to the lesion.

Dr. **Morton Prince**, Boston: Did the amblyopia which existed in one of the cases appear before the optic neuritis developed?

Dr. Harvey Cushing: There was a very high grade of choked disk.

Dr. Morton Prince: Was the amblyopia always accompanied by choked disk?

Dr. Harvey Cushing: I have had only case of amblyopia, therefore, I can not generalize on it.

Dr. J. K. Mitchell, Philadelphia: In the course of examination of a great many cases, most of which were apparently hysterical, I found in at least two or three patients with spinal injury which had resulted from very small trauma, reversal and retraction of the color fields. None of them were patients who could have been said at the time to have hysteria, and the discovery was made accidentally. There were some cases of locomotor ataxia in which it appeared.

Dr. G. E. De Schweinitz, Philadelphia: It is suggestive in every way. It is a well-known fact that concentric contraction of color field and color lines occurs in a number of conditions other than hysteria. In Charcot's clinic the same condition of affairs occurs in lesions of the internal capsule and in brain tumor of which a number of examples have been quoted, and it is a well-known symptom in certain toxemias, especially those the result of alcohol, of lead, probably of tobacco, and is most remarkably noticeable in cases of poisoning by dimethyl-benzoate. In those cases the color field exactly represents the hysterical color fields in Monod's book. This seems interesting because it seems to confirm that in many of these cases there must be great alteration in the intracranial pressure, particularly in the lead and alcohol. Another interesting fact brought out is in reference to the blue-blindness which Dr. Cushing has observed in many of these cases. That is, of course, a thing which might and does take place under various retinal conditions. This confirms Cushing's views in regard to the production of albuminuric retinitis which he has relieved by the decompression operation. The inversion of the color fields is due to intracranial pressure under such circumstances. It is a mistake to think that hysteria alone is capable of producing this peculiar condition when we know that it can be produced by the conditions recited.

Dr. Harvey Cushing: I wish first of all to give credit where it is due. Dr. Bordley discovered this constancy of color inversion, or interlacing of the color fields, in brain tumors. Dr. de Schweinitz has answered Dr. Starr's question. My view is that this condition is in some way associated with tension. Perhaps the albuminuric retinitis is partially due to cerebral edema, and one would expect to find these same changes in association with so-called albuminuric retinitis. We have not had a sufficient number of cases to speak dogmatically about it. I am sorry that I was not aware that Dr. Mills had worked this point out, as it would have saved a great deal of work. I am interested in what Dr. Mills has said as to whether this should be regarded as a general or a focal symptom and believe he has said just what we would all say about it, that is, that it appears to be a general symptom, but in certain cases there are focal signs which are suggestive of the nature of the lesion.

Distinction Between the Psychoneuroses Not Always Necessary

Dr. G. L. Walton, Boston: Much confusion exists regarding the classification of cases presenting nervous symptoms without known organic basis. In well-marked cases, there is little difficulty. Such symptoms as aphonia and anesthesia indicate hysteria; flight of ideas and pressure of activity, alternating with retardation of thought and profound depression are easily recognized as meaning manic-depressive insanity, and so with all well-marked cases. But there is a large class of patients showing symptoms which are common to manic-depressive insanity, hysteria, hypochondria and neurasthenia. Much unnecessary effort is made to place each of these cases under one or the other category. The text-books attempt, without success, to make clear the distinction between mild forms of these disorders. It should suffice to class these mild cases simply under the term psychoneurosis unless definite symptoms develop. Nothing is lost by including under this term most of the cases classed under neurasthenia, a misleading term, since it implies an asthenic condition not always present, whereas psychoneurosis indicates the essential state of all patients now included under neurasthenia.

DISCUSSION

Dr. Morton Prince, Boston: It would be going back forty years in time to accept this classification. What we want to do is to differentiate, to acquire precision of knowledge and not to dump everything together and say that we are dealing with only substantially the same thing.

Dr. Philip Coombs Knapp, Boston: There are many cases in which it is difficult to make a diagnosis. It is difficult sometimes to make a diagnosis between general paralysis and neurasthenia, between tabes and neuritis, between brain tumor and an ordinary epilepsy, but it does not seem that, because the diagnosis is difficult, we should throw up the sponge entirely and say there is no difference at all. There are certain well-defined types of mental and nervous disease; there are many borderland cases, but the more exact and the more thorough our study the better we can differentiate between them and the better our treatment can be.

Dr. Adolf Meyer, New York City: We know that there is more than one group of facts to be interpreted in almost every case that we have to handle. The error arises from the habit of trying to classify our cases as patients. If we then in the actual performance of grouping our cases throw an individual into one group, although he has something else in another group, we simply falsify our conceptions and do injustice to the actual work that we are doing.

Dr. J. J. Putnam, Boston: The diagnosis of psychoneuroses has been used a good deal more in the Massachusetts General Hospital than in other clinics. My tendency of late years has been to endeavor to differentiate a great deal more between the different cases than formerly. I have used the term psychoneurosis simply as a convenient heading in hospital classification, realizing that if I took up these cases again to study them I would analyze them a great deal further. We should recognize that we have to deal with patients, not cases, and with sick people who are sick at the same time in various ways.

Dr. C. B. Burr, Flint, Mich.: If you had the patient alone to deal with it might do to act on Dr. Walton's suggestion, but, unfortunately, you have his friends to deal with. A patient comes from another doctor, a friend. After a consultation you say the patient has a psychoneurosis. Presently you are going to hear from the patient's friends, "Why, Dr. ——— said she had hysteria." You try to compromise; you tell them you are in accord with the former physician and endeavor to explain, and by and by you mix the ball up and what you have to say will fall flat. It is better to arrive at a conclusion, even if you differ from everybody else, than to come to none at all.

Dr. J. W. Putnam, Buffalo, N. Y.: It has always seemed to me that the great desire to find what kind of disease the patient has may be carried to an extreme, and the tendency should also be to find out what kind of a patient is controlled by the disease. The same symptoms occurring in one individual lead to much more serious disaster than the same group of symptoms occurring in another patient.

Dr. G. L. Walton: My plan is not for merging such diseases as brain tumor and neurasthenia but rather to reserve for such really important questions one effort at classification. My position is not like that of collecting the diseases of the various viscera under one head but rather analogous to a protest against subclassifying those cases of heart disease without organic basis, whose symptoms are common to all, such as palpitation, anxiety, etc.

(To be continued)

MASSACHUSETTS MEDICAL SOCIETY

One Hundred and Twentieth Annual Meeting, held at Boston, June 15-16, 1909

(Concluded from page 226)

Discussion on Gastric Surgery

Dr. John C. Munro, Boston: Judging from my experience, alcohol has nothing to do with the frequency of duodenal ulcer. Some ulcers heal themselves, but it is not wise to depend on medical treatment, as this is distinctly a surgical disease. It is difficult to differentiate a duodenal from a gastric ulcer, as their situations are so near each other. One form may be present and yet be hidden by symptoms of the other. A duodenal ulcer may creep up to the pylorus, and it is this form which often becomes carcinomatous. Pain is a most valuable symptom and has no special relation to the ingestion of food. Pain at 11 and 4 o'clock and at midnight and relieved by food is a useful symptom. We can not make a diagnosis of location of ulcer by symptoms, but surgery must be called into play for final diagnosis. There is no objection to operating on chronic ulcer. Complications are so rare that they may be disregarded. Speaking of areas of hyperalgesia in the diagnosis of abdominal diseases, I shall use the method for trial in some future cases. For gastric dilatation the treatment is stomach washing. The Mayos advise their internes to substitute the stomach tube for the stethoscope for a neck instrument. Dr. Maury's work on duodenal secretions I consider valuable data in these stomach and duodenal cases.

Dr. Farrar Cobb, Boston: Acute inflammation of the kidney resembles at times appendicitis or cholecystitis, and often can be diagnosed by operation only. Ruptured tubal pregnancy symptoms are not classical in my experience, and often simulate appendicitis, gallstones or perforation.

Dr. Joshua C. Hubbard, Boston: In dilatation of the stomach we have a derangement of the nerves of the stomach. The real condition is a motor insufficiency of the stomach, and we should recognize it. The treatment may be preventive and corrective. It is evident that the preparation of the patient is of little moment in this lesion, since it is not seen in emergency surgery. It is no hardship on a patient to pass a stomach tube, when necessary. It may be done with the patient reclining and if any severe symptoms exist previously the patient feels repaid for the effort by the relief obtained. Shock is not caused by this procedure. The prognosis of dilatation of the stomach untreated is bad, but treated promptly recoveries are usually 100 per cent. Diagnosis is not difficult. I think that in general the use of the stomach tube is valuable in the after-treatment of surgical affections. All food should be stopped in suspicious cases and the tube used early and often.

Dr. Robert B. Greenough, Boston: I consider the constant overflowing of the stomach an important symptom of dilated stomach following surgical procedures. It can and does follow the application of a plaster packet.

Dr. Elliott P. Joslin, Boston: I have seen two cases following applications of plaster jackets, and they were successfully treated by the tube. Usually any food given following an operation is liquid, and it returns through the tube. In the coma of diabetes one should not give too much water with the alkali by mouth, as it tends to cause acute dilatation. It is wiser to give it by rectum. In "stepping up" the food, following laparotomy, it is wiser to give, following liquids, a more concentrated liquid than to give more of the liquid. This may be classed as prophylactic treatment. In the diagnosis of duodenal ulcer we can not rely on one symptom. I fear we are behind the times in this particular.

Dr. Franklin W. White, Boston: I found in a series of ulcers that two-thirds were gastric and one-third duodenal, and think it very difficult to differentiate the location of the two kinds.

The Shattuck Lecture: The Widening Sphere of Medicine

Dr. Edward W. Taylor, Boston: Medical practice was narrow a few years ago, but now it is broad. It is now preventative. There is less of the individual physician and more of the medical profession as a body. The work of the medical school is now more to aid the physicians as a whole than singly. This has reached a point when we ask ourselves whether the country towns are receiving proper physician's attendance. No one influence has been more prominent than the development of the specialties. It is said that specialties narrow. But still it is a platitude that all advances now must come through advances in special lines. Yet there is no antagonism between general practitioners and specialists. The former depend on the work of the latter. In reality, the pursuit of specialism is broadening due to the necessity of a knowledge of so many related subjects. We never may return to old superficial methods. In the world of men the physician is no longer placed on a pedestal, all his treatment is scrutinized. The definite benefit of modern medicine is its freedom from mysticism. People wish reasons for occurrences. Exactness is necessary, and the public has increasing interest in medical affairs. The public lectures on medical subjects held in Philadelphia and Boston should be continued. The public should know that we can not at present prevent pneumonia but can prevent tuberculosis. As an evidence of the interest in medical affairs by the public I would mention the widespread circulation of a recent work, "Why Worry," by a Boston neurologist. We must have the cooperation of the public in this preventative propaganda, and we need endowment. The social service is a prominent example of the widening sphere of medicine. The subject of hygiene and preventive medicine had few adherents in the past, but the number is increasing. It has been said that medicine requires a certain kind of mental makeup. It is plain that the attitude of the student is much influenced by that of the teacher. There are not enough students to supply the demand at present, and it is due to lack of attractive features in the practice of medicine. How may things be readjusted? Not by lowering the standard. The principle is to raise the standard, but we must also broaden it. I believe we should not refuse to admit men who are capable and yet who have not followed a certain prescribed course. An elective system modified to suit all conditions must be possible, if we are to act correctly. The great need of the future is recognition of the many diverse paths which may be followed in medicine.

The Diagnosis, Prevalence and Prevention of Rabies

Dr. Langdon Frothingham, Boston: Three methods of diagnosis are commonly used, inoculation of animals, isolation of the Negri bodies in the brain of the animal suspected, and the lesions in the ganglia. The Negri bodies vary in size considerably but with proper staining are very satisfactory. The technic is so perfected that in less than two hours a positive diagnosis is possible. The period of incubation has wide variation, and in some recorded cases varied from seven to ninety-one days. I strongly advise general muzzling and quarantine. Rabies would be immediately stamped out by these means.

DISCUSSION

Dr. Chas. H. Withington, Boston: The death rate of all cases untreated is 16 per cent. of those bitten. In Paris, with Pasteur treatment, a report of but 1 per cent. mortality is recorded. The last few days of life in a case is an example of terrible agony. In one case ether was used but had no effect on the convulsions. The mortality, when the disease is fully developed, is 100 per cent.

The Blood in Surgery

Dr. James G. Mumford, Boston: There are three methods of investigation of the blood. First, in the laboratory; second, the technical method which carries findings to bedside, and, third, the literary investigation, which adds its quota. The idea of transfusion is as old as the science of medicine, but we have perfected it. It is known that the blood does not tolerate large quantities of normal saline solution. Other solutions have been tried, as glycerin solution, milk, etc., but since 1890 saline infusion has been the usual procedure. One value of infusion is the flushing out of small capillaries. It has been asserted that the bulk only is necessary and that real blood is not necessary. But of late we have had evidence that flooding the system with salt solution is injurious. Attention to detail is the *sine qua non* in this transfusion work. It has now come to the position when transfusion may be stated to be a real therapeutic measure. Hemolysis is one of the severest dangers.

Medicine in Massachusetts

Hon. Elmer A. Chapin, Treasurer of Massachusetts, congratulated the physicians on their efforts toward stopping pernicious legislation, and stated that it had been singularly successful during the past session of the legislature. Massachusetts stands at the head in sanitary and health laws. The educated physician can do much to make life easier for the people, and no one set of people can do more to injure the citizens than uneducated (?) physicians, *i. e.*, quacks. Of the total expenditures of Massachusetts last year, namely, $12,000,000, there were $3,000,000 spent for its unfortunates. A great step in advance has now been made in the appropriation of $600,000 for an observation hospital for the Insane Department in the Boston district.

Other Papers Read

The following papers were also read: "Relation of the Pathological Processes to the Clinical Symptoms in Arthritis Deformans," by Dr. E. H. Nichols, Boston; "Serodiagnosis of Syphilis," by Dr. F. P. Gay, Boston; "The Intravenous Use of Strophanthin in Broken Cardiac Compensation," by Dr. A. K. Stone, Boston; "Laboratory Work by the County Physician," by Dr. M. A. Cummings, Winchester; "A Practical Diet Chart," by Dr. H. D. Arnold, Boston; "Report of Work Accomplished in Massachusetts During the Past Year," by Dr. A. T. Cabot, Boston; "Report of Committee to Suggest Suitable Employment for Individuals with Cured Tuberculosis," by Dr. Alfred Worcester, Waltham; "Tuberculosis Problem for Small Cities and Towns," by Dr. Carl A. Allen, Holyoke; "Frequently Neglected points in the Diagnosis of Tuberculosis," by Dr. C. Floyd, Brookline

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AMERICAN SURGICAL ASSOCIATION

Annual Meeting held at Philadelphia, June 3-5, 1909

(Continued from page 141)

SYMPOSIUM ON THORACIC SURGERY

Thoracic Surgery

Professor Friedrich, Marburg, Germany, reported eleven cases of unilateral phthisis in which he had resorted to extensive multiple resection of ribs. In two cases of multiple tubercculosis he performed total pleuropneumolysis, and in four partial pleuropneumolysis. He has not lost a single case from this operation.

Dr. William S. Halsted, Baltimore, detailed some experimental studies he had made with reference to lung surgery.

Dr. Charles A. Powers, Denver, discussed surgical measures designed to relieve pulmonary tuberculosis.

Dr. Leonard Freeman, Denver: Collapse of the lung may be obtained in several ways: (a) By the production of artificial pneumothorax according to the methods of Murphy and others. (b) By extrapleural resection of the ribs below the first part of the cartilages to the spine, including the periosteum. (c) By removal of portions of some ribs, with periosteum along the axillary line. (d) By resections of portions of several ribs, and periosteum directly over the diseased part of the lung, usually a cavity near the apex. (e) By a similar operation, without removal of the periosteum, followed by external pressure by means of a truss. He described an operation which he had done in two cases with encouraging results.

Dr. A. Vander Veer, Albany: The hypodermic syringe, with long needle, is of value for exploratory purposes and a safe instrument for a good general practitioner to use when in doubt as to the nature of the lesion that is present. Repeated use of the aspirator is not to be condemned so long as the fluid remains sterile and is the preferable method of treatment in malignant cases. Where we have some malignancy in which the effusion is distressing to the patient, the use of the aspirator affords great relief. The use of the trocar and drainage tube is advisable if it is shown the aspirator is no longer affording benefit. Resection of the ribs is necessary when no improvement takes place with ordinary drainage tube. The latter operation should be done early in order to protect the lung from unnecessary pressure and relieve adhesions which, in the young, become so detrimental in causing spinal curvature.

Dr. C. L. Gibson, New York, reported an interesting case of tuberculous pericarditis in which he succeeded in effecting a cure by means of incision and drainage.

Treatment of Fistulas and Abscesses Following Operations for Empyema of the Thorax

Dr. A. J. Ochsner, Chicago: This paper illustrates the value of the injection of Beck's paste into persistent sinuses and abscesses following operations for empyema of the thorax. Two formulas are in use. No. 1, consisting of one part of arsenic-free subnitrate of bismuth and two parts of sterile amber vaselin, has a lower melting point than No. 2, which consists of thirty parts of subnitrate of bismuth, sixty parts of amber vaselin, and ten parts of paraffin of a sufficiently high melting point to cause the mixture to maintain its form at the temperature of the body. No. 1 is used daily or every second day until the sinus or abscess is practically free from pus; then No. 2 is used at first every second day, and later less frequently until healing is completed. These mixtures are injected at 110 to 120 F. by means of an ordinary glass syringe. Only just enough force is used to fill the cavity. The outer opening is closed with a gauze plug. The remarkable part of the treatment lies in the fact that cases in which the abscess cavity communicates with a bronchus will heal as rapidly and as perfectly as other cases, and that symptoms of sepsis disappear rapidly and that in most cases in which there is no communication with the bronchi the discharge from the sinus soon becomes sterile.

Visceral Pleurectomy

Dr. Alexander Hugh Ferguson, Chicago: This operation means the removal by operation of the thickened visceral pleura in cases of chronic empyema. In six cases in which I resorted to this operation the results have been all that could be desired. All the patients gained flesh, and all cavities were completely closed. The youngest patient was 23 years of age, the oldest 45. The amount of visceral pleura removed varied from a strip an inch long to four inches wide.

Dr. Charles H. Peck, New York, reported a case of stab wound of the heart in a colored girl. The wound was sutured successfully, and the patient was well twenty-four days after the operation.

Dr. Willy Meyer, New York, detailed a new method of esophagogastrostomy for intrathoracic resection of the esophagus.

The Parathyroid Question

Dr. Charles H. Mayo, Rochester, Minn.: For more than fifty years reference has been made by various authors to peculiar gland bodies that were regularly associated or connected with the thyroid bodies. The glands are four in number, usually without the true capsule of the thyroid. They are from 6 to 7 mm. long, from 3 to 4 mm. wide, and 2.5 mm. thick. The pathologic changes are of simple type, i. e., degenerations, hemorrhages, cysts, and seldom tumors. In fact, there are but few tumors of the parathyroid reported, most of these being found at autopsy, and all were benign, mostly adenomas. From such reports it would appear that these glands, as compared with other organs and lesions, are singularly free from serious diseases, especially those of a surgical nature. The association of function of the glands like the thyroid, parathyroid, thymus, suprarenal and others becomes more marked as continued investigation discloses the various changes consequent on disease or removal of the various glands. It is possible that the human being with four parathyroids has some to spare, and that if those on one side are preserved, no untoward consequences will follow. This phenomenon has been noted in other double structures, the kidneys, ovaries, etc. Operations on patients with hyperthyroidism are usually confined to one side, and the blood supply being free, there is but little danger of subsequent hypothyroidism, the greatest danger occurring from operations on both sides and from secondary operations on the remaining side in single goiter. Should tetany follow the removal of the parathyroids, the indications are to administer calcium salts to maintain life until parathyroids can be secured, transplanted and function obtained, as by this means it may be possible to tide the patient over into a chronic state which may later become a cure. In nearly 1,200 operations for goiter I have seen no tetany.

Excision of the Larynx for Malignant Disease

Dr. James Bell, Montreal, reported 12 laryngectomies. In his experience partial operations on the larynx are not satisfactory. Excision of the larynx is a safe operative procedure.

In 7 of the 12 cases operations were done for intrinsic, far-advanced cancer of the larynx; in 5 for primary disease of the organ. Of the 12 patients operated on, 7 recovered.

DISCUSSION

Dr. W. W. Keen, Philadelphia: In 1908 I selected as the subject of my presidential address "Total Laryngectomy," and in it I reported a case of excision of the larynx. The patient, a man, is now perfectly well, it being 11 years since the operation. I recommended at that time that the patient be kept in the Trendelenburg position to prevent aspiration pneumonia.

Dr. Geo. E. Brewer, New York: The dangers from the operation of excision of the larynx are (1) aspiration pneumonia; (2) extension of the infection downward along the muscular and fascial planes of the neck toward the mediastinum; (3) too long deprivation of food in old people who are in a bad general state. I believe in early feeding. I introduce a nasal tube into the lower part of the esophagus, and begin feeding as soon as the patient comes out of the ether. I begin the use of water in about six hours after operation, and give eggnogs and concentrated food from the start.

Dr. Roswell Park, Buffalo: My first laryngectomy patient was operated on about 24 years ago, and the patient nearly died of iodoform poisoning. I was afraid to use iodoform after that, and in a later case employed subnitrate of bismuth. This patient also died. An autopsy was made, and I found the lining of every bronchial tube smeared with bismuth that had formed a paste, so that the patient died of asphyxiation from the bismuth.

Dr. N. B. Carson, St. Louis, Mo., after detailing five cases in which he had resorted to laryngectomy, said that rectal anesthesia adds much to the comfort of these patients.

Dr. George W. Crile, Cleveland, Ohio: I wish to report 20 total laryngectomies. There were 2 immediate fatalities in the first 8, but none in the last 12. The ultimate results are satisfactory. One patient is living between 15 and 16 years after operation; another 5 years after operation; one is alive 4 years after operation; one after 3 years, and the remainder have been operated on too recently to be considererd at this time.

Transfusion, With a Note on Hemolysis

Dr. George W. Crile, Cleveland, Ohio: In pernicious anemia, in toxemia, leukemia, Hodgkin's disease, carcinoma, uremia, etc., no benefit has occurred on observation from transfusion. No patients with hyperthyroidism improved apparently by transfusion. In a case of pellagra rapid convalescence was noted after transfusion from an immune donor. In suitable cases, this procedure is of great value in the prevention and relief of the circulatory phenomena of shock. I am encouraged by the results of transfusion in pulmonary tuberculosis. As influencing operative surgery, further experience amply confirms the earlier observations in grave surgical risks by preliminary and postoperative transfusion. There are two notable groups susceptible of results in contemporaneous transfusion, namely, those in which there has been internal hemorrhage, grave or continuous, demanding operation at the same time, and those in which the patients are reduced by long-continued disease, by starvation or otherwise to such a degree as to render them unsafe for the operation required. In those cases the donor is attached and a sufficient amount of blood is transferred until the recipient is sufficiently restored to take the anesthetic. All preparations having been made, the patient is then anesthetized, and in the course of operation the needed amount of blood may be transferred from time time by the assistant in charge at the direction of the operating surgeon. At the close of the operation a sufficient additional amount of blood is transferred to insure the postoperative safety of the circulation. Hemolysis must be considered, first, as but one form of manifestation of the end-action between the blood of one individual against the blood of another. Second, if there is hemolysis *in vitro* it by no means necessarily follows that there will be hemolysis *in vivo*. Their agreement may be an exception. Hemolysis is a valuable aid in the diagnosis of active tuberculosis reaction, occurring more frequently than in carcinoma. In cancer the reaction is largely dependent on the stage of the disease at the time of observation. Hemolysis usually occurs in the early stages of cancer, and rarely occurs in its late stages.

The Preservation of Dissections of Surgical Anatomy with Permanent Color of Muscles, Vessels, Nerves and Organs, by a New Method

Dr. Edmond Souchon, New Orleans: The details of this experimental work, extending over several years, were published in The Journal, Aug. 22, 1908, and I wish here to recall only the most salient features of this new method. The basic condition is a proper embalming formula which will assure color. The aim is not so much to obtain the real color of the living, as that color varies in the various subjects, but to secure a marked contrast between the fleshy parts of muscles and the tendons, bones and other white tissues, doing away with the uniform bleached appearance presented by so many otherwise beautiful preparations seen in the museums in this country and abroad.

After a number of trials, consuming over forty subjects, I have found that so far the following formula is the one that gives the best results for this work: Arsenic, 2½ gallons, formalin 6 ounces, alcohol 16 ounces, carbolic acid 6 ounces, glycerin 16 ounces, and creosote 2 ounces. Very lean subjects should be used. A feature of some importance is to allow the parts to be dissected to drain for ten or fifteen days before dissecting them. Otherwise the dissecting is rendered unsatisfactory by the infiltration of the tissues by the embalming fluid. After the dissection is completed, it is placed in a glass jar filled with a solution of carbolic acid, one ounce to the gallon. This is changed as often as it is discolored by the blood. The next important point is the placing of the dissected parts in an empty jar without any solution of any kind, but covered with a lid. I call this stage the curing process. It is second in importance to the embalming solution, as it develops or brings out again the color without darkening the tendons or other white tissues. It also smooths the surfaces, which may be shreddy or ragged, it sharpens the edges of the muscles, thus giving better definition. It fixes the color so as to keep it from being perceptibly affected when the specimen is finally put up permanently in a weak solution of alcohol, 20 ounces to the gallon of water. The arteries and veins must be painted with moist water colors, as the coloring matter used in the injecting material will not show when the preparations are preserved in solutions. All solutions should be changed as soon as they become the least cloudy or discolored. This is essential to the permanent beauty. Otherwise the impurities in the cloudy or discolored solutions will settle on the white tissues, stain them and destroy their whiteness and brilliancy. I estimate that 85 or 90 cer cent. of the specimens turn out satisfactorily. The remainder are merely good, but not good enough to be placed in a museum, specially with one's name to it. That uniformity of color and results does not invariably follow uniformity of procedures is due, I believe, to the fact that the chemical composition of the tissues varies with the subjects. The great practical value of this method is to give us the means of building study museums composed only of real dissections placed in very large glass jars, in spacious rooms flooded with light, on tables, so that students can study them. Thus the students can prepare for the dissecting room. They are assisted in their dissections by referring to the preparations in the museum. Their work in the dissecting room is completed by showing them the great number of things which they never see in a dissecting room. They are also able to review and fix in their minds what they have really dissected themselves. Practitioners can in a few moments relearn much anatomy. Such is the study museum I am now building for the medical department of Tulane University in New Orleans. The museum contains 400 very large glass jars with dissections. I have now 200 good ones and there are 200 to be made over, because they can now be made better owing to the improvements in the method. It will take about two or three years to make over those 200.

(*To be continued*)

Medicolegal

Charitable Institutions Not Liable for Injury to Employés

The St. Louis Court of Appeals says that the case of Whittaker vs. St. Luke's Hospital was brought to recover damages for an injury suffered by the plaintiff while an employé in the hospital, in working with an ironing machine or mangle, which it was alleged was out of order. The sole question presented was whether a charitable institution is liable for its torts (wrongful acts) to an injured employé. After reading numerous decisions on this question, the court concludes that the hospital ought not to be held liable.

Two rules of law, both founded on motives of public policy, came into conflict here: The rule of respondeat superior—the master must answer (or if not technically that, akin to it), and the rule exempting charitable funds from executions for damages on account of the misconduct of trustees and servants. As both rules rest on the same foundation of public policy, the question is whether, on the facts in hand, the public interest will best be subserved by applying the doctrine of respondeat superior to the charity, or the doctrine of immunity; and the court decides this cause for the hospital because in the court's opinion it will be more useful, on the whole, not to allow charitable funds to be diverted to pay damages in such a case, and, moreover, the weight of authority is in favor of this view, as expressed not only in cases where the parties seeking damages were patients in the institution, but where they were not. But the court will go no further than the facts before it required, and does not say instances of negligence of officials and servants could not arise in which it would be proper to make a charitable corporation responsible.

In some instances charitable institutions have been exonerated from liability for the negligence of their officers, trustees and servants, because they were agencies of the government, and in other instances because their funds were donated for use, in ways of charity, by individuals, and to take them to pay damages would be a diversion of the trust. It will be seen, on reading the opinions in cases where the defendants were instrumentalities of the government, that the principle on which they were held not liable was, at bottom, much the same as the principle on which private charitable institutions, in some of the best-considered cases, were exonerated; i. e., that their funds, whether donated by the government or by individuals, were intended to be dispensed for the general good in designated charitable ways. Hence, though some courts incline against holding private charities exempt from liability for damages, and attempt to draw a distinction between them and institutions which are made by law public instrumentalities, it is doubtful if this distinction is sound.

Right of Surgeon as to Protection of Patient in Operating Room

The Supreme Court of Michigan affirms, in the case of People vs. Reycraft, a conviction of a surgeon of assault and battery on another surgeon. They met in the operating room of a hospital, where the defendant surgeon arrived first with a patient who had been injured by the cars, necessitating the amputation of a leg. The other surgeon arrived a few minutes later, having been asked by the railroad company—whose regular surgeon he was—to go to the hospital and take charge of the case. The defendant considered his action intrusive, and he was pushed or thrown down. The verdict indicated that the jury were convinced that the defendant made an unjustifiable attack, or an excessive defense.

The jury were instructed in this case that if they found that the alleged intruding surgeon first made an unjustifiable assault on the defendant, or that the defendant had grounds to believe, and did honestly believe, that he was about to do him personal injury, then the defendant had a right to use such violence as was necessary to protect himself from personal injury, but if he did what was unnecessary, or did more than was necessary in order to defend himself, he became and was guilty of assault and battery. No mere words, no matter how irritating or insulting, would justify an assault and battery.

In regard to the defendant's claim that what he did was lawful as a necessary protection of the injured man, the jury were instructed that if they found it to be a fact that the second surgeon's presence in the operating room and his conduct therein before the assault was dangerous to the injured man, or if the defendant had good reason to believe, and did in good faith believe, such to be the case, he had no right to begin by assaulting the second surgeon: but he had the right to request, and he should have requested him, under such circumstances, to leave the room. Then, if he refused, he should have gently laid his hand on him, and not proceeded with greater force than might have been made necessary by resistance. And, in deciding as to what degree of force he was justified or would be justified in using in overcoming such resistance, the jury must take into consideration all the circumstances of the case, including the physical appearance of the two men, and anything else that would throw light on that, or bring their minds to a just realization of the facts as they existed. If the defendant did not request the other surgeon to leave the room, but assaulted him in the first instance, he did what was not necessary for the protection of the injured man, and was guilty of assault and battery.

The Supreme Court thinks that the defendant had no occasion to find fault with the instructions given.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

July 8

1 The Widening Sphere of Medicine. E. W. Taylor, Boston.
2 The Gospel of Peace. A Vacation in Norway. C. K. Austin, Paris, France.
3 The Pharmacopeia: What it Is, and What it is Not. S. Solis-Cohen, Philadelphia.
4 *Special Heater for Hot-Air Sterilizing. R. Amory, Boston.

4. **Heater for Hot-Air Sterilizing.**—The apparatus designed by Amory for sterilizing instruments, consists of an electric heater which is controlled by a switch, and a copper box or oven, the cover of which is lined with asbestos to check radiation. It is adapted to use the street current of 110 volts ordinarily supplied by electric companies and connects by an extension electric corded wire with any socket for an electric light. The heat is radiated from a drum-shaped piece of solid copper, around and beneath which is the heating coil. On top are four holes, two chisel-shaped and two cone-shaped, designed to char and sterilize the wooden sticks which surgeons use to clean their nails before operating. Below the drum is a shield, and below this is a handle controlling three switches by which different degrees of heat may be obtained. The copper boxes, or ovens, are made in three sizes, with open circle cut in the bottom and circular tube surrounding the drum of the electric heater to allow the heat waves to pass freely into the copper oven. The asbestos lined cover has a place for a thermometer.

Medical Record, New York

July 10

5 Leprosy. L. D. Bulkley, New York.
6 *Diagnosis and Localization of Appendiceal Abscesses. C. C. Rogers, Chicago.
7 *Importance of the Early Recognition of Bone Tuberculosis. A. J. Davidson, Philadelphia.
8 *Peculiar Case of Meningitis in which Treatment by Antimeningococcus Serum was Attempted. J. P. Gardiner, Toledo, Ohio.

6. **Appendical Abscesses.**—Rogers urges that catarrhal appendicitis should be considered a surgical disease. Acute suppurative appendicitis is always surgical and should be operated on without delay. Gangrenous appendicitis is always surgical and should be operated on early before there is a thrombosis of the mesenteric vessels. Tuberculous appendicitis is seldom primary, but is always surgical, and may require extensive resection. Appendicitis obliterans caused by repeated catarrhal attacks resulting in a fibrous obliteration of the appendix including the mesoappendix, causing a neuroma of the appendix and mesoappendix is always surgical. Appendical abscesses are located in the region of the appendix and do not locate in regions distant from the appendix.

7. **Early Recognition of Bone Tuberculosis.**—Davidson believes that radiography is of very great value and should be used in all doubtful cases. The slightest bone erosion can be determined and interpreted by a skillful radiologist and even before erosion, the radiogram will indicate, by the diminished resistance to the passage of the *x*-ray, the greater vascularity of the epiphyses, which always is present at this early stage.

8. **Meningitis Treated by Anti-Meningococcus Serum.**—Gardiner describes a case of cerebrospinal meningitis in which the antimeningococcus serum was used rather late in the disease. After two punctures had been made in the lumbar region it became impossible to withdraw fluid or to introduce the serum. The case terminated fatally, and autopsy showed a very thick exudate damming up the fluid in the ventricles of the brain and causing death by pressure. Intracellular diplococci were found in the fluid removed.

New York Medical Journal

July 10

9 *Ipecac Treatment of Amebic Dysentery. G. Dock, New Orleans.
10 *Agricultural Aspects of the Pellagra Problem in the United States. C. L. Alsberg, Washington, D. C.
11 *Etiology of Pellagra. C. H. Lavinder, Washington, D. C.
12 Prognosis in Eye Diseases Viewed from the Standpoint of the Patient's Rights and the Ophthalmologist's Duty. A. Duane, New York.
13 Ectopic Gestation. J. W. Kennedy, Philadelphia.
14 Relaxation of the Sacroiliac Synchondrosis: Third Paper. J. Dunlop, Washington, D. C.
15 *The Surgical Appendix. R. F. Ward, New York.
16 *Treatment of Neurasthenia. M. D. Keller, New York.

9, 10, 11. Abstracted in The Journal, May 8, 1909, p. 1537.

15. **Surgical Appendix.**—Ward says that whenever the abdomen is opened for the relief of an inflammatory process in the neighborhood of this organ it should be removed whether it appears to have shared in the inflammatory process or not.

16. **Treatment of Neurasthenia.**—Keller outlines a course of treatment for this class of patients such as can easily be conducted at a clinic or in private practice with little or no expense to the patient. He says that before commencing to treat these patients the physician must rid himself of the impression that neurasthenics suffer from imaginary ills. It is true that they complain of pains far out of proportion to the severity of the illness, but as a matter of fact, these patients are ill—there is something that really pains or irritates them, and on account of their introspective tendency, they exaggerate all these symptoms.

After having completed the history, a physical examination should always be made, although the physician may feel certain that he will derive no further information. The treatment proper may be divided into hygienic, dietetic, and medicinal. The physician should therefore insist that such a patient spend a few hours every pleasant day in the open air. He must walk, as this not only gives him the fresh air, but also the best of exercise. A cold daily bath, on arising, is very beneficial for those who can stand it. But many can not endure this rigid and frigid treatment, and furthermore, many have not the luxury of a private bathtub. In these cases, a cold pack or a cold douche (applied for about one minute at the outset and gradually increasing the duration) followed by vigorous friction, can be substituted with benefit. A towel dipped in cold water, held by the patient over the shoulder and squeezed out, or having this performed by another person, produces all the benefits of a spinal douche. A warm bath before retiring will allay restlessness and benefit insomnia. Almost all neurasthenics are constipated. These patients must be instructed how to form a proper habit so that the bowels will move without medication. They should be advised to go to stool every morning, just after arising. A glass of cold water on an empty stomach aids peristalsis. They should go to stool whether they have any inclination to move their bowels or not and remain ten, fifteen or even twenty minutes until there is a movement.

Diet is an important question with these patients. Tea, coffee and alcoholic drinks must be eliminated, as they tend to increase the nervousness of the patient. Tobacco must be restricted for the same reason. No specific diet can be mentioned, but each individual case must be treated along individual lines. As a general rule, the patients need nourishing foods to build them up. Fried foods should be avoided as they tend to upset the stomach and to cause constipation. Fruits that leave large residues may be allowed on account of their laxative effect. The medicinal treatment consists mainly of sedatives and tonics. The following formula Keller finds very effective in allaying the nervousness, sleeplessness, headache, etc.:

℞.	gm. or c.c.	
Potassium iodidi	33	gr. v
Potassium bromidi,	66	gr. x
Ammonii bromidi, āā	26	gr. lv
Sodii bicarbonatis	39	m. vi
Tincturæ nucis vomicæ	52	m. viii
Tincturæ gentiani co		ad. ʒii
Aquæ destillat., q. s.	8	

When this combination fails it is then advisable to give, in addition, some form of valerian. A pill made of 1 grain each of quinin valerate, zinc valerate, and ammonium valerate will allay nervous symptoms. When the patient's bowels are regular, the nervousness abated, the headache and sleeplessness gone, it is then proper to begin tonic treatment, which must be kept up for eight or ten weeks or longer if necessary. Arsenic in the form of Fowler's solution or in tablets containing arsenous acid probably produces the best results. Strychnin (or nux vomica), quinin and iron may be added, each separately or in combination.

Lancet-Clinic, Cincinnati

July 3

17 Ball's Operation in the Treatment of Pruritus Ani; Report of Case in which Necrosis of the Flap Occurred. L. J. Krouse, Cincinnati, Ohio.
18 Surgical Aspect of Goiter. H. O. Walker, Detroit, Mich.
19 Acute Mastoiditis: History, Symptoms and Surgical Treatment. W. Thrasher, Cincinnati, Ohio.
20 Modern Treatment of Esophageal Stricture. R. H. Johnston, Baltimore.

The Northwestern Lancet, Minneapolis

June 15

21 A Trip Abroad. T. Schott and B. Nauheim. W. A. Jones, Minneapolis.
22 Conservatism in Traumatic Surgery. W. Courtney, Brainerd, Minn.
23 Diverticula of the Esophagus; Report of Six Cases. H. S. Plummer, Rochester, Minn.
24 Appendicitis as a Complication of Pregnancy and the Puerperal State. L. C. Weeks, Detroit, Minn.

Kentucky Medical Journal, Bowling Green

June

25 Diphtheritic Cast of Larynx. I. Lederman, Louisville.
26 Prevention of Diphtheria. G. B. Jenkins, Louisville.
27 Diagnosis and Treatment of Diphtheria. C. G. Hoffman, Louisville.
28 Complications and Sequelæ of Diphtheria. F. H. Johanboeke, Louisville.
29 Intubation. L. Kahn, Louisville.
30 An Obstetrical Case. E. Speidel, Louisville.

Woman's Medical Journal, Toledo, O.

June

31 Résumé of the Various Preparations used in Tuberculin Tests. E. S. L'Esperance, New York.
32 Neurasthenia. A. Martine, Utica, N. Y.
33 Rupture of the Uterus. A. Bonner, Brooklyn, N. Y.
34 Teaching of Hygiene in America. H. C. Putnam, Providence, R. I.
35 Treatment of Chronic Intestinal Autointoxication. F. Forchheimer, Cincinnati, Ohio.
36 *The von Pirquet Tuberculin Reaction in 154 Children in an Orphanage. M. Michael, Chicago.

36. **Cutaneous Tuberculin Reaction.**—One hundred and fifty-four children, in an orphanage, ranging in age from 6 to 15 years were tested by Michael for the von Pirquet tuberculin reaction. The reaction varied somewhat in intensity. In some instances the vaccinal lesion was not more than one-eighth of an inch in diameter, of a pale color, and with little swelling; in others it was larger, and bright red, and surrounded by considerable tumefaction. Of the 46 children showing a positive reaction, 3 were 6 years; 4 were 7 years; 6 were 9 years; 6 were 10 years; 5 were 11 years; 4 were 12 years; 8 were 13 years; 7 were 14 years; 3 were 15 years. The family history is of interest. In 53 of the children either one parent had died of tuberculosis or was suffering from the disease at the time the test was made. The reaction was positive in 25 of these 53 cases.

Archives of Pediatrics, New York

June

37 Inspiratory Stridor and Dyspnea in Infants. A. D. Blackade and H. S. Muckleston, Montreal.
38 *Still's Disease. D. Hingston, Montreal.
39 *Diagnostic Value of Lumbar Puncture in Acute Tuberculous Meningitis of Children. F. E. Sondern, New York.
40 Relative Frequency of Abdominal Tuberculosis in Children in Great Britain and in the United States. D. Bovaird, Jr., New York.
41 *Bacterial Content of Whey. O. M. Schloss, New York.
42 Sleep Sweats in Chronic Pharyngeal Stenosis. J. R. Clemens, St. Louis.
43 Diabetes in a Boy of Ten. H. Heiman, New York.
44 Fatal Vomiting (Recurrent Type) in a Child. E. C. Jones, Philadelphia.
45 Tuberculous Adenitis of Bronchial Lymph Glands, Probably Causing Intermittent Atelectasis. R. L. Pitfield, Philadelphia.
46 Acute Dilatation of the Stomach in Infancy. W. P. Lucas, Boston.

38. **Still's Disease.**—Hingston reports two cases of so-called Still's disease, a chronic progressive enlargement of the joints associated with general enlargement of the glands, chiefly the supratrochlear and those of the axilla and neck, and enlargement of the spleen. Fresh air, arsenic, massage and passive movements produced prompt results—slight in one case, marked in the other.

39. Abstracted in THE JOURNAL, Nov. 7, 1908, p. 1627.

41. **Bacterial Content of Whey.**—Schloss' experiments show that in the rennin coagulation of milk many of the bacteria are included in the clot and that the whey contains far fewer bacteria than the corresponding milk.

Colorado Medicine, Denver

June

47 Laryngeal Fissure for Intrinsic Laryngeal Carcinoma. F. L. Dennis, Colorado Springs.
48 Idiopathic Inequality of the Pupils of the Eyes. E. T. Boyd, Leadville.
49 Case of Pemphigus of the Conjunctiva. W. C. Bane, Denver.
50 Congenital Cavernous Telangiectasis. L. A. LaGarde, U. S. Army.
51 The Trained Nurse. E. Stuver, Fort Collins.

Surgery, Gynecology and Obstetrics, Chicago

June

52 Points in Connection with Gastric Surgery. E. S. Bishop, Manchester, Eng.
53 Influence of Corsets and High-heeled Shoes on the Symptoms of Pelvic and Static Disorders. E. Reynolds and R. W. Lovett, Boston.
54 *Prevention of Adhesions in Abdominal Surgery. J. C. Webster, Chicago.
55 Significance of Peritoneal Adhesions Following Operations. H. T. Byford, Chicago.
56 *Local Anesthesia. L. L. McArthur, Chicago.
57 Radical Treatment of Deformity Following an Old Fracture of the Lower Epiphysis of the Tibia. H. O. Feiss, Cleveland, Ohio.
58 Pathologic Relationships of Exophthalmic and Simple Goiter. L. B. Wilson, Rochester, Minn.
59 *Operative Treatment of Hyperthyroidism. C. H. Mayo, Rochester, Minn.
60 *Thyroid Gland and Vascular Surgery. A. Carrell, New York.
61 The Thyroid and Parathyroids. J. P. McKelvy, Pittsburg.
62 *Frequency, Etiology, and Practical Significance of Contractions of the Pelvic Outlet. J. W. Williams, Baltimore.
63 *New Device and Method for Administering Ether. A. H. Miller, Providence, R. I.
64 The Adhesive Corset as a Surgical Dressing. C. F. Weinberger, Chicago.
65 Examining the Gall Bladder through a Vaginal Incision. W. B. Reid, Rome, N. Y.
66 Suppurating Fibroids Following Delivery. E. A. Hall, Vancouver, B. C.
67 Preparatory and After-Treatment of Celiotomy Cases. S. E. Tracy, Philadelphia.

54. **Prevention of Adhesions in Abdominal Surgery.**—Experimentally, adhesions of the peritoneum of dogs may be produced by undue exposure to dry air, cold air, mechanical trauma, and cultures of micro-organisms. Therefore, says Webster, in operating on the human subject, these factors should be avoided. Theoretically, the most suitable atmosphere is one that is very moist and of the temperature of the peritoneum. Practically this is never found, because operating staffs dislike to work under such conditions. An atmosphere charged with moisture at a temperature of 90° F. is perhaps the limit of endurance for prolonged surgical work. Defects in atmospheric conditions may be to a great extent made good by the avoidance of unnecessary exposure of viscera, protection of everything save the immediate area of operation with gauze pads soaked in hot normal saline solution. In order to reduce trauma of the peritoneum to a minimum, sponging should be employed as little as possible and all manipulations should be carried out with great gentleness. The injudicious use of retractors is likewise to be deprecated. Self-retaining instruments are better than those which are constantly being manipulated by an assistant. In removing tissues or separating adhesions, raw areas should not be left exposed when it is possible to bury them under peritoneum.

56. **Local Anesthesia.**—McArthur reviews the present status of local anesthesia and urges that the surgical profession give this subject more attention than it has received at their hands in the hope that observations by many men will eventually lead to a definite and precise knowledge on which practical conclusions may be based.

59. **Operative Treatment of Hyperthyroidism.**—The surgical treatment of hyperthyroidism must embody methods of reducing the secretion of the gland. The reduction of the blood supply in the gland, or a removal of a varying quantity of the gland is at present the accepted method of surgical treatment. In choosing a method to fit the condition in those patients seen in the early stage of the disease, in whom thyroidectomy is not justifiable, the ligation of the superior thyroid arteries and veins on both sides seems to bring about a rapid cure. This method is also free from the possible risks of hypothyroidism from removal of the gland. It is successful in most instances and can be followed later by removal of a portion of the gland, if a recurrence of the symptoms should make it necessary. In about two-thirds of the cases seen by the surgeon, the operation for the removal of the larger lobe and isthmus can be undertaken without undue risk. In at least one-fourth of the cases the condition is so extreme from the continued toxic condition or from acute exacerbation, that the ligation of the vessels, as advocated by Wolfler, is advisable, at least as a preliminary procedure. In a few such cases the results are astonishing. There is a relief from all symptoms and an increase within a few months, and should thyroidectomy be then undertaken it will be done with much less risk than the former procedure of ligation. These operations Mayo designates the graduated operations for hypothyroidism.

Some patients are in such *extremis* that preliminary treatment by heart tonics, diuretics, *x*-ray applications, and absolute rest is necessary before even the resort to ligation of the vessels is advisable. Patients who have developed the symptoms of thyroidism on a previously existing goiter are usually fair risks for thyroidectomy. The condition designated as unilateral exophthalmic goiter is also readily treated by enucleation of the offending encapsulated adenoma. Myxedema or hypothyroidism as a terminal stage of hyperthyroidism may be treated by the removal of the gland to the discredit of surgery, when the gland is already lacking in secretion.

60. **Thyroid Gland and Vascular Surgery.**—The treatment of hypothyroidism and athyroidism by transplantation of the thyroid is regarded by Carrel as being more immediately promising of practical results than any other form of treatment. The feasibility of the operation has been demonstrated. The actual problem is to render it ordinarily successful. Success in transplantation depends on two factors, biologic and surgical. We are still ignorant of the biologic factors of success and failure in transplantation of tissues between animals of the same species. It is certain that, at least in some cases, the gland adapts itself to its new owner, does not undergo any marked histologic changes, and functionates normally. But we do know how frequent are the cases in which the new tissue and its host will have a pernicious influence on each other. The surgical factors can probably be controlled. The operation is very much simpler than the transplantation with anastomoses of the vessels. However, if it is found that it can not be frequently successful, the transplantation of large pieces of thyroid, with union of their vessels to the vessels of the patient must be attempted. In this indirect manner vascular surgery may improve the results of the treatment of hypothyroidism and athyroidism.

62. **Contraction of the Pelvic Outlet.**—Williams claims that funnel-shaped pelves frequently give rise to more or less serious dystocia, are an important factor in the causation of deep perineal tears, and occasionally convert what promise

to be easy low forceps deliveries into most difficult and dangerous operations. Typical funnel pelves, in which the usual external measurements as well as those of the superior strait are normal, while the distance between the ischial tuberosities measures 8 cm., or less, were observed in 6.92 per cent. of 1.200 consecutive pregnant women, and occurred with equal frequency in both the white and black race. Generally contracted funnel pelves, in which shortening of the usual external measurements as well as of the diameters of the superior strait is associated with a distance of 8 cm. or less between the ischial tuberosities, occurred in 1.19 per cent of the white and 4.91 per cent. of the colored women, being 4 times more frequent in the latter. Typical funnel pelvis constituted 55.7 per cent. of all cases of pelvic deformity in white, as compared with 17.8 per cent. in colored women, and therefore are of especial practical importance in the former.

While a shortening of the transverse diameter of the outlet to 8 cm., or less, indicates the existence of a funnel pelvis, it should be regarded merely as a danger signal; as the possibility of dystocia will depend on the relation between its length and that of the posterior sagittal diameter. The latter is the distance from the center of the former to the tip of the sacrum, and must increase in length as the transverse diameter becomes shortened. Typical funnel pelves are apparently due to the presence of six vertebræ in the sacrum —so-called high assimilation, which so changes the relations at the sacroiliac joints as to permit the lower portions of the innominate bones to approach one another. In the generally contracted type, the outlet contraction probably represents only an exaggeration of the faulty development which characterizes the entire pelvis.

In view of the frequent occurrences of funnel pelves, palpation of the pubic arch should form an integral part of the examination of every pregnant woman. Whenever it appears to be narrowed the distance between the tubera ischii should be measured, and when it is 8 cm., or less, the length of the anterior and posterior sagittal diameters should also be determined. Only by so doing can one avoid being occasionally placed in the unenviable predicament of being obliged to resort to a serious obstetric operation after having assured the patient that her pelvis was normal. Fortunately, the great majority of labors complicated by funnel pelves end spontaneously. In the lesser degrees of contraction low forceps may give satisfactory results, while in the more pronounced cases the operation of choice is Cesarean section at the end of pregnancy, or pubiotomy after the head has reached the pelvic floor.

63. **New Device for Administering Ether.**—Miller describes his method of administering ether as he has employed it with entire success in over 6,000 cases. The apparatus is very simple. It consists of: 1, an open cone; 2, a ring of sheet aluminum; 3, a handkerchief and diaphragm of gauze. The cone is made from three sheets of newspapers, folded to form a flat strip six inches wide. This strip is folded on itself to form a funnel which, when flattened out, has a breadth of six inches. This funnel is covered with a towel. The ring is made from a strip of 28-1000 sheet aluminum, two inches wide and fifteen inches long. This strip is bent to form a ring which is adjustable in size. The ring may be made of brass and silver plated. The handkerchief is a piece of No. 1 surgical gauze, three feet by eighteen inches. The diaphragm is composed of eight layers of the same gauze, four by six inches. To administer ether by this method, which is styled the "handkerchief method," the cone is prepared as follows: Place the diaphragm over one end of the cone. Adjust the aluminum ring to a size a little smaller than the inside of the cone. Place the ring over the diaphragm and push it inside the cone, carrying the diaphragm to the full depth of the ring. Pull the ring open as far as possible, fixing the diaphragm in the cone. At one end of the cone there now is a chamber, its sides formed of the thin sheet of aluminum, its floor formed of eight layers of gauze, and its roof free. The roof of this chamber is the distal end of the cone.

Fit the proximal end of the cone closely to the patient's face. Moisten the gauze handkerchief with a few drams of ether. Beginning with one corner introduce the handkerchief gradually into the chamber. Thus the patient becomes very slowly accustomed to the ether vapor. Pour ether slowly on the gauze handkerchief in the chamber until the patient is completely etherized. Do not remove the cone from the face until the anesthesia is complete. If this procedure is carried out slowly, there is no coughing, choking, or feeling of suffocation. The supply of air necessary for respiration is not interfered with, and the amount of ether vapor inspired is imperceptibly increased. During the operation, ether is added constantly, drop by drop, or is poured on the handkerchief frequently in small quantities, at the distal end of the cone, or through the proximal end, on removing the cone momentarily from the patient's face. The handkerchief is frequently taken from its chamber and shaken out. In this way the evaporating surface is kept free and the amount of ether remaining on the handkerchief is frequently noted.

Alabama Medical Journal, Birmingham

June

68 Etiology of Typhoid Fever. H. Johnston, Birmingham.
69 Cholecystitis as a Complication and Sequel of Typhoid Fever. E. M. Prince. Birmingham.
70 Typhoid Fever—Its Pathology and Treatment. G. Dock, New Orleans.
71 Acute General Miliary Tuberculosis. E. V. Caldwell, Bessemer, Ala.
72 Analysis of Fifty Operative Cases of Appendicitis. W. M. Jordan, Birmingham, Ala.
73 Home Treatment of Tuberculosis. W. C. Gewin, Birmingham, Ala.

Laryngoscope, St. Louis

July

74 *Why a Peripheral Tone Analysis is Necessary to Explain the Phenomena of Tone Perception. G. E. Shambaugh, Chicago.
75 Transmutation of the Epithelium of the Tonsil into Connective Tissue Cells. J. Wright, New York.
76 Bronchoscopy and Esophagoscopy. E. F. Ingals, Chicago.
77 Id. T. H. Halsted, Syracuse.
78 New Electric Pharyngoscope. H. Hays, New York.
79 Pharyngoscopic Studies. P. Fridenberg, New York.
80 Cerebral and Epidural Abscesses of Otitic Origin. G. T. Ross, Montreal.
81 *Black Hairy Tongue—Hyperkeratosis Linguæ. H. Arrowsmith, Brooklyn.

74. **Phenomena of Tone Perception.**—Shambaugh believes that the telephone theory of central tone analysis is not only untenable, but is entirely lacking in scientific support, and that the theory of peripheral tone analysis in the cochlea is indispensable for the following reasons: 1. The elaboration of structures in the cochlea all point to the conclusion that a peripheral specialization, that is, a peripheral tone analysis, is located here. 2. A comparative physiologic study of special sense organs points toward peripheral specialization of function in all of the special sense organs. This is as true of the ear as it is of the other special organs. 3. The secondary phenomena of tone perception are plausibly accounted for only on the hypothesis of a peripheral tone analysis in the cochlea. 4. The peculiarities in tone perception that occur in connection with pathologic changes in the labyrinth, such as tone islands, or defects in the midst of the tone scale, and the phenomena of diplacusis, as well as the occurrence of peculiar types of tinnitus aurium argue in favor of a peripheral rather than a central tone analysis. 5. The production of circumscribed areas of degeneration in the organ of Corti as the result of exposure to long-continued overstimulation by intense tones of a certain pitch amounts to a practical demonstration of the existence of peripheral analysis.

81. **Black Hairy Tongue.**—Arrowsmith places on record an instance of this rare and curious lesion occurring in his own person. He was led to look at his own tongue by the persistent sensation, which had lasted for several days, of having a tooth-brush bristle, a mustache hair, or some similar substance in contact with its upper surface. This irritation impelled him to scrape it with his upper teeth and expectorate frequently, in the effort to dislodge the supposed foreign material.

There was at no time the slightest pain or tenderness. Two-thirds of the distance from the tip to the circumvalate papillæ, on the left side, was an area, ovoid in form, measuring about three-quarters by one-half an inch, slightly elevated and of a dark brown color. The surface of the tongue was otherwise entirely clean and normal in appearance. On stroking this area with a probe, the papillæ were raised into a sort of crest such as is seen on the fur of a soft-haired animal after immersion. Some of the papillæ were at least three-eighths of an inch in length. A number were cut off, *en masse*, with scissors, and submitted to examination. The microscopist reported that the process corresponded to a hyperkeratosis. In about ten days the trouble entirely disappeared and has since given no indication of any tendency to recur. No treatment was instituted. The personal history was absolutely negative, except so far as tobacco was concerned.

Vermont Medical Monthly, Burlington

June

82 Diagnosis and Treatment of Initial (Specific) Lesions. W. S. Reynolds, New York.
83 Chronic Prostatitis. W. W. Townsend, Rutland.
84 Lesser Known Properties of the Blood. B. H. Stone, Burlington.

Journal of Ophthalmology and Oto-Laryngology, Chicago

June

85 Arteriosclerosis in Relation to Ocular Lesions. W. H. Wilmer, Washington, D. C.
86 Congenital Fibroma of the Cornea—Report of a Case. W. A. Mann, Chicago.
87 Sources of Error in Functional Tests of Hearing. A. H. Andrews, Chicago.

American Medicine, New York

June

88 The Physiologic Action of Diuretics and Their Comparative Value. W. H. Porter, New York.
89 Conditions of Mal-Alignment of the Cervical Vertebræ: Their Ocular Significance. M. E. Bates, Denver.
90 Vaccine Therapy. W. H. Woglom, Brooklyn, N. Y.
91 *The Fetal Circulation. A. G. Pohlman, Bloomington, Ind.
92 Earaches, Their Causes and Treatment. H. Jarecky, New York.
93 Differential Diagnosis Between Gastric Ulcer and Cholelithiasis. H. Weinstein, New York.
94 Vaginal Hysterectomy Followed by Appendicitis: Delayed Operation: Death. H. Crntcher, Roswell, N. M.
95 *The Modern Corset. G. M. Niles, Atlanta, Ga.

91. **Fetal Circulation.**—Pohlman believes that he has established the correctness of the Galen-Harvey theory of the fetal circulation, that the foramen ovale affords communication between the auricles and that mixed blood passes from the right into the left auricle. The theory of Galen-Harvey states that all the arteries in the fetus contain mixed blood, and is a good working theory for normal as abnormal conditions in development. Pohlman sides with Munro of Boston, who has been advocating the possibility of ligating the ductus arteriosus. As an anatomist, he believes that with the recent advances in chest surgery, there is no reason why the operation may not be done successfully, provided, of course, that the failure in closure of the ductus is not due to some primary defect in the lung circulation itself.

95. **The Modern Corset.**—Niles commends the modern straight front corset, which, when properly fitted, tends to support and keep in place the abdominal organs.

Pennsylvania Medical Journal, Athens

June

96 Evolution of Medicine Since 1848. A. E. Fretz, Sellersville.
97 Treatment of Tuberculosis in Rural Districts. W. H. Brown, Richlandtown.
98 Tuberculous Phthisis; Is Second Recovery Possible? W. F. Dutton, Pittsburg.
99 The Tuberculosis Dispensary System of the Pennsylvania Department of Health: Sketch of its Organization and Methods. T. H. A. Stites, Harrisburg.
100 Factors in the Operative Treatment of Pulmonary Tuberculosis. W. W. Babcock, Philadelphia.
101 *Roentgen-Ray Diagnosis of Tuberculous Joint Disease. J. K. Young, Philadelphia.
102 *Compound Comminuted Fracture of the Tibia. W. H. Lowry, Carbondale.
103 *Fracture of Pelvis with Special Relations to Urethral Injury. A. G. Fell, Wilkes-Barre.
104 *Indicanuria. C. Rea, York, Pa.
105 *New Method for the Quantitative Estimation of Albumin in Urine. E. H. Goodman, Philadelphia.
106 Difficulties in the Diagnosis of Scarlet Fever. J. F. Schamberg, Philadelphia.
107 Treatment of Scarlet Fever. F. L. Van Sickle, Olyphant.
108 Color Photography by the Lumière Process, with Stereopticon Demonstrations of Slides, Showing the Surgical Significance and Advantages. C. B. Longenecker, Philadelphia.
109 *Mechanical Treatment of Visceral Ptosis and a New Method of Applying a Bandage. J. T. Rugh, Philadelphia.
110 *An Ophthalmologic Phase of the Dangers of Consanguineous Marriages. W. C. Posey and A. C. Sautter, Philadelphia.

101, 102, 103, 104. Abstracted in The Journal, Oct. 31, 1908, p. 1542.

105. Published in The Journal, Dec. 12, 1908, p. 2055.

109. Abstracted in The Journal, Oct. 10, 1908, p. 1270.

110. Abstracted in The Journal, Oct. 17, 1908, p. 1356.

New York State Journal of Medicine, New York

June

112 *Blood Transfusion as a Therapeutic Measure. W. F. Campbell, Brooklyn.
113 Certain Phases of Acute Anemia. G. W. Crile, Cleveland, O.
114 *Treatment of Cerebrospinal Meningitis by the Serum of Flexner and Jobling. L. E. Holt, New York.
115 *Congenital Abnormalities of Cervical or Spinal Origin. N. Jacobson, Syracuse.
116 *Scleroderma, with Special Consideration of the Eosinophilia. S. E. Ward and E. Corning, Albany.
117 *Baths and Exercises in the Treatment of Abnormal Tension of the Heart and Blood Vessels. L. F. Bishop, New York.
118 *Scarlatina. H. A. Fairbairn, Brooklyn.
119 *Glandular Fever. W. B. Garlock, Little Falls, N. Y.
120 Ocular Signs of Cardiovascular Disease. A. J. Bedell, Albany.

112, 115, 116, 117. Abstracted in The Journal, Feb. 20, 1909, pp. 654, 655, 656.

114, 118, 119. Abstracted in The Journal, Feb. 6, 1909, p. 496.

Ophthalmic Record, Chicago

June

121 Exophoria: Symptoms, Significance and Treatment. O. Wilkinson, Washington, D. C.
122 Some European Eye Clinics and their Clinical Opportunities—Vienna, London, Utrecht and Paris (concluded). A. P. Horwitz, Chicago.
123 Staphylococcus Vaccination in Phlyctenular Disease. H. Gradle, Chicago.
124 Diagnosis of Syphilitic Eye Lesions by Means of the *Spirochæta pallida* and the Serum Reaction of Wassermann. B. C. Corbus and F. G. Harris, Chicago.
125 Meningococcus Conjunctivitis. S. H. McKee, Montreal.

Maryland Medical Journal, Baltimore

June

126 Prevention of Typhoid Fever. C. W. G. Rohrer, Baltimore.
127 Oribasius Ætius; Alexander of Tralles; Paulus Ægenita. H. M. Cohen, Baltimore.

July

128 Sanitation on the Isthmus. A. K. Bond, Baltimore.
129 Some Phases of Family Psychoses. J. G. Fitzgerald, Boston.
130 Rhazes (925-1045 A. D.). H. M. Cohen, Baltimore.
131 Ideals of Health in Town and Country. C. O'Donovan, Baltimore.

Southern Medical Journal, Nashville, Tenn.

June

132 Diseases of the Colon Due to Extraintestinal Causes: Especially Membranous Colitis. A. B. Cooke, Nashville.
133 *The Basting Suture in Gastroenterostomy. J. W. Long, Greensboro, N. C.
134 Carbolic Gangrene of Thumb Following Injection for Cure of Synovial Ganglion. P. DeWitt, Nashville.
135 Visceroptosis: A Historical Review. R. C. Bryan, Richmond.
136 Causes of Peritonitis. G. S. Foster, Manchester, N. H.
137 *Abdominal Aneurism Treated by Wiring. M. Willis, Richmond.
138 *Status of Certain Postoperative Procedures Among Fifty Prominent American Surgeons. H. P. Cole, Mobile.

133. **Basting Suture in Gastroenterostomy.**—It occurred to Long that a basting suture applied around the circumference of the incision in both stomach and jejunum, after the serosa and muscularis were incised, but before trimming away the mucosa, would hold the mucosa snugly against the muscularis, and thus prevent prolapse of the mucosa, thereby facilitating the introduction of the through-and-through sutures. A full curved, round needle, carrying fine chromicized cat gut, is entered very near the margin of the cut serosa, and penetrates all the coats of the bowel, coming out in reverse order. The needle is again entered, this time a short distance behind its point of exit, and again sweeps through all of the coats, basting the mucosa securely against the outer layers. It is to be noted that while the suture shows a loop on both the outer and inner surface, that on the serosa represents an interrupted suture, while every line of the mucosa is embraced in the suture. In this manner the basting suture holds the mucosa in place and prevents most effectually any hemorrhage from the cut edges.

137. Abstracted in The Journal, Jan. 16, 1909, p. 243.

138. **Status of Certain Postoperative Procedures.**—Cole summarizes the views of 50 leading American surgeons as to the value of certain postoperative procedures. The popularity of Fowler's position is definitely shown in its employment by 92 per cent. of these 50 surgeons. The use of proctolysis by 99 per cent. shows its universal acceptance as a therapeutic agent in the postoperative treatment of infected pelvic conditions; 92 per cent. of these surgeons use proctolysis in conjunction with Fowler's position. There is undoubtedly a marked variance of opinion as to the employment of stimulative drugs in the treatment of postoperative shock, and a growing tendency

to physiologic rather than drug therapy. The fact that 70 per cent. of these surgeons prefer vaginal drainage in infected pelvic cases gives the preponderance of opinion in favor of this procedure in the postoperative treatment of infected pelvic cases.

Detroit Medical Journal

June

139 Value of the Mixed Toxins in Inoperable Sarcoma: Based on a Study of Cases Treated During the Past Sixteen Years. W. B. Coley, New York.
140 Foreign Body Cystitis; Report of Cases. G. E. Potter, Detroit.

California State Journal of Medicine, San Francisco

June

141 Antisepsis and Asepsis in Surgery. W. W. Beckett, Los Angeles.
142 Amebic Dysentery. J. D. Long, U. S. Public Health and Marine-Hospital Service.
143 Latent Tuberculosis: Its Symptoms, Treatment and Prognosis. M. Rothschild, San Francisco.
144 Dosimetric Method of Anesthesia by Inhalation. C. R. Krone, Oakland, Cal.
145 Osteoarthritis. S. J. Hunkin, San Francisco.
146 Adactylia Involving Both Hands and Left Foot with Right Amelus. F. P. Gray, San Francisco.
147 *Differential Diagnosis of Tuberculous Meningitis. G. E. Ebright, San Francisco.
148 *Brain Tumor. C. Bush, San Francisco.
149 Tuberculosis of the Kidneys. W. F. Cheney, San Francisco.
150 Somnambulism Relieved by Hypnotic Suggestion. G. H. Richardson, San Francisco.
151 *Reminiscences of Ten Years as Commissioner of Health in Chicago, and Suggestions for the Future. A. R. Reynolds, Chicago.
152 Backache. C. M. Cooper, San Francisco.

147. **Tuberculous Meningitis.**—The diagnostic points which in Ebright's opinion are too frequently overlooked in the performance of lumbar puncture in tuberculous meningitis are the following: 1. The intraspinal pressure is high in the irritative stages. Its measurement should be made with a mercury manometer, in view of the inaccuracy of other methods. 2. The fluid is usually clear or slightly turbid, and may present a fine filmy coagulum on standing several hours. This coagulum is highly characteristic. 3. The albumin content is high. It may even be 0.7 per cent., and is usually about 0.2 per cent. 4. As in all meningitides, Fehling's reagent is apt not to be reduced. 5. Tubercle bacilli can be found in from 30 to 50 per cent. of the cases and always after death in the spinal fluid. 6. Lymphocytosis is usually present in the fluid, except in the later stages, when polynuclear cells may predominate, possibly on account of a mixed infection, though more likely because that protective function represented by the multiplication of the lymphocytes in tuberculosis and tuberculin reactions has been overcome and lost.

148. **Brain Tumor.**—An interesting case of brain tumor is reported by Bush, occurring in a man aged 24, as the result of an injury. While engaged in pulling a truck, his arms were violently twisted. He immediately noticed a faintness and numbness in the right side of the face, followed by an occasional twitching of that side. The next day on attempting to lift a weight he had another fainting seizure; his face pulled to the right again, and he had some clonic convulsions of the facial muscles. His right arm also curled up, with a flexing of the fingers and wrist and there was a numbness of the arm extending to the shoulder. Since that time the attacks have occurred every eight or ten days, the arm and finally the leg becoming progressively weaker. Some light epileptiform attacks in the leg developed ten days after the injury. There was some difficulty in pronouncing words. There was occasional headache, but no vomiting, before his entry to the hospital. The man walked with a slightly hemiplegic limp on the right side, and the right side of his face seemed to be slightly paretic. The muscular movements of the right arm and leg were also weaker than on the left side, the reflexes were increased, except the right epigastric, which was decreased. The most striking feature at this time was the complete astereognosis, the man being unable to recognize the nature of any body placed in his right hand. At this time there was no atrophy of the muscles of the right side of the body. The main motor disturbance was in the right arm, the muscles of the leg being slightly involved. There was no Babinski reflex and no clonus. Examinations of the chest, abdomen, urine and blood were negative. Even at this time there were slight disturbances in sensation of the right forearm and hand, patient being unable accurately to localize pinpricks, and there being a definite hypalgesia on the dorsum of the right hand. No disturbance of temperature sensations. The symptoms steadily progressed, until two months later his whole right side was almost completely paralyzed, paralysis being of the spastic type. The man could walk only by following the wall about to his right and supporting himself by it. The reflexes were greatly increased, there being a Babinski reflex, ankle and knee clonus, while the epigastric reflex on the right was abolished. The left side of the body remained practically normal. The muscles had begun to waste on the right side. The astereognosis was absolute. The other sensory disturbances were more marked than before. Sweating on the right side was constant, and muscular twitching on the same side developed. At this time examination of the eye grounds disclosed a bilateral optic neuritis, becoming progressively worse from the first examination, a month after admittance, until on the day before operation a choked disc was present. At this time the left pupil was larger than the right, and the extent of the optic neuritis was greater on the left side than on the right. There was difficulty in getting food out of the right cheek. Percussion of the skull gave an apparently higher pitched note on the left side. The question of diagnosis lay between a functional or hysterical condition and an organic lesion involving, to all appearances, the left motor cortex. A few days preceding operation the rapid increase of the choked disc, accompanied by occasional vomiting, and the accentuation of the paralysis pointed strongly to the presence of a real lesion. A decompression operation was done and disclosed a mass under the precentral and postcentral convolutions. Following this the man's condition improved remarkably except the astereognosis, which remained unchanged. Gradually, however, with the increase of the brain hernia, the old symptoms recurred. At a second operation a cyst was found in the region occupied by the mass, was evacuated, and improvement followed. Repeated evacuations were always followed by an improvement in the patient's condition. A slight paralysis and spastic gait are the only evidence of the disease now present.

151. This article appeared in the *Chicago Medical Recorder*, May, 1909, and was abstracted in The Journal, June 19, 1909, p. 2024.

Journal Arkansas Medical Society, Little Rock

June

153 Duty of Imparting to the Public Knowledge Concerning Preventable Diseases. J. T. Clegg, Siloam Springs, Ark.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

June 26

1 *Pneumococcus Invasion of the Throat. Sir F. Semon.
2 Acute Pneumococcus Infection of the Pharynx. J. Elliott.
3 *Therapeutic Value of Pneumococcus Vaccine in Pneumonia. A. B. Harris.
4 Radioactivity and Carcinoma. W. S. Lazarus-Barlow.
5 Treatment of Volvulus. R. Mowbray.

1. **Pneumococcus Invasion of Throat.**—Semon adds one case of pneumococcus invasion of the throat to the two cases recorded thus far. The case terminated fatally owing to tuberculosis supervening on the original infection. The patient complained of unpleasant sensations in the throat, which were referred to the region of the lingual tonsil. The lingual tonsil was found to be distinctly swollen, and was treated with applications of a solution of iodin and potassium iodid (Lugol's solution). After a few applications the swelling decreased. and the patient for a few days felt better. He returned, complaining of distinct pain in the left side of his throat. An irregular superficial small ulcer, surrounded by a small area of whitish discoloration, was seen in the lateral wall of the throat, just opposite the last molar, and in its neighborhood a few small irregular spots of white infiltration, but without loss of substance, were visible. The ulcer was not bigger than a split pea. It was cauterized with a weak solution of chromic acid and, as this proved of no avail, with a solution of nitrite

of silver (60 grains to the ounce). For a time these applications afforded relief; usually, however, within a few days after disappearance of the ulcer, it reappeared, sometimes with, sometimes without, a whitish infiltration in its neighborhood. No enlargement of cervical glands was ever present. A scraping from the ulcer showed an almost pure pneumococcus culture. Despite local applications, curettage, and vaccine injections, the patient's condition rapidly became worse. Multiple ulcers made their appearance, together with edema of larynx, pulmonary consolidation, and extreme emaciation. The patient died about seven months after the onset of his trouble.

3. **Pneumococcus Vaccine in Pneumonia.**—Harris says that it may be taken as a clinical fact that in pneumonia death usually takes place through failure of the heart. Particularly obvious is this in the cases of virulent pneumonia, where death occurs about the fourth day of the disease. With regard to treatment of acute pneumonia by inoculation, he concludes that: (1) Successful inoculation for pneumonia is possible; (2) inoculation does no harm; (3) a vaccine from one or a number of virulent strains should be used; (4) it should be introduced as early as possible; (5) the estimation of the opsonic index is not necessary; (6) the observation of the temperature and physical signs is in pneumonia a sufficient guide in gauging the repetition of the dose. Infections of the lung by the pneumococcus which fail to resolve after an acute pneumonia, as well as pneumococcic infections of other areas, ought certainly to be treated with a pneumococcus vaccine; and these cases appear to afford a reasonable prospect of success.

Lancet, London

June 26

6 *Radioactivity and Carcinoma. W. S. Lazarus-Barlow.
7 Gastrointestinal Crises from Effusion into the Intestinal Wall. G. A. Sutherland.
8 Acute Mastoiditis, with Lateral Sinus Suppuration and Cerebellar Abscess as Complications of the Operation for the Removal of Tonsils and Adenoids. L. A. Parry.
9 Oral Sepsis in Connection with Throat Disease. G. I. Stewart.
10 Primary Sarcoma of the Duodenum. H. M. Mackenzie.
11 *Inherited Tachycardia. J. Kirkland.
12 *Effect of Diphtheria Antitoxin on the Tuberculo-Opsonic Index. A. G. Banks.
13 Missed Labor. P. McEwan.
14 Hydroa Gestationis. E. Ward.
15 Difficulties, Direct and Indirect, in Diagnosis, and Remarks on Treatment of Certain Forms of Deafness. R. Lake.
16 Hair-Ball in the Stomach. G. P. Newbolt and R. A. Jones.
17 Wound Diphtheria. R. Herley.
18 Medicolegal Evidence in a Case of Sudden Death. G. E. Wherry.

6. Published also in the *British Medical Journal*, June 26, 1909.

11. **Inherited Tachycardia.**—In Kirkland's report both grand mothers, the father, the mother, the aunt, four out of six daughters, the three sons, and at least one niece were, or are, victims of heart lesions. The trouble did not show itself to any appreciable degree in most of these cases until at least early adult life. The heart beats in Kirkland's case were between 220 and 240; they were difficult to count owing to the irregularity. Dyspnea was most distressing, increased by the cough and any slight exertion, even eating or drinking. The voice was much affected, amounting at times to aphonia. There were great abdominal discomfort and flatulent dyspepsia. The patient had to be propped up in bed, and was most comfortable and easy in this position and the dyspnea was less severe. The attack came on suddenly after a walk that was beyond his strength and lasted twenty-eight hours, passing off as quickly. A hypodermic injection of strychnin, together with a mixture containing apomorphin hydrochlorid (1/16 grain), caffein hydrobromid, etc., seemed to cut the attacks short.

12. **Effect of Diphtheria Antitoxin on Tuberculo-Opsonic Index.**—Banks found that in healthy subjects the effect of diphtheria antitoxin on the tubercle index is small, and it is quite possible that the larger variations are due to some hidden tuberculous lesion. In the majority of cases there is a definite rise in the tuberculo-opsonic power shortly after the injection of antitoxin; and during some few weeks after this a somewhat low index to the tubercle bacillus is the rule. Also, these effects are independent of the quantity of antitoxin administered and probably of the age of the patient.

Medical Press and Circular, London

June 16

19 Treatment of Bronchopneumonia. E. Cautley.
20 Recent Researches on the Function of the Non-Auditory Ear. R. H. Woods.
21 *Nature of Vomiting after Anesthesia, with Suggestions for Its Treatment. J. Blumfeld.
22 The State and Other Relationships of Modern Dental Surgery. H. R. F. Brooks.

21. **Treatment of Postanesthetic Vomiting.**—The most rational way to treat and prevent nausea and vomiting after anesthesia, according to Blumfeld, appears to be to promote in every way the elimination of the circulating anesthetic. That is to say, the patient should be kept warm so that the skin may act freely, and renal secretion should be helped. For this purpose saline enemata are of great value, and one should be introduced slowly as soon as the patient is back in bed. In some hands large quantities of saline solution are introduced under the skin slowly and for long periods of time after severe operations, and it is claimed that not only is shock diminished in this way, but after-vomiting is much less frequent. While elimination is thus going on, the less put into the stomach the better. There is no call for anything at all except through thirst, and this gives little trouble if enemata or subcutaneous injections are used. Washing out the mouth with lemon juice and water is pleasant for the patient, and helps to allay feelings of thirst. Preventive treatment with glucose, based on chemical theories explaining delayed chloroform poisoning, has been given a trial at St. George's Hospital; the results do not show any marked alteration of the ordinary percentage of cases of after-sickness.

Clinical Journal, London

June 16

23 Comparison of Cancer of the Lips and Cancer of the Labia. J. Bland-Sutton.
24 Hemiplegia. S. West.
25 *Hemoptysis and its Treatment. J. E. Squire.

25. **Treatment of Hemoptysis.**—Squire presents an admirable synopsis of the treatment of pulmonary hemorrhage. If the smallest amount of blood staining is noticed in the sputum it should be looked on as a danger signal, and the patient ought at once to be put to bed. Calomel gr. ij, iij, or iv, should be given, depending on the patient, followed in the morning by ʒj or more of magnesium sulphate; if necessary, this may be repeated in the day. The patient remains in bed for a couple of days, taking the magnesium sulphate each morning, and if no more staining appears he is allowed to get up, beginning with two or three hours the first day. If the staining continues while the above treatment is given, the amount of milk may be reduced to one pint daily and the patient is, of course, kept in bed till the sputum is clear for at least three days. Acute hemoptysis is treated by propping up the patient in bed. Amyl nitrite, minims 10 to 15, is inhaled. In a slight hemorrhage this is usually sufficient. Smaller amounts than 10 minims do not usually have much effect. In larger hemorrhages, particularly when the nose gets blocked up with blood, it may be necessary to put from 30 to 60 minims on a piece of lint and hold it over the patient's mouth. In some cases, this has been repeated, and the only complaint the patient made was that it produced a feeling of nausea. Turpentine (m. xxx to lx) may be used as an inhalation when amyl nitrite is not at hand, or spirits of turpentine (m. x to xxx) may be given internally and repeated. Morphin has been given with good results in slight cases; its action is probably due to the relief of anxiety from the sedative, with consequent quieter action of the heart. Adrenalin (m. v of a 1 to 1,000 solution) has been injected. It is said to be useful in cavity cases where it is likely that the hemorrhage is due to the erosion of a medium-sized vessel. On the other hand, it is said to be contraindicated when the hemorrhage is from a ruptured vessel, but is useful in congestive hemorrhage. It should be a general rule that when the hemorrhage is large and the cavity is known to be present, the patient should be made to lie on the side on which the cavity is located. Subsequent to acute hemorrhage the patient is kept in bed, if possible, propped up a little. Purgatives are given, beginning with calomel (gr. ij to iv), followed by magnesium sulphate,

one, two or three times daily; the amount and time must depend on the patient's condition. Milk, one pint, must be given in twenty-four hours, and all other fluid cut off as much as possible, and the patient fed on solids. In some cases calcium lactate, gr. xv, has been given thrice daily for three days and then omitted for three days, and so on. Or calcium chlorid (gr. x to xlv) in water or milk, every four or six hours, may be given in a similar manner. These calcium salts increase the coagulability of the blood and thus tend to check hemorrhage. It is not wise to examine the chest too fully nor too frequently during or immediately after an attack of hemoptysis.

Journal of Tropical Medicine and Hygiene, London

June 1

26 Schistosomiasis in Bahia, Brazil. P. de Silva.

Practitioner, London

June

27 Bearings of Pathology on Prevention, Diagnosis, and Surgical Cure of Carcinoma of the Cervix. V. Bonney.
28 Treatment of Simple Fractures. R. P. Rowlands.
29 Phthisis: Its Diagnosis and Treatment. W. Broadbent.
30 Hypertrophy of the Prostate, and its Operative Treatment. H. Collinson.
31 Cerebrospinal Fever. F. E. Larkins.
32 Diseases of Children. J. H. Thursfield.
33 Bacterial Vaccines and Rational Immunization. E. C. Hort.
34 First Three Weeks of Pregnancy: Practical Bearing of Recent Investigations on our Knowledge of Ectopic Gestation. J. Phillips.
35 Points of Medical Interest in New Children's Act. L. A. Parry.
36 *Meat as Source of Infection in Tuberculosis. A. R. Litteljohn.
37 Clinical Aspects of Cases Accompanied by Increased Blood Pressure. H. O. Butler.

36. **Infection in Tuberculosis.**—This subject is discussed at some length by Litteljohn, and he endeavors to show (1) that man can contract tuberculosis from cattle, but that, considering the difficulty experienced in transmitting human tuberculosis to cattle, we may, perhaps, assume that the transmission of bovine tuberculosis to man is also difficult to effect; (2) that infection of man with tuberculosis is not commonly caused by ingesting meat, since it requires the swallowing of large numbers of tubercle bacilli to be effective; (3) that the flesh of tuberculous animals (even in generalized tuberculosis) is rarely infective, except as a result of postmortem contamination; (4) that the ordinary processes of cooking, in the majority of cases, are sufficient to render the contaminated meat non-infective; (5) that during a period, in which the consumption of meat by man has increased in quantity, human tuberculosis has declined (British Royal Commission). Litteljohn believes that we may justly infer, therefore, that, to the community at large, the risk of contracting tuberculosis by eating the meat of tuberculous animals is not so great as is generally believed; but that this risk is greater than it should be, owing to inefficient methods of inspection. This perfect inspection particularly concerns those who buy cheap meat, and eat such commonly infected organs as the lungs, udder and mesenteries.

Australasian Medical Gazette, Sydney

May

38 Prevention of Pelvic Disease in Women. D. Hardie.
39 Treatment of Syphilis, Based on a Year's Work at the London Lock Hospital. J. S. Purdy.
40 Serodiagnosis of Syphilis. Drs. Butler and Flashman.
41 Internal Derangements of the Knee Joint, with Report of Two Cases with Successful Operation. C. E. Todd.
42 Infective Infantile Ileocolitis. H. S. Bush.
43 State Medical Inspection of School Children. J. H. Cumpston.

Glasgow Medical Journal

June

44 State of Education in British and Irish Schools for the Deaf. J. K. Love.
45 *Possible Incipient Addison's Disease. J. S. M'Kendrick.
46 Radium in Dermatology. J. G. Tomkinson.

45. **Incipient Addison's Disease.**—McKendrick reports the case of a woman, aged 37, who complained of cough with expectoration and general weakness. There was a very striking pigmentation of the skin. The color was yellowish brown, and affected chiefly the forehead, neck, hypochondriac and abdominal regions in front, and the infrascapular and lumbar regions behind. The arms were uniformly pigmented from the shoulder to the metacarpophalangeal joints. There was an entire absence of pigment over the clavicular and mammary regions in front, and the suprascapular region behind. Scattered here and there through the pigmented areas are patches varying in size from a lentil to a walnut, of clear pearly skin. The pigmented areas were not raised above the surface, nor were they affected by scraping with the nail or sharp instrument. The thighs and legs were free from pigment. The pigment was more marked over the areolæ and axillary regions. There was evidence of consolidation over the left apex, where there is relative dulness to percussion, diminution of respiratory murmur, some tubularity, and a few dry and moist râles. The lungs were otherwise normal. The symptoms in their order of development were pigmentation of the skin, great weakness accompanied by breathlessness, cough with expectoration, anemia, and lastly, a tendency to diarrhea. The pigmentation commenced almost a year before the asthenia and cardiovascular symptoms, and some little time before her last pregnancy. The question arises whether one is justified, from the symptoms of pigmentation, asthenia, gastroenteritis, tuberculosis and splenic enlargement with normal blood count, in supposing (without postmortem examination) that this patient suffered from Addison's disease. Is it more likely that the primary disease is chronic pulmonary tuberculosis, with splenic enlargement, pigmentation, weakness, etc., as secondary manifestations or accompaniments of this toxic process? Is there leukodermia associated with this peculiar Addisonian pigmentation, and if so, is leukoderma a frequent accompaniment of Addison's disease?

Journal Laryngology, Rhinology and Otology, London

June

47 Experiences in the Direct Examination of the Larynx, Trachea and Esophagus. A. B. Kelly.
48 *Indications for and Results of Operative Treatment of Purulent Otitis Media, Including the Simple and Radical Mastoid Operation. W. C. Phillips.

48. Abstracted in The Journal, Feb. 20, 1909, p. 654.

Archives de Médecine des Enfants, Paris

May, XII, No. 5, pp. 321-400

49 Buttermilk in Infant Feeding. (De l'alimentation des nourrissons avec le babeurre.) G. Jacobson (Bucharest). Commenced in No. 4.
50 Incessant Crying as Symptom of Inherited Syphilis. (Les cris incessants comme symptome de l'heredosyphilis.) C. Ferreira.
51 *Warmth for the Prematurely Born without an Incubator. (Rechauffement des débiles par un procédé nouveau.) J. Comby.

June, No. 6, pp. 401-480

52 Pathogenesis of Congenital Inspirational Stridor. J. von Bokay.
53 Tuberculous Peritonitis in Infants. E. Weill and M. Péhn.
54 *Roentgen-Ray Treatment of Tuberculous Peritonitis. (Nouvelles recherches cliniques et hématologiques sur la péritonite tuberculeuse traitée par les rayons Roentgen.) G. B. Allaria and G. Rovere.
55 Prostitution in Minors. (La prostitution chez les filles mineures. Ses causes. Ses remèdes.) H. Dauchez.

51. **Warmth for the Prematurely Born without an Incubator.**—Comby quotes with approval Dufour's suggestion to wrap the child, all except the head, in oiled silk, to shut off all contact with the external air. This maintains an even temperature and allows the incubator to be dispensed with. Tibone uses the same for wrapping parts affected with sclerema, and has thus treated 19 infants, curing 7, with 4 much improved. The oiled silk prevents chilling, raises the temperature and keeps it even and softens the subcutaneous fat in the sclerema, while the local circulation is stimulated.

54. **Roentgen-Ray Treatment of Tuberculous Peritonitis.**—Allaria and Rovere have had experience with seven cases, and their conclusions are that Roentgen treatment should be restricted to the form with ascites and that it must be suspended at the slightest sign of intoxication or aggravation. Owing to the difficulty of detecting these signs, the method should be regarded as still in the experimental stage. Their experience on the whole was unfavorable.

Revue de Chirurgie, Paris

June, XXIX, No. 6, pp. 1029-1290

56 Tuberculous Elephantiasis. (A propos d'un cas d'elephantiasis tuberculeux de la vulve.) E. Forgue and G. Massabuau.
57 Exostoses of the Calcaneum. P. Reclus and A. Schwartz.
58 Cancer of the Bile Ducts. (Traitement chirurgical du cancer des voies billiares.) G. Cotte.

59 Resection of Intestine with Strangulated Hernia. X. Delore and C. Thevenet.
60 *Reanimation of the Heart. (La réanimation du cœur.) P. Mocquot. Commenced in No. 4.

60. **Reanimation of the Heart.**—Mocquot reviews the various cases on record and adds some hitherto unpublished cases, including some from his own experience, and experimental research. He compares the experimental findings and the clinical results, the mode of action of each method, the causes of failure and the conditions for success. Of all the direct procedures massage has been the most frequently used and has given good results in many instances, especially in chloroform syncope. The best mode of access is through the abdomen. While massage with access through the chest in 21 cases has given 2 complete and 5 partial successes, there have been only failures recorded in the 10 cases of massage with access through the diaphragm, but in the 22 cases of massage in which the heart was manipulated from below the diaphragm, success was complete in 9 cases and partial in 6 others. The diaphragm was too taut in 3 cases; it might be relaxed by raising the pelvis, which has also the advantage of sending the blood into the upper part of the trunk. The heart is often so flabby that it can not be felt through the diaphragm, but after a few compressions it regains its consistency under the subdiaphragmatic massage. Another possible cause for difficulty in massaging the heart is an effusion in the pericardium. He has witnessed a case of this kind in a collapse at the end of an operation; after failure of the ordinary measures Delbet tried to massage the heart, but the diaphragm was so tight that this was impossible. An incision was made through the diaphragm and the pericardium, allowing the escape of a serous fluid; the existence of this complication jeopardizes the success of measures for reanimation. Mocquot asserts that it is not necessary to take hold of the heart to apply effectual massage; it is not only easier, but it is more effectual merely to compress the ventricle against the wall of the thorax by means of the hand introduced flat behind the heart. He reports a case in detail which demonstrates beyond question the utility and ease of this mode of massage which can be done readily through the diaphragm without necessity for incising it. Butruille succeeded in massaging the heart in a new-born infant without any incision, merely working two fingers under the false ribs on the left, thus seizing the heart between the two fingers and the thumb on the precordial region, but this method is applicable only for the new-born. While the massage is being applied, artificial respiration should be kept up to relax the diaphragm. The Silvester method interferes with the massage; the best technic is by direct insufflation with a tube. The rhythm of the compression of the heart should approximate the normal rate, that is, it should be about 60 a minute. The ventricles fill up as the compression is released, but sometimes this occurs so slowly that the rhythm has to be made slower. The massage acts as a mechanical stimulant, favoring the emptying of the heart, and setting up an artificial circulation. It is possible, he declares, that the maneuvers for artificial respiration owe part of their efficacy to their action as a kind of massage on the heart. Mocquot noted that the tint of the skin became pinkish during the compression; in one case there was a strong radial pulsation at each compression of the heart. In the majority of cases of chloroform syncope the heart is almost empty and it is important to supply the heart with more blood; this is one reason why massage from below the diaphragm is more effectual than massage after the chest is open. This creates a pneumothorax and thus puts an end to thoracic aspiration. The greater the pressure at the starting point of the coronary arteries, the better the myocardium will be irrigated; some have even advised compression of the abdominal aorta. The artificial circulation from the rhythmic compression acts both on the heart centers and on the myocardium; Cyon has revived the heart by merely irrigating the nerve centers with oxygenated blood. The causes of the failure of the massage have been pneumothorax, inadequate artificial respiration or blood pressure, organic changes or fibrillar tremulation. He gives the details of the total 53 cases of massage of the heart for chloroform syncope or traumatism of the heart or asphyxia, embolism or diphtheria, including a number of cases reported in America. In conclusion, he reviews the publications on Crile's and Spina's methods; the latter is the injection of serum against the current. In chloroform syncope massage has great chance for success when it is commenced not later than fifteen minutes after the arrest of the heart, and especially when it is not necessary to make a new operative trauma for it; it seems more effectual in tardy toxic syncope than in the initial reflex syncope. Adrenalin is a valuable aid in stimulating the heart to contract; it may be employed alone or associated with massage. Intravascular injections of serum not only raise the blood pressure, but dilute the blood and thus are indicated in all syncopes of toxic nature. In chloroform syncope the Silvester artificial respiration should be commenced at once; in cases of initial "white" syncope, insufflation of the lungs through the laryngeal tube, supplemented by massage of the heart, are the urgent indications. In tardy syncope, if the abdomen is already open, the above measures should be supplemented by intravenous injections of serum and of adrenalin. If the heart is not easily accessible, it is better to follow Crile's technic or Spina's, on condition that some artery not a branch of the carotid or of the left subclavian, is readily accessible and can be injected with Locke's fluid. In asphyxia, it is more difficult to revive the heart action, and, besides the massage and insufflation of the lungs, intravenous injections of serum and adrenalin are required. In a traumatism of the heart intracardiac injections of isotonic serum, combined with massage, seem the most promising method. The work should always be done with system, not haphazard. The article concludes with nearly three pages of titles of articles on this subject.

Revue de Gynécologie, Paris

XIII, No. 2, 179-368. Last indexed May 8, p. 1548

61 External Masculine Pseudohermaphrodism coinciding with Sarcoma of Ovary. P. Begouin.
62 *Retrouterine Hematocele from Rupture of Small Blood Cyst in the Ovary. F. Jayle.
63 *Gastro-Cutaneous Fistulas Consequent on Gastric Ulcer. I. F. Jeannel.

62. **Retrouterine Hematocele from Rupture of Blood Cyst.**—Jayle analyzes 126 works in the literature from which he has collected 14 cases similar to the 3 personal ones reported, in which rupture of a small blood cyst in the ovary resulted in a retrouterine hematocele. In treatment he left the apparently sound ovary in his cases, but he always regretted it later, as it proved pathologic, and a second operation had to be done. Consequently, he concludes that hemorrhagic ovaritis is constantly bilateral, and double oöphorectomy is indicated.

63. **Gastrocutaneous Fistulas Consequent on Gastric Ulcer.**—Jeannel classifies and summarizes 50 cases of fistula consequent on a gastric ulcer, including 2 from his own experience. The youngest patient was 13; the others were over 20. The gastric ulcer had caused symptoms for an interval ranging from fifteen months to thirty years before the fistula developed. In 20 cases there was no escape of pus when the fistula occurred, but in 17 this was noted. It is evident that suppuration is sometimes the cause, but in the majority the fistula is the result of necrosis of the inflamed tissues, destroyed by the gastric juice, and this same factor militates against successful operative closure of the fistula. It generally becomes more and more incontinent, and the patients, with good appetite to the last, die of inanition unless relieved by an operation. A few of the patients were in good health three and five years after the development of the fistula, but these are the rare exceptions, although Wencker's patient lived twenty-seven and Rouilly's eight years.

Presse Médicale, Paris

June 12, XVII, No. 47, pp. 425-432

64 *Early Total Resection of Varicose Veins. (Résection totale précoce des varices essentielles superficielles des membres inférieurs.) P. Alglave.
65 Experimental Typhoid. (Dothiénentérie expérimentale.) J. Milhit and E. Chabrol.

June 16, No. 48, pp. 433-440

66 Oösporoses. (Les actinomycoses, les oosporoses et la tuberculose.) H. Roger.

64. **Early Total Resection of Varicose Veins.**—Alglave gives fifteen illustrations to show the technic and ultimate results in three cases in which he removed the main trunk of the superficial saphenous vein and as much of its branches as po-

sible. The results have been the complete cure of the condition which had almost totally incapacitated the patients for years. He advises early intervention without waiting for leg ulcers to develop, operating when the patient first begins to find the condition painful and the pain warns of impending severer trouble. Total resection of the vein trunk at this stage is a simple and easy operation, he declares, free from danger, and yielding most excellent results. He carries the incision from the groin to the ankle, outlining a long spindle-shaped island in the center, which is cut out to draw the skin tighter around the leg as it is sutured.

Semaine Médicale, Paris

June 16, XXIX, No. 24, pp. 277-288

67 Symptomatic Importance of Segmented Sensory Disturbances in Brain Lesions. (Valeur sémiologique des troubles de la sensibilité à disposition radiculaire dans les lésions de l'encéphale.) J. Lhermitte.

June 23, No. 25, pp. 289-300

68 *Hemorrhagic Complications of Influenza. (Les hémorrhagies post-grippales.) L. Cheinisse.

68. **Hemorrhages Following Influenza.**—Cheinisse cites eight cases—including three in his own practice—of severe epistaxis or hemorrhage in the stomach or brain at the onset or during the course of influenza or within seven months of it in patients otherwise free from a hemorrhagic tendency before or since. These experiences emphasize the necessity for supervising the condition left after influenza, prescribing tonics and other measures as indicated. All but one of the eight patients were women.

Archiv für Gynaekologie, Berlin

LXXXVIII, No. 2, pp. 217-416. Last indexed May 22, p. 1724

69 Importance for Differential Diagnosis of the Plasma Cells in Suppurative Inflammation in the Uterine Adnexa. J. W. Miller.

70 Technic of Schauta's Operation for Prolapsus Uteri. F. Lichtenstein.

71 Bacteriologic Examination of Genital Secretions During Confinement. (Bakteriologische Untersuchungen der weiblichen Genitalsecrete während der Entbindung und des Wochenbettes, mit besonderer Berücksichtigung der Frage von der puerperalen Selbstinfection.) W. Wegelius.

72 The Bladder During Childbirth. (Die Harnblase während der Geburt.) E. Martin.

Correspondenz-Blatt für Schweizer Aerzte, Basle

June 1, XXXIX, No. 11, pp. 361-400

73 *Preparation and After-Care of Surgical Patients. (Vorbereitung und Nachbehandlung bei chirurgischen Operationen.) E. Kummer.

74 Ankylostomiasis. O. Henggeler.

73. **Preparation for and Care After Surgical Operations.**—Kummer reviews his experiences with 315 laparotomies. He devotes special attention to the 108 cases in which there were complications or delay in healing, urging the necessity for improving the present technic of anesthesia and the after-care. He insists on an abdominal bandage to be worn for three months after the laparotomy, especially for people who are constipated or suffer from respiratory catarrhal affections or of whom much physical effort is required.

Deutsches Archiv für klinische Medizin, Leipsic

XCVI, Nos. 3-4, pp. 217-418. Last indexed June 12, p. 1962

75 Case of Lymphadenoma of the Mediastinum with Hypertrophic Osteoarthropathy. F. P. Weber and J. C. G. Ledingham.

76 *Acute Myeloid Leukemia. F. Port.

77 *Pathogenesis of Pernicious Anemia. F. Berger and I. Tsuchiya.

78 *Paroxysmal Hemoglobinuria. E. Meyer and E. Emmerich.

79 *Treatment of Obesity with Exclusive Milk Diet. (Entfettungskuren durch reine Milchdiät.) M. Hedinger.

80 Persistent Absolutely Irregular Heart. (Zur Kenntnis der Arythmia perpetua.) E. Magnus-Alsleben.

81 Case of Kala-Azar from Asiatic Russia. (Fall von Kala-azar aus Taschkent in Wien.) E. Sluka and M. Zarfl. Id. E. Rach and M. Zarfl.

82 Hemolytic Substances in Ether Extract of Stools with Ulcerative Processes in the Intestines. (Vorkommen hämolytisch wirkender Stoffe im Aetherextrakt der Fäces bei ulcerativen Prozessen des Darms.) E. Grafe and W. Röhmer.

76. **Acute Myeloid Leukemia.**—The findings in the case reported indicate a myeloblast leukemia. The patient was a man of 41 and the disease ran its fatal course in less than four months.

77. **Pathogenesis of Pernicious Anemia.**—This communication from Schmidt's clinic at Halle reports much experimental research, especially with the extract of the gastrointestinal mucosa after death from pernicious anemia and with the mucosa from dogs with gastrointestinal affections. The extract of the mucosa under certain conditions had a pronounced hemolytic action. It seems probable that an inflammatory infiltration in the gastrointestinal mucosa plays an important part in the development of pernicious anemia. The inflammatory catarrhal process leads to the production of an intensely hemolytic lipoid substance. That every catarrhal affection is not accompanied by anemia is due to the compensating action of the bone marrow which replaces the destroyed blood corpuscles as fast as they are destroyed. The process has to be very severe or very long continued to result in a pernicious anemia.

78. **Paroxysmal Hemoglobinuria.**—Meyer and Emmerich's views in regard to the origin of paroxysmal hemoglobinuria have been already mentioned in these columns. They think it is now established that in all certain cases of paroxysmal hemoglobinuria a complex hemolysin is present in the blood which does not act unless it has been chilled and afterward rewarmed again to body temperature. This autohemolysin was demonstrated in the four cases described.

79. **Exclusive Milk Diet in Treatment of Obesity.**—Hedinger gives the metabolic findings in five persons restricted to less than a quart of milk a day, the Karell cure, advocated in treatment of obesity. The deficit in nitrogen was found greater than hitherto supposed, and there was retention of salt, his opinion on the whole being that it is possible to find a more rational method of underfeeding which, with the same small numbers of calories, will still supply sufficient albumin and maintain the nitrogen balance undisturbed. Possibly the Rosenfeld-Richter potato diet may answer the purpose better.

Deutsche medizinische Wochenschrift, Berlin

June 10, XXXV, No. 23, pp. 1001-1048

83 Close Connection between Condition of Tension of Muscles and Pupil Disturbances. (Weitere Beobachtungen über im katatonischen Stupor beobachtete Pupillenphänomene nebst einem Erklärungsversuch der "katatonischen Pupillenstarre.") A. Westphal.

84 Korsakow's Psychosis as Result of Concussion of the Brain. (Zur Kenntnis der akuten traumatischen Psychose.) O. Aronsohn.

85 *Hysterical Pseudopalsy. (Pseudoparalysis agitans hysterica.) Müller de la Fuente.

86 Cellular Pathology in Origin of Infectious Diseases. (Die Theorie der Infektionskrankheiten.) W. Dibbelt.

87 *Natural Resistance to Tuberculin. M. Pickert.

88 *Superiority of Hot Oil for Sterilization of Instruments, etc. (Neues Sterilisierungsverfahren.) H. Conradi.

85. **Hysteric Pseudoparalysis Agitans.**—The patient in de la Fuente's case was a well-to-do English spinster of 28 who had lost her mother from progressive paralysis agitans and who dreaded its appearance in herself, as she had heard that it was a hereditary and contagious disease. She developed the typical syndrome on the right side, with the gait and stoop of her mother. The physician first consulted diagnosed hysteria, which disgusted her so that she did not consult a physician again for years. Then a persevering course of encouraging suggestion restored her confidence and soon cured her completely; there has been no relapse during the three years since.

87. **Natural Resistance to Tuberculin.**—Pickert refers especially to the cases of pulmonary tuberculosis in which, notwithstanding the presence of bacilli in the sputum, the general health keeps good and the earning capacity is not reduced. This may be due to some special structure of the lung preventing the bacilli from spreading, or it may be the result of some special resisting power on the part of the body maintaining a high immunity to the toxin secreted by the bacilli. The serum from patients in this second group is able to neutralize the tuberculin used for the cutaneous test so that injection of the mixture causes no reaction, while the controls all show a pronounced reaction. In these exceptionally resistant cases, injections of tuberculin also show augmented resistance to the tuberculin. The substance in the blood serum of untreated patients which thus neutralizes the tuberculin becomes apparent also in tuberculous patients under tuberculin treatment—a striking proof, he thinks, that Koch's tuberculin therapy induces, in the best sense of the word, a natural healing process, imitating the healing processes of Nature.

88. **Hot Oil for Sterilizing Instruments.**—Conradi calls attention to hot oil as the most certain means of destroying all germ life on instruments and catheters; it is much more effectual than boiling water. The vessel holding the oil is heated to 200 C. (392 F.) or over, and then set in a vessel of cold water to cool, and the instruments are soon ready for use, without the possibility of harm, while the hands are lubricated with the oil, but not rendered slippery. As the boiling point of oil is above 300 C., there is no loss of oil below this and the supply can be used over and over again for the purpose.

Deutsche Zeitschrift für Chirurgie, Leipsic

May, XCVIII, No. 6, pp. 503-579

89 *Omental Tumors due to Adhesive Inflammation or Preceding Operations. (Ueber im Anschluss an Bauchoperationen und Entzündungen der Bauchorgane vorkommende entzündliche Geschwülste des Netzes—Epiploitiden.) D. G. Zesas.
90 Volvulus of Entire Small Intestine and Ascending Large Intestine with Common Ileocecal Mesentery. Blecher.
91 Two Cases of Solitary Kidney Successfully treated with Decapsulation and Incision. (2 Fälle von einseitiger Niere. wegen hochgradiger Beschwerden behandelt mit Entkapselung und Sektionsschnitt.) C. Lauenstein.
92 *Compression from the Thymus. (Zur Druckwirkung der Thymus.) Denecke.
93 *Clinical and Experimental Study of Momburg's Technic for Expelling Blood from Lower Part of Body. (Zur Frage der Momburgschen Blutleere.) H. Rimann and W. Wolf.

89. **Omental Tumor from Adhesive Inflammation.**—Zesas summarizes 44 cases from the literature, all but 8 of postoperative origin. The epiploitis generally subsides under bed rest or wet packs and inunction of potassium or mercurial ointment. In a few exceptional cases the epiploitis led to peritonitis or other fatal complication.

92. **Pressure from the Thymus.**—Denecke reports a case in which the large thymus compressed the vein trunks, causing attacks of syncope. The patient was a boy of five cured by resection of part of the thymus on each side. The supraclavicular fossa on each side protruded as the child cried and the veins in the neck swelled to finger-thick cords, while there was very little stridor during inspiration. He reviews the similar cases in the literature.

93. **Momburg's Method of Expelling Blood from the Lower Part of the Body.**—This method of hemostasis has been studied experimentally and in the clinic by Rimann and Wolf, who call attention to the effect on the pulse of this circular compression of the trunk. The constricting belt causes the blood pressure to rise; if the heart is healthy it can stand this high blood pressure without damage, and all is well, but if the heart yields and becomes dilated there is danger of irremediable collapse. They warn that this new method should be applied only when the heart can be relied on. A healthy young heart can stand it, but it should not be used in arteriosclerosis or valvular defects, even if well compensated. In the two clinical cases reported, the belting technic for constriction had been applied for an operation for rectal cancer. In the first case the belt was applied during the operation to arrest the excessive bleeding, which it did at once. The pulse continued strong for nearly two minutes, then grew weaker and became imperceptible by the fifth minute, the patient going into collapse. The belt was at once removed, when the patient revived and the operation was completed. The patient, a man of 70, with moderate arteriosclerosis, died four weeks later of pneumonia. In the other case the patient was a woman of 42 with normal findings in the thorax, the belt was applied before the operation, the blood pressure 115 mercury. The pressure dropped to 85, then to zero in two minutes. The belt was removed the fifth minute and the blood pressure rose in one minute to 75. Examination twenty-four hours later revealed signs of mitral insufficiency which unmistakably had a causal connection with the Momburg constriction. Digitalis was given for three weeks, the pulse remaining irregular for twelve days, after which it resumed its former forcible and regular rate, while there was no further trace of dilatation of the heart or of systolic murmur at the apex.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XX, No. 2, pp. 195-376. Last indexed May 15, p. 1630

94 *Cholecystitis and Cholangitis without Concrements Riedel.
95 *Fibrinous and Purulent Prehepatitis. Id.
96 Pathology of Jaundice. (Zur Pathologie des Ikterus.) O. Fischer.
97 Resection of Long Stretches of Intestines. (Erwiderung auf die Arbeit von Prof. Albu über Versuche über Ausschaltung von Dünn- und Dickdarm.) W. Denk.
98 Coagulating Property of Blood from Surgical Standpoint. (Verwertung der Koagulationsbestimmung des Blutes in der Chirurgie.) W. Denk and I. Hellman.
99 *Case of Brain Abscess with Complicating Meningitis. (Hirnabscess kompliziert durch Meningitis.) G. Bonvicini and H. v. Haberer.
100 Pathology of the Movements of the Intestines. (Zur Pathologie der Darmbewegungen.) G. Hotz.
101 Foreign Bodies in Appendix. (Fremdkörper im Wurmfortsatz.) Rammstedt.
102 Hemorrhage in Diseased Appendix. (Blutungen im kranken Wurmfortsatz.) R. Kretz.
103 *Surgical Treatment of Gastric Ulcer. (Zur chirurgischen Therapie des Ulcus ventriculi.) P. Clairmont.
104 *Neoplastic Nature of Enlargement of Prostate. (Pathogenese der "Prostatahypertrophie.") W. Runge.
105 Chronic Rigidity of Spine. (Chronische Wirbelsäulenversteifung: Spondylarthritis ankylopoetica, und Fall von Wirbelsäulenversteifung.) V. Reichmann.

94. **Inflammation of the Gall Bladder, etc., without Concrements.**—Riedel found no stones in 11 of 65 patients operated on for supposed gallstone disease during the last year. The adhesions left by a cholecystitis without stones generally cause no disturbance, but sometimes they induce intense pain and dilatation of the stomach follows if the passage of the food in the duodenum is interfered with. He has cured a number of patients by severing such adhesions. He describes three cases in which the trouble was an acute infection of the gall bladder, without stones, and the year or more of health since demonstrates that the dreaded cancer did not exist. In one case a young woman had been taken suddenly sick, vomiting constantly, and reacting with a chill to lavage of the stomach or any disturbance of the flow of bile, and finally collapse as three quarts of serous fluid collected in the bile passages. She recovered slowly after the operation, but after the cure of a streptococcus gall bladder affection was restored to complete health. The cholangitis may have been due to streptococci from the gall bladder. In two other cases the disturbances were not severe except for the jaundice; he did not operate, but is still treating these patients with Carlsbad water and is confident of a speedy cure. The severe cases require drainage of the gall bladder, but a course at Carlsbad is advisable in all cases when attainable.

95. **Fibrinous and Purulent Prehepatitis.**—This affection is an inflammatory process occurring exclusively on the anterior aspect of the liver. If aseptic there is fibrinous inflammation, sometimes but not always complicated with the cholecystitis without concrements, but if there is infection there may be suppuration and an abscess. In three cases the aseptic inflammation led to extensive adhesions, causing painful traction and requiring operative intervention, but there was no enlargement of the liver or trace of edema. In three other cases the purulent prehepatitis caused symptoms mistaken for a perforation of the gall bladder. The patients were between 33 and 62, except one child of 2, with protuberant liver region, which proved to be a prehepatic abscess and gave the clue to the other cases. The origin of the aseptic cholecystitis and cholangitis without concrements is still a mystery, as also of this collection of laudable pus in front of the liver in these cases of prehepatitis.

99. **Brain Abscess with Complicating Meningitis.**—The patient was a woman of 32 and the brain abscess was of otitic origin. The case is studied from the neurologic, surgical and general medical points of view, some of its features encouraging an attempt to trephine even in suppurative diffuse meningitis, the technic for which is discussed.

103. **Operative Treatment of Gastric Ulcer.**—Clairmont relates the experiences at von Eiselsberg's clinic with a total of 259 operations for gastric ulcer. The mortality has been reduced in the twelve years covered from 24.5 per cent. to 6.6 per cent., and with posterior retrocolic gastroenterostomy from 16.6 to 3.5 per cent. The ultimate outcome of a gastroenterostomy is a complete cure in only 52 per cent. of the cases, with improvement in 15 per cent. The outlook is more promising the nearer the ulcer to the pylorus. In only 3 per cent. of the total number of cases was it impossible to locate the ulcer by the anatomic findings. Ulcers accompanied by inflammatory tumefaction and callous penetrating ulcers give

especially favorable results with operative treatment, provided they are not too far distant from the pylorus.

104. **Pathogenesis of Enlargement of the Prostate.**—Runge examined the prostate after removal on account of excessive enlargement in 29 cases, the patients being between 70 and 90 in all but 6 cases, in which the ages ranged from 20 to 60. In 2 cases each there was tuberculosis or an abscess; in 2 the prostate was apparently of normal structure, and in 1 it was atrophied. In the 22 others the microscope revealed that the prostate was the seat of adenomatous proliferation and consequently that the enlargement was of neoplastic nature.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

June, XXIX, No. 6, pp. 677-968

106 *Promotion of Breast Nursing. (Zur Physiologie und Technik der natürlichen Ernährung des Neugeborenen.) R. T. Jaschke.
107 Puerperal Fulminating Purpura or Hemorrhagic Sepsis. E. Sachs.
108 Dilatation of the Cervix. Uterine Forceps. H. Wendel.
109 *Results of Treatment of Uterine Cancer. (Ergebnisse der Behandlung des Uteruskarzinoms.) G. Klein.
110 Giant-Celled Sarcoma in Wall of Ovarian Cystoma. (Riesenzellensarkom in der Wand eines Ovarialkystom.) R. Pucher.
111 Double Uterus with Birth of Twins. (Zwillingsgeburt bei doppeltem Uterus.) H. Cramer.
112 *Nature of Pregnancy Disturbances and their Prevention. (Wesen der Schwangerschaftsbeschwerden und ihre Verhütung.) E. Diesing.
113 Growth of Hips in Breadth according to Age and Sex. (Wachstum der Hüftbreite nach Alter und Geschlecht.) S. Weissenberg.
114 Etiology of Leakage of Amniotic Fluid and of Pregnancy outside the Fetal Membranes. (Aetiologie der Hydrorrhoea amnialis und der Graviditas extramembranacea.) F. Hornstein.
115 Treatment of Rupture of the Uterus. C. Schütte.
116 *Fatalities after Palliative Interventions on Uterine Cancer. (7 Todesfälle nach Palliativeingriffen beim Carcinoma uteri.) P. Zacharias.
117 Metastasis in the Skin from Uterine Cancer. (Hautmetastasen beim Uteruskarzinom.) H. Offergeld.
118 Wedge Resection of Fundus of the Uterus. (Keilresektion des Fundus uteri.) F. Heinsius.

106. **To Promote Breast Nursing.**—In this communication from von Rosthorn's gynecologic clinic at Vienna, Jaschke states that it was possible to secure the mother's milk in sufficient amounts in 91.3 per cent. of 1,000 children, while mixed feeding was obtained in 7.9 per cent. and only 0.8 per cent. had to be artificially fed. This was the regular sequence of births, and he succeeded in obtaining a normal secretion of milk by various measures, including suction apparatus at first to make the milk come more readily and drawing the milk with a breast pump to feed the child with a spoon when for any reason it did not get enough. One very important point, however, is that the child was made to suck for a few minutes each time before being fed with a spoon. Success depends mainly on the skill and devotion of the attendants, who must favor the natural nursing in every possible way, and this requires skill and immense patience. He is convinced that the loss in weight after birth is the result of insufficient food, and that it is possible to prevent it by giving pumped mother's milk, keeping control of the amount by weighing the child three or four times a day. His average of 18 healthy children was 19 c.c. the first day; 90 c.c. the second; 193.2 c.c. the third; 260.4 c.c. the fourth; 339.3 c.c. the fifth; 402 c.c. the sixth; 415.6 c.c. the seventh, and 470.5 c.c. the eighth. Unless the child gets about these amounts it is insufficiently nourished. In one ward with unusually conscientious attendants the children obtained their natural heritage of mother's milk in all but 0.5 per cent., with only 1.7 per cent. requiring additional food.

109. **Uterine Cancer.**—Klein comments with horror on the small proportion of women alive after five years, the absolute cures amounting to only 3.6 per cent. in his experience with 421 cases of uterine cancer. Only 40 per cent. were operable, and this is the factor that should be energetically combated. He urges medical societies to appoint committees to educate the public and warn them against the dangers from quack practices, especially in cases of cancer.

112. **Disturbances of Pregnancy and Their Prevention.**—Diesing has long practiced in the orient and in Africa, but never witnessed there an instance of the pregnancy disturbances common elsewhere. He ascribes this difference mainly to the different diet. The pregnant woman uses up iron more than sulphur, so that the latter predominates in the blood, and this is the cause of the disturbances. The sulphur is derived from the albumin of the food, mostly in the form of meat. The African races do not allow women to eat meat.

116. **Fatalities After Curetting Uterine Cancer.**—Zacharias reports seven cases which warn against the danger of opening a passage into the blood for the virulent germs in a cancer during the course of a palliative scraping of an inoperable uterine carcinoma. His experience indicates that it is wiser not to curette before removing an operable malignant growth.

Münchener medizinische Wochenschrift

June 8, LVI, No. 23, pp. 1162-1216

119 *Mistakes in Diagnosis of and Failures in Treatment of Ear Diseases. (Aus dem Gebiete der Ohrenheilkunde.) H. Schwartze.
120 Spread of Syphilis at Freiburg since Abolition of Medical Inspection of Prostitutes. E. Jacobi.
121 *Primary Tuberculosis of Nasopharynx. (Zur Kenntnis der primären Tuberkulose der Nasenrachenschleimhaut.) H. Merkel.
122 *Pseudomembranous Enteritis. (Ueber kruppöse Darmentzündungen.) G. Baermann and O. Eckersdorff.
123 Medullary Pseudoleukemia. v. Domarus.
124 Roentgen-Ray Inspection of Concrements in the Prostate. (Röntgenologie der endogenen Prostatakonkremente.) G. Forssell.
125 Hypertrophic Stenosis of Pylorus in Infants. K. Kaspar.
126 Technic for Local Anesthesia for Immediate Repair of Perineal Tears. (Schmerzlose Dammnaht.) Mathes.
127 Tuberculosis-Immune Opsonins. (Bakteriotropine.) A. Böhme. Commenced in No. 22.
128 *Substitute for Bismuth in Roentgen Work. (Ersatz des Wismut bei Röntgenaufnahmen.) K. Taege.

119. **The General Practitioner and Treatment of the Ears.**—Schwartze says that he has repeatedly encountered instances of actual harm done by "pseudospecialists" in otology, or by general practitioners failing to differentiate ear affections or overlooking them or inflicting injury in attempts to extract foreign bodies from the ears. He has known of cases in which the symptoms of internal ear disease, vertigo, nausea, vomiting, were ascribed to a stomach disorder, while pyemia originating in the ear was diagnosed as typhoid on account of the fever, diarrhea, enlargement of the spleen and bronchitis observed. Otitic pyemia may even simulate acute articular rheumatism, although the discovery that the larger joints are affected first speaks for the former trouble; in acute rheumatism the small joints are generally the first involved. When the otitic pyemia assumes a chronic form it is difficult sometimes to recognize it; but abrupt changes from high fever to subnormal temperature within a single day or a few hours should suggest it. The physician is also liable to blunder by assuming an ear affection when none exists, as in cases of radiating pains from a carious tooth or acute angina, or rheumatic pains, or subjective noises in the ears in chlorosis and anemia without reduction of hearing capacity. Eczema of the outer ear, if neglected, may even simulate a malignant tumor. In a recent case he removed a necrotic cholesteatoma from a patient who was in a very serious condition from the disturbances connected therewith; for weeks she had been under the treatment of a "pseudospecialist," who had diagnosed the case as a furuncle and applied treatment accordingly. A prolapsed, swollen or protuberant tympanic membrane may be mistaken for a polyp, as occurred once in Hyrtl's experience, the attempt at extraction resulting in the death of the patient from meningitis. Operations may be performed on lymph glands in the neck, the surgeon overlooking the causal chronic ear affection. He warns further that repeated injection of a warm fluid into the ear is liable to transform a mere catarrhal affection of the middle ear into a suppurative process or aggravate such. Salt is as efficient in sterilizing the ear as boric acid, he says, and when used for rinsing the ear, in the proportion of a heaping teaspoonful to the quart of boiled water (7.5 gm. to the liter), it prevents the raising up of the epithelium of the mucosa in the middle ear. Blister revulsion does no good in acute otitis media, and insufflation of a powder in cases of suppuration in the middle ear is dangerous, as it may glue up the opening and shut in the pus. It is permissible only with a large defect in the membrane, and the patient should never be allowed to insufflate the powder. He has recently encountered three serious cases of foreign bodies in the ear; in one a small pebble had been forced into the drum by unskillful maneuvers to remove it, and although the pebble was removed later by an

operation, yet fatal meningitis resulted. Every year, he adds, a not inconsiderable number of persons lose their lives in consequence of foreign bodies in the ears, but not so much from the foreign bodies themselves as from the attempts to extricate them. Syringing with warm water is all that should be done to extract them. Never, he adds, never allow yourselves to be tempted to seek to extract them with an instrument. An insect in the ear may be killed by cigar smoke or a little warm water, or, better still, the fumes of chloroform; maggots may be expelled by pouring sterilized oil into the ear; they come to the surface of the oil as they begin to suffocate. The dreaded "earwig" very seldom gets into the ear, but he has known of many instances of fleas, bedbugs, small beetles and mites entering the ear. Numerous cases of injury have come under his notice in which injury resulted from attempts at extraction of a foreign body when there was none present, or it was in the other ear. In case of recent trauma affecting the ear it should not be rinsed out, and manipulations with instruments should be avoided as much as possible. The only correct treatment is an aseptic protecting dressing and rest in bed. Insufflation of air is dangerous, he declares, in sclerosis of the middle ear, especially in unilateral ear trouble, and nose douches and syringing may also affect the ear unfavorably. Intranasal operations often set up an acute otitis, sometimes entailing pyemia; operations for chronic empyema in the accessory cavities should be restricted to the cases with intolerable headaches. Evacuation of the sphenoidal and ethmoidal sinuses may also lead to injury of the base of the brain, with fatal meningitis; the rarity of published cases of this kind does not mean that such mishaps do not occur more frequently.

121. **Primary Tuberculosis of the Nasopharynx.**—Merkel has found only four cases on record of primary tuberculosis of the nasopharynx confirmed by autopsy, and here reports a fifth case. Without the autopsy findings it would have been recorded as an unquestionable case of pulmonary tuberculosis with secondary tuberculous meningitis. Tubercle bacilli were found constantly in the sputum, but the focus in the nasopharynx was the only manifestation of tuberculosis discovered in the cadaver, and this gave no sign of its presence except the bacilli which were ascribed to the lungs.

122. **"Croupous Enteritis."**—This communication from Sumatra reports an epidemic of an acute intestinal affection with a tempestuous onset with fever, leucocytosis, rapid pulse, violent colics, blood-stained stools and tenesmus and speedy fatal termination. Ten cases are reported with autopsy findings; a pseudomembrane had developed at points in the small or large intestine, or both, and streptococci were found in overwhelming numbers.

128. **Substitute for Bismuth in Roentgen Work.**—Taege has found that the addition of 1 per cent. tragacanth to the suspension of magnetic oxid of iron, which has been recommended recently as a substitute for bismuth, will hold the iron perfectly in suspension for hours. Otherwise it soon drops to the bottom of the vessel. He mixes the tragacanth with the oxid, then adds the water, and shakes the whole in a bottle.

Virchows Archiv, Berlin

June, CXCVI, No. 3, pp. 385-576

129 Pathologic Anatomy and Pathogenesis of Syringomyelia and Similar Affection of Medulla Oblongata. (Syringomyelie und Syringobulbie.) K. Petren. Commenced in No. 2.
130 Changes in Pancreas with Cirrhosis of the Liver. (Veränderungen des Pankreas bei Leberzirrhose.) S. M. Poggenpohl.
131 Chronic Metritis. L. Hirsch.
132 Guanin Crystals in the "Interference Cells" of the Amphibia. E. Neumann.
133 Request for Autopsy in 1591. (Aufforderung zu einer Privatsektion.) D. v. Hansemann.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXIV, No. 3, pp. 449-694. Last indexed June 12, p. 1964

134 Fever with Uterine Myomas. (Fieber bei Myomatosis uteri.) O. v. Franqué.
135 Measurement of True Conjugate Diameter. (Direkte und indirekte Messung der Conjugata vera.) O. Polano.
136 *Relation of Retention of Membranes and Placenta to Puerperal Fever. (Beziehungen der Eihaut- und Placentarretention zum Puerperalfieber.) R. Puppel.
137 *Direct Pushing up of the Pelvis as Modification of the Trendelenburg Position. (Ueber Beckenhebung, eine Abänderung der Beckenhochlagerung.) E. Opitz.
138 Vaginal Staphylococci. P. Jung.
139 Traumatic Epithelial Cysts in the Vagina. J. Risch.
140 Involvement of Rectum in Adenoma of the Uterus. (Uebergreifen der Adenomyome des Uterus auf den Mastdarm.) O. v. Franqué.
141 *Surgical Treatment of Puerperal Fever. (Zur chirurgischen Behandlung des Kindbettfiebers.) A. Koblanck.

136. **Connection Between Retention of Membranes and Placenta and Puerperal Fever.**—Puppel's experience speaks against the assumption that retention of part of the fetal membranes or placenta can cause puerperal fever; he is convinced that active measures to remove retained scraps are not justified, and may lead to severe infection. Only when there is much hemorrhage and high fever should the attempt be made to remove placenta scraps. Especially with febrile processes it must be done with extreme care and caution not to fan the flame. He has found in the literature records of twenty cases of retention of membranes or placenta or both without a trace of fever, and to this list he adds thirteen from his own practice. Review of autopsy records has shown further that retained scraps of placenta tissue were found in only 3.7 per cent. of all the fatal cases of puerperal fever, and could not have been the cause of the fever. On the other hand, evacuation of the uterus in thirteen cases without a trace of fever was followed by development of fever in 61.5 per cent. of the cases, very serious in 50 per cent. The results were still more pernicious when the infection had already spread beyond the uterus; fatal pyemia followed promptly in two such cases.

137. **Pushing Up the Pelvis; a Modification of the Trendelenburg Position.**—Opitz has the woman recline on a horizontal table with a board under the buttocks. This board is then raised by a screw operated from beneath the table, lifting the woman's pelvis while head and shoulders and feet still rest on the horizontal table. His illustrations show the much greater oversight of conditions in the pelvis possible with this technic, the ampler access and the consequent shortening of the time required for operating in the pelvis, all of which his experience in the clinic has fully confirmed. The same device might be useful applied to the kidney or other region. One advantage of the lifting device is that the patient is less liable to be burned by the arrangements to keep the operating table warm. He adds that the problem of keeping the patient warm during the operation is not yet solved. The pressure of the relaxed body drives the blood out of the skin and thus renders it more liable to feel the effect of heat which otherwise would scarcely affect it. With the lifting device the table can be kept warm; the patient lies in the ascending hot air. A further advantage is that there is no interference with the circulation at the knees as with the Trendelenburg position.

141. **Surgical Treatment of Puerperal Fever.**—Koblanck states that from Feb. 1, 1907, to Jan. 1, 1909, 484 patients with puerperal fever have been treated at the Virchow hospital at Berlin, including 100 with general sepsis. In 6 cases of diffuse puerperal peritonitis, incision and puncture saved 2 of the women; in the other cases the intervention came too late. In 7 cases of puerperal suppurative thrombophlebitis, resection of the left ovarian vein was followed by recovery in 2 cases. In 15 cases of sepsis the uterus was removed and 6 of the patients recovered. In 8 of the 10 cases in this group in which bacteriologic examination was made, hemolytic streptococci were found, and he refrained from operating in the absence of this finding as the prognosis with the nonhemolytic streptococci and hemolytic other microbes is more favorable. In case of metastatic involvement of heart, eyes or air passages, the prognosis is so bad that hysterectomy offers no chances for success. Among the 100 cases of sepsis the heart was involved in 19 patients and only 2 of these recovered. In 8 cases the eyes were involved, and all but one of these patients succumbed. In 55 cases with serious involvement of the lungs or pleura in the septic process, only 9 patients recovered, and 2 of these had required resection of ribs for a suppurative streptococcus pleurisy. Septic joint processes were observed also in 8 patients, and only one of them recovered. These figures show the gravity of these metastatic processes, but they also encourage hysterectomy even in the most desperate cases, as 2 patients with severe endocarditis recovered, one with hemorrhage into the retina and pneumonia and another with streptococcus pleurisy. Be-

sides removing the infected uterus, the accessible metastases should also be operated on. Remarkable results from multiple intervention were obtained in some of the cases reported. The general condition is the index whether to operate or not, but he has been amazed at the way in which patients in general sepsis tolerate long and severe operations. The vaginal route is indicated only when general sepsis is threatening. Once established the abdominal operation is indispensable; if for no other reason, because the uterus is so decayed that it is impossible to remove it whole.

Hospitalstidende, Copenhagen

May 12, LII, No. 19, pp. 569-600

142 *Vaccine Treatment of Colon Bacillus Infection of Urinary Organs. (Om Vakcinationsbehandling af Coliinfektion i Urinorganerne.) T. Rovsing.

143 *Invagination of the Bowel in Children and its Treatment. (Om Tarminvagination hos Born og dens Behandling.) C. E. Bloch. Commenced in No. 18.

May 19, No. 20, pp. 601-640

144 *Treatment of Acute Bleeding Gastric Ulcer. (Behandlingen af det akute blødende Mavesaar.) L. Kraft.

May 27, No. 21, pp. 641-680

145 Research on Secretion of Pepsin. K. Schroeder.

142. **Vaccine Treatment of Colon Bacillus Infection of Urinary Organs.**—Rovsing states that he made a trial of Wright's vaccine technic in treatment of colon bacillus nephritis and pyelitis entering on it with much skepticism, but he has become convinced of the great value of this method of treatment. He relates the histories of four out of the twelve patients thus treated, showing the prompt cure after failure of all other measures, and he urges others to try this technic in all cases rebellious to other methods of treatment. The reaction, both general and local, is surprisingly mild, and the local reaction might be reduced still more if the fluid was fractioned and injected at different points. The vaccination does not seem to affect the proliferation of the bacilli in the urine, and consequently he advises as supplementary measures a retention catheter and irrigation of the bladder with 2 or 3 liters of distilled water and 1 gm. (15 grains) of salol internally three times a day. The value of the vaccine treatment was especially evident in one case, the patient, a v-para of 65 with colon bacillus infection for a number of years and recurring acute nephritis. The last attack was septicemic, with coma and blindness in the right eye from thrombosis. Rovsing is convinced that the vàccine treatment was life-saving in this instance. The patient has had no signs of trouble during the six months since.

143. **Invagination of the Bowel in Children.**—Bloch reports nine cases to show the various types of symptoms that may be observed, and to sustain his assertion that non-operative measures have little prospects of success unless within the first twenty-four hours and only when the invagination is in the ileocecal region or in the large intestine. By attempting non-operative interference time is wasted and conditions rendered less favorable for successful operative measures later. If the first thorough attempt at reduction fails, there is little hope of its succeeding later. None but a skilled surgeon should handle the case.

144. **Treatment of Acute Hemorrhagic Gastric Ulcer.**—Kraft thinks that the treatment of hemorrhage from an acute gastric ulcer has entered on a new phase with gastroscopy and diaphanoscopy especially as introduced by Rovsing, described in The Journal, Oct. 24, 1908, page 1476. Surgeons have shrunk hitherto from attempting operative measures for acute gastric ulcer on account of the difficulty of locating the source of the hemorrhage. The acute gastric ulcer may be located anywhere in the stomach, it may be so small as to escape discovery, while the blood pressure drops so much under the influence of the anesthetic that the blood no longer oozes from the arroded vessel and it is thus overlooked. In half of the cases of operation reported in the literature it proved impossible to locate the ulcer and in half of these cases the patient died. The long search for the ulcer and the longer anesthesia required aid in depressing the vitality. All this has been changed by the introduction of diaphanoscopy which reveals a dark shadow where the blood is oozing from the arroded vessel, and Kraft reports two cases in which he operated under diaphanoscopy, the bleeding vessel disclosing itself at once by the small dark shadow. He threw a ligature around this vessel, making a sunken ligature. Immediately after the vessel had been ligated the outer end of the vessel, peripheral to the ligature, emptied itself of blood and the shadow cleared up, confirming the fact that the right vessel had been ligated. If the dark shadow had been cast by a thrombus, no change in the shadow would have followed the ligation. The buttonhole required to insert the gastroscope is too insignificant to make any demands on the patient's vitality, in comparison to the ordinary methods of operative interference for gastric hemorrhage. In his first case he had no gastroscope and used an ordinary cystoscope, not even having time to disinfect it thoroughly, consequently he had to pay the greatest attention to keep it from contact with the tissues. The operation was undertaken the seventeenth day after the first and only hematemesis, but there had been traces of blood in the stools constantly afterward. In about two months the patient was entirely cured of gastric trouble and now eats ordinary diet without disturbance. In the second case, by some technical blunder the electric current became short circuited and the tissues were burned during the diaphanoscopy, resulting in fatal sloughing, but autopsy revealed that the sunken ligature had answered its purpose perfectly. Preliminary rinsing out of the stomach was found an important aid for the diaphanoscopy. He comments on this rapid, easy, simple and certain method of treating bleeding gastric ulcer as destined to wide application when the general practitioner learns to appreciate it and refers the patients to the surgeon before the anemia becomes so intense that the outcome under any circumstances is doubtful.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Practical Gynecology. A Manual for Nurses and Students. By Netta Stewart, Sister in the Gynecologic Wards of the Royal Infirmary, Edinburgh, and James Young, M.B., F.R.C.S.E., Clinical Tutor in Surgery and Late Resident Gynecologist, Royal Infirmary Physician to Lauriston Pre-Maternity Home, Edinburgh. Cloth. Pp. 327, with illustrations and plates. Price, $2.00, net. New York: William Wood & Co., 1909.

The Harmful Effects of Acetanilid, Antipyrin, and Phenacetin. By L. F. Kebler, Ph., C., M.D., Chief Division of Drugs, with the Collaboration of Drs. F. P. Morgan and Philip Rupp, Assistant Chemists, U. S. Department of Agriculture, Bureau of Chemistry. Bulletin No. 126. Paper. Pp. 85. Washington: Government Printing Office, 1909.

Report on National Vitality, Its Wastes and Conservation. Bulletin of the Committee of One Hundred on National Health. Prepared for the National Conservation Commission by Professor Irving Fisher, of Yale University, Member of the Commission. July, 1909. No. 30. Paper. Pp. 138. Washington: Government Printing Office, 1909.

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Addresses

TROPICAL DISEASES—AMERICA'S OPPORTUNITIES AND OBLIGATIONS *

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The race for empire from its beginning has suffered more from disease and pestilence than from the implements of war. This fact has furnished many examples of stimulation to medical research. None is more striking than that given to the study of the diseases of warm climates as a result of the struggle of the nations for the possession of the tropics.

The close of the nineteenth century found the work of the colonizing powers practically at an end, in that nearly all of the available territory of the earth had been entered on and occupied. With these acquisitions, however, the mother countries realized that their work had but begun. To bring these great tracts of earth under the dominion of civilization, to develop their abundant resources, to give peace and prosperity to their fertile soils, they wisely realized that another foe had to be conquered—realized that they must learn the causes, nature, and means of prevention of the diseases which have always formed the greatest barrier to the colonization of these countries.

On August 27, 1897, after ten years of laborious research, under the most disadvantageous circumstances, success crowned the efforts of a hero and scientist—a success which well might inspire his poetic nature to sing:

"This day relenting God
Hath placed within my hand
A wondrous thing; and God
Be praised. At His command

Seeking His secret deeds
With tears and toiling breath
I find thy cunning seeds,
O million-murdering Death.

I know this little thing
A myriad men will save.
O Death, where is thy sting,
Thy victory, O Grave?"

The discovery of Ross that the mosquito is the intermediate host of the malarial parasite, and its confirmation and extension by other distinguished scientists may be said to have stimulated renewed interest in the onslaught on tropical diseases.

With the dawn of the twentieth century we see special institutes established and commissions formed and sent out for the study of these diseases. At the close of the first decade of this work, which has resulted in epoch-making discoveries which vie with those of Jenner and Pasteur; at this meeting, when the American Medical Association is honored by the presidency of Colonel Gorgas, it seems not inappropriate to speak of "Tropical Diseases and America's Opportunities and Obligations" toward the same, notwithstanding the fact that the subject has been dealt with in several excellent addresses recently.

Sir Patrick Manson has pointed out that the "peculiarities of tropical diseases are etiologic rather than pathologic." Passing those conditions, such as insolation, heat-syncope, siriasis and tropical neurasthenia, which are the direct result of climatic and meteorologic influences found in warm countries, certain diseases are encountered which are the result of toxic substances taken in with the food, peculiar to these climates. As example of these may be mentioned ergotism, lathyrism, pellagra, and possibly beriberi.

It has also been customary to include, conventionally, in the list of tropical diseases certain bacterial infections, such as Malta fever, bubonic plague, leprosy, bacillary dysentery and cholera, because here are found social and hygienic conditions which are conducive to their prevalence. These diseases, however, can flourish in any climate and, therefore, have no real claim to be regarded as strictly tropical diseases.

The most important factor which determines the geographic distribution and limitation of tropical diseases is the fact that "certain pathogenic agents either require high atmospheric temperature for their successful passage from host to host or require an animal intermediary which flourishes only in high temperatures" (Manson). As examples of the former may be mentioned uncinariasis, amebic dysentery and certain parasitic skin diseases; of the latter, malaria, trypanosomiasis, African tick fever, filariasis, yellow fever and possibly dengue.

While this fact of high temperature is found at its best in the tropics, these diseases are by no means confined to the equatorial zone, extending around the earth between the tropics of Cancer and Capricorn. The same condition is found in subtropical regions, and in the temperate zone during the summer season. Our increasing knowledge of these diseases is demonstrating their prevalence in these regions.

So keen has been the interest; so great have been the achievements in tropical diseases during the last decade, that it will manifestly be impossible for me to do more at this time than to call attention to some of the more important advances which have been made in this domain of medicine.

The report of the hitherto unsuspected occurrence of pellagra in the United States has excited widespread interest here in this disease, which has proven and still proves a veritable scourge in Italy and other European countries. In these countries pellagra is described as a chronic disease characterized by an erythematous exanthem, gastrointestinal phenomena and nervous and psychic disturbances. It is generally regarded as an intoxication due to the using as food the products of unsound Indian corn. "Possibly the specific toxic products are formed by the action of some bacterium on maize which has been cut while immature and stored in damp condition " (Novy). In view of the extensive use of the proverbial "hoe-cake" as food in the South, it is rather surprising that pellagra should have so long escaped the notice of physicians. The report of its endemic occurrence in Alabama, North Carolina, South Carolina, Georgia, Mississippi, Florida and Texas, makes the study of the disease a matter of great importance.

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* Oration on Medicine, before the Section on Practice of Medicine, at the Sixtieth Session of the American Medical Association at Atlantic City, June 8-11, 1909.

Notwithstanding the immense amount of work which has been done on beriberi, the specific cause of the disease remains unknown. The micro-organismal and food theories each still have their advocates. It may be noted that Frederick Pearce, from clinical and pathologic observations on epidemics of beriberi and epidemic dropsy in Calcutta and Howrah, strongly suggests the identity of these diseases.

The clinical syndrome which is commonly known as dysentery has been shown to be due to three distinct diseases; amebic dysentery, due to *Entamœba histolytica;* bacillary dysentery, due to *Bacillus dysenteriæ* (Shiga, Flexner and Kruse); and catarrhal dysentery, due to the action of one of several bacteria which produce a catarrhal condition of the large intestine (Strong). This knowledge has furnished the basis for the more intelligent prevention and treatment of these diseases.

Studies on Malta or Mediterranean fever have shown that this disease, capable of producing an immense amount of invalidism, has a wider distribution than was formerly supposed. Mainly through the researches carried on in 1904-05-06 by a commission appointed under the auspices of the Royal Society of London, our knowledge of the disease has been distinctly advanced. It has been shown that the *Micrococcus melitensis* is constantly present in the blood of patients suffering from the disease; that it escapes from the body chiefly through the urine; that it is found at times in the urine of perfectly healthy individuals. It has also been demonstrated that domestic animals (chiefly goats) are frequently infected and that the disease is largely if not entirely acquired by the use of the milk of these animals as food. A distinct advance in the therapy of the disease has been claimed by Bassett-Smith from the use, in chronic cases, of a vaccine prepared from cultures of the organism isolated from the spleen during life.

The march of the "black death" has advanced throughout the civilized world, and at the beginning of this decade we see it lodged in Asia, Africa, Europe, Oceania, North and South America. Fifty-one countries of these continents have been infected and millions of lives have been destroyed. Hence it is that the brilliant achievements with respect to the conveyance of the *Bacillus pestis* should rank with the epoch-making discoveries of this period.

Bannerman has pointed out that Simond in India was the first to suggest the flea as the carrier of the disease. His work, however, was discredited by the first plague commission. Captain Liston, an assistant to that commission, seeing the possibilities of this theory, continued investigations along this line, so that when the second plague commission was sent out in 1905, this method of transmission seemed the most worthy of investigation. Their carefully planned experiments and painstaking execution of the same have resulted in the following conclusions:

1. "Pneumonic plague is highly contagious, but being rare (less than 3 per cent. of all cases) plays a very small part in the spread of the disease.

2. "Bubonic plague in man is not infectious and is entirely dependent on the disease in the rat.

3. "The infection is conveyed from rat to rat, and from rat to man, solely by means of the rat flea.

4. "Plague is usually conveyed from place to place by rat fleas brought by people in their baggage or on their persons" (Bannerman).

The outbreak of plague on the Pacific coast in 1907 was suppressed by the efficient work of the United States Public Health and Marine-Hospital Service under the direction of Dr. Rupert Blue. Still, in view of the difficulties in certain areas attending the destruction of rats and rat fleas, the question of protective inoculation against plague has been the subject of extensive investigations. The researches of Strong in Manila has resulted in the production of a vaccine from attenuated plague bacilli which promises to be of great practical importance.

One of the most far-reaching results which has come about as a result of the increased interest in tropical diseases is the importance which attaches to protozoology and helminthology as fundamental medical sciences.

The researches of Laveran, Theobald Smith, Councilman, McCallum, Ross, Dutton, Novy and others stimulated men like Calkins, Minchin, Stiles, Mesnil, Nuttall, Schaudinn, and Grassi to study more carefully the protozoa. Great principles have been announced, the influence of which on medicine it is difficult to estimate.

By study of these organisms Hertwig has been able to announce the Kern plasma relation theory, Goldschmidt the chromidial apparatus, Schaudinn the nuclear dimorphism—theories and principles which offer much toward the elucidation of the long vexed questions of the physiology and pathology of the cell. Weissman's doctrine of the immortality of the protozoa has been overthrown by the fact that sexual reproduction is necessary at some period of the life cycle to rejuvenate these organisms "depressed" by vegetative activity or otherwise.

A knowledge of these life cycles has been shown to be necessary for a proper classification of these organisms, and has established close relations between phyla heretofore supposed to be widely separated.

Of greater importance in so far as tropical diseases are concerned are the results of the study of protozoa and helminths as pathogenic agents. Indeed, Sir Patrick Manson has said that in the study of tropical diseases "the student's attention is confined almost entirely to protozoa and helminths, to the special vectors or media of these organisms, to their pathologic effects, and to the prophylaxis and treatment of the diseases they give rise to."

The observations of Lösch, Kartulis, and Councilman and Lafleur had long ago established the etiologic relationship of amebas to a characteristic form of dysentery prevalent in tropical and subtropical regions and frequently associated with abscess of the liver. These observations have been confirmed by numerous observers. Much confusion, however, has existed as to the nomenclature and taxonomic position of these organisms, and even some skepticism as to their pathogenicity. Cassigandro and Barbigallo had shown that the amebas occurring in man and fresh water amebas presented sufficient difference to justify placing the former in a separate genus—entamœba.

In 1902 and '03 Schaudinn from morphologic and biologic differences, as well as from their effect on animals, was able to separate them further into two species—*Entamœba coli,* a harmless commensal of the intestinal tract, and *Entamœba histolytica,* the pathogenic agent of amebic dysentery. In 1904 Stiles summarized the various views as to the relationship of disease and amebas found in the intestine of man justifying the nomenclature of Schaudinn for those who believe in a harmless and pathogenic species. In 1908 Craig, after a most exhaustive study of the subject, wholly confirms the views suggested by Schaudinn.

It must be noted that there are still some observers who hesitate to accept the division of the entameba into pathogenic and non-pathogenic forms. These differences of opinion would seem to emphasize the desirability of relying on the full life cycle of these organisms under natural conditions rather than morphologic differences observed *in vitro* for purposes of classification.

Among the most interesting advances of this period are the discoveries which have removed trypanosomiasis far beyond the mere economic importance which it heretofore had maintained. The discovery of a peculiar, wormlike, actively motile body in the blood of a patient by Forde in 1901 and named *Trypanosoma gambiense* by Dutton stimulated investigations with respect to this organism as a pathogenic agent. The first result was the discovery of a trypanosomatic fever of man, which came about through the investigation of Dutton and Todd in 1902, under the auspices of the Liverpool School of Tropical Medicine. Shortly afterward the discovery, by Castillani, of this organism in the cerebrospinal fluid of a patient suffering from sleeping sickness led to the discovery by Bruce and others that this disease is caused by the *Trypanosoma gambiense* and that trypanosomatic fever is the first stage of sleeping sickness.

The *Glossina palpalis* has been shown to be the chief agent by which the organism is transmitted. In spite of efforts to show that the trypanosome undergoes biologic development in the tsetse fly which would be expected from what is known of the life-history of other hematozoa, the insect intermediary seems to be only a mechanical vector. Of other advances made in trypanosomiasis, the successful cultivation of these organisms *in vitro* by Novy and his associates is of importance as furnishing a method of studying these organisms. The early diagnosis of sleeping sickness by gland puncture is of the greatest importance for purposes of prophylaxis and treatment.

The rapid spread of the disease is a striking illustration of the "disseminating influence that modern travel and means of communication have on diseases formerly confined to limited areas." Advances have also been made with respect to the prophylaxis and treatment of the disease. As a result of the work in Zambesi in 1907 and 1908 by Allan Kinghorne and R. Eustace Montgomery the following means for preventing the spread of the disease have been suggested—control of native movements, segregation of cases, removal of villages from dangerous zones, clearing, education of the natives, personal prophylaxis destruction of the tsetse flies, their larvæ and pupæ. Koch further suggests the destruction of crocodiles, inasmuch as the tsetse flies subsist almost entirely on the blood of these reptiles in the neighborhood of the lakes. Atoxyl, an anilid of metarsenious acid, supplemented by antimony, promises to be of service in the treatment of the disease.

The spirochetes, a genus closely allied to the trypanosomidæ, have been the subject of much study both from the academic and practical side. The discovery that African relapsing fever is caused by a spiral organism which is conveyed from one individual to another by means of the tick *Ornithodorus moubata* (Murray) and the spirillæ of American fowls conveyed by a species of argas, as well as the already known relation of a spiral organism to European relapsing fever, and its possible conveyance by an arachnid, raised the question whether or not these organisms should not be included among the protozoa.

The brilliant researches of Novy and Knapp and Breinl would seem to clear up to some extent the confusion which has existed with respect to the spirochetes. It seems to have been shown that these spiral organisms, the Spirillum duttoni, and the Spirillum recurrentis are different species belonging to the bacteria and giving rise to different kinds of relapsing fever in various parts of the world.

These studies have aroused much scientific interest, as at first glance they would seem to furnish an exception to the general law enunciated by Stiles in 1901, that "those diseases which are dependent on insects or other arthropods for their dissemination and transmission are caused by parasitic animals." It does not seem conclusively proven that these arthropods are biologic transmitters of these diseases; that they are not necessary for the development of the spirilla, as are the anopheles for malaria or the *Stegomyia callopus* for the hypothetical organism of yellow fever. The work of Ricketts on Rocky Mountain Spotted Fever is also interesting in this connection, in addition to being a work of great merit.

Malaria, of all tropical diseases, is the most widespread, the most disastrous in its effects, and the one concerning which our knowledge was most complete at the beginning of this period. Hence it is that the application of this knowledge in the prevention of the disease has attracted the most attention. It should be noted, however, that the introduction of eosinated methyl azure stain and thick dehemoglobinized smears have facilitated the diagnosis of malaria. Schaudinn's discovery of the parthenogenetic cycle of the macrogametocyte in the blood of the vertebrate host furnishes a long desired explanation of the relapses which so frequently occur in this disease. Craig's more recent work on latent malaria should also be noted.

Much work has been done in various regions on the epidemiology and prophylaxis of malaria. Worthy of special notice are the researches and efforts of "The Society for the Study of Malaria in Italy." Professor Celli, in a report on this work, concludes that the campaign against malaria should include two methods concurrently—the one directed to destroy, or at least render inoffensive, the mosquito which inoculates man with the parasite; the other directed to destroy with specific means and with general means these parasites in the human blood.

The recent excellent articles of Deaderick of Arkansas well present the present state of our knowledge as regards blackwater fever. While the results of investigators in various parts of the world seem to show the relation of malaria and quinin to the disease, the immediate cause of the condition which determines the increased hemolysis remains to be found out. The results of the researches of the medical commission of the United States Army to investigate the cause and mode of transmission of yellow fever are well known. And the application of this knowledge has been successful in the control of many outbreaks of the disease.

The work of E. H. Ross in Egypt, and Craig and Ashburn in the Philippines, would seem to indicate that dengue is dependent on the mosquito for its spread, and, therefore, another trophy is added to the war waged against these insects.

It has been shown that the presence of intestinal parasites has a marked influence on the mortality of other diseases, and the advances with respect to helminths as pathogenic agents are scarcely less notable than those with reference to the protozoa. Of the long list, time permits reference only to ankylostomiasis. This disease has been shown to be of wide distribution in all tropical and subtropical countries and wherever found is of the greatest importance from the economic as well as from the standpoint of public health. New hookworms have been discovered, their mode of infection has been determined, and much has been added to our knowledge of their clinical and pathologic manifestations. The ankylostoma duodenale has been shown to contain a hemolytic substance, and efficient methods of prophylaxis and treatment have been worked out. With all this, however, the work on hookworm disease may be said to have only begun.

This short and imperfect review serves to emphasize the great interest which has been manifested all over the civilized world in the study of tropical diseases during the past decade; to emphasize how vital the thorough study of these diseases is to the progress and art of medicine. There is already abundant cause for praise of the results which have been achieved, but it would seem that they are only evidence of what is to follow.

Without disparagement of the work of every and all nations concerned, we can with pleasure note the prominence of the influence of English thought in this as in other branches of medicine, and may be permitted to contemplate with pardonable pride the triumphs of America in this field.

The philanthropic spirit which moved the United States to engage in war to relieve a down-trodden people from the consequences of despotism was also sufficient to stimulate efforts to overcome a more formidable tyrant; to free these people from disease and pestilence. The establishment of a biologic laboratory in Manila as a part of the government laboratory and the high class of work which has emanated from this laboratory have reflected great credit on American medicine. The record of ten years of sanitation in the Philippines, of the scientific methods by means of which diseases have been combated, reads like a romance and justifies the statement of Musgrave that "America has made Manila one of the cleanest and healthiest and most attractive cities under the flag."

The discoveries with respect to yellow fever by the commission under the auspices of the War Department ranks as the greatest triumph of modern medicine since the discovery of vaccination against smallpox. As regards the triumph of America in the canal zone, it has been said that "of one credit history can not rob the United States. Among much good and evil it must record that it was under the American administration that the knowledge and resources of modern medicine were applied to the hygienic redemption of the once noisome isthmus. Such fruits of labor in this direction have already been gathered that they promise to rival as a worthy monument of American achievement the canal itself." Leigh.

It is proper that we recognize the ability, revere the heroism and extol the genius of those who have brought about these and other triumphs. The names of no greater heroes will be recorded in the annals of American history than the names of Reed, Carrol and Lazear. Carlisle has said that genius is "infinite capacity for taking infinite pains." Measured by this standard the work of Colonel Gorgas in Cuba and Panama must stamp him as a genius whom we are proud to honor.

While we felicitate ourselves over this foreign missionary spirit and rejoice in the inestimable benefits which it has developed, we are led to inquire if the conditions are not such as to offer opportunities and impose obligations to increased activity in the field of home missions? If we consider only the great economic losses, the suffering, deaths, and race deterioration which amebic dysentery, malaria, and uncinariasis visit on this country, there can be but one answer. Unfortunately the vital statistics do not give a proper conception of the prevalence of amebic dysentery in the United States. Its wide endemic occurrence is, however, well known through the writings of Harris, Dock, Jelks, and others. Professor Osler says, "It is the most common variety of dysentery throughout the United States. It is endemic, the cases sometimes increasing to such an extent as to form an epidemic." Boggs states that the records of the Johns Hopkins Hospital show 182 cases in that institution from 1889 to 1908, the vast majority coming from the state of Maryland. He also points out that the large number of cases of abscess of the liver in the records of some southern hospitals would indicate its wide prevalence. The economic importance of amebic dysentery, its chronicity, its resistance to treatment, as well as its tendency to serious complications, furnish a rich opportunity for investigation.

The prevalence of malaria is too well known to require discussion. Attention has often been called to its economic importance to a large section of this country. Woldert has shown that it cost the state of Texas in 1900 in loss from labor alone $533,320. Glenn W. Herrick, some years ago, in writing on the effect of malaria on agriculture, has convincingly shown the enormous losses which the disease entails on the South. More recently Howard, in a bulletin on the economic losses to the people of the United States through insects that carry disease, estimates on a very conservative basis that malaria produces 12,000 deaths and 3,000,000 cases of fever annually. He further states: "Accepting this as a basis and including the loss through death, the cost of medicine, the loss to enterprises in malarious regions through the difficulty of securing competent labor, and other factors, it is safe to place the annual loss to the United States from malarial disease under present conditions at not less than one hundred millions of dollars." To say nothing of the physical suffering and deaths, the losses from this disease alone make that from hog cholera, Texas cattle fever, and the boll wevill combined look exceedingly small. The above estimate of Howard does not include the retardation to development of certain regions on account of malaria. No region on earth more urgently invites the "triple alliance of the doctor, drainage and agriculture" than the great Mississippi Valley designated by one of its most gifted sons as "the cornucopia of the world." History, ancient and modern, furnish ample evidence of the baneful influence of malaria on mental and physical development.

Through the researches of the United States Public Health and Marine-Hospital Service, of the Porto Rican Commission, as well as of practitioners in the endemic areas, we have learned of the great economic importance of the hookworm disease. According to the report of Surgeon General Wyman, the recent researches of Stiles have shown that 12.6 per cent. of the employés of the cotton mills of the South are affected with uncinariasis; that of this class 13 to 18 per cent. of those of maternity age are in a condition which prevents them from properly nourishing babes; 5.8 to 20 per cent. of the males of possible military age are in a condition which would materially decrease their military efficiency; 48.1 per cent. of the children are suffering from an anemia-producing disease which would naturally inhibit their usual capacity for study. These figures serve to emphasize the truth of the statements of Allen J. Smith, who, writing on this subject in 1904, said, "All through the districts of our southern states infested by the American hookworm there exists a class of persons notorious for their unprogressiveness, lack of ambition, application and effort, thin, sallow, unhealthy look, cadaveric appearance, and uniform poverty in the midst of natural fertility and plenty." He further states: "These families are usually prolific, but with parents of the type mentioned there are bound to arise numerous causes for fatality among the children. Probably many in childhood die from direct and indirect effects of uncinariasis. Of those who live a large, proportion suffering in some degree short of fatality from the same parasite, grow up stunted in mind and incapable of physical effort, without incentive, hopeless, unequal to real exertion, branded as lazy and wearing the mark without care or shame. These pallid, spindle-legged, pot-bellied, and always dirty and unkempt children grown to manhood and womanhood may scarcely hope to breed a stronger race than themselves; and thus, generation after generation, from originally strong and virile progenitors, families recede and eventually die out."

These are but examples of the opportunities afforded in tropical diseases at home. To these may be added the menace from bubonic plague, the ever-constant danger from yellow fever, and the probable endemic existence of other of these diseases which increased knowledge is demonstrating. Our increasing commerce with the tropics and the better facilities for communication with the same must inevitably increase these opportunities.

It follows as a natural corollary that these present and growing opportunities for the study of tropical diseases must impose the obligation of affording better facilities for teaching them and research work in them. If they are of such importance as we have indicated, it would seem that more time should be given to them in the curricula of our medical schools than is at present devoted to them. Even with this, the time has arrived when to keep in the front rank of the armies which are moving on these common enemies to our health and prosperity, the obligation rests on us to follow the examples of England, Germany, France and other countries in the establishment of an institute for the study and teaching of these diseases, Dr. E. N. Tobey, of the Harvard Medical School, has, in recent articles, successfully answered the objections which have been urged against this necessity.

The need for a special institute for the study of tropical diseases is in no sense a reflection on the magnificent work which the Bureau of Public Health and Marine-Hospital Service has done and is doing. The sharp eye which this service keeps on our ports to prevent the entrance of exotic disease, the magnificent service which it has rendered in the suppression of pestilences, the importance which the hygienic laboratory has assumed as a center of research in contagious and infectious diseases, the pioneer work which it has instituted with respect to the study of leprosy amongst other labors, compels us to agree with Seaman when he says that "the United States Public Health and Marine-Hospital Service is the one department of which Americans have most reason to feel justly proud."

The growing sentiment in this country of the obligations of the federal government to the public health is propitious, and this sentiment needs the fostering care of physicians more than any other class. The importance which we to-day assign to tropical diseases in this country demands our best efforts in the extension of the authority of this service and in the securing of appropriations to render it still more efficient.

Let us hope that these opportunities will impel the performance of the duties which they impose.

THE PRESENT STATUS OF STOMATOLOGY

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON STOMATOLOGY AT THE SIXTIETH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, 1909

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It is my pleasurable duty to address you in welcome to the Sixtieth Annual Session of this Association. Our able and untiring Secretary has prepared the feast, and it promises to make this year's meeting second to none which we have had.

At this time it is in order to look back, with what complacency we may, on the progress in our profession during the past year, and to outline some of the hopes and aspirations for the future.

There are two great incentives to the profession to grow and develop. One is the desire of the true physician to increase his power to prevent or heal suffering—to keep abreast of the world's progress in general. The other, to gain for his specialty that recognition in a social way which will satisfy the hearts of those already in practice and offer to the youth contemplating a life work a profession in the practice of which there shall be nothing incompatible with the highest self-respect.

While new and increased attainments in the first case help to some extent, in the second it is by no means proportionate, and I doubt very much whether, even with all knowledge, with every practitioner a doctor of medicine, we should find our condition improved otherwise than in the direct satisfaction in our hearts over our increased efficiency. Perhaps if we faced the condition squarely and honestly we should more easily and readily find the cure.

I venture to say that we suffer much from the term "dentist" and if we could shake that off, even as the surgeon has shaken off his original appellation of "barber," we could more easily claim the recognition to which our attainments entitle us. And consider our attitude in regard to nostrums and inventions! Here are men practicing a liberal profession constantly exhibiting a selfishness which, like other vices, generally proves a boomerang; instead of gaining in reputation or financial returns, such men too often lose both and do much to lower their profession. We have many bright and shining lights in this dark way, but, alas! the rank and file are constantly bringing on us the judgment that ours is a profession of sordid money-grabbers. Yet have any of our inventors of remedies or instruments who have patented their inventions for the sake of financial returns ever reaped their desired reward? Have they not rather received pitifully unsatisfactory returns and lost forever the opportunity of being enrolled in the list of the benefactors of their profession and of mankind—a list which is a long and glorious one in the other branches of medicine?

But let us turn to the contemplation of the steps which we as stomatologists have been making the past year toward the goal of being perfect physicians to the teeth and their environment. Much progress has been made along the lines of greater appreciation by us, by our fellows in other branches of medicine, and by the public generally, of the part which a perfectly equipped oral cavity plays in the preservation of the general health of the individual.

Fletcher's teachings have received prominence and general acceptance. He has entered on a missionary work in New York which not only improves the physical and moral condition of those whom he teaches, but also brings into greater prominence the importance of the stomatologist in the conservation of health and morality.

Perhaps one of the most notable efforts for the advancement of the profession, both among ourselves and the laity, has been the formation of the Dental Hygiene Council of Massachusetts, which is being followed rapidly by the formation of like societies in other states.

I quote from Dr. Potter, who has ably seconded Dr. Woodbury in the development of the Council. He states the objects of the council to be (a) publication and distribution of literature on oral and dental hygiene; (b) urging the work of examination of school children; (c) giving advice to educators and others as to practical methods of promoting dental hygiene; (d) assisting in the formation of dental dispensaries where dental services can be had at a nominal cost; (e) establishing lists of young practitioners who are willing to work within the means of persons of small wages; (f) calling attention to the way in which the condition of the teeth enter into the problem of the general health and physical development of the community.

They have established a dental hygiene exhibit which has been shown in a number of cities not only in Massachusetts, but in other states, and which has made a deep impression on layman and scientific student alike.

By means of casts, slides, photographs, etc., the council aims to bring before the public and the profession the importance of dental hygiene in preventing disease and building up sound minds in sound bodies.

The bacteriologist has made us familiar with the *Staphylococcus pyogenes,* pneumococcus and spirochete, which flourish so successfully in the unhygienic mouth and breed disease far reaching and destructive in its influence.

The reading of the opsonic index and the vaccine treatment, both the autogenous and stock vaccine, has enlarged the scope of the stomatologist and bids fair not only to increase his usefulness to his patients, but also his importance as a true physician to the diseases of the oral cavity. The pendulum is swinging away from the point at which all dental troubles were treated mechanically and where the stomatologist was only an operator; and may be will swing too far and we shall hear of a vaccine for every ill, and be advised to throw all instruments into the scrap-heap.

Not long ago I even heard a speaker state that interstitial gingivitis had been cured by vaccine, while the teeth were still covered with scales. I fear this is going pretty fast, but it shows how the germ theory has taken possession of us!

Speaking of interstitial gingivitis, I am minded to make that a text for a short sermon on the cruelty of some obstructionists, both to themselves and to the profession, in opposing, simply for the sake of opposing, the efforts of some to raise our scientific standard. This is shown by the opponents of the term "interstitial gingivitis." They have nothing better to offer, yet, with the perversity of the bucolic, still adhere to the totally unscientific name of Riggs' disease. I am sorry to say that there are many bitter objectors to the term who do not even understand the meaning of the words.

I have heard within the year an eminent educator in our profession jeer at the use of "interstitial" because "it meant the interstices of the teeth, and as the disease was not always between the teeth the term was a misnomer." Let me ask all such obstructionists to look up the definition in their medical dictionaries before they denounce!

Now, there have been few new remedies added to our list, but there are some important applications of old ones. Leary's IKI solution (iodin, 1 part; potassium iodid, 2 parts; water, 100 parts) as an antiseptic for the bacteria of the mouth seems to be a distinct advance. Both ingredients have been used individually and in other connections, but this particular mixture seems a most happy one.

Again, the use of bismuth paste after the manner suggested by Beck proves to be helpful to the stomatologist in the treatment of antrum diseases, alveolar abscesses and the pus pockets of interstitial gingivitis.

It seems to me that more attention should be paid by us to the production of anesthesia, both local and general, for painful operations, such as the preparation of roots for crowns, removal of nodules from tooth roots, and excavations for filling; for more thorough study shows little or no danger in the use of ethyl chlorid in the production of general anesthesia and cocain or eucain, or both combined, in local anesthesia by injection.

The unfavorable cases reported in the use of these agents are now pretty conclusively shown to be due to impure preparation or gross ignorance of fundamental principles on the part of the user.

We should be too intelligent to condemn the use of a drug because some one has had an unfortunate result from the use of an impure preparation or from administering it to a patient already in a critical condition from heart, kidney, or lung diseases, or from the employment of toxic doses when the therapeutic doses have been called for.

Since this address is merely introductory, I have purposely made it very brief, for we have many papers of special scientific import and I know you must be anxious to get to them.

129 Marlboro Street.

ABSTRACT OF DISCUSSION

DR. GEORGE V. I. BROWN, Milwaukee: I am glad to hear Dr. Briggs speak of the important advances made by our profession without divorcing us from other advancements in medical science. It is unfortunate that speakers and essayists sometimes refer to the progress we are making as though we were working along distinctly individual lines, quite ignoring the fact that ours is only a division of medical practice that is advancing hand in hand with the other divisions.

DR. S. G. JACKSON, Vineland, N. J.: I am glad that the profession is recognizing the work of Horace Fletcher. Thorough mastication is the essential thing for good teeth, as well as for proper digestion and assimilation. If we can teach the children this, much will be accomplished for future generations.

Original Articles

THE PHYSIOLOGY OF THE EUSTACHIAN TUBE [*]

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The physiology of the Eustachian tube has been regarded as so well established that I hesitate to relate experiments which will necessitate a different view.

Politzer made the following observations by means of an ear manometer, a small glass tube (from 2 to 3 mm. wide and containing a drop of liquid) fitted into a rubber stopper and the latter hermetically sealed into the external auditory canal. During Valsalva's experiment the fluid rose in the manometer. During Toynbee's experiment, after a slight positive fluctuation during the first stage of swallowing, there was a marked negative fluctuation of the fluid which coincided with the rarification of the air in the nasopharynx. The fluid in the manometer then remained stationary until the Eustachian tube was reopened by another act of swallowing with open nostrils. Sometimes fluctuations in the manometer fluid were noted synchronous with quiet respiration.

In endeavoring to substantiate the above experiments with a manometer similar to Politzer's, it was apparent that the one important fact established was that the Eustachian tube opens during deglutition, but just how the normal pneumatic air balance in the middle ear is maintained under the usually existing conditions was not clearly demonstrated. It seemed to me that the act of swallowing, opening and closing the pharyngeal portion of the Eustachian tube should exert an effect on the air in its tympanic prolongation similar to that which would occur in a piece of rubber tubing when the walls of the latter were released and compressed.

Over one end of a small rubber tube, place a soap-bubble film or a film of saliva to act as a delicate manometer, and apply a small clamp near the other end, or pinch the tubing with the thumb and forefinger. On quickly releasing and reapplying the clamping device, the film will be observed, first quickly to become concave, then at once convex, and finally, to come to rest with a slight outward convexity.

It was practically impossible to obtain accurate information by means of Politzer's manometer, as the movement of the tympanic membrane during deglutition is so slight that the air-changes this movement occasions are masked by the contractions of the muscles about the cartilaginous portion of the external auditory canal, and experiments were often negative or showed the reverse of that which I believed must be true. To overcome these difficulties, I fitted well into the osseous canal a small glass manometer, with a lumen one mm. in diameter, and flanged at the outer end better to accommodate a soap-bubble film, by means of which the changes in air pressure within the device could be detected. Using this instrument, I have been able to obtain during deglutition results exactly similar to those brought out by the rubber-tubing contrivance.

The most delicate manometer is the drum membrane of the patient, and in suitable cases if the light reflex is studied through a magnifying Siegel's speculum the drum membrane may be seen during the normal act of swallowing to depress quickly and to inflate and come to rest in a slightly inflated condition.

During Toynbee's experiment, after deflating and moderately inflating, it is again sucked in and so remains until another act of swallowing opens the tube and allows it to return to its normal position. Theoretically, after the final deflation, there should be a slight inflation, due to closure of the tube, but I have been unable to see this—probably because the drum becomes stretched too tensely to allow it to appear. These phenomena are best observed on thin drum membranes, and on those which contain old perforations obliterated by very thin scar tissue, as the latter is often very sensitive to slight changes in intratympanic air pressure.

It is of great assistance in interpreting movements of the drum membrane to execute the experiments while by means of the hand bulb attached to the speculum the air in the canal is condensed and rarified. On moderate condensation the drum will be pushed inward, and on swallowing no movement will be observed, while on gentle suction the act of deglutition will cause a marked inward flutter of the membrane, followed by an over-return to its former state.

During strong suction or condensation, the drum membrane is too tense to be affected by the slight air changes brought about during deglutition by tubal opening or closing.

By observing the drum membrane, or by using the glass manometer above described, I can not positively state that I have seen fluctuations due to the influence of quiet respiration on the intratympanic air. With Politzer's instrument I have observed movements in the manometer fluid synchronous with respiration, but on substituting the other methods of observation these were not apparent, and I concluded that they must have been caused by the respiratory pulse, especially that in the blood vessels about the cartilaginous portion of the ear canal.

If the foregoing observations are accurate, the act of swallowing should increase the sound of tuning forks heard either by air or by bone conduction. That it does this is proved by the following experiments:

If a tuning fork (preferably C, C_1 or C_2) is vibrating strongly near to and below the nostrils, the act of swallowing will cause a marked increase in the intensity of its tone to be perceived in both ears. This increase lasts only during the culmination of the first part of deglutition, or, in other words, while the tubes are held open by the contractions of the tensor and levator palati muscles.

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[*] Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Until recently I was under the delusion that I had originated this experiment, but I find that before I was born Politzer[1] discovered the same phenomena and stated that the experiment could be used in certain cases for diagnosing tubal and middle-ear obstructions.

I have found the experiment useful in many cases, and especially if a double auscultation tube is used to connect each ear of the patient with an ear of the examiner, as by this method the latter is able to hear and compare changes in the intensity of the fork's note during deglutition, and so eliminate errors due to the patient's inability to recognize correctly changes in musical notes.

Politzer states that the examiner can occasionally hear the increase in the sound of the tuning fork during the experiment only in patients with healed suppurations, with unhealed perforations, or with cicatrices in the latter, or with cicatrices stretched before the tympanic orifice of the tube. In normal ears I have seldom failed to hear a distinct increase in the sound during swallowing, and in individuals with blocked tubes the increase is almost invariably heard after the physiologic function has been re-established.

This increase in sound perception is due almost wholly to the opening of the Eustachian tube during deglutition, and it may be well elicited without the act of swallowing by simply contracting and relaxing the muscles which act as tubal openers. If the nose is closed during this experiment, an increase in sound is heard during tubal opening, but less intensely than with open nostrils, while if the nose is closed and the fork is held before the open mouth a more marked accentuation in sound occurs. The fork is heard best if held horizontally beneath the nostrils with one prong presenting near its free extremity and by its outer side. If the fork is held before the nostrils and if at the instant when its note ceases to be heard by the patient he swallows, the sound will again become audible to him. This method of eliciting the test is often most serviceable.

The following experiments and results were observed: Opening the normal Eustachian tube by deglutition or by contraction of the tubal muscles causes increased perception for the sound of the lower tuning forks held before the nostrils as follows: With the ears open a marked increase was noted; with the ears closed by the finger (using care not to compress air in meatus) increase was noted; with one ear closed by the finger increase was greater in the other ear; with both ears closed by author's ear massage cups, there was marked increase; with one ear closed by author's ear massage cup, increase was more in cup ear; with both ears closed by author's ear massage cups (air in one, rarified or compressed), increase was noted only in other ear; with both ears closed by author's ear massage cups, note is heard to increase more than with the ears uncovered, unless extreme quiet can be obtained.

Opening the tubes immediately after autoinflation by Valsalva's method brings about a distinct increase in the sound perception.

Opening the tubes after autodeflation by Toynbee's method brings about a still greater increase.

If one tube is blocked, the increase is noted during swallowing regularly on the patent side.

If a long rubber tube is slipped over the shank of the fork, and its distal end placed in the nostril, results similar to those described may be elicited during tubal opening, but if the tubing is inserted into the external auditory meatus no change in intensity occurs. So much for the increase in sound during tubal opening as heard by air conduction through the Eustachian tube.

By bone (craniotympanic) conduction I obtained the following results:

A vibrating tuning fork (C, C_1, C_2) is placed in firm contact with the scalp, preferably over the lambda. During deglutition or tubal opening a marked increase in the sound will be noted by the subject. If the air pressure in one meatus is considerably increased or diminished, the increase in sound will be noted only in the other ear. If both ears are covered by the author's ear cups, and care is used not to compress or rarify the air in the canal, the increase in sound of the vertex fork during deglutition will appear faintly or not at all. If one ear is covered by the cup, the sound of the vertex fork will be lateralized in the covered ear, and on swallowing this increase by lateralization will so mask the experiment that it is difficult to detect the faint increase which should appear more marked in the uncovered ear.

If a fork is vibrating on the vertex, Valsalva's experiment will cause a marked increase in sound to be perceived. If Valsalva's experiment is very gently executed and the pressure in the nasopharynx is increased until only one tube opens, the sound of the fork will be clearly lateralized to the side of the open tube.

If a fork is vibrating on the vertex, Valsalva's experiment appears to bring about increased perception only to the side inflated, and this increased perception persists as long as the tube is held open by the raised air pressure in the nasopharynx.

Gentle double autoinflation will increase the perception of vertex forks in both ears, and that this is not due wholly to tubal opening may be proved by placing the fork on the head (preferably on the mastoid fossa), quickly removing it, executing gentle inflation, replacing the fork, and then allowing the middle ear to deflate. The fork's note will be heard louder on its second placement and less distinctly after the middle ears have recovered their normal pneumatic balance.

If more than the faintest inflations are used, the results will be exactly opposite, owing to the influence of the increased air pressure in the middle ear.

If in normal ears, at the moment when the sound of the vertex fork ceases to be heard, swallowing is executed, the sound of the fork will reappear to the ears in the order of the opening of their tubes.

If the ears are closed during these experiments, the increases in sound are not easily detected, probably because this closure interferes with the slight further increase in bone conduction brought about by the movement of the drum membrane during tubal and middle-ear ventilation. If this were not the case, the increase in sound should appear in a similar manner to that occurring during swallowing with the ears closed and a fork vibrating before the nostrils, and I, therefore, bring these bone-conduction experiments forward as further proof of the movement of the drum membrane during deglutition and as tests that may be useful for diagnosis in selected cases.

The increase in the sound of vertex forks during tubal opening is brought about by two main factors—one being the opening of the communication between the middle ear and nasopharynx, permitting increased perception by air conduction from the latter; the other is the increased bone conduction due to slight changes, mainly in the drum membrane. That this is a factor I believe I demonstrated by applying the fork before and after Valsalva's and the other experiments, as the note under the different conditions could be compared without the interference of sound changes due to Eustachian tube opening.

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[1] Diseases of the Ear, p. 132.

Although I can bring forward but slight evidence to prove that during tubal opening there is a contraction of the tensor tympani muscle, I will present this evidence for discussion. If, while one of the lower forks is vibrating on the vertex, the tubal muscles are voluntarily contracted just short of opening the tube (this can be managed with practice), it will be noticed that during the muscular contraction a slight increase in sound sometimes occurs. This increase in sound is of a different character from that noted during tubal opening while a fork is vibrating on the vertex or before the nose, and gives the impression that bone conduction has been slightly increased. The middle-ear structures which would be apt to be affected during the experiment are the tensor tympani muscle and the parts to which it is attached, especially the malleus and drum membrane. If the ears are closed during the experiment, no increase in sound can be detected, nor does this occur if the experiment is executed with the fork vibrating before the open nostrils.

The intimate nervous connections through the otic ganglion of the nerve to the tensor tympani, and the nerves innervating the muscles attached to the Eustachian tube, at least make it seem possible that during contraction of the latter the former also may be brought into action. This does occur during the act of yawning, as brought out by Politzer and confirmed by Helmholtz.

The otic ganglion is in relation internally with the cartilaginous Eustachian tube and the origin of the tensor palati muscle. It communicates with the glossopharyngeal and seventh nerves through the small superficial petrosal nerve continued from the tympanic plexus, and through this communication it probably receives its sensory root from the glossopharyngeal, and its motor root from the facial.

Its branches of distribution include a filament to the tensor tympani and one to the tensor palati. The fibers of these nerves are mainly derived from the nerve to the internal pterygoid muscle.[2]

Politzer[3] quotes L. Meyer to the effect that the anterior border of the tensor tympani is sometimes in close relation with the tensor veli palati, either directly or by fibrous tissue. The cracking noises heard in the ears during deglutition and produced by many people by voluntary effort are caused principally by the contractions of the abductor tubæ muscles, but the noises may be caused also by contractions of the tensor tympani.[3]

Contractions of certain muscles of the face, especially the orbicularis palpebrarum, can produce simultaneous contractions of the stapedius, as first observed by Lucæ, and while during these contractions the perception by air conduction for the lower and middle tones of the tuning forks is lessened or discontinued, the reverse holds good if these forks (especially C_2) are heard by bone conduction, and the tones seem markedly intensified. In other words, bone conduction is increased. The note is also raised the fraction of a tone.[4]

I mention these facts, as they are similar to, though more marked than those noted during contractions of the tubal muscles alone.

It is conceivable that during tubal opening the tensor tympani should contract to prevent traumatism to the conducting mechanism from violent inflations through the tube, to make tubal opening less difficult, and to prevent during the opening of the tube disturbances in sound perception due to movement of the drum membrane. As its subsequent relaxation follows the increase in intratympanic air pressure due to tubal closure, this increase in air pressure will not cause so much disturbance as would be the case if the drum membrane were immovably anchored during the ventilating process. In other words, the slight contraction of the tensor tympani protects and tends to prevent disturbances in the conducting mechanism during ventilation of the middle ear.[5]

I hold that the tensor tympani may contract during contraction of the tubal muscles, and, though I arrive at this conclusion mainly by exclusion, I hope it may perchance stimulate further research along the line indicated, to the end that from more accurate knowledge may spring beneficial practices.

It appears that the middle ear is easily ventilated under normal conditions, because the walls of the Eustachian tube, to a greater or less extent, lie in just sufficient contact to enable the ordinary act of swallowing to bring about their separation, and on its completion to allow their collapse to close the tube and re-establish the faintly positive air pressure which I have shown tends to exist in the tympanic cavity.

It is easily demonstrable that with the slightest rarification of the air in the middle ear more effort will be required to inflate the tube and middle ear than if there is an increase in the tympanic air tension.

Many individuals with chronic retraction of the drum membrane require but a slight increase in pressure in the nasopharynx to enable them during the act of swallowing to ventilate the ears adequately, and it seems to me that the usual method of treatment is wrong, because it violently inflates the middle ear and at comparatively infrequent intervals, and, therefore, does not fully meet the conditions presenting.

To provide a means for home treatment in these cases, I devised a method based on the following experiment. At first sight, this may appear to be but a modification or combination of Valsalva's and Toynbee's experiments, but, as its performance is different from either, and its result the opposite to the latter, I hold that the experiment is distinct. I mention it in this paper, because it is a modification of Nature's method of inflating the Eustachian tube and middle ear.

While the nostrils are tightly closed by pinching them together with the thumb and forefinger as near their free borders as is possible, gently increase the air pressure in the nose and nasopharynx by attempting to expire wholly through the nose, and, while maintaining this increased pressure, swallow. The result will be the inflation of both middle ears.

This is brought about by the opening of the tubes during the increased nasopharyngeal air pressure, due to the patient's efforts and to the ascent of the soft palate. During the second stage of deglutition a negative pressure is avoided, because the primary increase in pressure and the bulging of the elastic lateral walls of the nose supply a sufficient amount of air reserve to enable the descent of the soft palate to occur without creating a partial vacuum in the nasopharynx.

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[2] Gray's Anatomy, 1896, p. 808.

[3] Diseases of the Ear, p. 33.

[4] To bring out these results the fork must be vibrating strongly during the experiment.

[5] Several important considerations naturally occur to one in connection with the above, but their discussion would lead me into a discourse too lengthy to be included in this paper.

Until familiar with this method of inflation it is well to take a full breath preliminary to its performance. It would be unwise to prescribe this treatment for some patients, as it is subject to abuse and harm might result from faulty execution.

The author's automatic ear inflator.

To avoid all danger, I have used an instrument, here illustrated, so constructed that, no matter how forcibly the patient blows into it, the pressure in the instrument, and, therefore, in the nose during treatment, can not exceed a certain number of millimeters of mercury—the latter to be determined by the surgeon when prescribing the device. It consists of a rubber balloon attached to a nosepiece. If one nostril is closed and the nosepiece is fitted tightly into the other nostril, the patient may inflate the balloon by blowing into it through the nose. In the size I usually employ, a pressure of about 10 mm. of mercury is required to inflate the air bag, and, no matter how much it is distended, the pressure within it will remain between 8 and 10 mm. of mercury. After inflating the balloon, the patient, without removing the nosepiece or releasing the opposite nostril, swallows, and repeats this act several times, or until the balloon has completely collapsed. At every deglutition both middle ears will be inflated. During deflation the air pressure in the balloon remains at about 6 or 8 mm. of mercury until the bag is deflated, when the pressure drops suddenly to zero.

So far as I can see, this method is simple, safe and efficient, and enables patients to obtain every-day treatment which can not but benefit the diseased conditions it is adapted to correct.

I have made many modifications of this instrument, but the one described is the simplest and cheapest. The balloon may be made in various sizes and strengths, depending on the amount of air and the pressures it is desired to obtain.

The experiments here detailed were devised by me and executed first on myself and subsequently on many other individuals, and with one or two exceptions were confirmed by competent observers. To carry out the more delicate experiments correctly much practice and patience are required.

57 West Seventy-sixth Street.

ABSTRACT OF DISCUSSION

Dr. J. Holinger, Chicago: The instrument Dr. Fowler shows is of decided advantage, because of its psychic effect, if for no other reason; so long as the patient has something which requires some special preparation it is an inducement for him to carry out directions more accurately. I did not hear Dr. Fowler mention the name of Professor Bezold, who has done so much along this line. A point which I think is often overlooked in affections of the tube is the difference in size of the cells in the mastoid process. If it is true that these cells have the function of a reserve air tank, it is evident that the difference in size of this tank can not be without influence on the ventilation and function of the middle ear. It seems to me that together with the adenoids this smallness of the reserve air tank in children explains the frequency of affection of the tubes much better. In adults, too, after destruction of the cells by mastoid operation, I have often seen affections of the Eustachian tubes which necessitated treatment extending over many weeks.

Dr. George E. Shambaugh, Chicago: I do not wish to pass unfavorable criticism on a piece of work on which so much time and patience has been spent as this paper by Dr. Fowler. I should like to suggest, however, that the one object in writing a paper is to convince other people of conclusions which our work has led us to believe are correct. It is a point that we should always keep in mind in preparing a paper. An article that covers so much as this paper by Dr. Fowler is much less likely to accomplish this object than a paper in which not so much is attempted.

Dr. Edmund P. Fowler, New York: Probably Dr. Shambaugh is right in saying that I have tried to give in one paper too many experiments pertaining to the Eustachian tube, and it would have been wiser perhaps to have presented one phase of the matter at a time. My object was to obtain criticisms from men who had investigated the experiments before the meeting, to the end that my work could be substantiated. The little instrument I have shown I have used in the form of a penny whistle for some time with apparently happy results. We must be cautious in our opinion because every new treatment is apt to show remarkable results at first, but I think the method outlined has benefited a great many people and especially those who could not spare the time for regular treatment. This treatment, so far as I can see, is harmless and enables patients to maintain the drum membrane in a better condition than if they carried out no treatment at home.

SYMPTOMS OF INTRACRANIAL COMPLICATIONS OF PURULENT OTITIS *

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The subject of intracranial lesions arising from suppurative otitis has occupied the foreground in otologic discussions for many years. The brilliant achievements of Macewen in this difficult surgery were already well known in the 80's and his classical work "Pyogenic Diseases of the Brain and Spinal Cord," published in 1893, stands, with few parallels in surgical literature, as a monument to his genius.

The impetus exerted by this publication in extending the otologist's field has been tremendous, and has resulted in the cure of hundreds of cases which previously had been considered hopeless.

Added knowledge of the function of certain areas in the brain, improved methods of study of the blood, and cerebrospinal fluid, and accurate data regarding the static equilibrium, have all contributed in recent years, to an earlier and more certain diagnosis of the character and localization of intracranial lesions.

Certain clinical data have now come to be recognized as definite proof of lesions which formerly were considered doubtful. Nevertheless it must be admitted that, with all the evidence which can be accumulated, we are too often in grave doubt as to the nature or

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

location of a lesion which presents symptoms serious enough to force us into an exploratory operation. Under these circumstances one can not escape a feeling bordering on helplessness in the presence of such a desperate surgical condition.

In view of the numerous well-known works and monographs on this subject, it would be presumptuous on my part to attempt to do any more than bring up for consideration, the more important views of others, presenting them in the way they have been most useful in my own experience.

It is not within the province of this paper to discuss the pathology of extension of suppuration of the middle ear to the endocranial structures. Nevertheless it is important, to an understanding of the symptoms which arise, that the methods of invasion should be borne in mind.

Infection may take place on the one hand directly through dehiscences in the bone, to the middle or posterior fossa either the result of erosion, or developmental defects, or occasionally, from operative work: on the other hand, the infection may travel through the lymph sheath of blood vessels, or nerves, or in the blood-current, from the tympanum, mastoid antrum, or mastoid cells, to the duramater of either fossa, or to the sigmoid sinus. Even further you are aware that suppurative processes, having invaded the labyrinth, are in direct communication, through the ductus endolymphaticus, with a pocket between two layers of the dura; and, through the aqueductus vestibuli, directly with the subarachnoid space.

Naturally, symptoms of endocranial involvement must vary greatly with the method of invasion and the virulence of the organism causing it.

Endocranial lesions resulting from acute suppurative otitis are likely to be very rapid, from a most virulent infection, and very general in this invasion, owing to the fact that the infection has entered the cranium through lymph sheaths of the blood vessels, or through the vessels themselves, rather than by erosion, or disease of the bone, as in chronic cases; and, as a result of the rapidity of the invasion, there has been no opportunity for resisting barriers to be thrown out. Symptoms of endocranial envolvement of acute suppurative otitis, then, are more likely to be those of acute leptomeningitis or sinus thrombosis than of temporosphenoidal or cerebellar abscess.

On the other hand, when intracranial invasion has resulted from chronic purulent otitis, the infection being slow and milder in character, due to necrosis and erosion of the inner plate, the early symptoms are likely to be those of a very local involvement of the dura (external pachymeningitis) with the production of an extradural abscess.

Should this persist a fibrinous exudate may form on the internal surface of the dura, cementing it to the subjacent arachnoid and pia mater, thus preventing a diffuse leptomeningitis, as happens in the acute cases from the rapidity of the invasion. This barrier may also prevent further extension into the brain, but, continuing, a necrosis of the cortex may take place leading to the formation of an intradural abscess. Still continuing, the suppuration may extend to the deeper parts with the formation of a cerebral, or cerebellar abscess, according to the position of the primary invasion.

On the other hand, deep-seated abscesses may form without this progressive involvement of the different membranes, and the cortical substance, owing to thrombosis of small veins running in from the surface. In a similar manner thrombosis of the sigmoid sinus or jugular bulb may take place without the previous formation of a perisinus abscess.

In a general way, then, it may be said that endocranial involvement of acute purulent otitis is likely to be rapid, diffuse, and accompanied by violent systemic disturbances, in addition to the local symptoms; whereas the involvement from chronic purulent otitis is likely to be slow, distinctly localized, with slight systemic disturbances in the early stages, owing to the fact that its progress has been combated at every step by Nature's protective barriers. The final breaking down of these protective barriers, in the later stages, gives rise to violent symptoms of systemic disturbance, similar to those which occur early, in the acute cases. The lesions to be considered are:

A. *Inflammation of the meninges:* (1) External pachymeningitis, or extradural abscess; (2) internal pachymeningitis or intradural abscess; (3) diffuse leptomeningitis; (4) serous meningitis.

B. *Inflammation of the brain:* (1) Encephalitis; (a) circumscribed; (b) diffuse. (2) Brain abscess: (a) temporosphenoidal; (b) cerebellar.

C. *Inflammation of the sinuses of the dura:* (a) lateral: jugular bulb, jugular vein; (b) superior and inferior petrosals: cavernous.

D. *Erosion of internal carotid artery.*

In considering any suppurative intracranial lesion it is well to bear in mind the fact that many of the symptoms arising from it are purely mechanical in origin, while others are the result of the toxemia produced by the infection.

Any meningeal inflammation has three characteristic symptoms; *headache,* which is severe and persistent; *vomiting,* which takes place without nausea and at unexpected times; *constipation,* without abdominal distention or pain, which can not be relieved by cathartics or purgatives. These symptoms are due largely to an alteration of adjustment of intracranial tension, although absorption of toxins has some part in them.

The accompanying symptoms, of mechanical origin —due to pressure of the effusion on the cortical centers beneath—vary according to the location, extent, and nature of the inflammation, together with the degree of irritability of the patient. Such symptoms have been classified by Ballance as follows:

1. *Psychic symptoms:* Irritability, change of disposition.

2. *Motor symptoms:* Convulsions, Kernig's sign, exaggeration of reflexes.

3. *Sensory symptoms:* Photophobia, hyperesthesia.

4. *Sympathetic vasomotor disturbances: Tache cérébrale.*

5. Finally, *symptoms due to exhaustion and death of nerve cells:* Paralyses, anesthesia, coma.

Fever, anorexia and emaciation, the other accompanying symptoms, are due to the general infection rather than to the meningeal involvement, and may be very pronounced or very mild, depending on the virulence of the organism producing them.

In a case of purulent otitis, or mastoiditis, acute or chronic, either before or after operation, the occurrence of severe and persistent headache; repeated vomiting, without nausea; and obstinate constipation, accompanied by fever, together with one or many of the detailed symptoms of cortical irritation, would point unmistakably to meningitis.

The problem then presented would be to determine whether the inflammation was of a serous, or purulent, or tuberculous type; whether localized or diffuse; whether associated with brain abscess, encephalitis, or sinus thrombosis.

Much light has been thrown on these questions by examination of the cerebrospinal fluid obtained by lumbar puncture. In diffuse purulent leptomeningitis, the fluid is under high pressure, opaque, and contains large numbers of leucocytes and abundant bacteria. In serous meningitis, it is under high pressure, contains very few leucocytes, and no bacteria. In tuberculous meningitis it is under very high pressure, and contains tubercle bacilli. At the Babies' Hospital it is not unusual to draw off 140 to 150 c.c. of fluid. In 76 cases of tuberculous meningitis the bacillus was found 74 times in the cerebrospinal fluid. In acute leptomeningitis from 30 to 40 c.c. of fluid are withdrawn, and the infective organism is always found. Diffuse purulent leptomeningitis which has an acute onset, and rapid course; while tuberculous meningitis has an insidious onset, a slower course, and a period of remission. Acute basal meningitis has a slower course than diffuse purulent leptomeningitis. It occurs in infants up to one year of age. Tuberculous meningitis occurs from 2 to 7 years, and purulent leptomeningitis at any age.

Optic neuritis is an early symptom in leptomeningitis and a late one in tuberculous meningitis. Blood counts show a high leucocytosis (30,000 to 40,000) and high polymorphonuclear count (75 to 90 per cent.) in diffuse leptomeningitis, while in tuberculous meningitis, it is likely to show a low leucocytosis (10,000 to 15,000) and a low polymorphonuclear count (60 to 70 per cent.) Meara has reported 37 cases in which 81 per cent. showed a leucocytosis of over 13,000, ranging as high as 38,000 in clinically uncomplicated cases. It is evident from this that the blood count is not as valuable a differential factor as microscopic examination of the cerebrospinal fluid for the tubercle bacillus.

EXTRADURAL ABSCESS, INTRADURAL ABSCESS, CEREBRAL ABSCESS, CEREBELLAR ABSCESS

The symptoms arising from localized collections of pus within the cranium, like those from meningeal inflammation, are best appreciated when considered from the points of view of (a) the systemic disturbance due to the toxemia; (b) the mechanical disturbances resulting from increased intracranial tension; and (c) those resulting from pressure on or destruction of definite areas of the brain.

Thus, the mere presence of pus, depending on the virulence of the organism producing it, and the amount of poison taken into the circulation, might produce moderate or high temperature, chills and vomiting. The mechanical pressure might alter the intracranial tension sufficiently to cause slow cerebration, slowness of pulse, vomiting of a cerebral type (at unexpected intervals, and without nausea), and obstinate constipation. Pressure on or destruction of centers in the motor area might cause convulsions, on the one hand, or paralysis on the other; the same action in other areas might cause a perversion or loss of certain special senses. Thus it frequently happens that large collections of pus may at times take place extradurally, or intradurally, or in an area of the brain not occupied by important centers or tracts, and, being well walled off, may remain for long periods without giving rise to any characteristic symptoms. Such a collection of pus is not infrequently encountered during the course of a mastoid operation, the symptoms, previous to operation, having been so slight that the abscess was unsuspected.

In other cases, the suspicion of an epidural abscess or intradural abscess with connecting fistula is aroused by the unusual and persistent discharge of a quantity of pus from the tympanum which seems too large to have come from the middle ear and mastoid cells.

Many cases, however, in which there is no fistulous outlet, present characteristic symptoms. High fever, definitely localized pain and tenderness (often far back in the region of the mastoid emissary vein) and stiffness of the neck, are indications of extradural pus under tension. Further symptoms of intracranial pressure may be present from the presence of extradural abscess only, and all or a part of the graver symptoms of leptomeningitis, meningitis or brain abscess may appear.

It has frequently happened that graver symptoms have cleared up after the evacuation of an epidural collection of pus. There is no certainty from the symptoms, however, that such a case is not accompanied by an intradural abscess, or a serous or purulent leptomeningitis, or brain abscess, or sinus thrombosis. In such cases, lumbar puncture, and a blood count are of value in differentiation, in the manner pointed out.

Unless a brain abscess has actually destroyed important areas, or is large enough to interfere with their function, by compression, the location can only be conjectured from attending circumstances. It must be borne in mind that even a large abscess may lie in certain parts, without giving rise to localizing symptoms, owing to the fact that the space for the pus has been made by actual destruction of brain tissue. The abscess formed by the disintegrated brain substance occupies the same space, and therefore gives no evidence of its presence by pressure symptoms. Such accumulations have often become encapsulated and remained for years without sufficient symptoms to bring them to the attention of a surgeon. So-called latent abscess, however, is latent only in the sense that no violent symptoms are present, and careful examination of pulse, temperature, ocular fundi, the functional power of groups of muscles, reflexes, static equilibrium, etc., would have brought to light sufficient evidence, in many of these cases for a diagnosis.

Remembering that brain abscess is a disease of an organ of most complex functions; that it is secondary to many serious conditions which themselves present a variety of symptoms which might be due either to the primary disease, or some other complication; that wide variations in the virulence of the invasion are possible; it is easy to understand that the clinical picture will be a variable one.

Ballance adopts the five types of clinical evolution described by Brissaud and Soques:

1. *A subacute evolution,* in which three stages are evident: (a) The initial *stage of septic infection* characterized by headache, vomiting and fever, lasting 4 or 5 days; (b) the second *stage of remission* in which there is a sudden or gradual abatement of the active symptoms; this period of calm may run over a very long course; (c) the third, or *paralytic stage,* comes on suddenly with or without a convulsion. Coma and death may ensue in a few hours, from rupture of the abscess or, there may be recovery from the apoplectic seizure, followed by symptoms of rapid extension.

2. *The evolution with severe general infection* which is rapidly fatal. High fever with acute delirium are prominent symptoms, marking the more characteristic symptoms of brain abscess. This is usually mistaken for a malignant form of some specific fever unless other conditions have previously pointed to possible brain abscess.

3. *Evolution with complete latency* until the final attack of coma: In this variety, sudden death occurs without previous suspicion of brain abscess until revealed at the autopsy. It is in this "latent stage" that the suggestion was made that some symptoms might have been found if carefully sought after.

4. In the fourth type the *evolution is just like that of a brain tumor.* Abscess produced by infection of low virulence, and symptoms are similar to a tumor of the same size in the same region.

5. The fifth type of evolution is *the remittent type:* "Here the clinical evolution is in two acts, separated by an *entr'acte* of greater or less duration. The first act is marked sometimes by an attack of mania, sometimes by acute delirium. Then all quiets down and the patient seems cured. But after a few weeks, a few months, or even a year, follows the second act, which is commonly quickly fatal."

It is perfectly evident that the array of symptoms of suppuration; local headache, tenderness on percussion, local increase in temperature, etc., while they have some bearing on the location of the abscess, are not characteristic of any particular type of collection of pus. One can not say whether it is extradural, intradural, or in the brain substance. So, too, the symptoms of pressure, headache, dizziness, vomiting, loss of memory, delirium, slow pulse, optic neuritis, change in size of pupils, apathy, somnolence, etc., while indicative of intracranial lesion, are not characteristic of any particular type or location. Localizing symptoms when present are frequently most definite in pointing out the position of an abscess. Lack of time will prevent more than a brief allusion to some of the more important of these.

Ballance calls attention to the following facts:

1. The cortical center for hearing may be in part or wholly involved, causing tinnitus, hyperacusia, or absolute deafness of the opposite (healthy) ear.

2. The cortical centers for taste and smell may be affected. Alteration or suppression of the sense of smell may occur in abscess, involving the anterior extremity of the temporosphenoidal lobe.

3. Sensory aphasia often occurs in abscess of the left temporosphenoidal lobe in consequence of the cortical centers for the mechanism of speech being on the left side of the brain. The auditory word center and the visual word center are the ones involved in temporosphenoidal abscess. A temporosphenoidal abscess on the left side is therefore commonly more easy to recognize than on the right.

4. Paralysis of the opposite side of the body may be of cortical or internal capsule type. The march of the paralysis is different in the two cases. This paralysis is a frequent occurrence from pressure on the posterior end of the internal capsule, and may be associated, as might be expected, with hemianesthesia.

5. Paralysis of the third nerve on the side of the abscess. This is important. The paralysis is rarely complete. A stabile pupil on the side of the suspected abscess clinches the diagnosis.

6. Paralysis of the "naming center." Certain clinical and pathologic observations point to the conclusion that the nervous mechanism by which the ideas of objects are correlated with their names is located in the left temporosphenoidal lobe.

Few of the early symptoms of cerebellar abscess recorded by various writers can be considered as pathognomonic of that condition alone, since they are so frequently found in other intracranial lesions. In later stages, when the abscess is large, or meningitis of the cerebellar fossa has developed, pressure symptoms appear which point toward that region. Yawning, slow opening and shutting of the mouth, and rigidity of the masseters have been frequently observed. Optic neuritis, while not characteristic, may come on early and be very marked. Pressure on the medulla at a low level produces a brachiocervical paralysis on the same side. If pressure were exerted on the pons on the same side as the abscess, a crossed paralysis would result; pressure on both sides of medulla and pons would produce a bilateral paralysis.

A number of cases have been recorded in which pressure on the medullary respiratory center has been so marked that respiration ceased while the heart continued to beat. I have seen two such cases in which artificial respiration prolonged life for hours. Evacuation of the abscess in such a case might be followed by restoration of the function of the respiratory center, and recovery.

Two symptoms which may appear early are of great significance, viz: rotatory nystagmus, and cerebellar ataxia. The disturbances of equilibrium may not be differentiated from those arising from suppurative labyrinthitis, but Neumann has pointed out that there is a marked distinction in the nystagmus. The nystagmus from progressive labyrinthitis grows weaker as the disease progresses and finally disappears, while that from a cerebellar lesion increases as the disease progresses and reaches a degree never attained in labyrinthitis.

In addition to this, a point of great value appears from the fact that, in a case in which at first the nystagmus was more pronounced when the eyes were turned toward the well side, if the phenomenon later were suddenly reversed a diagnosis of cerebellar lesion could be made with certainty, and a labyrinthine cause excluded.

INFECTIVE THROMBOSIS OF THE SIGMOID SINUS; JUGULAR BULB; JUGULAR VEIN

As has been pointed out, an infective thrombus may occur in the sigmoid or jugular bulb by direct infection through disease of the intervening bone cells, and lining membrane, or by thrombosis of small vessels within the tympanum or mastoid process which lead directly into the sinus or bulb.

The first type is more likely to occur in chronic or subacute purulent otitis, the second from acute purulent otitis, of a virulent character.

Naturally, the chronic cases are more likely to be associated with other intracranial lesions—epidural abscess; cerebral or cerebellar abscess; encephalitis, or meningitis—which would increase the difficulty of diagnosis.

In a typical case without other cerebral complications the symptoms are very characteristic. A chilly sensation or distinct rigor, lasting for a few minutes, is followed by a rapid rise in temperature to 104 or 106 F. The pulse is small and rapid; the facial expression is anxious; there is intense local pain, there is complete anorexia, great thirst, and sometimes frequent vomiting. The tongue is thickly coated, and the breath has the characteristic fetid odor of sepsis. The patient is perfectly rational, perhaps somewhat irritable. The rapid rise in temperature is succeeded by almost as rapid a fall to normal, or often subnormal, accompanied by profuse sweating and prostration. According to the virulence of the infection, this is repeated in a few hours, or possibly not for a day or two. Irregularity has seemed to me to be a strong diagnostic sign in contradistinction to malarial or tuberculous conditions, though at times there has been a diurnal vacillation from the first. Uusually the chills and fever, followed by the sudden remissions, appear at increasingly shorter intervals, with more marked rigors and wider variations in temperature. Death may occur in a few days from acute septicemia, the patient being perfectly rational up to the last minute.

Left alone, however, signs of metastatic processes in the lungs usually manifest themselves within a week or ten days. Pain in one lung is followed within twenty-four hours by rapid, superficial breathing, accompanied by cough and expectoration of rusty sputum. The temperature may remain persistently high and death may supervene from septic pneumonia, or gangrene of the lungs may take place and death occur at a much later period from pyemia. Should this occur, the constipation, which has usually been present in the first stages, will have given place to a foul diarrhea. Metastatic abscesses in the joints are likely also to appear in the cases which assume the pyemic character.

A certain number of cases will assume a typhoid character very early: there will be no wide vacillations in temperature, and no chills, except possibly at the very beginning. In such cases the mentality is not clear as in the first type. Diarrhea, abdominal pain, and meteorism are present, and skin is likely to be mottled by a dull red rash. The presence of otitis or mastoiditis may be of great value in determining a diagnosis. In such a case, an absent Widal reaction, high leucocytosis and polymorphonuclear count; and, presence of streptococcemia would be of great value differentially.

Then there is a class of cases in which symptoms of meningitis are present early, in connection with the signs of infective thrombosis. Rigors are unusual in the early stages, and the temperature is persistently high. Many of the pressure symptoms and symptoms of cortical irritation of meningeal inflammation are present; tonic and clonic spasms of groups of muscles; squint; early optic neuritis; etc.—in fact the symptoms of meningitis may entirely mask the involvement of the sinus until metastatic processes appear. Early coma, and death, however, are most likely to supervene.

All these types are easily recognizable, but there are many cases in which the early symptoms are not so typical. The first signs of infective thrombosis may be moderate vacillations in temperature, without chills and without prostating sweats. Or in a less virulent case the temperature at first may not show much vacillation, remaining moderately high for a few days without other indications.

On the other hand, wide vacillations in temperature may be present, in infants, without the presence of infective sinus thrombosis. At the Babies Hospital, I have repeatedly observed infants who had influenza or bronchopneumonia, in which vacillations of from six to eight degrees took place for many days; in one case for weeks. The fact that such vacillations took place in those who did not have discharging ears, as well as in those who did, deterred me from investigating the sinuses and jugular bulbs in those with the purulent ears. It is gratifying to report that these children did not die of infective bulb thrombosis. In one child, with very marked purulent discharge from both ears, the vacillations were so very wide that, in the absence of pulmonary signs, I was tempted to perform an exploratory operation. The patient finally died, and I then had the opportunity of investigating the sinuses and jugular bulbs. They were both perfectly healthy.

It seems, therefore, that there are a certain number of cases in which an early diagnosis is very difficult if not impossible. It is possible that increased knowledge from examination of the blood may enable us to make a positive diagnosis in the future at an earlier moment than now. With certain doubtful clinical symptoms present a blood culture showing the presence of streptococci would lead the physician to make a diagnosis of probable infective sinus thrombosis, providing there was no other evident cause for the streptococcemia. So, too, a very high or low leucocytosis, with a high polymorphonculear percentage, taken together with other symptoms, even though not typical, might lead to a diagnosis of septic thrombosis.

It seems unnecessary for me to discuss symptoms of involvement of other sinuses since they are extensions of infection from the sigmoid, except as they give additional symptoms.

Involvement of the jugular vein may give rise to tenderness along its course, and even to a cord-like feeling, so it is said, although I have never observed it.

Infective thrombosis of the cavernous sinus occurs from suppurative otitis only secondary to that of the superior or inferior petrosal sinuses. In addition to the symptoms of septic poisoning, thrombosis of the petrosals is likely to cause epistaxis, swelling of the veins over the temple, and thrombosis of the retinal veins.

Extension to the cavernous sinus causes an engorgement of the vessels of the orbit, with consequent ophthalmos, photophobia, disturbances of vision, paralysis of the motor oculi, abducens, and trochlear nerves, ptosis and edema of the eyelids and trigeminal neuralgia. Thrombosis of the cavernous sinus of the other side is likely to follow rapidly, accompanied by similar symptoms in the corresponding eye.

While erosion of the internal carotid artery is extremely rare, a few cases have been reported, all of them fatal. The condition can only occur in chronic cases with extensive necrosis. The diagnosis is evident from the gushing of bright red blood from the auricle with great force. This is temporarily stopped by pressure on the carotid in the neck.

In the reported cases death has occurred in from five minutes to thirteen days, even in those patients in whom ligation of the common carotid was performed.

27 East Fifty-Seventh Street.

To Limit Use of Saccharine.—The *Scientific American* says that a conference was held at Brussels for repressing the use of saccharine in food products or drink. While the drug has 400 times the sweetening power of sugar, it is dangerous to health and it is desired to prevent the fraudulent use of the product. Delegates were present from all parts of Europe, and it was decided to hold a new conference on the subject at Geneva during the next spring. A resolution regulating the use of saccharine was adopted. Fiscal agents will look after the manufacture and destination of the product and see where it is employed. In many countries of Europe it is brought in by contraband, and in one case there was found in a vessel in the Russian port of Riga about a ton of saccharine, which would replace 400 tons of sugar.

THE INDICATIONS FOR TYMPANOMASTOID EXENTERATION IN ABSENCE OF SYMPTOMS OF INTRACRANIAL COMPLICATIONS *

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The prime indication for evisceration in chronic tympanic suppuration is the confidence of the surgeon that he will thereby make the condition safer and better. Hence, the personal equation of the operator is one of the major factors—his operative skill and facilities, together with his insight into the pathologic conditions and the therapeutic possibilities of less radical measures. Some men have not drilled themselves in the exhaustive application of the non-operative procedures or use them so half-heartedly that little can be expected from them: some patients are so intolerant of the tedious, painstaking, pains-giving procedures which alone can succeed in difficult cases that one must cut the Gordian knot rather than attempt to unravel its complexity.

For the field is very complex and difficult; and, while we can truly claim that every one of these patients can be cured by thorough cleansing, experience shows that what is so simple of statement is often practically impossible of performance. Even the intricacies of the tympanic cavities often defy complete access for cleansing, unless the knife clear the way by enlarging the drumhead opening or dividing obstructing folds. Removal of the ossicles should do even more to facilitate access and aid cure; but, as I have repeatedly said, my experience of this has been extremely unsatisfactory, and I have never brought to lasting cure, cases that had resisted full test of mere cleansing. I can fairly claim the same percentage of cures without operation as others claim with it, even in cases condemned by colleagues as beyond any but operative relief.

Study of the literature shows a reasonably probable cure in but 50 per cent. of ossiculectomies, in many of which, like Schwartze's, there was little or no trial of non-operative measures first, the patients being operated on as soon as seen. The same attitude toward radical exenteration has robbed many men of their opportunity to learn how much and how lasting is the benefit which in many of their cases may be gained by fairly persistent cleansing methods.

For this attitude the statements of some men who meet demur as to quick surgical intervention by a preaching more radical than their practice are in part responsible. In face-to-face discussion it is readily apparent that the indications on which men seeming to stand near the two extremes really operate are nearly identical—the main difference being a question of the time at which each thinks that the reasonable efforts in the non-operative line must cease. But one man will cite "all the cases of attic suppuration with Shrapnell perforation" as needing radical evisceration, yet admit that he brings many through without. Another will state that cholesteatoma formation is an absolute demand for operation; yet I have long taught that most cases—broadly speaking, all cases—of chronic suppuration are maintained by cholesteatoma formation. Nature strives to heal over the gaping perforation by growth of the drumhead epithelium. If this fails to bridge the gap, it "skins over" the edges and the cells (perhaps the most rapidly proliferating in the body) invade the mucous cavity of the tympanum with its more succulent blood supply and there form the obstructing laminæ of so-called cholesteatoma. Close study with minutely thorough cleansing will reveal such epidermal flakes in practically every case of chronic suppuration.

Yet some men balk at this minutely thorough work as too hair-splitting and finical, perhaps as beneath their dignity or demanding more time than they can afford to the individual patient, especially in hospital work. Certainly it can not be delegated to the patient himself or even to the less expert assistants. Probe, forceps, curette and intratympanic syringe must be skillfully employed in tedious and exhausting manner if success is to be gained. Yet it is not only fair but urgent to question whether the aggregate of time so spent generally equals that demanded by the operative cure pushed to equal completeness. After it is done for weeks or months it may fail and call for operation; then one regrets and almost resents the wasted time and effort; yet in these same cases is the proportion of real "radical cures" nearly so good as often claimed? Politzer, in summing up as to ossiculectomy, cites "the limited success which the author has attained from this operation," as "after months or years the suppuration recurs, and it is finally necessary to resort to the radical mastoid operation." Yet of the latter he says: "It is impossible to establish, from the many communications which lie before us, all of which present different statistics, even an approximate relation between those cases which heal and those which do not. This is easily explained if it be borne in mind that some surgeons strictly limit the indications for operating, while others proceed to operative measures in all persistent middle-ear suppurations unassociated with complications. The latter will naturally have a greater percentage of cured cases." . . . "Stacke states that 94 per cent., and Schwartze that 74 per cent. of the cases in which the radical operation was performed were discharged as cured. Of the uncomplicated cases operated on at the author's clinic in the last few years, recovery did not take place in only 14 or 15 per cent."

It can hardly be doubted that in the two decades of radical tympanomastoid exenteration there has been considerable advance in skill in choosing cases and meeting the difficulties of the intervention, so a discussion of results must be based on the later years, and especially on the work of the men who are really experienced. My own estimate, published ten years ago, of 90 per cent. of cures proved too roseate, for some of these patients relapsed; and figures like those of Dench are too recent and too large to be followed to final issue. If the non-operative cure is to be distrusted until it has persisted at least two years without relapse, this is certainly a fair test to exact as to the operative results, and few have applied it to their own work as has Schwartze, whose admission of incomplete success in 26 per cent. has great weight. Summarizing the last ten reports from Schwartze's clinic, we find of the 979 patients operated on radically that 536, or 55 per cent., are set down as healed, 181 still under treatment when reported, 82 lost sight of uncured, 84 unknown results and 96 deaths. Among more than 700 additional cases reported by six skilled surgeons some 80 per cent. of patients are reported as cured, with only 5 per cent. of

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

deaths; but such figures lose their force when we read the claim of one man that of his 142 cases "without complications confirmed or imminent" all patients were cured. The second operations needed because of failure of the first by the same hands form a small but noteworthy group, while many patients are reported as cured although still showing discharge about the Eustachian tube. These fully offset the due additions to the healed from those unknown or under care at the time of publication.

The deaths reported, constituting nearly 10 per cent. of the whole, were more often in spite of the operation than because of it. Few can be directly attributed to the intervention; yet some apparently can, and I doubt if the mallet is as guiltless of precipitating intracranial involvements as its advocates claim it to be. Certainly meningitis and other complications previously unsuspected have flared up promptly or tardily after operation, in sad contradiction of the claim that the patient was to be made safe by it. Cases of uncovered dura found at operation are generally cited as if nothing but prompt intervention had saved the patient; yet most admit that the pachymeningitic granulations ought not to be attacked, forgetting that they were as protective before operating as after. I have had non-operative cases in which granulations of the exposed dura, all tegmen being lost, were cautiously bitten and burned away, with healing as prompt and lasting as though a needless exenteration had been done.

Are such patients lulled to a false sense of security? Rarely by any word of mine; rather the contrary, for the not improbable need of operation has been set before them when discharged on probation. Had I resorted in their cases to a "radical cure" would they have been as likely to seek periodic supervision later. Other otologists have operated on patients whom I have tided along for years and reported the need of such intervention as urgent; but the same is said of many others who were brought to enduring cure by non-operative measures. That I see cases evidencing the mistakes or failures of some of our most esteemed colleagues does not rob me of respect for their judgment or skill. I know that these mistakes are the exception, not the rule; yet it does fortify one in maintaining his own judgment until proof is furnished that it is actually in error. Perhaps there is pus in the mastoid cells or their lining is swollen into polyp-like filling. Must every empyema of frontal or maxillary sinus have a radical operation? Is there caries present? The same probe which can demonstrate it from the canal can often curette it successfully. The parts are complex and difficult of access, but full success is not impossible. At least it is hardly for the man who has never learned how to do it, especially if he is only a fledgeling, to be too uncompromising a critic.

The effect on the hearing is generally regarded as unimportant; slight gain being more common than loss, usually slight. Yet in some of the best hands a loss was shown by rigid testing in full 30 per cent., and, while men in small series stated that as low as 5 per cent. showed loss, the summary of 639 cases available for study gives loss in 122, or 20 per cent. This is insignificant in cases in which the operation is done for urgent symptoms, but must be weighed when suppuration alone calls for intervention. Hearing after operation is rarely so good as one meter for a stage whisper; anything better is apt to be lost.

Facial palsy is very variously reported, some men counting only those cases in which it is permanent. But even the palsies ultimately recovering are distinctly to be weighed, for if they occur in the hands of experts how much more serious will they be in the work of beginners. Few operators have had Schwartze's luck of 6 in his first 30 cases, but in one of our best special hospitals there were 20 among 117 operations, only 4 being known to persist. They may clear up under appropriate treatment even after persisting a year or more unchanged, and in the future the grafting operations may give successes that are recognizable to the impartial; but this will long remain one of the positive drawbacks to lightly advised radical intervention.

Deformity is usually trivial, even when the operation is rather ruthlessly extensive or when a postauricular opening persists. Torticollis has been left, but only in cases not well cared for. Atresia of the external canal is infrequent, and chondromalacial deformity of the auricle has been seen by few operators. Unsightly widening of the entrance is of doubtful aid in securing good healing and is to be deprecated. Still more is it of doubtful wisdom to chisel extensively the uninvolved mastoid merely to get freer access to the diseased tympanic cavities. My protest in favor of the original Stacke operation is still cogent except for those too "thumby" to work in the more limited space and extend the operation only so far into the mastoid as is found to be needful. The larger surface opened to septic absorption materially increases the risk. For tympanic suppuration and caries *mastoid* exenteration is not indicated.

Summarizing the indications for radical exenteration in chronic tympanic suppuration with no intracranial symptoms, I would claim that such intervention should be advised for the expert operator when the hearing can not be improved beyond one meter for a stage whisper nor the discharge stopped nor the fetor controlled by a reasonable trial of the most thorough cleansing. This must include painstaking use of probe, forceps, curette and the intratympanic syringe, with antiseptic instillations, insufflations and drainage wicks. The reasonableness of persistence must be conditioned on the patient's ability to submit to full treatment, the general health and any such intercurrent complication, as facial palsy, stenosis of the canal by soft tissue hypertrophy or bony outgrowth, or labyrinth caries, which have been shown to indicate often a graver prognosis, as well as to furnish an additional lesion which we may hope to bring to a cure by the evisceration. Labyrinthine involvement. as shown by vertigo, nystagmus and loss of caloric reflex, electric response and bone conduction, constitutes a distinct indication for operation. as suppuration in this portion of the ear is trebly likely to involve the intracranial structures. It must be differentiated, if possible, from cerebellar disease, and especially from hysterical and other neuroses—a distinction easy in print, but often almost impossible in clinical cases. Tympanic exenteration must precede any evisceration of this vestibular apparatus, whether done for sepsis or for uncontrollable vertigo or tinnitus.

1717 Locust Street.

Lack of Playground Space in New York.—The children of New York are prisoners jailed in narrowness and literally "cabined, cribbed and confined." It is doubtful if the children of any city of the world have less scope for play and exercise.—*Hygiene and Physical Education.*

CONTRAINDICATIONS TO THE TYMPANO-MASTOID EXENTERATION IN CHRONIC SUPPURATIVE OTITIS MEDIA *

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BOSTON

At many medical meetings physicians have listened to a discussion of this subject from various standpoints, radical and conservative, without coming to a definite conclusion, and I do not suppose that any better results will be attained at this particular meeting. In fact, as one reviews his own impression of the subject, he is at first radical and then again conservative according to his experience in cases from year to year. I suppose my own standpoint may be regarded as a conservative one, and yet there are certain cases in which I believe operation to be imperative; in some of the cases in which I claim a contraindication exists it may be impossible to lay down a definite rule.

In cases of chronic middle-ear suppuration with large perforations and a very slight amount of purulent discharge, which, however, will not cease after long-continued treatment and yet which does not bother the patient either with pain or retention of secretion, a definite decision is often impossible. The operation is certainly dangerous in the hands of unskilful operators and is not entirely free from danger with the most experienced surgeon. On the other hand, the condition is seldom dangerous, and yet when it is it is almost invariably fatal. I have never forgotten an impression made on me when called one night two or three years ago to see the only child (a boy 14 years old) of a family who are friends of mine. For eight or nine years, the boy had had an intermittent purulent discharge which came from a large perforation of the drum membrane of the right ear. He had never had any symptoms from this discharge and, in fact, there was no discharge from the ear two-thirds of the time. Three or four years before, acting on my best judgment, I had advised against a radical operation, and yet when I saw him with a temperature of 105 F., with an acute attack of chills, nausea, vomiting and delirium, in fact a most evident attack of leptomeningitis, I can not say how bitterly I regretted my former advice. On the other hand, I had seen a case which also lingers too long in my memory, of a working man who had a chronic suppurative discharge from one middle ear of twenty years' duration. It could not be stopped by ordinary treatment; he had never had any symptoms indicating meningeal trouble, and I advised a radical operation on him simply to relieve him of the chronic suppuration which required him to leave his work once a week and go to the hospital for treatment. There was really no other reason for urging an operation. The operation was done as skilfully as I knew how, and the man died eight days afterward of acute purulent meningitis.

We see, therefore, from these two cases how difficult it is to be definite, either for or against the operation. There are, however, some cases in which I think we can be perfectly certain that a radical mastoid operation should not be done. In the first place, we should never forget that in certain cases a patient may value hearing almost more than life and consequently when operating on the patient's only hearing ear this becomes an important factor in helping us to make a decision.

In nearly all patients with double chronic middle-ear suppuration or with a chronic middle-ear suppuration in one ear, and the hearing in the other destroyed by some former process, a radical operation should never be advised except as an operation of last resort. I mean by that, in the presence of direct meningeal or septicemic symptoms. My reason for making this assertion is that the patient with a chronic middle-ear suppuration has become accustomed to the amount of deafness which he has and has adjusted his whole scheme of life to it. He probably gets along with the allowances made for him by his employer or friends just as well as if he had normal hearing. Moreover, there is always the chance of stopping the discharge and ultimately improving his hearing by use of ordinary tympanic treatment, and in many of these cases there is, of course, chance of improving the hearing by use of some form of artificial membrana tympani.

An operation might, it is true, immediately improve such a patient, but not to any great extent, and it might also, and more likely will, seriously injure what hearing he has. We must also, in such a case, subject a patient to a bilateral radical mastoid operation, which is, of course, a far more serious thing than a single radical mastoid operation.

Then in the case of very young children, that is children under five years of age, I believe that a radical mastoid operation should practically never be done. It is hardly possible at this age to have a chronic middle-ear suppuration which will not yield to ordinary middle-ear treatment, with the exception of the very severe surgical infections, such, for instance, as actinomycosis or tuberculosis; and in these infections a radical operation is going to be a failure as regards stopping the suppurative discharge, on account of the likelihood of infection of the skin flaps and new formed tissue in the cavity and of involvement of adjacent portions of the skull and of the petrous portion of the temporal bone. When we are positive that middle-ear treatment fails to stop the suppurative discharge in the infant or young child, it is then better, as suggested by Dr. McKernon,[1] to do a simple mastoid operation, draining the middle ear through the antrum and keeping the mastoid wound open, if possible, until the middle ear is dry, if necessary doing a secondary operation, in such a case at a later date if the ear still continues to discharge.

In a majority of such operations in children a perfect result as regards discharge and hearing will be obtained, and the child will be left with an intact drum membrane and perfect hearing. In a small proportion of cases the discharge will diminish but not cease, and two or three such operations may be required. I see occasionally now (not professionally) a young girl, now of 20 or 21 years of age, who has a perfect drum membrane and perfect hearing in an ear on which I have done four simple mastoid operations, the first seventeen years ago and the last about twelve years ago. She has had no discharge from the ear and no symptoms of mastoiditis for the last twelve years, and if she were my own child I would far rather have her subjected to several acute mastoid operations in infancy and early childhood, and then at 20 find her with a perfect ear, than I would to have one radical operation at the same period and afterward carry a totally destroyed drum membrane and practically deaf ear through life.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Trans. Am. Otol. Soc., 1907.

In addition to the fact that a chronic middle-ear suppuration in a young child is likely to heal after ordinary middle-ear treatment, or after the performance of one or two simple mastoid operations with an after-treatment which consists in keeping the antrum open until the middle ear is dry if possible, there is another great objection to performing an extenterative operation on a very young child, and that is that the anatomic landmarks are different from the adult. The facial nerve is more easily injured and lies more superficially than we are accustomed to seeing it, and it is extremely difficult for the most experienced operator to discriminate between a normal soft healthy bone of a baby and the soft carious bone of the diseased portion. If in such a case the operation is extended beyond the limits of the diseased portion and into the diploë of the normal bone, in a number of cases an extensive osteomyelitic infection of the normal bone occurs which will extend far beyond the limits of the normal mastoid.

I have reserved until the last the most difficult and important subject and the one on which there will be the most difference of opinion, namely, the question of radical operation for the relief of intratympanic suppuration of long standing in adults in whom there is shown, so far as can be seen, a normal mucous membrane of the tympanum with no evidence of granulation and no evident symptoms of necrotic process.

It is not infrequent to see adults who have carried a suppurative ear forty or fifty years and who have never had any bad symptoms during all this period. On the other hand, we have all seen cases in which an ear of this description caused unexpected trouble. I have in mind especially an adult who had such an ear for twenty-five years, and who suddenly and without warning developed a meningeal process with a fatal result. In such cases, I do not advise against operation except in that I do not advise any operation until faithful middle ear treatment has been carried out for at least six months; and I do not count such middle-ear treatment as faithful unless the ear has been persistently syringed with a middle-ear syringe, as, for instance, Hartman's cannula, and in which the cannula has been passed directly to the attic and the whole tympanic space flushed out at least once a day for three or four weeks When such careful treatment has failed to stop the suppuration, I believe that an operation should be advised unhesitatingly, but I also believe that it should not be advised except under such conditions, and it is altogether too evident nowadays that many aural surgeons advise operations in these cases without sufficient consideration of the former treatment of the case.

To recapitulate, I believe the radical mastoid operation is contraindicated:

First, unless the operator is experienced in the surgery and anatomy of the temporal bone and well-grounded in the after-treatment of such operations.

Second, it should be performed on patients with double chronic suppurative middle-ear disease except in the presence of symptoms indicating danger of patient's life.

Third, it should not be performed on a patient's only hearing ear except under the same circumstances.

Fourth, it should not be performed on young children, that is children under 5 years, under practically any conditions.

Fifth, it should not be performed on a patient with tuberculosis or syphilis except in an emergency.

Sixth, it should not be performed on any suppurative middle-ear process, of however long duration, until the ordinary forms of middle-ear treatment have been faithfully carried out for a period of at least six months, except in the presence of symptoms indicating cerebral involvement with danger to life.

226 Marlboro Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. DUEL, RANDALL AND CROCKETT

DR. S. MACCUEN SMITH, Philadelphia: I am glad to find that the essayists advocate the procedure probably carried out by most of us, namely, when the examination shows a pathologic aural condition, non-operative lines of treatment are given a thorough trial, and if they fail to effect a cure surgery must be resorted to. Brain abscess or sinus thrombosis will sometimes develop without symptoms. Indeed, there are few cases that present distinct localizing symptoms that are characteristic of any one of the intracranial complications, owing to the fact that in the majority of cases more than one lesion is present. In cases in which we have had the advantage of the advice of surgeons, neurologists and medical men it has still been impossible to locate accurately a brain abscess formation. At the point of probable location of the trouble, as indicated by the neurologists, we would find nothing, but at autopsy the abscess was found on the opposite side from where it was suspected. I mention this to show how impossible it is definitely to locate many of these intracranial lesions.

In operating for chronic suppurative otitis media, I wish to call attention to a point which, in my experience, is not infrequent, to-wit, the escape of pus through the tegmen antri at the time of operation which was not anticipated.

In illustration I cite the case of a child of seven years on whom I operated this winter. The patient had had a discharging ear for five years. The child became dull at school, inattentive, rather quarrelsome, and the mental attitude was gradually becoming impaired. There was considerable discharge from the external auditory canal. On account of the mental attitude and certain symptoms of labyrinthine involvement operation was advised. After opening the cortex there was a gush of pus such as is frequently found in cases of acute empyema of the mastoid. This was followed by two other distinct discharges of pus, which seemed to escape under pressure. It required the attention of one assistant constantly to wipe away the pus. Finally this ceased and we continued the operation and found a carious opening exposing the tegmen antri and also an opening in the dura. A probe showed that this opening extended into the temporosphenoidal lobe. As the drainage had been good, we did not introduce a tube, but contented ourselves by introducing a small piece of iodoform gauze. The patient did well and improved mentally for about three weeks, when she was taken with a violent convulsion which lasted forty-five minutes, and nystagmus to the opposite side occurred. The child was taken to the operating room, the original opening enlarged, and some bone removed around this opening through the tegmen. A Jackson brain forceps was introduced into the old tract without evacuating any pus. We then inserted it anteriorly and evacuated a quantity of grayish-yellow, foul-smelling pus, almost a test-tube full. A drainage tube was introduced and again the patient progressed nicely. At the end of three weeks practically the same symptoms occurred. On exploring the two old tracts no additional pus was found. We then took away more bone posteriorly to the opening and again evacuated a quantity of pus of a similar character. After that the child recovered. I mention this case to show how, as has been pointed out here, we may have these brain abscess formations without symptoms extending over a long period of time. My conception of this case is that the first was the parent abscess cavity and that the one anterior and the other posterior were both satellite cavities arising from the former. It simply confirms the fact that has been frequently pointed out, that the deaths following operations where pus has actually been evacuated from the interior of the brain are usually due to the satellite abscess formations which have been overlooked, and not to the fact that the pus was not all evacuated from the parent abscess formation.

Dr. Randall's conservatism may be called a bold conservatism. He is radical, as are the majority of us, when it is necessary to be so, and I agree with him that we should make the younger men, especially, understand that these cases are to be treated non-surgically before resorting to surgical means. On the other hand, there are cases that require prompt operative interference. Probably the best way to prevent labyrinthine involvement is to operate before that condition can develop, as it is a most serious condition which only the ultra-expert should undertake to operate on, but

I consider the treatment of double mastoiditis a matter of the greatest importance. This is especially true in young when diagnosed, an operation should be promptly performed. children, from the fact, to which I have frequently called attention, that these children will very likely become deaf mutes if anything, operative or otherwise, destroys their hearing. If only one ear is involved the importance of its possible loss is very much lessened, as the child will learn to talk in the usual way. I have seen patients up to the age of 10 or 12 years become positively mute after having suddenly lost their hearing through cerebrospinal meningitis. I recall one case, the daughter of a physician, who lost her speech, although she was 23 years old, when her hearing was from some cause destroyed. She gradually forgot how to speak and is to-day, after 12 or 14 years, a complete deaf mute.

In cases of double mastoiditis requiring operation (and now I am referring to the chronic variety) it might be well to consider the so-called Heath operation, which, however, was first performed, I believe, by Jansen. In this operation we retain the more or less necrotic drumhead and ossicles, which probably have a tendency to preserve, and possibly improve the hearing. In other words, as was pointed out by Heath, the site of the disease which causes a continuance of the suppuration is probably situated in the mastoid antrum and not, as usually supposed, in the tympanic cavity.

Dr. J. A. Stucky, Lexington, Ky.: I think that we must make a distinction between conservative radicalism and radical conservatism. One is safe and the other is not. I have had some bitter experiences in being too radically conservative, and as a result have signed four death certificates. Dr. Crockett says that he does not advise the mastoid operation in tuberculous cases. I desire to report five patients operated on in the last two years in which there was well-marked pulmonary tuberculosis, with extensive involvement of the ear, and the question of the safety of giving an anesthetic had to be considered and only partial anesthesia was deemed advisable. Yet each of these five patients made a beautiful recovery, so far as the ear was concerned, and great improvement in pulmonary trouble. One was a double radical mastoid operation. Four other cases similar to these have given just as good results. In the syphilitic cases, too, the same rule holds good. If there is locked up pus in any cavity the sooner we get it out the better.

Dr. Roy P. Scholz, St. Louis: I consider myself conservative and yet when I find cholesterin crystals I advise operation. I think operation is as necessary in these cases as in a case in which a pathologist diagnoses a section taken from a tumor, as a malignant growth. It is true a cholesteatoma is not a malignant tumor, still by its growth it plays such havoc with the surrounding structures, exposing the individual to such risk of life as to make its removal desirable. While beginning as only misplaced epidermis (epidermis growing in a serous cavity), it may become so closed off as to form a poorly drained pocket or true cyst. The accumulation of débris, together with the natural cell growth, causes a rapid increase in size of the tumor mass at the expense of the surrounding sutures. Nor should we forget another method of growth of the cholesteatoma that by budding or throwing out sprouts into the surrounding tissue each of these in turn becomes a cyst. The greatest danger of cholesteatoma is that we have to deal with a cavity, not only favorable to germ growth, but literally filled with germs of many varieties. Even though we keep the pocket empty by cleansing, the lining still remains, continuing to grow and to throw off more débris. We should keep in mind, at least when cholesterin crystals are found, the great risk to which the patient is exposed and be prepared to operate, and then very radically, on short notice. One should go far beyond the cholesteatoma mass into the healthy tissue, for fear of overlooking one of these nests of epidermic cells.

Dr. C. F. Welty, San Francisco: From some of these papers I think it is hard to find where a man stands. I accept all our indications for the radical mastoid operation that have been laid down and established. The only point at issue is that of a suppuration that doesn't improve by intratympanic treatment. If the patient doesn't recover in a reasonable length of time the condition should be operated on. In other words, patients who come to one must recover or be operated on.

I recently reported 100 radical operations. While I was in process of doing these operations 12 patients with whom I came in contact, or knew of, died because they were not operated on; 2 whom I operated on died; 1 was unconscious 24 hours before operation, and another was, perhaps, suffering from purulent meningitis at the time of operation. There were 94 cures; by cures I mean that the pus ceased to discharge. From 3 to 5 per cent. had pus that would return during the year with the accumulation of débris and after a little antiseptic treatment would recover. In 57 the hearing was improved. In 30 it remained the same and in 2 it was made worse. In 2 cases the hearing was 26 feet for a whisper; 7 patients had facial paralysis prior to operation. They all recovered but one, who died with meningitis.

In regard to tuberculosis, I stand with Dr. Stuckey absolutely. In operating on 100 patients some of them must have been tuberculous. Twelve cases were reoperations, the patients coming from other physicians. I reoperated on 5 of my own patients; 2 of them were reoperated on at different times and one is not well yet. Four years ago I saw a patient with double chronic otitis media and recommended this operation when he had an intact labyrinth. I said: "The chances are you will have an improvement of hearing." He wanted me to treat him without operation, but I told him that there was no other treatment. He came back some time afterward with labyrinthine involvement and was operated on and recovered. Another patient in whom hearing was very bad on both sides was operated on and both ears improved.

Dr. E. C. Ellett, Memphis: From what I can gather in regard to this radical operation, from a rather limited experience of my own, but a good deal of observation of the work of others, there are three points of objection to be brought against it. In the first place, it may not stop the suppuration, possibly from the presence of cholesteatoma and possibly from difficulty in healing up the mouth of the tube. A discharge that persists from the mouth of the tube should not be counted too heavily against the operation, as the patient is cured from the dangerous condition. Second, in regard to hearing, favorable reports to the contrary notwithstanding, my own observation is that the radical operation is the funeral of the ear. Third, the possibility of facial paralysis, which no amount of skill can entirely do away with.

With the Heath operation we may not stop the suppuration, which may persist from the tube which no attempt is made to close. The hearing, however, is never made worse and in a majority of cases is much improved. The membrani tympani and ossicles are not disturbed and I have seen as much as one-fourth of the drum regenerate after the operation. There is no possibility of facial paralysis, or at least no more than in the simple mastoid operation. Chronic suppuration in many cases is an antral disease. Therefore, if we drain the antrum well we will cure the suppuration. My conception of the Heath operation is that it is the application of the simple operation to chronic mastoid disease. I think that hearing is conserved by early operation in these cases. In one case of double chronic suppuration which I saw in Mr. Heath's hands one ear had been operated on by another surgeon and the child was deaf in that ear and had facial paralysis. He did his operation on the second ear and suppuration ceased, there was no facial paralysis and perfect hearing was preserved. Many members of this section have seen the excellent collection of temporal bones that Mr. Cheathle exhibited in this country a year ago. A study of them will convince one that so-called osteosclerosis is not the result of chronic suppuration, but the cause of it. It is a type of infantile mastoid in which the cells have not developed.

Dr. A. R. Solenberger, Colorado Springs: Prior to six or seven years ago I never operated on tuberculous otorrheas except by simple curettments. The teaching up to ten years ago, both in Europe and in America, was distinctly against it. However, since I have been in Colorado, where we see more of these cases than in the East and not a few coming to grief, we operate, and in as radical a way as possible. The only differences in the indication for radical work between tuberculous and non-tuberculous cases is the greater consideration of the general condition of the patient, but just such and no more than we would take into account in laryngeal tuberculosis. This done, we get just as uniformly good results. Obviously many patients do not require the most radical procedures.

Dr. George E. Shambaugh, Chicago: It may seem to some that the views expressed here are over-conservative. I would refer those who have this fear to the proceedings of the German Otological Society for 1908. The statement has just been made that whenever a diagnosis of cholesteatoma is made a radical operation on the ear is always indicated. This is hardly the case. There is a vast difference in the character of cholesteatoma. We have all seen cases in which a cholesteatoma discharges itself into the external meatus and the condition is practically cured without an operation.

Dr. S. L. Ledbetter, Birmingham, Ala.: Physicians who practice in large cities and in the clinics have a class of cases that we do not have in country neighborhoods and that probably explains some of the differences of view. I am sure that while I see a number of acute and chronic middle-ear suppurations, I do not have many cases in which it becomes necessary to do a mastoid operation. If properly treated nearly all these patients recover without operation.

Dr. A. B. Duel, New York: The presence of a bacteremia in an otitis without the other conditions which might give rise to it in other parts of the body has been considered an operative indication, even in the absence of other aural symptoms. In a recent paper I showed that in a certain number of the positive cases bacteremia existed which was not accompanied by any clinical symptoms whatever of septic sinus thrombosis. Therefore, it seems to me that it would be impossible for us to accept the dictum that it can be taken as an operative indication in the absence of clinical symptoms.

Dr. B. A. Randall, Philadelphia: Dr. Duel's point should be emphasized; unless we do our intracranial operations generally as explorations we may fail to save our patients; if we wait for clear-cut indications we will often be too late. We must be fairly radical as soon as we feel that we are in the presence of intracranial complications. Abscess of the brain has been shown to be in 80 per cent. of cases immediately in relation to the diseased temporal bone, and without other localizing symptoms we are justified if not compelled to operate on such indications. I believe that some disadvantages of operation are, perhaps, more apparent than real. The facial palsy—which in my paper I, perhaps, cited in unpleasant form, referring to a hospital where 17 per cent. of cases showed facial paralysis—will often be precipitated; the palsy would have occurred spontaneously if it had not been brought on by the operation, and, while the operative palsy is transitory, the other may have been much longer. I would also speak again on the danger of the use of the mallet. I think that the lesions in the brain frequently may be ascribed to the use of the mallet.

Dr. E. A. Crockett, Boston: The principal criticism of my paper seems to be in the matter of operating on tuberculous patients. Tuberculosis of the middle ear and mastoid, not complicated by lung tuberculosis, is found more often than is generally supposed. In a ward for babies in which there are 15 beds I tried the von Pirquet test in all cases, with positive results in 77 per cent. All the mastoids operated on were tested by injecting guinea-pigs and 20 per cent. of the guinea-pigs died with acute tuberculosis. I think that tuberculosis of the middle ear and mastoid without tuberculosis of the lung is much more common than we think. All these patients do well with the simple operation which doesn't take over fifteen minutes, but if the radical operation be undertaken the children will often die of shock or sepsis. I am not against operating on the mastoid of tuberculous patients, but against doing the radical operation in these cases.

I think the technic of the Heath operation more difficult than any operation on the ear that I have tried to perform. The patients who recover with the Heath operation would recover with the old Schwartz operation in which the antrum was kept open until the middle ear was dry. When I have done the Heath operation in the other type of cases I have found the worst mess to do a secondary operation that I have ever encountered. These patients have been very difficult to treat afterward. Heath himself operated on one of my patients while she was in London last summer in July, and I have been seeing her, ever since her return for a continued suppuration, and she is in a far worse condition than any case of acute mastoid trouble that I have ever seen.

INFECTIOUS LABYRINTHITIS

TWO CASES WITH ACCOUNT OF OPERATION*

GEORGE F. COTT, M.D.
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Case 1.—Mrs. E., aged 40, weight 210 pounds.

History.—The patient had had a discharge from the right ear since she was six weeks old; there was nothing left of the membrana tympani. The condition had never given any trouble till shortly before she consulted me. She complained of having had attacks of dizziness, lasting about five minutes each. She had had little sleep for several weeks and sometimes she awakened at night with an attack. Occasionally she vomited, and at times she became nauseated as soon as she awakened. She had also had attacks of fainting.

Examination.—The patient was pale and hysterical. On deep pressure there was pain, principally over the antrum. As soon as the caloric test was begun she screamed and became greatly excited; this test demonstrated some nystagmus. There was impaired coordination, and loss of hearing. Here it was necessary to discriminate between symptoms due to disease of the labyrinth and those due to hysteria. Revolving produced such dizziness that I could not turn the chair half around. Air pressure produced no effect at all.

Operation.—Ordinarily, in such a case as this, I should have hesitated to operate, but in view of the fact that the symptoms complained of were probably subacute following a latent period, I thought it best to give the patient relief at once. Membranes and ossicles were gone. A radical operation was first done; then a great part of the horizontal canal was removed and part of the inferior vertical canal also. I then chiseled behind the knee of the facial canal and entered the vestibule; a probe was then passed from the oval window to the operative field, thus establishing good drainage.

Postoperative History.—After the canal was opened, cerebral fluid began to flow more rapidly than gauze would absorb, but after the operation was completed gauze packing lessened the flow perceptibly; for two days, however, the patient felt it trickling down the Eustachian tube. Five weeks after the operation the patient felt well, though there was some facial paralysis. The ear was perfectly dry.

Case 2.—Miss B., aged 16, a school girl.

History.—The patient's mother died of tuberculous laryngitis, and two sisters had tuberculosis of the bowels. The patient had had a discharge from the left ear since she was ten weeks old, which of late had become intermittent. She had been treated from time to time by different specialists, but without result, and had been told that she would probably outgrow it by the time she was fourteen.

Present Illness.—On May 29, 1906, she had earache, and on the following day she had a severe chill. Three days later she became dizzy and had headache. Ten days after the first attack she had another chill on the train coming to the city and in my office had another severe chill, the temperature going up to 104 F. There was also deep-seated pain on pressure.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Operation.—Operation was done at 9 p. m. the same night. I found a membrane consisting mainly of epithelium and pus cells lining the antrum. Bone was destroyed over the lateral sinus and a quantity of pus was removed from under the dura. The girl made a good recovery and left the hospital in two weeks.

Subsequent History.—Two years later this patient came to my office complaining of dizziness. She was unable to stand without feet apart; was dizzy on waking, and her hearing had been gone for several years. I kept her under observation for two weeks but no improvement was noted.

Diagnosis.—In cleaning out the ear some cheesy matter was removed which proved to be a quantity of cholesteatoma; this led to a decision in favor of operation. Here was a latent labyrinthitis followed by a subacute condition which would certainly cause further trouble.

Second Operation.—The same operation was performed as in Case 1, except drainage of the vestibule. The lateral sinus having been perforated, it became necessary to plug it, and consequently it was difficult to remove enough bone to make room for the chisel to work under the facial canal, so there was no communication made with the vestibule, but the promontory was chiseled away aand thus drainage established through cochlea, and canals.

Result.—The patient left the hospital in two weeks, still suffering from vertigo. I have seen her several times since and found her in good health, though with occasional headaches and sometimes some dizziness.

In both of these cases I might have waited for succeeding attacks, for in both cases there was labyrinthitis, while the organ of Corti had lost its function years ago through the disease of the middle ear, without producing any of the acute labyrinthine symptoms, unless they were entirely overlooked. When cholesteatoma is present, however, there is always danger of infecting the labyrinth, and one is justified in draining the internal ear.

DIAGNOSIS

These patients complain of great dizziness, moving of objects in one direction and sensation of body movement in opposite, usually going around, nausea and sometimes even vomiting. There is spontaneous nystagmus toward both sides. After two or three days (perhaps weeks, depending upon virulence) they enter the second stage, and nystagmus is toward the diseased side only; dizziness continues, irritability of the semicircular canals is increased and hearing is plus. If resolution does not take place the disease enters on the third stage. Nystagmus is then toward the sound or healthy side, vertigo is still present, irritability decreased and hearing is lost. After a few days nystagmus again becomes of equal degree on both sides in the fourth stage but dizziness is absent, irritability of the semicircular canals and hearing are gone. When nystagmus ceases the fifth stage is entered on, in which nystagmus, vertigo, irritability and hearing are all absent. (The normal ear has no nystagmus or dizziness, irritability normal and hearing plus.)

If the caloric test is applied in the third stage no reaction is noticed. This verifies the diagnosis of destruction of the labyrinth.

The first two stages, which show increased irritability to diseased side, belong to the variety called perilabyrinthitis. The change in nystagmus to the sound side and lessened excitability of the semicircular canals are distinctly endolabyrinthine. The first two stages of perilabyrinthitis may be, and in the majority of cases are, due to a fistula or circumscribed disease of the bony canal, while in the three last stages the disease becomes diffuse and always finally destroys hearing.

If the disease is checked, instead of going through these regular stages, it becomes latent, to be succeeded sooner or later by a second or third attack, and so on. When the symptoms are not so severe as above described, and the patient is able to walk, he usually walks with the feet wide apart to keep from falling; the feet are placed in the same position when standing still. When they are placed together, that is, the sides touching each other, the patient usually inclines toward the affected side and, with the eyes closed, will fall toward the diseased side. This will be more marked when the patient is trying to stand on one foot, but more especially so when the foot employed is the one on the diseased side. After all these symptoms have passed off and the patient has entered the latent stage there still are means to ascertain the status of the disease, for the patient may believe himself perfectly well.

At first then we have the perilabyrinth affected but when through a fistula or carious process the endolabyrinth becomes involved and the process having been slow we get symptoms of approaching destruction of the semicircular canals which invariably affects the cochlea also, dizziness gradually vanishes. However, dizziness exists so long as nystagmus is directed to one side alone. As soon as the labyrinth becomes affected there are vertigo and disturbance of equilibration.

Barany says: These symptoms may be due to other causes but when they are of vestibular origin we can alter the fall of the patient by changing the position of the head; the patient is not conscious of the fact that he is not performing the test normally and can not retain his equilibrium by touching a stationary object.

Labyrinthine vertigo may and often does come on even during sleep, (the vertigo sometimes is so severe that nausea is produced, and even vomiting) or on rising from the bed or on performing any rapid movement of the head and lasts from a few minutes to half an hour or more. Slight attacks lasting from a few seconds to several minutes do not necessarily signify endolabyrinthitis but may be noticed in the latent stage and therefore are suspicious. Sometimes external causes affect a diseased labyrinth markedly, such as rapid movements of the head, stooping and rising, drinking spirits, or smoking and are accompanied by nystagmus. In vertigo, not labyrinthine, the patient often complains of everything getting dark and involuntarily closes the eyes, but this variety does not come on during sleep. Therefore the cardinal symptoms of suppurative labyrinthitis are spontaneous nystagmus, vertigo, increased irritability of the canals, or decreased if the endo-sac is involved.

In the latent stage, a patient may be examined at the office and even in the acute stage he is often able with a little assistance to call on his physician. The actions of the patient are peculiar in every case. He may waddle as though topheavy, instead of walking, his feet may be far apart and, he may state that everything is going around or that he is moving around the room and the furniture seems to remain still. He may walk steadily but when attempting to stand on one foot, on the side of the diseased ear, he will fall always toward the side of the disease. Von Stein's test of jumping backward is favorable only in some patients and during the latent stage. When one can make use of it the patient will jump backward with separated feet deviating from a straight line, such deviation being toward the diseased side and the energy with which the patient begins jumping becomes markedly less with the fourth or fifth jump.

If one side is normal, it may be tested and found to produce on turning, nystagmus up to forty seconds, possibly but thirty or even only twenty-five seconds. Whichever it is, the diseased ear, will be much more than normal. If the endolabyrinth is involved the opposite will be the rule. Whatever the normal is, the diseased side will be lower by more than one-half, as perhaps from five or eight to thirty.

When the patient has become hysterical from long suffering with suppuration or anxiety, the caloric test may call forth a scream and violent sobbing, this must not draw the attention of the physician from the real work in hand; also revolving an hysterical patient seems almost intolerable and puts him or her into a terrible fright.

The caloric test is applied with water that is above or below the body temperature. A few ounces in a Politzer bag is thrown into the ear against the upper wall of the meatus through an attic nozzle; it takes one or two minutes to empty the bag; the eyes looking straight ahead are watched and nystagmus is soon observed.

The revolving test is simple and can be carried out in the office while the caloric test may be used at the bedside. It has been found that turning a patient ten times on a revolving chair gives most accurate results.

TABLE OF ALEXANDER

Stages.	1	2	3	4	5
Spontaneous nystagmus	Toward both sides.	To diseased side.	To good side.	Toward both sides.	Gone.
Vertigo	Present.	Present.	Less.	Going.	Gone.
Irritability of semicircular canals.	Increased.	Increased.	Decreased.	Less.	Gone.
Hearing	Plus.	Plus.	Gone.	Gone.	Gone.

Barany says: After rotating neurasthenics, they will complain that the vertigo produced is more violent than the spontaneous variety but on bending the head forward during the turning no difference will be noticed.

In a fistula or circumscribed inflammation of the vestibular tract rapid head movements produce more violent dizziness than in hysterical patients. It is even possible by throwing the head backwards to produce nystagmus toward the affected side with vertigo (perilabyrinthitis).

The table of Alexander presents graphically the five stages of labyrinthine infection. The first two stages refer to perilabyrinthitis and the last three to endolabyrinthitis always due to suppuration of the middle ear. A tumor of the auditory nerve would present the same condition. The otologist sees the patient in any of these stages. The disease may stop at any stage and become latent for awhile then start up again, and so on.

To recapitulate: Revolve patient ten times toward the left when the right ear is affected, and, on stopping, nystagmus will be toward the right side, that is the slow movement of the eyes toward the left and the rapid movements toward the right side. Nystagmus above normal as compared with the healthy side indicates perilabyrinthitis. If the movements of the eyes are below normal say from five to ten seconds only, it indicates endolabyrinthitis.

In the caloric test, cool or cold water if injected into the affected ear in the second stage will produce nystagmus toward the good side. Hot water will also produce nystagmus but to diseased side. Air-pressure nystagmus with the Politzer bag, according to Barany, when perceptible, and the caloric test is positive is indicative of fistula.

In using galvanism, the anode in front of the right ear, 10 to 12 milliamperes, produces rotatory nystagmus toward the left while the cathode will have the opposite effect.

It is difficult to maintain the body erect when placing one foot before the other (Jansen). Standing on one or both feet with eyes closed is practically impossible (Rhomberg), and often the patient stands with feet apart to keep from falling.

Dizziness occurring during sleep and on rapid movements lasting a few minutes to thirty or more is a valuable diagnostic sign.

INDICATIONS FOR OPERATION

In acute suppuration of the labyrinth, when there is vertigo, nystagmus to good side, and decreased irritability, fever, headache, foul secretion, pain in mastoid or periosteal abscess, the radical operation is first performed followed at the same sitting by removal of semicircular canal or canals and drainage through the oval window.

If the patient is not in immediate danger we may wait until the more acute stage has subsided, then both operations should be done at once; for in just these cases if the radical operation only is performed, postoperative meningitis is most liable to occur.

In fistula or the circumscribed variety of labyrinthitis middle ear exenteration often causes healing without touching the canals or vestibule. If diffuse symptoms follow, the labyrinth must be drained.

Hearing must be taken into account. When it is bad or gone the cochlea must not be considered at all; when good it is better to hesitate, for the patient may recover, as the disease has not yet reached the inner side of the sac. If the patient's hearing is bad in the healthy ear and better in the diseased, drainage of the vestibule or destruction of the canals must not be considered because hearing is always destroyed by the operation.

Alexander's rule is never to operate on a labyrinth when there is hearing or when there is normal or increased irritability of the vestibular apparatus.

So long as a fistula or even exterior caries keeps the condition circumscribed and hearing is conserved the radical operation alone is often sufficient. When, however, hearing has already been destroyed there is no reason for sparing the vestibule or canals and thus taking chances on recurrence or new lighting up of the labyrinth infection.

To drain by the vestibule alone seems to me to invite further trouble unless it is distinctly shown that a fistula exists, perhaps through the promontory, or the cochlea that is carious. When infection has entered through the oval window there is every reason to believe that it is better to drain the canals as well as the vestible. At any rate, whichever operation is decided on, the patient should be closely watched for several weeks and if necessary the more extensive operation should be done.

RESULTS

I believe with others—Politzer, Jansen, Alexander, Neuman, Barany, etc.—that the operation is not in itself dangerous but patients often die from too long delay. The results ought to be uniformly good barring complications.

Serous labyrinthitis sometimes occurs after a radical operation which has most of the symptoms of the suppurative variety with deafness to all sounds but the high forks, and recovery is complete in a week or ten days, without interference.

Intercurrent attacks no doubt occur in fistula or as a forerunner of later and more severe infections.

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ABSTRACT OF DISCUSSION

Dr. J. Holinger, Chicago: Before we irredeemably destroy a patient's labyrinth, we ought to make a more careful examination of the real condition. For example, Dr. Cott says: "The first patient complains of dizziness for a short time and is sometimes awakened in the night with an attack." All these things can be produced by simple occlusion of the tube. For instance, I saw a woman of 54, four times, at intervals of one week, and every time she had these same symptoms, dizziness, vertigo, vomiting, headache, swelling over the mastoid, pain on pressure. She could not stand on her feet; could not walk from the bed to a chair. On simple inflation with the Eustachian catheter she was relieved and without help walked back to her room. Afterward a surgeon was called and he promptly operated. Six weeks after that I saw the patient again, the wound was not healed, and all the symptoms were just as before. I took her to the hospital and gave her about eight catheterizations of the tube. Her condition improved promptly. I repeat, therefore, that all symptoms the Doctor mentioned do not prove affection of the labyrinth, and do not justify its destruction. They may be caused by occlusion of the tube.

In the second case there is nothing said as to the findings of the drum dead, nothing as to the pulse and temperature. Therefore, we unfortunately are not able to judge whether the Doctor's diagnosis and indications for operation are correct. The proofs of labyrinthitis in these cases I do not think have been given. The hearing tests are absolutely left out and I think if we want to know anything about the labyrinth we must have complete hearing tests.

Dr. Cott: There was no hearing.

Dr. Holinger: Hundreds of people have been treated as deaf mutes and then we find they do have considerable hearing after proper tests are made. I do not believe that from this paper we can get clear ideas on the subject. We have to study and digest carefully every point of this difficult question. The paper shows that the whole question of surgery of the labyrinth is much more complicated than it looks at first sight. The entering of the labyrinth with our instruments destroys every function of this most necessary and interesting organ, it involves a mutilation of the patient which ought not to be undertaken unless every means have been tried to avoid it. Conservative methods will often preserve a useful quantity of hearing otherwise destroyed in over-zealous attempts at radical surgery which is not indicated in slowly progressing chronic suppurations, since they usually have time enough to limit themselves.

Dr. J. R. Fletcher, Chicago: I have read the presessional print and listened to the reading of this paper. It is one certainly not to go unchallenged. The essayist speaks of labyrinthitis without the presence of labyrinth symptoms, or if present, overlooked. They must have been overlooked, as nystagmus, at least, is always present, from the very beginning of a labyrinthitis. Some form of labyrinthitis can be diagnosed from this symptom alone, when the disease follows a chronic suppurative otitis media. In the initial stage of labyrinthitis, and so long as it remains circumscribed, attacks of nystagmus will occur, varying in duration and severity. The quick movement is directed to the diseased side and not to both sides, as stated by Dr. Cott. When the irritability of one labyrinth has been decreased by the disease becoming diffuse, the nystagmus changes its direction to the sound side, but can at this time be produced toward the diseased side also by irrigating the tympanic cavity with warm water; the nystagmus directed to the sound side, however, will be the stronger. Spontaneous vestibular nystagmus directed toward both sides is of intracranial origin. Usually the nystagmus of intracranial origin is directed to the diseased side. The difference between nystagmus of intracranial and that of labyrinthine origin is that the intracranial appears relatively late in the disease. When the nystagmus, after changing from the diseased to the sound side, at the time of destruction of the labyrinth, swings back to the diseased side, meningitis or abscess in the posterior fossa may at once be diagnosed.

In all these cases the nystagmus is of the rhythmic vestibular type, as contradistinguished from the undulating, or ocular type. The rotary element is always present, though the nystagmus may be compound, that is involving more than one plane. The important symptom of nystagmus is sometimes overlooked because the eye is not observed in the extreme lateral position. The nystagmus may be so slight that unless this is done it is not seen. If we remember that one of the characteristics of the vestibular type is that it is increased by looking in the direction of the quick component and decreased or stopped completely by looking in the direction of the slow component, the symptom will not be overlooked. Before Bárány insisted on thus examining the eyes, a number of competent observers had reported the absence of nystagmus in cases in which it must have been present. It is on this account, and because of my great interest in the subject that my remarks have been confined to nystagmus. The mention of the presence of nygstagmus without stating its direction and plane is of no value.

Dr. Philip D. Kerrison, New York: Dr. Cott's paper seems to me to be in some respects misleading, and for the following reasons: In the first place, the symptoms he recounts in the two histories given are not those usually regarded as justifying a diagnosis of labyrinthitis; and, second, the operation described in connection with the second case is not generally held to be advisable. In discussing these histories, we must consider what positive symptoms are mentioned, and their value as pointing to labyrinthitis.

In Case 1, the patient was a woman, 40 years old, pale and hysterical. As positive symptoms we are told that (1) "she had had attacks of dizziness," (2) she had occasionally vomited and (3) there had been attacks of syncope. She had no spontaneous nystagmus. Attacks of dizziness without nystagmus are not characteristic of labyrinthitis. Vomiting is usually a symptom of the onset, continuing fairly constantly for a day or two, then stopping wholly. Attacks of syncope are decidedly not characteristic of labyrinthitis. In this case the caloric test was followed by great excitement and screaming, and also caused nystagmus and disturbed equilibrium. The excitement and screaming are characteristic of hysteria, while the nystagmus and ataxia must be regarded as evidence of an intact labyrinth. The symptoms in this case do not indicate suppurative labyrinthitis.

In Case 2, a girl of 16 years, on whom a mastoidectomy had been performed two years previously, came to the office complaining of dizziness, and could not stand except with feet well apart. There is no mention of spontaneous nystagmus; and no caloric test was made. Rotation produced nystagmus; it always does if one labyrinth is intact. If in this case the caloric reaction had been tested and found absent, we would have had something to go on. As it is, I can find no symptoms justifying a diagnosis of labyrinthitis.

In Case 2, Dr. Cott, owing to an accidental opening of the lateral sinus, did not open the vestibule, contenting himself with opening the cochlea by removing the promontory wall. This is not considered ever to be justifiable. Hinsberg, Jansen, Neumann, Bárány, Richards—all who have done recognized work in labyrinthitis—agree that the vestibule should always be opened. This constitutes one of the first essential points of the operation, its importance resting on two facts, viz.: (1) that it secures free drainage from the vestibule, which is always involved in suppurative labyrinthitis, and (2) that it enables the surgeon to destroy the membranous structures of the vestibular apparatus, which is an essential point in controlling permanently vestibular symptoms.

DR. S. MACCUEN SMITH, Philadelphia: When it comes to treatment, I believe, as in all other cases, the first thing is to make our diagnosis, and this, notwithstanding our tests, is often very difficult to accomplish in this class of cases. In some instances it might appear that these patients would require operation, and yet a great many will recover spontaneously if we perform the radical mastoid operation and then treat the case by more simple methods, so that, notwithstanding Dr. Cott's brilliant results, I would offer a plea for considerable conservatism in most of these cases, especially at the hands of those more or less inexperienced in this line of work. I was interested in noting that the majority of his cases come from the recurrent type of suppurative otitis media. In my experience, the majority of intracranial complications arise from this particular form of disease.

DR. GEORGE SHAMBAUGH, Chicago: This discussion has brought out several points which it is well to have emphasized. The first is that the interpretation of labyrinth symptoms and the correct diagnosis of labyrinth conditions is by no means a simple matter. To make such a diagnosis, a clear understanding of the physiology and of the pathology of the labyrinth is necessary. The second point that the discussion has emphasized is that the practice of otology is a good deal more than the application of the principles of general surgery to the mastoid region. To carry out successfully the surgical measures necessary to relieve complications in and about the mastoid, the middle ear, and the labyrinth, requires not only skill in carrying out the difficult technical examinations of the ear, but requires also an intimate acquaintance with the complicated anatomic relations of this part. The tendency of the general surgeons to undertake aural surgery is to be deprecated for the reason that they are not trained in otologic technic and can seldom make an accurate diagnosis, nor have they as a rule mastered the anatomic details of this region, without which serious injuries are readily caused.

DR. OTTO GLOGAU, New York: It is important to have all or at least most of the symptoms before we consider operation on the labyrinth indicated; nystagmus, impairment of hearing, disturbances of equilibrium, dizziness, nausea, fever, etc., and it is especially important to have the tuning fork test. I would like to mention one case in which all the symptoms were present and yet there was no suppuration of the labyrinth. They were the so-called pressure symptoms. The indication for operation was there and only by opening the neo-membrane which had formed in place of the destroyed drum and the evacuation of the pus was the diagnosis made. It is probably not well to be too conservative. I saw one patient who had been operated on for mastoiditis and after a few weeks developed symptoms of labyrinthitis. The man was not examined properly and by three physicians a diagnosis was made of cerebral tumor. I operated on the patient's labyrinth and now, some months after, he is all right. I would impress on you that in the Mount Sinai Dispensary we now examine every case of suspicious chronic suppurative otitis media for the so-called labyrinthine symptoms, which are very important because often we can detect a starting involvement of the labyrinth before there is a more serious complication. When all the symptoms have developed it is almost too late for treatment. I think it would be very interesting if every case of chronic suppurative otitis media were examined in this way.

DR. F. I. BROWN, Chicago: I would like to speak of a case somewhat parallel to the one reported by the last speaker. It is impossible to judge from any one case just what should be done. We must have a collection of cases before we can arrive at any definite conclusions. This was a case which would have been put down as one of operative labyrinthitis. A radical mastoid was done and in three months' time the patient came back for internal operation. During the interval there was no cessation of symptoms but they all progressed steadily and the man begged for relief. The second operation gave immediate relief. I was present at both of Dr. Cott's cases. It seems to me that with a rapidly progressive perilabyrinthitis Dr. Cott was justified in operating. The great lessons for us to learn are not so much when to operate as when it is best not to do any operation at all on the middle ear without at the same time operating on the internal ear.

DR. B. A. RANDALL, Philadelphia: One will find that with the personal equation that is so important in the examiner there is also a large personal equation in the examined, and hysterical and other elements may largely complicate the findings; and one need but turn to the studies in the Vienna Otologic Society to see that these men who rank as experts find many difficult cases and that it is not all plain sailing for them. The matter is difficult and will remain so.

DR. G. F. COTT, Buffalo: I wish to thank the gentlemen who criticized me most severely and most adversely. It is a good stimulus and will help a man to do better work. Dr. Brown and I went into these cases very thoroughly during the last eight months and were satisfied with what we were doing and that it was right to operate. I simply wanted to give an idea in my paper how to make a diagnosis in these cases of infectious labyrinthitis due to suppuration of the middle ear. Dr. Kerrison has given a paper on this subject which took into consideration almost the entire category of symptoms. I therefore left out most of the theoretical part.

Dr. Holinger claims that these symptoms may be present with Eustachian tube occlusion; that is impossible, so far as the labyrinthine vertigo is concerned. I know of two patients treated expectantly because of the mistaken idea that the symptoms might be due to some other cause and both patients died. Perilabyrinthitis and endolabyrinthitis have absolute and definite symptoms and must not be mistaken for anything else.

Jansen is the only man who has had any great experience with suppurative labyrinthitis, having operated over 100 times with a death rate of 29 per cent. Such a mortality will be cut down very much with the more definite symptoms to guide us.

I do not lay any stress on temperature; the probabilities are that one will have no rise of temperature or a very little. I am familiar with the work in Vienna, having visited that city last year and gone over the matter thoroughly. As to the cholesteatoma deciding the diagnosis, it did not, but it decided that if I did not operate the patient would sooner or later succumb. I did not drain the vestibule in this young patient because after I had punctured the lateral sinus I could not remove enough bone to lay the vestibule bare; therefore I took off a part of the posterior and horizontal semicircular canals and opened through the oval window. This course was justified, as the result shows.

PEMPHIGUS NEONATORUM, OR BULLOUS IMPETIGO CONTAGIOSA OF THE NEW-BORN*

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Pemphigus neonatorum was first described as an independent disease by Oehme in 1773. Previous to that time it had been confounded with syphilis, and until almost the middle of the last century there were many who still considered it as syphilitic in origin. Writers on the subject gave prominence to the bullous character of the affection, to its frequent occurrence in epidemics—especially in obstetric wards, foundling asylums, and in the practice of midwives—and to its variable course, benign in some instances, and in others presenting an alarming mortality. The latter observation early led to its division into a benign and malignant form. The possibility of a transference of the disease from infants to other children or to adults was also noted, and many writers observed that transmission to older children or adults resulted in a decided change in the clinical character of the affection. This alteration in character is striking; it appears strange that it has not aroused more attention until a comparatively recent date.

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Although many instances of an association of pemphigus neonatorum and impetigo contagiosa have been recorded, the possible identity of the two affections has not been given sufficient prominence in English dermatologic literature. In fact, a review of recent contributions to this subject shows that many entirely overlook or disregard the existence of any relation between the two diseases, so that a discussion of the question at this time is justified.

Pemphigus neonatorum is a contagious disease which affects the new-born at a variable period after birth and is characterized by the rapid development on various parts of the body surface, usually on an erythematous base, of more or less numerous flat vesicles or semiglobular bullæ with clear or purulent contents, which rupture readily, leaving a moist, red, smooth, generally circular defect in the uppermost layers of the epidermis, usually with extensive undermining at the periphery, and which heal without a scar; any constitutional symptoms, if present at all, being a result of the denudation of extensive portions of the body surface, or due to supervening infection, rather than an integral part of the disease.

It often appears in epidemic form, especially in foundling asylums, obstetric wards, or in the practice of midwives; and isolated instances of its appearance are frequent. The recognition of a benign and a malignant form is based on the observation that in some instances but few lesions develop and a correspondingly small extent of the cutaneous surface is involved, constitutional symptoms are entirely absent, and rapid healing occurs; while in other cases the disease develops with extraordinary rapidity and affects almost the entire cutaneous surface, the infant succumbing often within a day or two after the first manifestations of the disease. It is a remarkable fact that in these rapidly fatal cases there is often but little evidence of constitutional disturbance. Evidences of constitutional involvement are occasionally found, however, in a rise of temperature, diarrhea, or symptoms of general exhaustion.

Fehling[1] says that the appearance of fever is indicative of complications, such as furuncles, abscesses, and follicular intestinal catarrh.

Among the cases that have contributed to the establishment of the so-called malignant form, in which constitutional symptoms are generally present to a marked degree, are many that do not properly belong here, as they are bullous exanthemata occurring in the course of septic conditions. Such are the cases of Staub,[2] in which the mother had pyemia; Peter,[2] in which the mother suffered from puerperal sepsis, and the *Staphylococcus aureus* and *albus* and a diplococcus were found in the circulating blood of the infant, and Prissmann,[3] who remarks that his case of malignant gangrenous pemphigus neonatorum may be a genuine septic process.

Bullous eruptions in the new-born appearing in the course of septicemic conditions originating in the infected umbilicus are likewise to be excluded from among the cases of pemphigus neonatorum, as they are also septic eruptions. Trautenroth's[4] case of pemphigus neonatorum periumbilicalis, in which a ring of bullæ surrounded the purulent remains of the cord, is the result of local infection and probably similar in nature to impetiginous lesions that form about the mouths of children with a purulent nasal secretion.

The disease at one time appeared in epidemic form very frequently; asepsis and antisepsis are responsible for its comparative rarity at the present time, though occasional reports of small epidemics are found in recent literature. The contagious character of the disease was recognized early, and there is no lack of reports of its occurrence in epidemics. An epidemic of "pemphigus acutus," affecting ninety-four infants in the Leipsic Obstetrical Clinic, was reported by Moldenhauer[5] and was in all likelihood a continuation of an epidemic of "pemphigus contagiosus" reported by Klemm,[6] in which twenty-six cases occurred, chiefly among older children. From the description of the epidemics it can reasonably be assumed that they were instances of impetigo contagiosa. Faber declares that, had impetigo been known as such, these would have been called impetigo.

The epidemic described by Almquist,[7] in which of 216 children born in the maternity at Göteberg during a period of three and a half months 134 developed pemphigus neonatorum and none died, was probably in largest part impetigo contagiosa. Small epidemics without fatalities have been described in this country by Kilham.[8]

In 1890 Knut Faber observed a case of pemphigus neonatorum that was directly traceable to an impetigo contagiosa on the face of the mother; another infant, nursed by the same woman, developed pemphigus neonatorum and caused an impetigo contagiosa on its own mother's face. In an analytic paper on the reported cases Faber[9] declares the two diseases to be identical, and the variation in the clinical manifestations dependent on the age of those affected. Jonathan Hutchinson[10] observed an epidemic in the maternity of a workhouse, which was called "pemphigus" by the house physician because of "its distinct vesicating character." He concluded, however, that "the cases are of the same nature as those to which the term impetigo contagiosa has been given." Matzenauer[11] likewise considers pemphigus neonatorum and impetigo contagiosa to be identical diseases. He observed that pemphigus neonatorum developed in an infant whose mother was affected with impetigo contagiosa. Carefully conducted bacteriologic and histologic examinations of both diseases gave identical results.

Grindon[12] reports a fatal case of impetigo contagiosa bullosa, the infant having contracted the disease from the father, who was affected with impetigo contagiosa. The clinical description is entirely that of a malignant form of pemphigus neonatorum. "Besides the father, a brother, aged 4, a sister, aged 3, and the nurse in attendance on the infant contracted the affliction in typical form."

A most exhaustive study of the literature of pemphigus neonatorum has been made by Richter,[13] who concludes that pemphigus neonatorum appears to stand in etiologic connection with impetigo contagiosa.

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[1] Fehling: Arch. f. Gyn., vi, 388.

[2] Staub: Berl. klin. Wchnschr., 1893, p. 49. Peter: Berl. klin. Wchnschr., 1896, p. 124.

[3] Prissmann: Petersburg. Med. Wchnschr., 1903, p. 503.

[4] Trautenroth: Dissertation, Marburg, 1892.

[5] Moldenhauer: Arch. f. Gyn., 1874, p. 369.

[6] Klemm: Deutsch. Arch. f. klin. Med., 1871, p. 199.

[7] Almquist: Ztschr. f. Hyg., 1891, p. 253.

[8] Kilham: Am. Jour. Obst., 1904, p. 473.

[9] Faber: Monatsh. f. prakt. Dermat., 1890, p. 253.

[10] Hutchinson: Arch. Surg., 1892, iii, 206.

[11] Matzenauer: Wien. klin. Wchnschr., 1900, p. 1077.

[12] Grindon: Jour. Cutan. Dis., 1901, p. 190.

[13] Richter: Dermat. Ztschr., 1901, p. 507.

Whitfield[14] observed the development of a lesion of impetigo contagiosa on the forehead of a mother two days after her child had become affected with pemphigus neonatorum. Pemphigus neonatorum and impetigo contagiosa are considered by him as identical.

Engmann[15] speaks of "eight cases of typical bullous impetigo in infants," and appears to believe in the identity of the two diseases.

Hengge[16] describes a small epidemic in which the original source of infection was the lochial discharge of a mother, vesicles and small furuncles developing in the anal cleft. This woman's child developed pemphigus. The wet-nurse contracted the disease on both breasts and transmitted it to two other infants. A fourth child exhibited in clinic (to demonstrate the compression of the skull following delivery through a narrow pelvis) in conjunction with one of the pemphigus cases, two days later developed an eruption of pemphigus vesicles limited to the scalp. In the first five cases numerous small furuncles developed one to three days after the vesicular eruption, and in the two cases these were the most prominent part of the clinical picture. In all six cases the *Staphylococcus aureus* was found in pure culture in the vesicles and furuncles. Hengge remarks that the combination of pemphigus neonatorum and furunculosis points to an intimate relation between pemphigus neonatorum and impetigo contagiosa.

Others (among them Löwly, Luithen, Clegg and Wherry) have contributed similar observations, and there now appears to be sufficient evidence at hand to warrant insistance on the proper recognition of pemphigus neonatorum as simply a bullous infantile variant of impetigo contagiosa and elimination of the confusing term "pemphigus" when this affection is under discussion.

Of especial interest is the occurrence of epidemics in families, for under these conditions the variation in the clinical picture of the infection as it assumes the characteristics of impetigo contagiosa or those of pemphigus neonatorum are best observed. Among the many reported instances of contagion in families Grindon's[12] observation of the development of pemphigus neonatorum in an infant whose father was affected with impetigo contagiosa and spread of the impetigo to two other children, as also the development of typical impetigo contagiosa in the nurse (who presumably contracted the disease from the infant), is a most striking evidence of the identity of the two diseases. Within the past six years I have had the opportunity of observing thirty-four cases of pemphigus neonatorum. In several instances members of the family or the nurse in attendance developed typical lesions of impetigo contagiosa on the arms or the face—an infection undoubtedly attributable to contact with the infant.

Olson[17] directs especial attention to his observation that the lesions in the infant first appeared on the neck and at the border of the pectoralis major muscle—regions which were pressed by the arms of the midwife, who probably conveyed the infection; and also, that the primary lesions were located on the midwife's forearms, on which the child rested during its bath. Although most of the cases observed by me occurred in the practice of midwives, among whom it is customary to attend personally to the infant's bath, I was never able to trace such direct connection.

Experimental inoculations, performed to reproduce the disease or for bacteriologic purposes, have been frequently made, and almost exclusively on adults. Direct inoculations with the contents of blebs have resulted in the formation within a variable number of hours, on an erythematous surface, of single vesicular lesions, with clear contents rapidly becoming turbid, and often pustular, and drying into crusts. Numerous inoculations have been made with pure cultures of micro-organisms obtained from the lesions, with varying results. In some an erythema was produced at the site of inoculation, others succeeded in producing vesicles or blebs. Engmann[15] inoculated into the skin of his arm the third generation of a pure culture of *Staphylococcus aureus* obtained from cases of typical bullous impetigo in infants. "Within two days a clear vesicle had formed . . . from which was obtained a pure culture of the . . . same organism inoculated."

Several inoculations into the skin of my own arm of the serous and purulent contents of blebs from cases of pemphigus neonatorum, and one inoculation of a pure culture of *Staphylococcus pyogenes aureus* grown on blood serum, were uniformly negative.

Midwives as carriers of the infection have received the attention of most writers, and, in fact, the majority of the recorded epidemics occurred in the practice of midwives or originated there. Moldenhauer,[5] in his report of the epidemic previously mentioned, in which 96 infants were affected, instances infections by midwives in the institution. Dohrn[18] reports that a midwife had 27 cases among 114 births and carried the infection to a maternity in another city. Wichmann[19] reports 22 cases of infants delivered by the same midwife. Zechmeister[20] observed an epidemic affecting 28 of 76 infants delivered by a midwife, who continued to spread the disease for more than a year. Almquist[7] reports 7 cases in 21 infants born under the care of one midwife; Platon,[21] 25 cases; Jukowsky,[22] 12 cases; Brosin,[23] 18 cases in a total of 64 confinements by two midwives.

In the United States this mode of spread is less frequent. Corlett[24] reports 2 fatal cases in the practice of one midwife. I have had the opportunity to observe 34 instances of the disease in Milwaukee. Four occurred in the practice of one midwife, 2 in the practice of another, and most of the remaining 28 were isolated cases in the practice of various midwives. During my attendance on these cases I learned of numerous other instances of the disease, usually in the practice of the same midwife who had attended the confinement of the mother volunteering the information. Milwaukee is a city with a large proportion of German and Polish inhabitants, who are very partial to midwives. Of the total of 7,546 births in the city during 1904, 4,354 were reported by midwives and 3,192 by physicians, which may account for the relative greater frequency of pemphigus neonatorum in Milwaukee. One midwife informed me that she had been "followed by the disease" for several months in spite of all her attempts to overcome the infection. After she had provided herself with entirely new clothing and a new obstetrical outfit the disease disappeared from her practice.

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[14] Whitfield: Brit. Jour. Dermat., 1903, p. 218.

[15] Engmann: Jour. Cutan. Dis., 1901, p. 180.

[16] Hengge: Monatsschr. f. Geburtsh. u. Gyn., 1904, xix, 53.

[17] Olsen: Abstr in Centralbl. f. Dermat., 1900, p. 137.

[18] Dohrn: Arch. f. Gyn., 1876, p. 589; 1877, p. 567.

[19] Wichmann: Abstr. in Arch. f. Dermat. u. Syph., 1888, p. 423.

[20] Zechmeister: München. med. Wchnschr., 1887, p. 737.

[21] Platon: Abstr. in Centralbl. f. Dermat., 1900, p. 137.

[22] Jukowsky: Abstr. Brit. Jour. of Dermat., 1891, p. 368.

[23] Brosin: Ztschr. f. Geburtsch. u. Gyn., 1899, p. 418.

[24] Corlett: Am. Jour. Med. Sc., 1894, p. 413.

The persistence of the disease in institutions and the practice of midwives for prolonged periods is an evidence of the ability of the causative agent to resist ordinary destructive influences. Reports of the tenacity with which it adheres to wearing apparel are furnished by Scandinavian writers. Wichmann[19] traced the origin of an epidemic in which 22 infants were affected to the woolen mittens of a midwife, in which the infective agent was harbored for a long period. During this epidemic five persons were infected by the use of the same sponge. Holst[25] also attributes the origin of an epidemic affecting five children to the midwife's infected woolen mitten. The midwife had had three cases of pemphigus neonatorum, after which the mitten was put away for a year. Shortly after it was used again the new case developed. Erichson[26] relates the case of a midwife in whose practice pemphigus neonatorum was epidemic. The health board insisted on a thorough disinfection and provided her with new clothing; the discarded garments were packed in two boxes. The epidemic ceased, but after a time reappeared. It was found that one box had been broken open, and Erichson believes that the disease started afresh whenever the midwife removed an old dress from the box. Experiments conducted by Almquist[7] proved cultures of the micro-organism obtained from bullæ, when dried on silk threads, to be viable after one and one-half months.

The frequency with which pemphigus neonatorum occurs in the practice of midwives, and its frequently high mortality rate, have led some writers (Zechmeister,[20] Hengge,[16] Bloch[27]) to advocate compulsory notification of the disease by midwives, and the immediate report of all births attended by midwives who have recently had cases of pemphigus neonatorum. The revised Prussian text-book for midwives (1900) instructs the midwife concerning the contagious character of pemphigus neonatorum and makes it obligatory to report at once to the district physician any case occurring in her practice.

Some sort of municipal control ought to be established over the disease as it appears in the practice of midwives. It is desirable, in my opinion, to secure the establishment of a municipal ordinance requiring midwives to notify the health authorities of all cases of pemphigus neonatorum appearing in their practice and the immediate report of all births attended by midwives who have recently had cases of the disease.

Although a large majority of the cases encountered are benign in character, the disease in some instances shows a mortality rate that is appalling. Zechmeister reports 28 cases, with 6 deaths; Wichmann, 22 cases, 3 deaths; Janovsky, 12 cases, 4 deaths; Brosin, 18 cases, 7 deaths; Platon,[21] 25 cases, 12 deaths; Host, 5 cases, 2 deaths. Of the 34 cases observed by me 5 ended in death. A disease which at times has a mortality rate of between 10 and 50 per cent. and which is to a large extent preventable is a proper object for municipal control.

Numerous attempts have been made to associate a definite micro-organism with the disease as its causative agent. The results of different investigators are, however, not in accord. The *Staphylococcus pyogenes aureus* in pure culture in the contents of vesicles or bullæ has been found by Hengge, Brosin, Löwly, Maguire,[28] Call, Engmann and Matzenauer. Almquist isolated a diplococcus from the contents of the bullæ, which in its growth on artificial media closely resembles the *Staphylococcus aureus*, but when inoculated into the skin produces bullæ. He considers this organism to be the causative agent and named it *Micrococcus pemphigi neonatorum*. Clegg and Wherry[29] made a bacteriologic study of five cases in the Civil Hospital at Manila, and in all cases isolated the micro-organism described by Almquist. Inoculation of the skin with the organism resulted in the production of several small vesicles. Some investigators, Bloch, Whitfield[14] and McLeod[30] have found the *Streptococcus pyogenes* in pure culture.

In those of my cases in which material for bacteriologic examination was obtainable, the *Staphylococcus pyogenes aureus* was found in pure culture. In the case of an extremely marasmic infant of six months, weighing but five pounds, numerous flaccid bullæ of quarter-dollar size, with semipurulent contents, developed rapidly in various localities. Pure cultures of *Staphylococcus aureus* were obtained. Within twelve hours several bullæ became hemorrhagic and their bases were converted into a pulpy mass, forming deep, punched-out ulcers. Numerous small tense bullæ then appeared, all with hemorrhagic contents. Cultures showed the presence of the *Bacillus pyocyaneus*, rapidly overgrowing the *Staphylococcus aureus*. The infant ultimately recovered, although the postcervical, axillary and inguinal lymph glands sloughed, and portions of the skull, ribs and sacrum were exposed in the floor of the ulcers.

At the present time it appears impossible to bring any one organism into causal relation with the disease.

A similar condition of uncertainty exists in connection with the bacteriology of impetigo contagiosa, which may be produced by either the common staphylococci or streptococci—most often by the former.

Leaving out of consideration the failure of bacteriology definitely to establish the identity of pemphigus neonatorum and impetigo contagiosa, there appears to be enough other evidence at hand to warrant classing them as identical diseases. To the anatomic and physiologic differences between the skin of the new-born and that of older children and of adults can be ascribed the variation in clinical appearance. With increasing age of the child an almost parallel decrease occurs in the severity of pemphigus neonatorum—as regards the extent of surface involved, number and character of the lesions, their rapidity of evolution—and the disease presents progressively less danger to life. It assumes the characteristic features of impetigo contagiosa, among which is the tendency to crust formation. Pemphigus neonatorum can only be regarded as a bullous, infantile variant of impetigo contagiosa, and not as an independent disease.

The treatment of greatest efficiency in my experience is, with some modification, the same as that which may be regarded as specific in the impetigo contagiosa of adults. The vesicles or bullæ are drained, the edges of the lesions are thoroughly exposed, and the entire base is freely anointed with 2 per cent. ammoniated mercury ointment. The lesions are dressed with gauze and cotton, and individually thus isolated. Mercurial intoxication has not occurred in my experience, even when extensively denuded areas were treated in this manner. To secure asepsis of the uninvolved surface the infant is bathed in a warm permanganate solution and sponged with the solution whenever the dressings are changed.

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[25] Holst: Centralbl. f. Dermat., 1900, p. 136.

[26] Erichson: Centralbl. f. Dermat., 1900, p. 137.

[27] Bloch: Arch. f. Kinderh., 1900, xxviii, 61.

[28] Maguire: Brit. Jour. Dermat., 1903, p. 427.

[29] Clegg and Wherry: Jour. Infect. Dis., March, 1906, p. 165.

[30] McLeod: Brit. Med. Jour., 1903, p. 1278.

External heat with strychnin and brandy in full doses are indicated as supporting measures if the disease is at all extensive.

128 Wisconsin Street.

ABSTRACT OF DISCUSSION

Dr. John A. Fordyce, New York City: It does not seem to me that sufficient attention has been given to the investigations of Sabouraud, which led to the conclusion that these lesions were due to the streptococci and not to the staphylococci. His inoculation experiments invariably gave a growth of streptococci. Afterward the lesions became contaminated with the *Staphylococcus aureus*, and mixed infection resulted. The clinical history of these cases point to a definite and distinct entity, different from the ordinary staphylococcus infection. We are indebted to Dr. Foerster for calling our attention to the identity between acute contagious pemphigus of the new-born and the impetigo contagiosa of older children.

Dr. Douglas W. Montgomery, San Francisco: I have long thought that in this bullous form of impetigo contagiosa the formation of bullæ was due to the fact that the skin of the baby is very tender, and furthermore, to the heat to which these children are often exposed. I am led to believe that in warm countries impetigo contagiosa in adults is more liable to assume a bullous form, than in cooler climates, like San Francisco. I have long believed that these two affections, acute contagious pemphigus and impetigo contagiosa, were identical. In San Francisco we do not often see acute bullous impetigo, but we do see pemphigus neonatorum. In the Philippines and in other hot countries bullous impetigo is common in adults.

Felix Lewandowsky of Hamburg, in a recent number of the *Arch. für. Dermatologie*, has reported a large number of cases of impetigo contagiosa in which the causative agent was the streptococcus, not the staphylococcus. I think that in all probability, from the nature of the disease, that it will be found to be of streptococcus origin. It would be very remarkable if the staphylococcus would give rise to such marked disease entities as impetigo contagiosa and bullous impetigo.

Dr. M. B. Hartzell, Philadelphia: I think since we all agree that these cases are really impetigo contagiosa occurring in very young infants, we ought once and for all to dispense with the name pemphigus neonatorum. I recently saw a small epidemic of this in a maternity hospital. In this epidemic, the eruption was originally regarded as bullous syphilide. A number of these babies died: I think in practically 50 per cent. of those attacked there was a fatal termination. I have seen very large bullæ in adults. That is probably a matter of the severity of the original infection and the nature of the soil. The very delicate soft skin of the new-born infant apparently offers a suitable soil for the growth of the infecting organism.

Dr. C. F. Knowles, Philadelphia: There has recently been an epidemic of thirty cases of this affection in one of the public institutions in Philadelphia. Of the infants attacked, ten died. Cultures showed streptococci in some of the lesions, staphylococci in others.

Dr. W. A. Pusey, Chicago: Last winter there was an epidemic of impetigo contagiosa of the new-born in the maternity ward of one of the hospitals in Chicago. In a group of 16 cases there was a mortality of over 30 per cent. In my opinion, it is as irrational to hope to identify one definite pus organism in these pus infections of the skin as it is in pus infections generally. I have no doubt that impetigo may be produced by all of the different kinds of common pus organisms.

Dr. George Pernet, London, Eng.: I have long been familiar with the identity of pemphigus neonatorum and impetigo contagiosa. Many years ago I was asked to see a child with a supposed bullous syphilide. I found instead a bullous form of impetigo contagiosa, while three other members of the family had evidences of impetigo lesions about the face. In the ambulatory cases of this affection the patients generally recover, and I have not seen many cases that terminated fatally. This may be different in institutions, but in ordinary hospital practice and in the out-patient department one does not find that these are very bad cases, as a rule.

Before Sabouraud labeled the streptococcus as the causative factor, I examined several of these lesions and always found the streptococcus. Sabouraud insists that we must get a very early pin-point lesion and from that get the streptococcus, and I think that is generally admitted, although he also insists on cultivating the germs on a fluid medium, while I cultivated them on a solid medium. If the organism be cultivated in bouillon, there will often be a general formation, but that does not label the organism as a streptococcus. It is generally accepted that these lesions are of streptococcus origin, although Matzenauer of Vienna did a lot of work on the subject and states that he has found the staphylococcus. I am inclined to agree with Dr. Pusey that a variety of pus-producing organisms may lead in some cases to impetigo contagiosa, as well as to other forms of bullous lesions. I recall reporting a household infection of this kind that followed pediculosis, with a development of bullous lesions in several of the cases.

MONGOLIAN IDIOCY*

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Several years ago I was called to attend a male child about 8 months old, suffering at the time from acute bronchopneumonia. This child had a peculiar facial conformation which then attracted my attention. Some weeks after my first acquaintance with him I saw another, somewhat older, but having such a remarkable resemblance to the first that it was difficult to believe that they were not brothers. These children were mental defectives of the Mongolian type. Since that time I have seen about thirty of these children in practice and in institutions in this country and in Europe. I wish now to discuss in particular this class of cases, which is comparatively common among us, although it frequently passes unrecognized.

In 1866 Dr. Langdon Down described a condition which was characterized by features which bore a remarkable resemblance to those of certain Mongolian races, particularly to a type indigenous to certain parts of Siberia, known as Kalmucks. On account of this resemblance he suggested the name Mongolian, or Mongoloid.

I wish to emphasize certain differential diagnostic features for the reason that I have known Mongolians to be mistaken for cretins by more than one good physician. In conversation with Dr. E. J. Emerick of the Ohio State Institution for Feeble-Minded Children I was told that Mongolian idiots repeatedly entered his institution with a diagnosis of cretinism. The recognition of Mongolism is important, in order that we may guard against dangers to which the child is peculiarly susceptible, and not discredit thyroid therapy by administering it where little benefit can be derived. The distribution is world-wide; no race is exempt. According to Shuttleworth, 5 per cent. of mentally defective children are Mongolian. In our own state institution I understand that the percentage is not so high.

As to the causes we know very little. From some resemblances to cretinism it has been suggested that it might be due to some vice in the thyroid function. Other observers state that it is most often seen in the last children of large families, or where the parents are over 40, or where the reproductive powers of the parents are impaired. This, however, is denied by many authorities. Alcoholism, tuberculosis, syphilis, and other disorders have been considered, but with few definite conclusions. They are evidently unfinished children and the Mongolian features are possibly an example of atavism.

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* Read before the Academy of Medicine of Toledo and Lucas County, May, 1908.

I shall consider first the most conspicuous characteristics. In a typical case, even at birth, there is a peculiar facial resemblance to a Chinese child; even a layman will often speak of it. This is due to the presence of an inner epicanthic fold and an obliquity, upward and outward, of the palpebral fissures. The bridge of the nose is flat and this causes the eyes to appear far apart, when in reality they are close together. The nostrils look forward; strabismus and nystagmus are common. In early life the skin is smooth and white. The cheeks are often ruddy. In smaller children, also. the hair is soft, straight and abundant. The ears are small and the lobules adherent. The mouth is open and the tongue often protrudes; this latter, I presume. is the chief reason for the commonly mistaken diagnosis of cretinism. The tongue is fissured and the circumvallate papilli are red and hypertrophied. The next characteristic that is seen constantly is the brachycephalic skull; this is nearly always seen. It is often so pronounced that the vertex, occiput and neck are all in the same plane. Goodhart and Still state that the skull is usually less than normal in circumference. Dr. John Thompson of Edinburg described some peculiarities of the hand which he considered quite constant. This consists of a shortening and incurving of the little finger. Dr. John Muir found this absent in 46 per cent. of his series. This deformity has been found to be not uncommon in all forms of idiocy. The fingers are all shorter than normal and taper at the tips; this in contradistinction to the stumpy finger-tips of cretins.

In addition to physical characteristics which are more or less constant, these children have frequently the various deformities of the imperfect and many of the stigmata of degeneracy. They are, when grown, short in stature; there is a deficiency of muscular tone and strength, and the limbs are soft and small-boned. Coordinate movements are not acquired early; the grasp is feeble; the child may not hold up its head until seven or eight months old, and not sit alone until a year and a half or two years old, or walk until four or five. The sutures are late in closing; the teeth are slow and irregular in developing; not uncommonly a molar may appear before the incisors. As in all mental defectives, speech is late in developing; the child may not talk until four or five years old. Such children are anemic and susceptible to diseases of the respiratory and gastrointestinal tract. Especially are they liable to pneumonia, bronchitis and later to pulmonary tuberculosis. A subnormal temperature as a rule exists and they are easily chilled. Dr. A. E. Garrod of London speaks of the extreme frequency of congenital heart disease among Mongolians. The mental development is very interesting. One might be misled into a too favorable prognosis unless made wary by experience. Mongolians are nearly always amiable and happy. If in a hospital they become the pets of the ward by reason of their cheerful dispositions. They are imitative to a marked degree. At this point I would like to suggest that this trait of imitativeness might be considered another point of similarity to the Chinese and Japanese races, among whom mimicry is a very marked trait. By reason of their cheerfulness and mimicry they are often given credit for more mentality than they really possess. They are always mentally dwarfed. The degree of mental deficiency varies with the subject. Some subjects with a proper education acquire a fair degree of intelligence; these, however, are the border-line cases. In the average case the reasoning powers remain at a low level.

The vital prospects are bad. Before adult life many succumb to tuberculosis or pneumonia. There is little in the pathologic anatomy which is characteristic. Some observers speak of central changes,' such as antero-posterior shortening at the base of the skull and imperfectly developed occipital lobes, the whole brain being more coarsely convoluted than normal and having fewer secondary convolutions. Wilmarth reports five autopsies in which the brains were all of fair size, the pons and medulla being unusually small in all cases.

There is no specific medical treatment for Mongolism. Thyroid therapy is useless, although at first there is a slight apparent improvement. As to mentality, if advantage is taken of the child's ability to imitate, something may be accomplished. Much may be done to teach habits of cleanliness. Careful feeding, exercise and fresh air must be furnished to aid a constitution of feeble resistance to avoid and throw off disease. The approach of puberty is always an anxious period in the life of any mental defective and care should be exercised in reference to the abuses of the animal instincts when awakened. On account of the importance of a diagnosis, both of Mongolism and cretinism, I wish to emphasize graphically as possible the chief differential features of both these conditions.

COMPARISON OF CRETINISM AND MONGOLISM

CRETINISM	MONGOLISM
1. Characteristics seldom present before six months.	1. Present at birth.
2. Dull, passive infants, taking no notice of anything or any one. No active movements.	2. Smiling, active infants, imitative and observant.
3. Skin swollen and dry. Fat pads above the clavicle. Hair coarse and scanty.	3. Skin soft and fine. Hair straight, soft and fine in early life.
4. Skull normal in shape.	4. Skull brachycephalic.
5. Palpebral fissures horizontal, lids swollen, epicanthus not present.	5. Palpebral fissures narrow and oblique, no swelling of lids, epicanthus present.
6. Tongue protruding and swollen.	6. Tongue protruding but not swollen.
7. Lips thick and everted.	7. Lips normal in shape.
8. Fingers short and stumpy.	8. Fingers short and tapering. Little finger short and curves inward.
9. Thyroid absent or atrophied.	9. Thyroid normal.
10. Thyroid treatment beneficial if used in early life.	10. Thyroid treatment of no use.

REPORT OF CASE

Patient.—The child whom I wish to describe is a peculiarly attractive boy, 4 years of age, the sixth child in a family of seven. His brothers and sisters, of whom five are living, are all healthy, normal children. His mother was 35 years old when he was born, his father 38. During pregnancy his mother was not as well as with her other children; she had a cough during a considerable part of the time and was not so strong as usual.

History.—At birth the child weighed 8½ pounds. Labor was normal in every respect. Very soon after birth the family noticed a peculiar expression about the eyes, but the obliquity was not noticed until the boy was 7 or 8 months old. He was nourished at the breast, was in good health and developed normally until 8 months old, at which time he suffered from bronchopneumonia. Since that time he has taken cold easily and has had repeated attacks of acute bronchitis. He was able to hold up his head at about three months, but his neck seemed weak; this was more noticeable after his pneumonia. He was not able to sit erect until he was a year old. He did not creep or attempt to do so until he was 2, but would sit quietly and contentedly wherever he was placed; after this he began to creep and when 2½ years old he began to walk. One of his most noticeable traits is his happy, amiable disposition. His mother states that he is the best-natured child in the family; seldom quarrels with his brothers and sisters; even if imposed on, does not seem to resent it. He is not selfish and is willing to divide with the other children. He is cleanly in his habits and not destructive with his toys. The imitative trait mentioned previously is very noticeable; his parents spoke of it independently of any questioning. He imitates many of the actions of his parents and playmates with surprising accuracy, and is even now learning much of his speech by imitating his sister, who is but 2 years of age. He has a decided taste for music and takes much delight in playing with the piano. His speech is very imperfect; he speaks only a few words connectedly; he finds difficulty in making sentences longer than three or four words. His wants are made known chiefly by nouns; verbs he uses with difficulty.

Physical Examination.—Child, 37 inches tall; weight, 33¼ pounds. Complexion fair, hair straight and of fine texture, fontanels closed. Circumference of the head 19 inches, meatus to meatus 14 inches. Nose broad at base. Distance between eyes 1¼ inches. Epicanthus present. Palpebral fissures oblique. Nystagmus present and marked. No fat pads in axillæ or supraclavicular regions. Mouth held open, tongue protruding, but not swollen. Lungs normal at the present time. Heart normal. Little fingers both shorter than normal and curve inward.

Thyroid treatment has never been tried, the case being so clearly one of Mongolism that I felt it would be folly to use it.

810 West Central avenue.

Note.—The following authorities may be consulted on the subject:
Taylor: Nervous Diseases in Childhood and Early life.
Thompson: Clinical Examination and Treatment of Sick Children.
Goodhart and Still: Disease of Children.
Holt: Diseases of Childhood.
Koplik: Diseases of Infancy and Childhood.
Barr: Mental Defectives.
Ireland: Mental Diseases of Childhood.
Pfaundler and Schlossman: The Diseases of Children.
Allbutt: System of Medicine, viii, 236.
Waterson: Brit. Med. Jour., 1906, ii, 1701.
Neurath: Wien. med. Wchnschr., 1907, lvii, 1132.
Reavley: West. Canada Med. Jour., 1907, i, 450.
Baumann: Transvaal Med. Jour., 1906, ii, 107.
Sutherland: Practitioner, London, 1904, lxxiii, 821.
Sutherland: Lancet, London, 1900, i, 23.
West: Arch. Pediat., 1901, xviii, 918.

A CASE OF SUCCESSFUL REMOVAL OF A CEREBELLAR TUMOR *

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In a recent study Schuster, of Berlin, finds that about 15 per cent. of intracranial tumors are situated in the cerebellum.

In his work on brain surgery, published in 1893, Dr. M. Allen Starr collected 16 cases of cerebellar tumor in which operations had been done. In 11 of these cases the tumor was not found; of the other 5 patients, 3 died from the operation, and 2 cases the tumor was removed and the patient relieved. Writing again ten years later,[1] including his own personal experience up to that time, Dr. Starr collected 1,277 cases of brain tumor; of this number, he regarded 104 as operable. Among these 1,277 cases he found 58 cases of operations for cerebellar tumors. Dr. Starr gives table of operations for brain tumor (Table 1):

TABLE 1.—STARR'S TABLE OF OPERATIONS FOR BRAIN TUMOR

	No. Cases. Cerebrum.	Cerebellum.
Tumor found, removed, and patient recovered	154	16
Tumor found, removed and patient died	52	8
Tumor found, but could not be removed	22	12
Tumor could not be found	91	22
Total	319	58

Writing only two years later, in 1905, Mills and Frazier were able to collect reports of 116 cases of cerebellar tumors in which operations had been performed; and they estimate that in 15 per cent. of these cases there was "removal with recovery."

Dr. Frazier, from a study of these 116 cases, has constructed the following table:

TABLE 2.—FRAZIER'S TABLE

	Per Cent.
Tumors found	45
Tumors not found	55
Removal with recovery	15
Removal with improvement	13.9
Removal without improvement	0.9
Improvement without removal	13.9
No improvement without removal	13.9
Death when tumor was removed	12.9
Death when tumor was not found and removed	28.7

Comparison of statistics of successive dates, showing an increase in the percentage of recoveries and improvements and a reduction in the mortality, is given in Table 3.

TABLE 3.—COMPARISON OF STATISTICS OF SUCCESSIVE DATES

Results.	Frazier's. Table—1904. Per Cent.	Duret's. Table—1903. Per Cent.	Oppenheim's. Table—1902. Per Cent.
Recovery	15	14	7.5
Improved	28	25	7.5
Unimproved	15	0	13.0
Mortality	42	60	71.0

A comparison of the statistics of the total number of cases in Frazier's collection with the statistics of the last five years shows a manifest improvement in the results as illustrated by Dr. Frazier in Table 4.

TABLE 4.—RESULTS IN FRAZIER'S TOTAL NUMBER OF CASES COMPARED WITH CASES IN PAST FIVE YEARS

Results.	Total Number of Cases. Per Cent.	Cases Reported 1899-1904. Per Cent.
Recovery	15	24
Improved	28	28.5
Unimproved	15	11.0
Mortality	42	35.8

Dr. Frazier remarks:

> From a review of these tables one is struck at once with the progress that has been made in this field of surgery from every point of view. The percentage of tumors is yearly growing larger, the percentage of partial or complete recoveries is larger, and the mortality has fallen from 42 per cent. to 35.8 per cent. We believe that the results of surgical intervention on the cerebellar hemisphere will continue to improve, if not generally, at least in the hands of those who are giving this subject especial thought and attention.

We have gone over the table of 116 cases of cerebellar tumor collected by Dr. Frazier; and in doing so we are not able to note quite as high a percentage of cases in which the tumor was found and the patient recovered. From the study of this paper it appears to us that 10 per cent. of recoveries would be a fair allowance as against 15 which Dr. Frazier figures out. But these tables do indicate in a striking way that the mortality from the operations has been considerably reduced and the percentage of recoveries considerably increased in the last few years. In six cases in which Dr. Frazier operated the results were as follows:

> One died after the first stage of operation; two recovered after removal of tumor; one relieved after evacuation of cyst, no recurrence more than a year after the operation; one considerably improved after palliative operation; one no improvement; tumor not found.

Dr. Harvey Cushing, of Baltimore, as is well known, has made a number of special detailed studies of the operations for intracranial growths; being anxious to learn of his experiences in cerebellar operations up to date, we wrote to him, and he kindly responded with the following letter which sufficiently explains itself:

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Starr, M. Allen: Organic Nervous Diseases, 1903.

> The following summary is complete so far as I can tell from a fairly careful survey of the hospital files and my own private records. I have never had occasion to look these things up before as an especial group and there may be a few omissions.
>
> I have had thirty cases of known or presumed cerebellar tumor which have been subjected to the bilateral suboccipital operation which I favor through a "cross-bow" incision with permanent removal of the bone.
>
> In this series there have been two deaths that can be directly attributed to the operation, both of them among the early cases, one patient with a vascular tumor of the vermiform process operated on in a comatose state, who died from hemorrhage into the fourth ventricle; the other a patient with a benign cerebellar pontine endothelioma, who died from pneumonia on the seventh day. This was before the adoption of the cerebellar table with the shoulder-supports. These are the only cases in which there has been any operative complications of any kind. The wounds in all other cases have healed per primam.
>
> In eleven cases the tumor has been found and removed, or a simple (?) cyst evacuated.
>
> *Intracerebellar.*—More or less solid tumors, three; cysts evacuated, four.
>
> *Extracerebellar.*—Four.
>
> Tumors found and considered irremovable, with no improvement after simple decompression, two.
>
> Tumors not found, the operation resulting in a simple suboccipital decompression, twelve.
>
> In two cases from the latter group I have operated some months later at a second session and found and evacuated an intracerebellar cyst on each occasion. One of the patients was operated on elsewhere and a solid tumor, which was not apparent at the time of the first operation, was found and removed.
>
> It is my feeling that with a proper face-down position on a suitable operating table, with a skilled anesthetist and with a low operation with removal of the posterior half of the foramen magnum so as to get below the lips of the cerebellum and evacuate fluid before the dura is freely opened, these cases, contrary to the opinion that has been expressed by others, are favorable, if not more favorable, for operation as lesions of the cerebral hemisphere.

It is earnestly to be hoped that Dr. Cushing will, before long, publish his experience with cerebellar tumors in detail. For certainly the results he has attained should inspire us all with a more hopeful view of cases of this character.

In view of the experience of the immediate past these records of Frazier and Cushing are certainly most striking and noteworthy ones. And they abundantly indicate that there is a fair measure of chance for these poor patients suffering from cerebellar tumor when they are operated on by skilled surgeons who are specially trained for this work and who have their hearts in their work.

But not all investigators are able, like Frazier and Cushing, to see that the results of cerebellar operations are growing more favorable; and this other side of the case is well shown by Knapp of Boston.

Knapp[2] has made several studies of brain tumor from the standpoint of the operation. In a paper published recently (1906) he concludes from the study of 104 autopsies of brain tumor that only four were anatomically accessible and presented enough clinical symptoms so that they might have been localized for the purpose of an operation.

Knapp presents the following tables of operations undertaken for the removal of brain tumors of all sorts:

TABLE 5.—KNAPP'S TABLE OF PERCENTAGE OF FAILURES TO FIND GROWTH

	1889.	1891.	1899.	1905.	Total
Removed	18	28	265	160	471
Not removed	5	10	115	59	189
Percentage of failures	22	26	30	27	29

TABLE 6.—KNAPP'S TABLE OF PERCENTAGE OF FAILURE TO REMOVE

	1889.	1891.	1899.	1905.	Total
Removed	18	28	265	160	471
Not removed	6	20	224	107	357
Percentage of failures	25	41	46	40	43

Besides the cases of operations for cerebellar tumors recorded by Mills and Frazier, several additional cases have come under our notice as follows:

Stewart[3] reports forty cases which he has analyzed. Wharton Sinkler[4] also reports three cases. In two instances an operation had been performed. In these two cases one patient, who had a cyst, recovered. He was in perfect health seven months after the operation. Dercum[5] also discusses the subject.

Martens and Seiffert[6] report the case of a boy of 13 on whom an operation was performed for removal of a cerebellar tumor. The patient died after a few hours. An autopsy revealed a tumor, a large glioma, in the fourth ventricle.

Savage[7] furnishes notes of eleven cases, ten of which were relieved by trephining.

Funkenstein[8] reports five personal cases as follows: (a) patient died from operation; (b) patient died without operation; a solitary tubercle on the right auditory nerve; (c) neurofibroma on the auditory and facial nerves; (d) sarcoma of the cerebellum; (e) encephaloma of the left posterior fossa.

Becker[9] reports a case of tumor removed from the left pontocerebellar angle. The patient died in three hours after the operation. A beautiful plate shows the tumor *in situ* and another, the brain with the tumor removed.

W. B. Warrington[10] reports a case of an operation for the removal of a cerebellar tumor. The tumor was not found and the patient died. An autopsy discovered a sarcoma the size of a pigeon's egg in the right lobe pressing on the middle of the medulla.

Poppert[11] reports one case of successful removal and one of a partially successful removal. From one patient a woman, aged 28, a tumor was removed from the cerebellum, and four weeks later, at the time the report was made, she was doing well and greatly relieved, although the operation was done too late to improve the eyesight.

B. Sachs[12] reports three cases of cerebellar tumor in which operations were performed. Two of the patients succumbed. In the third case the patient was greatly relieved, although the tumor could not be found at the operation. He remarks: "Cerebellar surgery is in a sad plight." He believes that "the cure of cerebellar tumors is difficult to attain except in a small proportion of cases," but he believes that much relief may be afforded by trephining operations.

Ascoli[13] reports the case of a boy, aged 14, with cystic gliosarcoma in the right lobe of the cerebellum

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[2] Knapp: Boston Med. and Surg. Jour., Feb. 1, 1906.

[3] Stewart: Brain, 1904, p. 522.

[4] Sinkler, Wharton: Three Cases of Cerebellar Tumor, THE JOURNAL A. M. A., Sept. 26, 1908, li, 1057.

[5] Dercum: Jour. of Ment. and Nerv. Dis., 1906, p. 169.

[6] Martens and Seiffert: Berl. klin. Wchnschr., Aug. 10, 1908.

[7] Savage: Berl. klin. Wchnschr., Aug. 10, 1908.

[8] Funkenstein: Mitt. a. d. Grenzgebi., xliii, 1732.

[9] Becker: Deutsch. Arch. f. klin. Med., lxxxix, p. 6.

[10] Warrington, W. B.: Med. Chron., 1905, p. 144.

[11] Poppert: Deutsch. Med. Wchnschr., 1907, No. 15, p. 613.

[12] Sachs, B.: Med. Rec., Dec. 22, 1906.

[13] Ascoli: Corriere San., Milan, xviii, 172.

3 cm. from the surface and a little anteriorly. Two operations were done two days apart. The tumor was not removed entirely. The patient died fifteen days later.

He reports another case[14] of a woman, aged 23, who was operated on early in August, 1906, for cerebellar tumor. No tumor was found at the operation, but a few drops of pus of tuberculous character was discovered. By the middle of August the symptoms again became exaggerated. The patient died September 20. An autopsy revealed a tuberculous node in the left cerebellum and a tuberculous area on the surface on both sides of the medial lobe superior.

With this brief survey of the literature, we desire to give the clinical and pathologic records of a case observed by us, in which a tumor was removed from the cerebellum, the patient surviving the operation and exhibiting complete relief from headaches and vomiting and very great improvement of vision and considerable improvement in his gait.

The patient was admitted to the Allegheny General Hospital Jan. 4, 1909, having been referred to Dr. Diller by Dr. J. J. Emmens, of Somerset, Pa., who had previously made the diagnosis of cerebellar tumor.

CASE REPORT

Patient.—A single man, aged 20. His father is supported by charity. At the age of 2 the patient was given out by the Children's Aid Association to a farmer. He was healthy and strong and after he grew up did good work about the farm. At the age of 18 he secured his release and wandered about a good deal; and it is thought he was rather wild. Six months ago he returned to the farm. For some time before his return he had been suffering from headaches; and soon after he came back to the farm he fell quite a distance from a hay wagon and struck his head. But it appears he had headaches before this accident. Three or four months ago the headaches became very severe and very frequent. For three weeks past he has had very severe headaches located at the top of the head and pain running down the spine. His head now became drawn forward and to the left. He became intolerant of light; and his pupils were dilated. He had lately been subject to many dizzy spells and very marked right-sided sweating. There has been no fever. Hearing in the right ear is somewhat impaired. He is still able to read the newspaper.

Examination (Dr. Diller).—The posture at once commands attention. The patient's head is bent forward on the chest and drawn toward the left and rotated on its axis toward the right. Efforts to straighten it up cause great pain. He assumes this position to relieve himself of pain. He walks in a slow, laborious fashion with feet wide apart; his gait is very weak and uncertain. But he can walk the length of the ward with a little assistance. Four or five times he staggered so that he had to be supported, and at times he always staggered toward right. At a subsequent test he staggered to the left two or three times. He is generally weak and wretched, but I find no particular palsies of the trunk, arms or legs; and I note no cranial nerve palsies. In a mental way he exhibits nothing significant except that he is overly quiet and subdued and has a desire to be let alone. He is perhaps a little dull.

Eyes: There appears to be marked neuroretinitis in the right eye. I could not get a satisfactory look at the left eyeground.

Ears (Dr. Barndollar): Examination is negative. Hearing in both ears is normal.

Diagnosis.—The case appears to be one of cerebellar tumor. The evidence as to which side of the cerebellum is involved does not seem clear.

Course of Disease.—Jan. 18, 1909. Dr. Heckel found 5 D. of swelling in each nerve—double optic neuritis. The patient has had several attacks of vomiting at the hospital. His headaches appear to be very severe and are located chiefly at the back of the head. His head is rotated to the right side, but pushed forward to the left.

January 26: Ben's headaches continue to be severe and he complains that his eyesight is rapidly failing; that he can hardly see to read at all, even large print.

This unfortunate man presents a most pitiable sight. Sitting up in bed, with his head drawn forward, his manner and appearance indicate the truthfulness of his assertion that the head pains are unceasing and very severe most of the time. He has vomited frequently and obtained very, very little sleep since he entered the hospital because of the pain. The poor fellow gladly welcomed an operation, although its serious character was made plain to him.

Operation (January 27).—Dr. Gaub operated today, exposing both lobes of the cerebellum. The right lobe was found more protruding than the left and softer in consistency. About one-third or one-half of this lobe was cut away and the finger thrust forward to the anterior margin of the cerebellum; and a tumor was withdrawn somewhat almond-shaped and about as large as a hickory-nut. The patient stood the operation well, but the night following the operation his pulse became very rapid, going up to 190 by midnight; and for several hours it was more rapid than this and could not be properly counted. By the next day it was down to 136; but the pulse has continued to be more or less rapid even up to the present time (March 16).

DESCRIPTION OF OPERATION BY DR. OTTO C. GAUB

The patient was placed on his left side and a sandbag placed under his head. He was supported in this position by means of a reinforced plaster bandage passing around the upper part of the right arm and attached to an ordinary leg-holder. This posture gave a fair operative field and was comfortable to the patient, owing to his fixed head flexion. Ether anesthesia was used.

A cross-bow incision was made, the bone over both inferior occipital fossæ was removed by means of chisel and rongeur forceps, impinging on the foramen magnum, leaving a strip covering the occipital sinus. The bone of the right side was of the thickness of ordinary parchment paper, while that of the left side was three times as thick. The dura was opened by a crucial incision over both lobes of the cerebellum. Pronounced bulging of the right cerebellar lobe was noticed immediately on exposure, and its color appeared deeper than its fellow; its appearance was suggestive of softening. Palpation of both lobes demonstrated marked softening of the right lobe; and an attempt to introduce a spatula underneath produced a tear of its substance. It was readily seen that a satisfactory exploration was impossible without destroying the right lobe; so the index-finger was introduced and at a point, judged to be at the anterior surface of the right lobe, about its middle, a smooth rounded mass the size of a hickory-nut, of firmer consistency than the surrounding cerebellar tissue, was felt and then enucleated.

The removal of the tumor and softened cerebellar tissue was followed by a free hemorrhage controlled by packing with iodoform gauze. Up to this time the patient's condition was satisfactory; but following the removal of the tumor with its accompanying hemorrhage his condition became grave. The blood pressure fell to 90 mm. of mercury. A rapid closure of the wound was made with catgut for muscle and fascial layers and interrupted silkworm-gut sutures for the scalp. The incision over the right lobe was closed last, after the removal of the gauze tampon; no drainage.

Eight hours following the operation, the patient's condition was unsatisfactory. He lay on his left side, his head supported by one pillow. The dressings were soaked with blood, the skin relaxed and perspiring, pulse 140. He was propped up, supported by a back rest and grain 1/120 atropin sulphate administered, following which the pulse rate became increasingly rapid so that it was impossible to count, although each pulse move was distinct.

I believe this extreme rapidity to have been due to the atropin. The further progress of the patient had been detailed.

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[14] Ascoli: Policlinico, Rome, 1907, xiv, 141.

Immediately following the operation there was a very slight rise of temperature. By the 29th the temperature was normal and remained so except that on February 8 there was an elevation to 101.6.

FURTHER NOTE BY DR. DILLER

On the 29th it was noted that the pulse was intermittent and it continued so for several days, being very markedly so at times.

On February 7 the patient's respirations suddenly became rapid, going up to 40 per minute and his temperature to 101.6; and he seemed a little dull. I found a rough murmur over the heart which was apparently mitral-regurgitant. Dr. Emmens informed me that he examined the patient's heart carefully just before he came to the hospital and found no evidence of valvular heart trouble. When the patient left the hospital this murmur was much less marked.

Excepting the above complications the patient's condition following the operation has been extremely satisfactory. He experienced complete relief from headaches and vomiting; the optic neuritis subsided.

One of the most interesting and gratifying features of the case was the rapid subsidence of the optic neuritis, which began the day following the operation and continued for several days; and there was a corresponding improvement in vision, which went hand in hand with it. Optic neuritis had been noted by Dr. Emmens before the patient entered the hospital; and the examination at the hospital on January 5 revealed its presence in a high degree. The week preceding the operation the patient's vision was rapidly failing; so that the day before the operation he could hardly read the largest letters in the advertisements of the newspapers. Dr. Heckel observed the patient at frequent intervals following the operation and has kindly furnished us with the subjoined report, which speaks for itself.

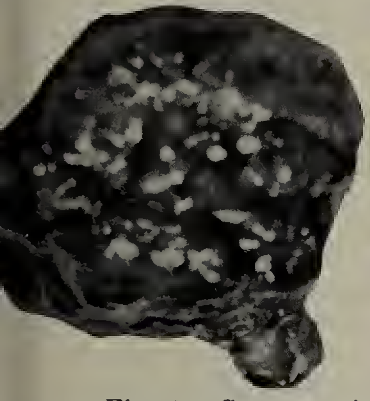

Fig. 1.—Gross specimen, from photograph.

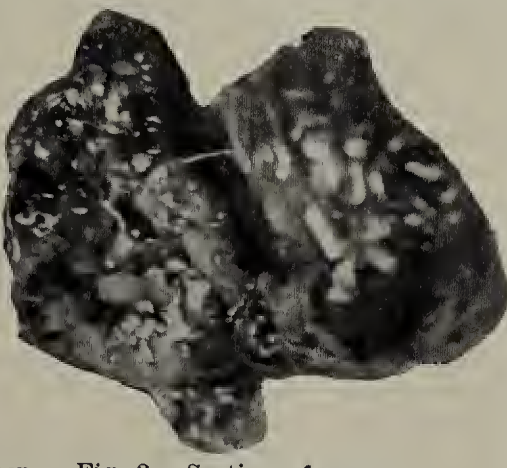

Fig. 2.—Section of gross specimen, from photograph.

EXAMINATION BY DR. E. B. HECKEL.

"First examination, Jan. 18, 1909: A typical papilledema (choked disc) with an elevation of the optic disc of five diopters, above the fundus, in each eye.

Jan. 26, 1909 (day before operation:)
  O. D. about 6 diopters.
  O. S. about 5 diopters.
First day after operation:
  O. D. about 5 diopters.
  O. S. about 4 diopters.
Second day after operation:
  O. D. about 3 diopters.
  O. S. about 3 diopters.
Fourth day after operation:
  O. D. about 3 diopters.
  O. S. about 2 diopters.
Fifth day after operation:
  O. D. about the same.
Sixth day after operation:
  Outline of optic disc just beginning to show in left eye.
Seventh day after operation:
  Optic disc level with fundus.
  Outline of optic disc in O. S. more pronounced.
Eighth day after operation:
  About the same.
Fourteenth day after operation.
  Outline of optic disc more distinct.
Sixteenth day:
  Optic disc still blurred in O. D.
  O. S. quite normal.
March 16, 1909, R. V. = 20/30; L. V. = 20/40.
Error of refraction, O. D. + 0.50 D. S. = + 0.50 D. C. ax. 75°.
  O. S. + 0.50 D. S. = + 0.50 D. C. ax. 90°.
p. a. Jaeger N. 1 with O. D.
p. a. Jaeger No. 2 with O. S.

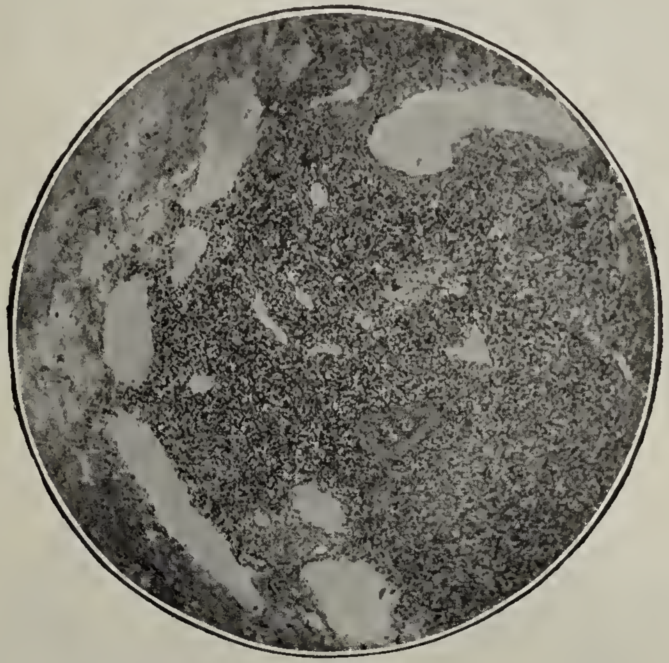

Fig. 3.—Low-power view of section of specimen: ocular 4, objective 1; from microphotograph.

"The optic disc of the O. S. is a trifle paler than the optic disc of the O. D.

"One of the most striking features of Ben's eyes was the greater elevation of the optic disc in the right eye; and the swelling was slower in disappearing than in the left eye. This point of the greater swelling in one nerve may be an aid in locating the tumor, i. e., right or left-sided."

REMARKS BY DR. DILLER

Ben passed an examination for train service on the Baltimore and Ohio Railroad within the last year.

The patient himself noted some improvement in his vision the second day after the operation and steady improvement from then afterward during the next three weeks, at the end of which time he could readily read all the ordinary print in the newspapers.

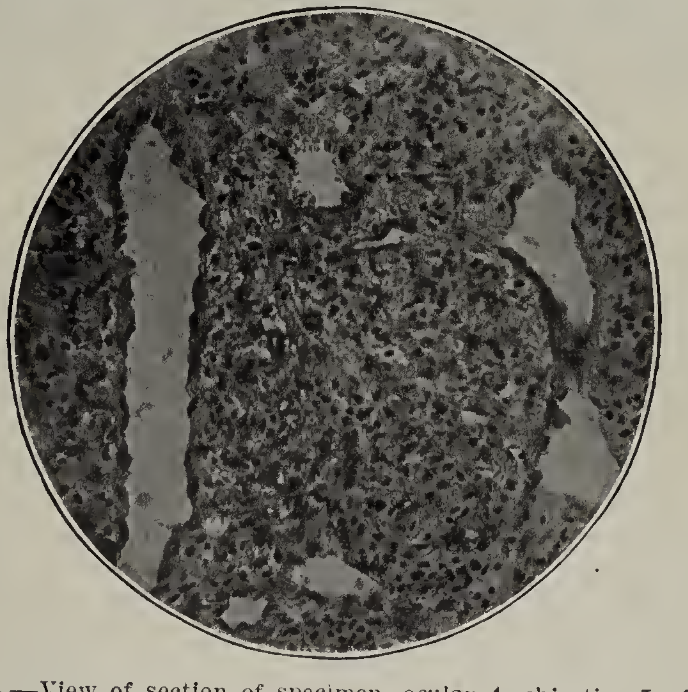

Fig. 4.—View of section of specimen, ocular 4, objective 5; from microphotograph.

The attitude of the head which had been so striking was no longer noted. The patient complained of no dizziness or nausea, or indeed of any distressing symptoms whatsoever.

It was very cheering to hear the patient's response to inquiries. "How is your headache?" "I have no headache." "How is your sight?" "Why, that's good now." At the time that the patient left the hospital, on March 22, he was comfortable and cheerful, but not yet able to walk more than a short distance; and he was still quite uncertain in his gait. But even his gait was rapidly improving. The heart murmur was still quite audible.

Ben left the hospital, March 22, about eight weeks after the operation. After he had been home six weeks he wrote a very cheerful letter, reporting on his condition, from which we abstract the following: "I got here all right. I have been visiting ever since. I am feeling pretty good at present. I am walking around every day to get exercise."

A more recent report from Dr. Emmens also assures us that the patient continues to do well.[15]

The tumor was given to Dr. F. Proescher, pathologist of the Allegheny General Hospital, for examination, and he reported as follows:

PATHOLOGIC REPORT BY DR. F. PROESCHER

The specimen is a very soft round tumor, 4 cm. in diameter and 2 cm. thick. It was partly surrounded by a red fibrous capsule. When cut in two its periphery was reddish-yellow, opaque, very soft and rich in blood vessels. The center of the tumor had the consistency of gelatin, was grayish-white and transparent and contained many hemorrhagic areas.

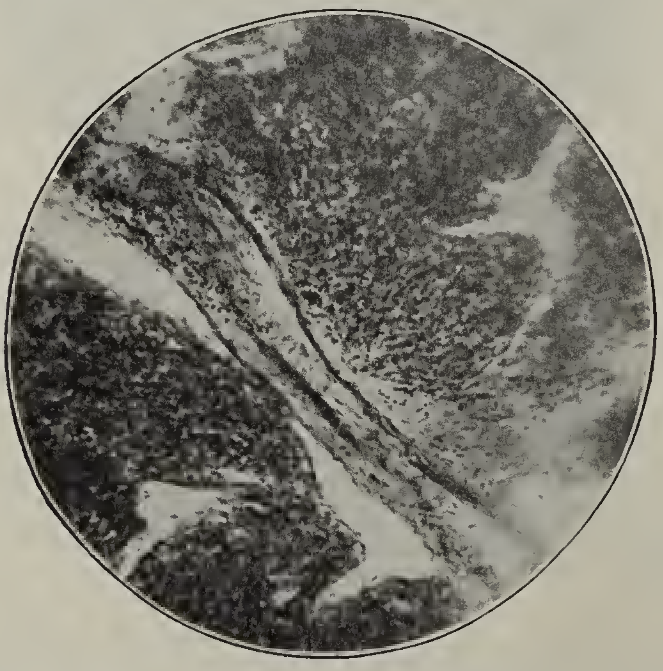

Fig. 5.—Tumor cells infiltrating walls and lumen of vein.

Microscopic sections showed a polymorphous sarcoma with myxomatous areas. It contained many large and small blood vessels, some of which the sarcoma perforated; and there were multiple hemorrhages.

Diagnosis.—Myxosarcoma teleangiectatum.

The features of this case which appeared to us as noteworthy are:

1. The excellent recovery of the patient after the operation and his great improvement.

2. The position of the head, bent forward to the left on the chest and rotated to the right. This is against the common statement that in cerebellar tumors the head is drawn backward.

3. The very rapid subsidence of the optic neuritis following the operation.

4. The fact that the optic neuritis was greater on the right side—the side of the tumor—than the other side.

5. The great practical value of exposing the cerebellum over both sides; this, not only because it is frequently difficult to decide on which side a tumor is located, but because such an opening allows for far better manipulation and exploration of the cerebellum. Without this double opening the tumor in this case could probably not have been enucleated.

6. The fact that considerable manipulation and even destruction of the cerebellar lobe is compatible with life.

7. The position of the patient on the operating table and the surgical technic are of the greatest importance.

8. The cardiac complication—the apparent development of an endocarditis which seems to have disappeared now.

9. Right-sided sweating.

Westinghouse Building.

ABSTRACT OF DISCUSSION

Dr. B. Sachs, New York: The matter of greatest importance is to determine the exact location of the cerebellar neoplasm; and a considerable experience has led me to the conclusion that accurate localization can only be made by the observation of a few especial and very delicate symptoms. The attitude of the head is one of the most important of all signs. I have found it of importance in a considerable number of cases; and my impression has been that for the most part the head inclines toward the side on which the tumor is situated, although there may be cases reported in which the opposite has been true. Moreover, the occurrence of vertigo on looking to one side or the other sometimes leads to a differential diagnosis. And in that case, too, so far as my experience goes, the vertigo becomes extreme if the person looks also toward the side on which we believe the tumor to be situated and where it is subsequently found. Another point of importance as an aid to diagnosis in cerebellar cases is the occurrence of intense nystagmus. While nystagmus is an associated symptom in neoplasms in various locations, there is very intense nystagmus associated with this class of neoplasms that I think may be considered as evidence of cerebellar tumors in contradistinction to tumor in other parts of the brain.

Then the minute differences between the reflexes (and all these symptoms are apt to be slight), particularly slight ataxia in one member as compared with the member on the opposite side of the body, are important.

Dr. Diller has been extremely fortunate in his diagnoses; for in a series of twenty cases of cerebellar neoplasm it has been my misfortune not to be able to localize the neoplasm in any spinal part of the cerebellum and yet the cerebellar operations will not be such an infrequent occurrence, because nowadays we are impelled to exploratory operations in order to save vision. For that reason I do not hesitate in any case in which I suspect a cerebellar neoplasm to have the first exploratory operation done for the purpose of saving the vision if possible; and incidentally have that exploratory operation done in such a way that it would be performed on the side to which the symptoms appear to point. In that way we may sometimes have all the good fortune that Dr. Diller has had in this case.

Dr. Max Mailhouse, New Haven: A year ago I was fortunate enough to see two cases of cerebellar tumor within three months; and I had two particularly important aids to localization in these two cases: One was ataxia shown by the finger to nose test on the same side as the tumor, which ataxia is now considered to be a homolateral symptom. The other was awkwardness in the pronation and supination of the forearm, present in both cases, that awkwardness being on the same side as the tumor. Those two phenomena aided me in localization, and the tumor was found in each case where these ataxic conditions indicated.

One of the cases unfortunately was very late in coming to hand. It had been diagnosed by the general practitioner as neurasthenia and the patient had been sent into the country and rusticated for three or four months before reaching my hands. In both of these cases the early and marked development of choked disc and the persistent and early development of vomiting helped to point toward the cerebellum as the seat of the lesion.

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[15] The patient was shown at the meeting of the Section on Nervous and Mental Diseases of the American Medical Association at the Atlantic City meeting, June, 1909. At this time he was bright mentally, entirely free from headaches and vomiting, and able to read readily an ordinary newspaper; and he walked with ease an ordinary pace, exhibiting but slight trace of the marked ataxia which he had formerly had. The right knee-jerk was normal; the left, somewhat exaggerated. The pupils reacted to light; the fundus was not examined. The patient's head was held in nearly normal position, although movements were somewhat, not greatly, restricted. In every way he was quite comfortable. The wound had entirely healed.

Dr. George B. Moleen, Denver: Nothing has been said with reference to the utilization of the *x*-ray in these cases. I feel somewhat hesitant in bringing that up, although in three cases in Denver prior to doing either an exploratory or ameliorating operation, I had the side in which I suspected the tumor to be present *x*-rayed, keeping that side closest to the plate.

In two instances I obtained very good shadows. Both of the patients were operated on and the diagnosis and location verified. One of these cases, like the one mentioned by the previous speaker, was diagnosed as a case of neurasthenia, but it had all the evidences of a left-sided cerebellar tumor with secondary atrophy incident on the choked disc. In that case the patient was placed on a plate and photographed with the left side down. The skiagram showed a very clear outline.

Those tumors which are, however, more deeply seated should not be expected to give a clear and definite outline, as compared with those which are located near the cortex. Naturally, the line of such tumors will be more or less diffuse. But with those located near the cortex if that side of the head is brought next to the plate, the skiagram will furnish a very important aid in determining the location of the tumor.

Dr. B. R. Tucker, Richmond, Va.: I have a case which I think is undoubtedly one of cerebellar tumor, in which I have advised operation, but I am very uncertain, and in fact, completely in doubt as to which side the tumor is on. The patient is a child about 4 years old who has nystagmus, nausea, vomiting, and optic neuritis which had gone on to atrophy. The position she takes is unique. She has spells of drowsiness, and then she will kneel on the floor, put her head on one side, resting it on the floor, sometimes on the right and sometimes on the left, and drop off to sleep instantaneously. I have not been able to find another instance of a similar position assumed by the head and also by the body.

Dr. T. M. T. McKennan, Pittsburg: There are three suggestive points in diagnosis which have not been brought out, but which I noticed in the case which is under discussion. One point is that while the patient had severe general headache, he stated that the most intense pain was on the right side and toward the back part of the head. The second point is that on palpation of the head, there was distinct tenderness on the right side; the third point is that there was unilateral sweating on the right side; all suggesting that the tumor probably was in the right cerebellum.

Dr. T. Diller, Pittsburg: I would be the last to minimize any aids that we would get in the way of localization, both as to whether a tumor is in the cerebrum or cerebellum and, if in either of these, in which portion. But the patient was not examined, I confess, with quite the same precision that he would have been ordinarily; for, as I said, he was so miserable and so very wretched that we could not examine him quite so thoroughly in all respects as would have been desirable. I am glad Dr. McKennan mentioned these two or three points that I had forgotten in my brief summary of the case. A very interesting point was this unilateral sweating.

We should get all the aid we can and locate the tumor as exactly as possible; but after that from a practical point of view I think we ought always in cases of cerebellar tumor to open the skull over both lobes of the cerebellum. This allows for a greater facility for exploration and also for a possible error as to the side the tumor is on; and since this is necessary for surgical purposes, it makes it less necessary to localize a tumor exactly in the cerebellum.

I may say that since this case I have had another that was not so fortunate. The tumor was correctly localized in the cerebellum on the right side, on the basis of the marked masseter involvement, as well as the sensory involvement of the fifth nerve, and although the operation was done with the same care and skill as in the other case, the patient succumbed very shortly.

LICHEN PLANUS SCLEROSUS

WITH REPORT OF A CASE *

JAY FRANK SCHAMBERG, M.D.
AND
ROSE HIRSCHLER, M.D.
PHILADELPHIA

Patient.—Miss L., American birth, aged 19; height about 5 feet; weight about 90 pounds; hair brown; eyes blue; skin fair with slight freckling; intelligent. Parents Irish, living and well. Several brothers and sisters living and well; one brother died in infancy of bowel trouble; no consumption in family; no skin disease; no history of syphilis.

History.—The patient had none of the infectious diseases that she could recall. About a year before examination she had lumbago; since then had had slight attacks of rheumatism. She was not nervous in any way, i. e., her temperament was not neurotic. The patient slept well and ate well; she was actively engaged in work and was inconvenienced in no way by the skin disease present. She had never had any other skin affection. The disease under consideration made its appearance about three years before the first examination. It is possible that it might have begun somewhat earlier, as the lesions when first observed by the patient were already large. The patient insisted that the spots were white from the very beginning and that no reddish coloration was at that time present. The palmar surface of the left wrist was first attacked and later the corresponding area of the right wrist. Scant, scattered lesions had since appeared on the dorsal surfaces of the hands and fingers. A patch was also present on the posterior median aspect of the neck.

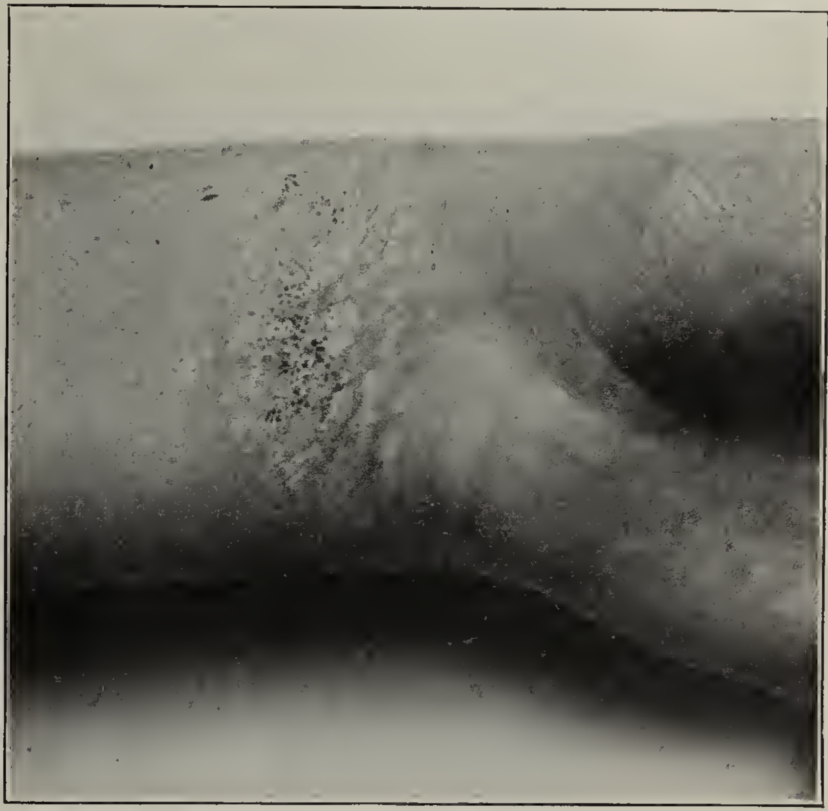

Fig. 1.—Lichen sclerosus, showing whitish papules and keratotic plugs.

First General Examination.—The eruptive elements consisted of flat, shining, angular papules of a whitish hue. The discrete lesions were of a brilliant snow-white or bluish-white color; the confluent patches exhibited more of an opaque dead-white tint. The papules varied in size from a pinhead to a milletseed or larger. The smaller papules had a smooth surface and were but slightly, if at all, elevated above the level of the skin. On palpation, they were not more resistant than the surrounding integument. The larger patches were slightly raised above the skin, and somewhat resistant to the touch. The papules were irregularly facetted, their angularity being produced by the exaggerated furrows which constituted their boundaries.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

On examination with a low-power magnifying glass, the patches were seen to be covered with fine adherent scales. One of the most striking features of the disease was the presence of numerous brownish-black keratotic plugs which were studded over the larger patches. On the left wrist about one hundred of these plugs could be counted. They were most numerous in a confluent plaque in the center of the wrist. The plugs varied in size from a pin-point to a pin-head, were firmly imbedded, and scarcely elevated above the surface. They could not be dislodged with a needle, although the patient said that washing with soap and hot water temporarily removed some of the plugs. Here and there were a few small pits or depressions from which the corneous plugs had evidently been lost. On the dorsal surfaces of the hands and fingers, the lesions were few and discrete. On the palmar surface of the wrists, particularly the left, there were numerous closely aggregated papules, some arranged in transverse lines corresponding with the furrows of the wrist; others were merged into smaller or larger confluent, irregular patches. The greater part of the wrist was covered with the disease. On the back of the neck was an irregular, quarter-dollar-sized patch made up of partially merged whitish papules. The most recent papules were, as would be expected, the smallest ones. These were devoid of the horny plugs. In one lesion a central, dimple-like, depression was noted. None of the lesions exhibited any depression below the level of the skin, or any change suggestive of atrophy. The skin surrounding the papules and plaques was normal in color; there was neither telangiectasis nor pigmentation. No itching was present nor have there been any subjective disturbances. The disease appeared to be slowly but positively progressive, new lesions developing in the neighborhood of the old patches. The mucous membrane of the mouth was free of eruption.

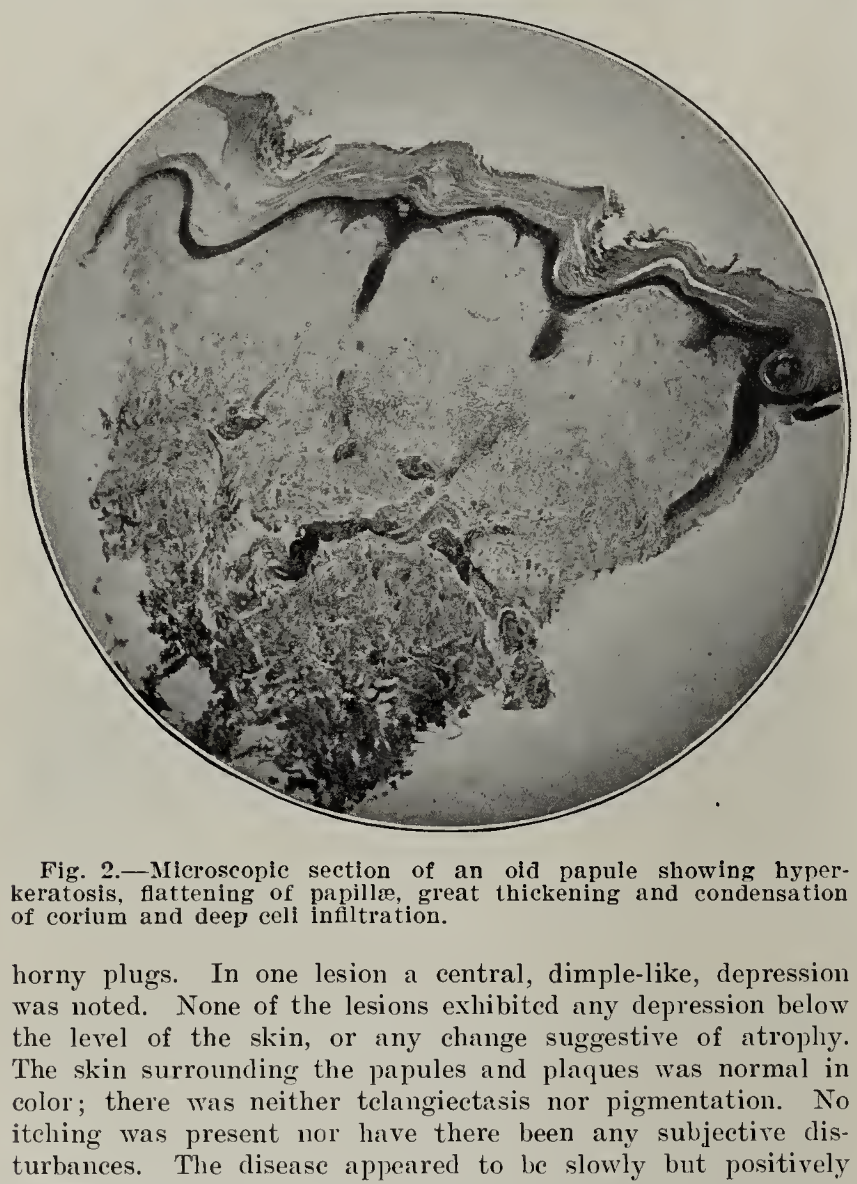

Fig. 2.—Microscopic section of an old papule showing hyperkeratosis, flattening of papillæ, great thickening and condensation of corium and deep cell infiltration.

Second General Examination.—The patient, after a period of absence was again seen in May, 1909, over a year after the time she first came under observation. Nearly all of the lesions had undergone involution. The large patches on the wrists had practically disappeared, leaving a rather thinned atrophic skin. One or two small angular whitish papules were still visible. At the nape of the neck, involution had gone on to the same extent as on the wrists.

Microscopic Examination.—In 1908, a biopsy was made with a skin punch from a confluent plaque on the wrist, and a small papule was excised from the base of the little finger. Each incision is now the seat of a pinkish, slightly keloidal scar. The patient complains that darting pains are occasionally felt at the site of the biopsies. The specimen of skin from the confluent patch on the wrist presented the following histological appearances: Larger and older lesion: The horny layer was enormously hypertrophied, being five to eight times its normal thickness. It exhibited longitudinal cleavage of the various strata. Its thickness varied somewhat, being greatest over the follicular depressions at the mouths of the sweat ducts. In these depressions, the horny layer showed a persistence of nuclei and a somewhat whorl-like and irregular arrangement of the epithelial fibers, with reticular spaces in the whorls. These horny masses which took the hematoxylin stain deeply represented the corneous plugs referred to in the clinical description. The plugs were, therefore, due to a follicular hyperkeratosis and parakeratosis.

The granular layer did not show any marked departure from normal; it was made up of two to four layers of cells containing numerous granules of keratohyalin.

The most profound changes in the epidermis were seen in the rete mucosum. This stratum consisted of but four layers of cells, which were fusiform and closely packed together. No polygonal cells were observed whatsoever. The rete was not only greatly thinned, but pronounced degenerative changes were present. The basal layer was in many places completely disorganized. Instead of a marginated contour separating the rete from the corium, the nether edge of the basal cells was irregular and frayed, with fibrils extending therefrom into subepithelial spaces in the corium. In many places, the nuclei of the lowermost rete cells were crescentically shrunken and occupied but a portion of the normal nuclear area.

The papillæ of the corium were practically effaced, inasmuch as there were no downgrowths of the rete mucosum save at the follicular openings, of which there were but five in the section. Just beneath the rete mucosum, the corium in places appeared to be detached with the formation of clear spaces. In most areas instead of a detachment, the basal rete cells seemed to have become disorganized and to have disappeared, leaving an irregular fibrillary network. Here and there rete cells were seen lying loose in the spaces in the upper corium in a rarified reticular structure. The papillary layer was the seat of a dense, fibrous structure made up of closely packed, wavy, collagenous fibers. The papillary blood vessels were practically absent. One or two capillaries are seen coursing for a short distance, but their lumina appeared to be obstructed by endothelial cells. Connective tissue cells were seen seattered among the collagenous fibers in about normal numbers.

No hair follicles were present in the section, but four or five mouths of sweat ducts were seen.

Inflammatory cell infiltration was absent in the papillary layer but was seen about the middle of the corium. At this level, the cells lay in interspaces between coarse collagenous fibers. A pronounced cell infiltration was seen about a sweat duct; and a little lower in the corium a pronounced infiltration was noted in the immediate neighborhood of some of the coil glands and around the adjacent large blood vessels.

Indeed, most of the cell infiltration seemed to be in anatomic relationship with the sudorific glands and ducts.

Smaller and Younger Lesion: The second specimen was a millet-seed-sized, smooth, glistening, discrete, whitish papule removed from the base of the little finger. It presented the following appearances:

The horny layer was hypertrophic, exhibiting two or three times the normal thickness; over the central portion of the papules, the horny layer was thicker than over the periphery. The granular layer was normal. The rete was of normal thickness: the cells in many areas showed a most pronounced contraction of the nuclei and vacuolation of the cell; in some cells vacuolation with disappearance of the nuclei was observed. Subepithelial spaces, such as were seen in the older lesion, were not present in this one, but there was a degeneration of many of the basal rete cells.

There was a pronounced cell infiltration in the subpapillary region. The blood vessels were markedly dilated. The infiltration was more superficially located than in the first specimen but it did not, as in ordinary lichen planus, involve the most superficial portion of the papillary layer. Nevertheless, it would appear that the cellular infiltrate in young lesions is in the subpapillary region and that this is later replaced by an increase and condensation of the collagenous fibers leading to a sclerosis or fibrosis of the corium.

Sections stained with acid orcein disclosed the presence of normal elastic fibers in the sclerosed areas. In the subepithelial spaces and in the subjacent reticulated, and rarified portions of the corium, however, the elastic fibers were absent.

In an inaugural address, in 1887, Hallopeau[1] first directed attention to a variety of lichen planus which he termed "lichen planus atrophicus." The patient was a neurotic woman, 45 years old. The eruption was present on the forearm, back and lumbar regions.

In 1889, Hallopeau[2] described a second case and modified the designation to read "lichen planus sclerosus." The patient was an unmarried woman, aged 58. The eruption was present on the wrists. The onset was sudden with intense itching; later the itching moderated. A progressive spread occurred during four years.

A third case was published by Hallopeau in 1896.[3] The patient, a woman of 55 years of age, had had the affection for eight years. The eruption began on the wrists; later the left forearm and right shoulder-blade region became involved. The buccal mucous membrane presented numerous opaline striæ characteristic of lichen planus.

Hallopeau's fourth case was published in 1898.[4] This patient, a woman of 60, had had the disease for two years. The eruption was located on and between the breasts, lower part of the neck, over the clavicles, and in the lumbar region. There was marked itching in some of the areas.

The essential features of the eruption in these cases and in those subsequently to be referred to are remarkably uniform. The lesions consist of flat angular shining papules, as a rule, neither depressed beneath the surface nor raised perceptibly above it. In the center, particularly of confluent papules, are dark horny or keratotic plugs, which when removed expose pits or depressions with corneous walls. The color is whitish—sometimes a shining nacreous white, at other times ivory-tinted. The papules are prone to coalesce into plaques; their borders are nevertheless distinguishable, the patches exhibiting the papules *en mosaique,* as Fournier aptly expresses it. Surrounding some of the papules or plaques is a reddish areola or in other cases pigmentation. Itching is present in most cases.

One of Hallopeau's patients asserted that the eruption began as blackish, slightly elevated points; there then developed a bright, reddish areola lasting several months; later the lesions became decolorized.

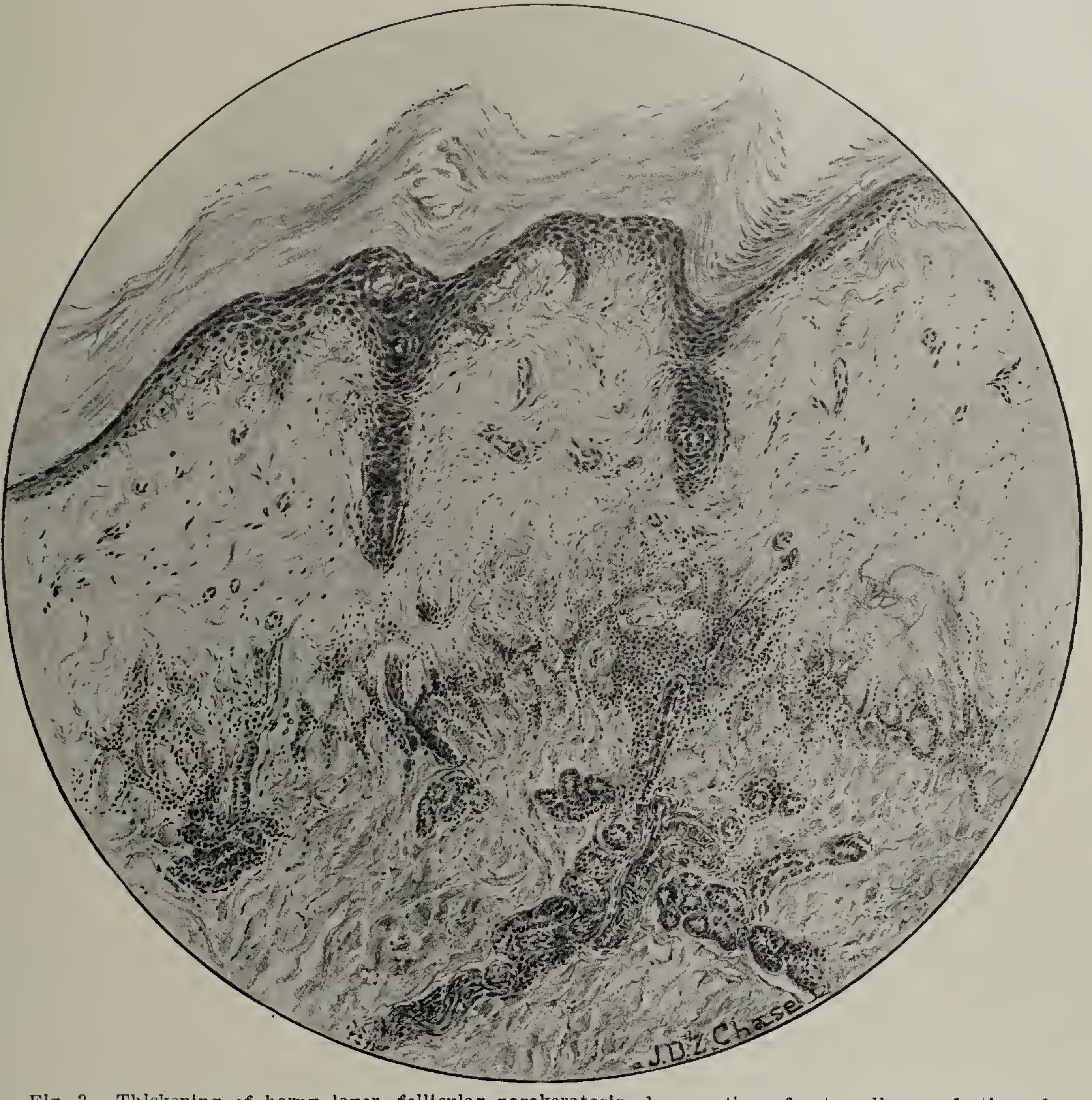

Fig. 3.—Thickening of horny layer, follicular parakeratosis, degeneration of rete cells, rarefaction of subjacent corium, thickening and condensation of deeper layers of the corium and deep cell infiltration.

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[1] Union méd., 1887.
[2] Ann. de dermat et de syph., 1889, p. 447.
[3] Ann. de dermat et de syph., 1896, p. 57.
[4] Ann. de dermat. et de syph., 1898, p. 358.

Some doubt attaches to the accuracy of this patient's observations, as most of the patients assert that the lesion is white from the beginning. Indeed, Hallopeau himself says the papules are decolorized "d'emblée."

Morrant Baker exhibited a case before the London Dermatological Society in 1892, of which Crocker made the following notes:

> A man, age about 40, eruption present about eighteen months. It was composed of white, oval or round, convex solid papules in symmetrical groups or irregular shape on the tips of the elbows and knees, the wrists, backs of the hands, and dorsa of feet, the upper and lower lips, etc. Examination with a lens showed minute vessels between and ramifying on the peripheral part of the papules, very like in this respect what may be frequently seen in lichen planus, to which the disease appeared to have some affinity. Moderate but not excessive itching.

It must be admitted that the above case is not in all respects identical with Hallopeau's cases.

Darier[5] published a typical case in 1892. A woman, aged 54, had the disease for two years. It began with itching in the axillæ. The eruption was limited to the axilla and back of the neck. White spots, brilliant and nacreous, were bordered by a reddish areola. Thirty yellowish and brownish points were present on one patch.

Stowers and Vinrace[6] exhibited a case similar to those of Hallopeau before the London Dermatological Congress in 1896. The disease was limited to the inner side of the right knee and caused intense itching.

Orlack[7] described in 1899 a case of lichen atrophicus associated with vitiligo. A young man, aged 23, had large scar-like plaques in the trochanteric region; duration, ten years. Each spot was surrounded by a sepia-colored zone. There was intense itching and paresthetic symptoms.

Under the title of "Lichen Albus, a Hitherto Undescribed Disease," von Zumbusch,[8] who was apparently unfamiliar with the literature on lichen sclerosus, published in 1906 a typical example of this disease. An unmarried woman, aged 51, began four years previously with an itching dermatosis, which appeared first on the shoulders and upper arms, and later on the forearms, wrists, neck and back. The lesions consisted primarily of vivid red polygonal papules, later acquiring a pale lilac tint. Confluent patches of a porcelain white coloration with a slight rose violet areola were later observed. In the middle of the plaques were seen pit-like depressions, in some of which there were visible grayish-brown horny comedo-like plugs. The histologic changes were characteristic of lichen sclerosus.

Montgomery and Ormsby,[9] after describing cases of morphea guttata, detail the description of a typical case of lichen planus sclerosus et atrophicus. The patient was an extremely nervous woman of 51. The lesions were present on the shoulder blades, on the chest and arms. There were no subjective symptoms.

A number of other cases of atrophic lichen planus have been described, but it is doubtful whether they should be regarded as the same variety as that just considered. Most of these cases assuredly are of a different character.

Kaposi[10] describes a case of a woman, aged 45, who had in the cervico-clavicular region, on the back and on the right thigh extensive flat and slightly depressed reticulated cicatrices, with a whitish luster and a reddish-brown border. Kaposi states that they looked like the cicatrices of lupus erythematosus. Later typical lichen planus lesions appeared.

Pawlow exhibited a case of lichen scleroticus seu atrophicus before the St. Petersburg Dermatological Society. Pawlow[11] regarded the condition as influenced by a general keloidal tendency and employed the term "lichen planus keloidiformis."

Schwimmer,[12] in 1895, demonstrated a case of lichen scleroticus present in groups on the greater part of the body. There was intense itching. In the beginning, the condition was regarded as a universal squamous eczema.

Gaucher, Barbeé and Balli observed in 1895 a patient, 24 years old, with a lichen scleroticus universalis. There were papular plaques with intense pigmentation. The authors called the condition "lichen atrophicus pigmentosus."

Zarubin[13] published a case of a man, 32 years old, with an atrophic lichen planus. On the left thigh in particular, but also elsewhere, were numerous lesions consisting of annular and segmental brownish-red patches with atrophic scar-like centers. He also described a case of "lichen atrophicus annulatus universalis" in a man, 47 years old. This patient had numerous brownish-red annular patches with whitish atrophic or cicatricial centers. An accompanying colored plate of the first case demonstrates conclusively that the affection is not the "lichen planus sclerosus" of Hallopeau.

From a survey of the literature we are led, as others have been, to the conclusion that there are two varieties of atrophic lichen planus. The one represents a terminal degenerative change, while the other would appear to be a primary aberrant variety of lichen planus, or an affection closely allied to it. The term "lichen planus sclerosus" is much to be preferred to "lichen planus atrophicus," as the atrophy of the rete mucosum is probably secondary to the sclerosis of the corium. Furthermore, the term "atrophic lichen planus" should be reserved for the secondary variety. In lichen planus sclerosus, the whitish color of the papules is probably due to the compression and obliteration of the papillary blood vessels by the condensed and hypertrophic collagen. Inasmuch as the whiteness of the papules is a striking feature, the designation "lichen albus sclerosus" would not be inappropriate.

In the 11 undoubted cases that have been reported, 8 patients have been females, 2 males and the sex of one patient we have not been able to ascertain. The preponderance of this variety of lichen planus in women is far greater than that of ordinary lichen planus. Kaposi writes that two-thirds of his lichen ruber cases (doubtless including lichen acuminatus as well as lichen planus) were in men. Crocker states that of 114 hospital cases of lichen planus, there were 7 in women to 4 in men; in 108 private cases, there were 8½ in women to 7 in men.

The histologic changes observed in lichen planus sclerosus by Darier, Montgomery and Ormsby, von Zumbusch, and by ourselves are remarkably constant. There is a cell infiltration in the middle of the lower part of the corium, with later a sclerosis and condensation of the collagen fibers. The papillæ are effaced and the papillary blood vessels obliterated. The rete mucosum exhibits marked atrophic and degenerative changes, while the horny layer is hypertrophied.

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[5] Darier: Ann. de dermat. et de syph., 1892, p. 833.

[6] Stowers and Vinrace: Tr. Third Internat. Dermat. Cong., London, 1896, p. 906.

[7] Orlack: Arch. f. Dermat., 1899, p. 393.

[8] Von Zumbusch: Arch. f. Dermat. u. Syph., 1906, lxxxii, 339.

[9] Montgomery and Ormsby: Jour. Cutan. Dis., 1907, p. 1.

[10] Kaposi: Diseases of the Skin, Am. Ed., 1895, p. 332.

[11] Med. Obozr., 1894, No. 8.

[12] Schwimmer: Lichen ruber planus atrophicus, Arch. f. Dermat. u. Syph., 1895, p. 451.

[13] Zarubin: Arch. f. Dermat. u. Syph., 1901, p. 323.

The constancy in the clinical and histologic features of lichen planus sclerosus serves to distinguish it trenchantly from other varieties of lichen planus. There are some cases of morphea with keratotic plugs imbedded in the patches, which may closely resemble lichen sclerosus, but a careful study of the gross and microscopic appearances will usually enable one to differentiate the two affections.

1922 Spruce Street.—1911 Diamond Street.

ABSTRACT OF DISCUSSION

Dr. M. B. Hartzell, Philadelphia: I had the opportunity of seeing the case which Dr. Schamberg has reported here, and of which he has shown drawings. I am not quite convinced, and I think the reader of the paper is not, that these cases properly belong to the lichen group. If I recall the case aright, there were small whitish areas, some of them containing minute keratotic plugs. Some of the older patches had a peculiar ivory-white appearance, such as we see in old patches of morphea, and I can not help but think that these cases properly belong to morphea rather than to the lichen group.

Dr. J. F. Schamberg, Philadelphia: Some cases of morphea certainly bear a distinct resemblance to lichen planus sclerosus; only recently I made a histologic study of a case of morphea in which keratotic plugs similar to those in lichen sclerosus were present. In its clinical features, however, this disease does not run the same course as morphea. Discrete patches have appeared and disappeared in the course of a year. Histologically, in the case, the elastic fibers were destroyed in the superficial papillary layer, but were preserved in the mid-corium.

VINCENT'S SPIRILLUM AND BACILLUS FUSIFORMIS IN PSEUDOMEMBRANOUS ANGINAS*

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MINNEAPOLIS

Since Plaut, in 1894, described a spirillum and an associated spindle-shaped bacillus in cases of membranous tonsillitis, and Vincent, in 1896, described similar organisms in cases of hospital gangrene, a large number of observers have reported similar lesions in which the spirillum and the *Bacillus fusiformis* have been constantly associated.

These lesions have been described as acute, or subacute, ulcerative or membranous inflammations in which were found the characteristic spirilla and bacilli. Morphologically, the fusiform bacilli have been described as spindle-shaped rods with tapering ends, slightly bulging in the center, usually straight, and from 6 to 12 microns in length. The spirilla, usually associated with the bacilli, are delicate spiral-shaped organisms, staining somewhat faintly, and varying considerably in length and in the number of twists or curves. Both organisms take the ordinary stains but are Gram-negative. They are always found associated with other micro-organisms.

Clinically, these acute lesions appear as a grayish pseudomembranous inflammation attended by necrosis; the necrotic area usually sloughs leaving a penetrating ulcer, the floor of which is covered with pus and which easily bleeds. The duration is from one to three weeks.

In the following cases, the lesion was a chronic pseudomembranous inflammation of the fauces, in which repeated microscopic examinations showed the presence of the characteristic bacilli and spirilla.

Case 1.—Miss S., aged 24. Family and personal history negative. The patient was referred to me by Dr. C. G. Weston for the removal of chronically hypertrophied faucial tonsils.

Examination.—This showed small deeply embedded chronically diseased faucial tonsils. She had been subject to former attacks of acute tonsillitis. The general health at time of examination was good. A short time previously the cervical lymphatic glands on the left side had been enlarged, but were not so at time of examination. On the surface of both faucial tonsils were small membranous patches, not confined to the crypts. These patches were grayish-white in color, somewhat adherent to the tonsil, and when removed, by brushing, left an underlying reddened surface which did not bleed. The patient stated that she had noticed these patches for the last two months. Temperature was normal and no constitutional symptoms were present.

Operation.—Under cocain anesthesia both tonsils were enucleated and the operative wounds healed quickly.

Subsequent History.—One week after operation patient complained of an annoying cough, accompanied by considerable irritation in the throat. Examination showed a number of gray white patches on the lingual tonsil, and extending into the upper portion of the pyriform sinuses. The tonsillectomy wound showed patches of white membrane. Examination of thorax was negative; temperature was normal. Microscopic examination, by Dr. H. L. Ulrich, of deeper portions of the membrane showed Vincent's spirilla and fusiform bacilli.

Further Treatment.—Application of a 10 per cent. solution of silver nitrate relieved the cough for twenty-four hours. Three days later the patches of membrane still persisting, the galvanocautery was applied superficially and a small area was cauterized. This was followed by a violent reaction lasting for ten days, and was not repeated. Following the use of the cautery, a membranous deposit appeared on the cauterized area. Subsequent treatment consisted of applications of peroxid of hydrogen followed by silver nitrate, 2 to 10 per cent. solution and 5 per cent. solution of zinc sulphocarbolate. Three weeks later the pseudomembrane had disappeared and the throat presented a normal appearance.

Case 2.—Male, aged 45, was in city for a few days only and was referred to me by Dr. J. H. Stewart for examination of throat. The man's general health was good and his history was negative. Patient complained of some irritation of the throat, but had no pain.

Examination.—This showed small submerged faucial tonsils and membranous patches in the orifices of the faucial tonsillar crypts, on the lingual tonsil and a small isolated patch on the outer side of the epiglottis. Temperature was normal and there were no constitutional symptoms. Microscopic examination of the deposits from both the faucial and lingual tonsils showed the spirilla and fusiform bacilli, numerous cocci and some leptothrix.

Remarks.—This patient was seen only at time of examination, hence subsequent condition was not noted personally, though a letter received some time later stated that the deposits on the tonsils had disappeared a few weeks after I examined him, and that there had been no recurrence. Treatment had consisted of sprays of mild antiseptic solutions.

Case 3.—Mrs. J. W., aged 44, was referred to me by Dr. J. P. Schneider, on account of a chronic involvement of the throat. Family history and previous personal history was negative.

History of Illness.—The patient took care of a relative, ill with typhoid, four months before date of examination, and her throat became acutely sore at that time, numerous membranous patches appearing on the faucial tonsils. During the past four months there has been a feeling of irritation and discomfort in the throat, but no pain. At times she has been subject to slight hoarseness, though her voice has not been markedly affected. She states that about one month after her throat became affected she felt some irritation further down in the throat and thought the larynx was becoming involved. At that time she had fever, with pain in the muscles of neck, and also some pain in the muscles of chest and back which she described as "shifting pains." She is extremely nervous, does not sleep well, wakes suddenly and has a feeling of impending danger. When nervous and restless at night she perspires freely.

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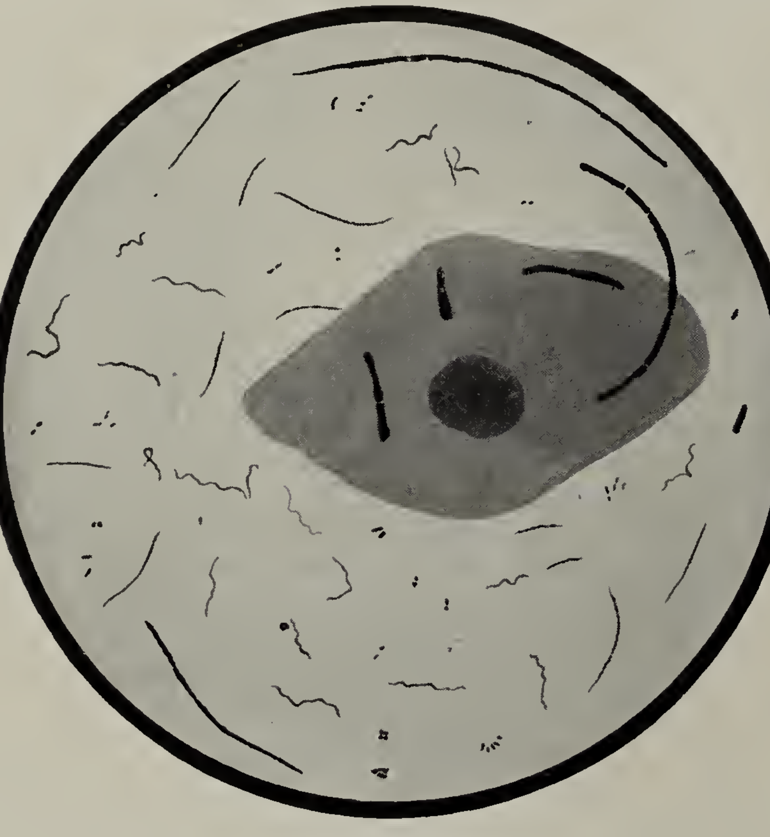
* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Examination.—Faucial tonsils were moderately hypertrophied; the surface of the tonsils showed numerous patches of grayish deposits, some located in the crypts of the glands, but not confined to them, which were adherent to underlying membrane, but could be removed by brushing with a cotton-wound applicator without leaving a bleeding surface. The deposits were abundant between the anterior pillars and the base of the tongue and a number of membranous patches were present on the lingual tonsil and in the lingual sinus. There were several isolated patches in the pyriform sinuses and involving the upper lateral edge of the epiglottis. Temperature at time of examination was 99.5 F., and during subsequent days it varied from 98 to 99.5 F. The patient was also examined by Dr. J. W. Bell, who reported a nervous dyspepsia and neuralgia of the muscles of the chest and back. The patient was neurotic and her general condition was considerably below par; physical examination otherwise was negative.



Drawing from smear in Case 3, × 500; 3 mm. immersion objective and No. 6 ocular used. Drawing made with camera lucida.

Examination of smears: Several days later smears were taken from the affected areas and submitted to Dr. S. Marx White for microscopic examination. Dr. White reported Vincent's spirilla and fusiform bacilli, and a few days later he personally removed some of the pseudomembranous deposits for examination and reported as follows:

1. Considerable numbers of squamous epithelial cells with occasional smaller round cells. No polymorphonuclear leucocytes were seen.

2. A moderate amount of granular detritus without any special structure and small amounts of substance staining like mucus.

3. Bacteria in large numbers. Among these we find most prominent a slender spirillum 8 to 12 and sometimes 14 micra in length, with pointed ends. Each spirillum shows from 3 to 5 and sometimes 6 turns and many of them are twisted in such a manner as to form a loose loop. Beside these are found a number of fusiform bacilli 8 to 12 micra in length. These are pointed at both ends and stain somewhat irregularly, appearing at times to be divided near the center so as to form two bacilli with their blunt ends together. The special staining properties of these organisms will be described in a later paragraph.

Aside from these are a few short bacilli, many cocci, occasionally in pairs and tetrads, and larger deep-staining organisms of the leptothrix type. The fusiform bacilli and spirilla above described resemble those seen in a number of cases of the so-called angina and stomatitis of Vincent. The staining properties of these organisms are as follows:

(a) Gram's stain: The fusiform bacilli when decolorized with alcohol rapidly, retain here and there, a little of the gentian violet, but under ordinary decolorization lose almost completely this stain. The spirilla are completely decolorized.

(b) Gentian violet and aqueous fuchsin stains color the bacilli deeply and give an appearance of vacuoles or fainter staining areas in the protoplasm. The spirilla are brought out more prominently by these than by any other stains.

(c) Methylene blue: The bacilli are faintly colored, but show some irregularity. It is difficult to see the spirilla with this stain, as they are very faintly colored.

The predominating organism in these smears made from the whitish patches on the lingual tonsil are the fusiform bacillus and the spirillum corresponding in all particulars with that of Vincent. Cultivations were impossible because of the larger numbers of other organisms. These organisms may bear an etiologic relation to the condition, but it is impossible to make a dogmatic statement to that effect, since similar organisms are occasionally found in the normal buccal secretions and since also many other organisms, such as the leptothrix, are found. Repeated observations, finding the same organisms in a number of similar cases, would be necessary.

The sections of the tonsil and a small mass of material from the lingual tonsil fail to show anything aside from partially filled crypts in which these organisms can not be distinguished.

In Case 1, the general health of the patient was good and she responded readily to treatment. In Case 3, at the onset of the throat involvement the patient had been subjected to considerable physical and mental strain; she was extremely nervous and apprehensive in regard to what she considered a serious throat affection; she was of a neurotic temperament and subject to gastric disorders, and for these reasons I did not attach much importance to her systemic condition as being a direct result of the throat lesions. This patient responded less readily to treatment than the patient in Case 1. Tonics were prescribed and, while there was no history or other evidence of specific disease, potassium iodid, in increasing doses, was administered for four weeks without result. During the first four weeks, local applications were made of peroxid of hydrogen, silver nitrate, 2 to 10 per cent., and zinc sulphocarbolate. This treatment was followed by but slight improvement; the silver nitrate solution was then increased to 30 per cent. and improvement followed resulting in the disappearance of the membranous deposits.

Clinically, these cases resembled in some respects a mycosis and some leptothrix were found in the microscopic examinations of the smears. The pseudomembrane, as described above, could be removed by brushing with an applicator and left a reddened but not a bleeding surface. This membrane showed a marked tendency to recur after removal and appeared on the cauterized area in the tonsillar fossa after tonsillectomy.

Whether the organisms, as described by Vincent, and which were found in all the miscroscopic examinations made in these cases, were the causative factor I am unable to say. Unsuccessful attempts were made to grow the organisms, aërobically, on culture media and no inoculations were made. The growth of Vincent's spirilla and the fusiform bacilli on culture media has demonstrated the great difference in vitality that these organisms possess.

As previously stated, I am not able to say that the Vincent's organisms were the causative factor; their continued presence, however, would seem to justify the assumption that they may have been a factor in the production of the pseudomembranous angina as occurring in these cases, and I have considered the subject of enough interest to warrant my presenting to the section the clinical histories and findings.

602 Nicollet Avenue.

ABSTRACT OF DISCUSSION

Dr. F. C. Todd, Minneapolis: The literature on the subject of Vincent's angina is large, many cases having been reported despite the relative rarity of the disease. Clinically, two types are generally recognized (according to Bruce), first, the mild diphtheritic type which is unilateral, superficial, limited in extent with no swelling or injection of the fauces, and very slight glandular enlargement on the affected side with slight elevation of temperature, lasting from one to two days, following which there is no immediate change in the throat condition, the slough finally dropping off, revealing an ulcer which quickly heals. Second, the ulcero-membranous type. In this condition the disease spreads rapidly over a greater and deeper area. There is a slow suppuration of the slough in from ten to fourteen days; one-half of the tonsil or uvula may be destroyed, followed by granulations which bleed readily and heal rapidly. Glandular involvement occurs but not suppuration.

The cases reported by Dr. Murray, it would seem to me, sufficiently correspond to those reported by other observers, to be considered as true cases of Vincent's angina, though very likely the mixed infection alters the disease.

I have had one case which I diagnosed as mycosis (mycelium being present) because there were present not alone the microorganism producing this disease, but because it was typical, clinically, and there were present horny, hard elevations extending from the crypts, indeed a keratosis; Vincent's spirillum and Vincent's fusiform bacillus were present. There was at no time a membrane present and the disease was only cured by complete removal of the tonsil and repeated surgical removal of the areas in which recurrence too place, some months being required to eradicate the infection.

Another case I have seen is that of a physician, a pathologist, who is examining the throats of patients in an insane asylum where an epidemic of Vincent's angina was present, contracted the infection himself and although this occurred several years ago he can at all times find the infection present in his tonsils even when no abnormal manifestations are present. At times he suffers severe acute exacerbations. It may be a chronic infection similar to Dr. Murray's cases.

Dr. Samuel Iglauer, Cincinnati: I have seen at least six or seven cases of Vincent's angina. Whenever I had occasion to suspect this disease I found the smears about the same as here given. In giving the characteristics Dr. Murray did not state that the bacillus as well as the spirillum is motile, and that a very good way to study it is in the hanging drop. They both stain with Loeffler's methylene blue, or with carbolfuchsin. We may safely state that these organisms are always present in these ulcers, and it would seem that they are the cause of the disease. The bacillus has always had a characteristic canoe shape and the transverse markings represent, if you will, the seats in the canoe. Another point of importance is the absence of constitutional symptoms. The patient has little or no pain and is usually surprised when told that he has an ulcerative process in the throat.

Dr. E. H. Porter, Tiffin, Ohio: Dr. Iglauer has said the patients have little pain or discomfort. I would like to report a case. A butcher came under my care with a diseased condition of the mucous surface of the mouth which had existed for nine months and suffering excrutiating pain. I took him to St. Vincent's Hospital in Toledo and we went carefully over the case. We found the typical bacilli and enormous numbers of the tetrads. He was taken care of at home for about a week and did not progress favorably and I took him back to the hospital and the whole inner surface of the cheek was removed surgically. He was in the hospital about six days and was sent home by the operating surgeon. Since that time I have been trying everything the various text-books have given for the treatment of the disease, but just before coming to this meeting I found the ulcerative process still going back into the tissues. Dr. Mayer in a letter suggested the use of iodin solution but it has not stopped the process.

Dr. J. A. Stucky, Lexington, Ky.: I have had seven cases, five of which have already been reported. The treatment in the first two was most unsatisfactory, but in the last five I have had gratifying results from the application of Loeffler's solution. In three of the five only two applications were necessary; in the others four or five applications were made.

Dr. W. R. Murray, Minneapolis: I have not reported these cases as typical cases of Vincent's infection. Moreover, I am not prepared to state that they are cases of Vincent's angina. They are not acute cases and are very different from the cases formerly described as Vincent's angina, a great many cases of which have been described in the literature. These cases were chronic, with no constitutional symptoms and no local symptoms except irritation in the throat. I have seen a number of cases of typical acute involvement of the fauces and in the treatment I have found that application of the tincture of iodin usually gives very good results, although I am aware that some men have claimed that it is a disease which is very little influenced by any treatment whatever.

Clinical Notes

A NEW APPARATUS FOR THE TREATMENT OF FRACTURES OF THE HUMERUS

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COHASSET, MASS.
AND
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In the treatment of fractures of the shaft of the humerus, much difficulty is often encountered in getting apposition of the fragments and then holding them in place by the methods commonly in use.

The forms of apparatus most commonly used consist essentially of an axillary pad, coaptation splints, an internal angular splint, a shoulder cap, either of felt or of plaster of Paris, and a cravat sling to support the forearm at the wrist. It may easily be seen that the amount of traction obtained with such an apparatus depends directly on the downward pull which the weight of the forearm exerts on the lower fragment.

In certain cases in which reduction is difficult, an internal angular splint is applied and active traction is obtained by means either of a weight which is hung on the internal angular splint close to the elbow, or by means of a piece of rubber tubing which is fastened to the angle of the splint and then passed downward to the groin, and around the thigh. Such an apparatus as the latter is uncomfortable and necessitates constant watching to see that no pressure sores result from insufficient padding under the tube.

It may readily be seen that such a humerus apparatus is complicated and difficult to adjust properly, and that it requires constant readjustment in order to hold the fragments of bone in apposition. It also does not allow of muscular relaxation, but simply tires the muscles by constant and direct pull, and by pressure of the coaptation splints.

It would seem, then, that a simpler apparatus which would allow of muscular relaxation and which also could be applied so as to cause traction without weights, and thus bring the ends of the fragments into apposition, would be much more advantageous than the complicated contrivances commonly used. Such an apparatus would have all the advantages of the usual combination without the disadvantages attendant on frequent removal for readjustment.

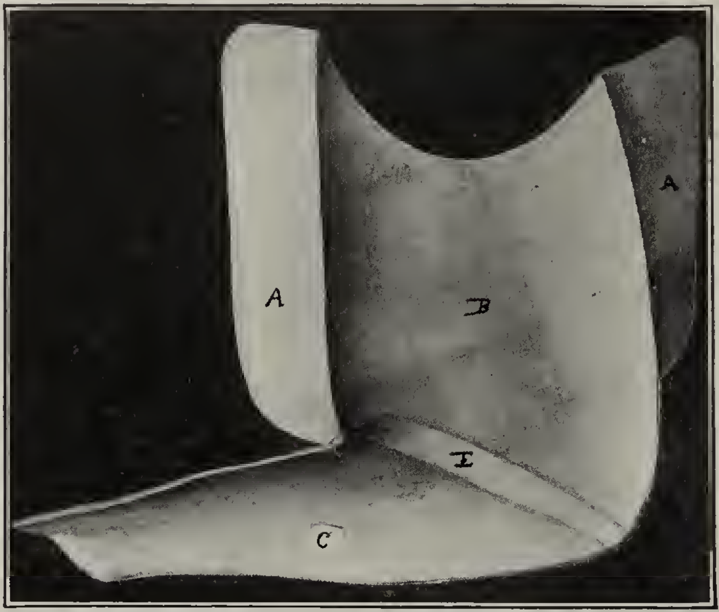

Fig. 1.—Side view of left arm splint; foreshortening due to position of splint; A, chest piece; B, upper arm support; C, forearm splint; E, reinforced angle.

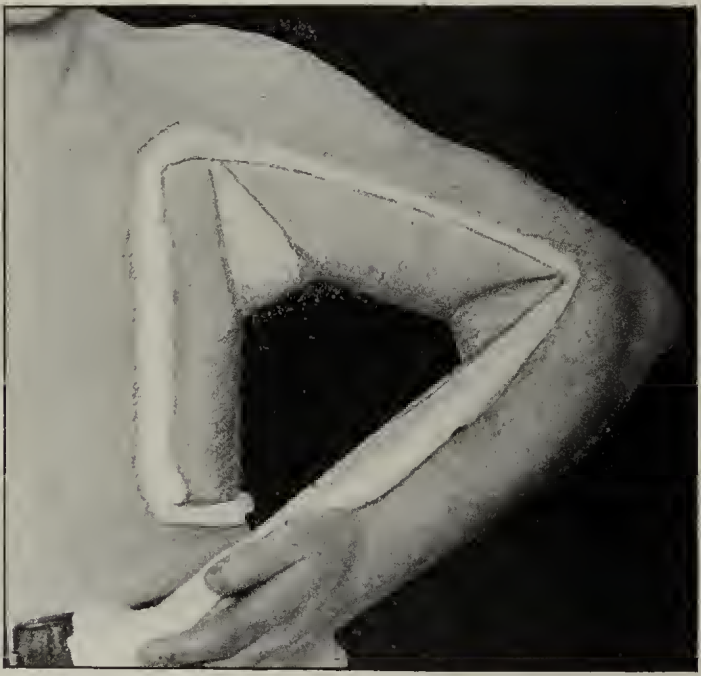

Fig. 3.—Splint padded and applied before the adhesive swathe has been put on.

Taking all these factors into consideration, the following apparatus was devised for the treatment of fractures of the shaft of the humerus. It may be used for fractures elsewhere, such as those of the surgical neck, and for supracondylar fractures, provided that care is used in adjusting the splint and the pads. The splint consists of a chest piece (Figs 1 and 2, A), to which is attached a gutter (B) at an angle of about 45 degrees and large enough to accommodate the upper arm and of a length approximately that of the humerus measured from the axilla to the flexure of the elbow. From the lower end of this gutter is what is practically the forearm part of an internal angular splint (C) set at such an angle that the forearm will be carried slightly in front of the body, while the hand will be held in a position of semipronation and somewhat lower than the elbow. This position of the hand and arm is very comfortable and exerts little or no pressure on the large vessels in the arm and at the elbow, so that the circulation is not retarded, and there is very little chance of edema of the hand in spite of its relatively dependent position. In order to gain extra strength, the splint is strongly reinforced in the angles (E, E).

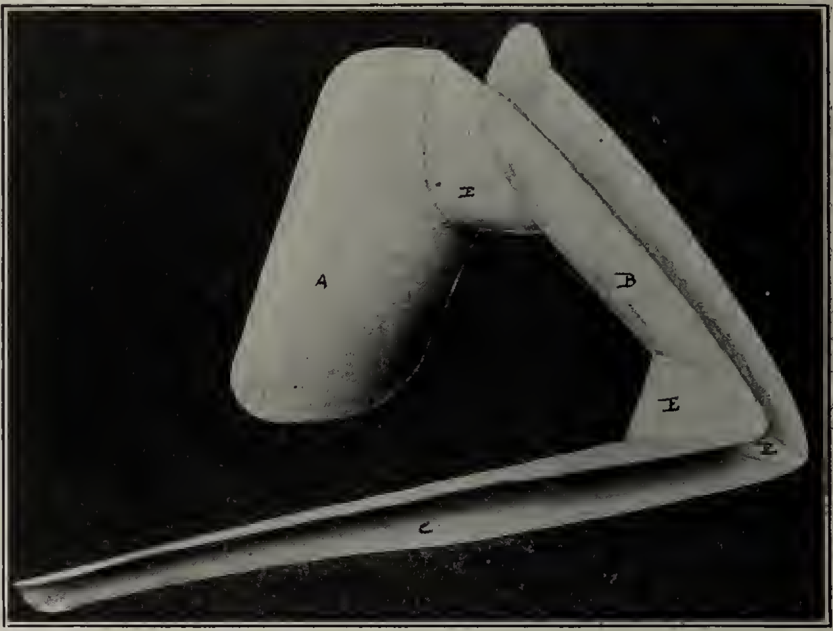

Fig. 2.—Front view of left splint; Various parts designated as in Figure 1.

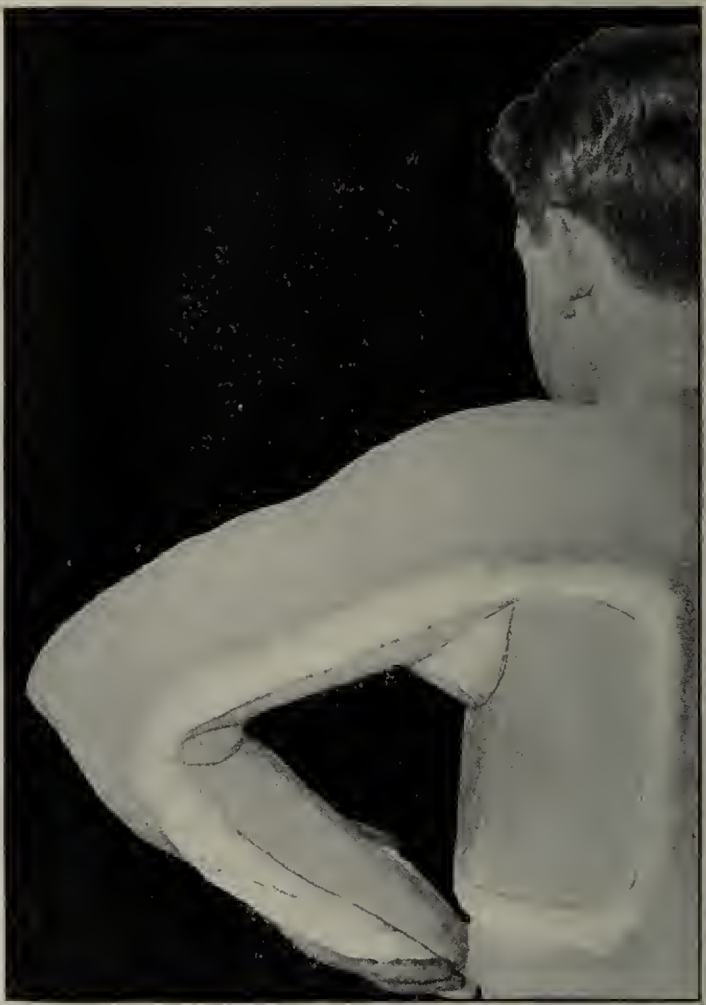

Fig. 4.—Same as Figure 2; rear view.

This apparatus, when applied, combines in itself an axillary pad, internal angular splint, sling and internal coaptations. The adhesive plaster straps which cross over the deltoids take the place of the shoulder cap. External coaptation splints may be used to advantage in certain cases, simply to aid in the prevention of outward bowing, and also to prevent "gunstock deformity."

The greatest advantage of this apparatus, however. is the fact that it permits of practically any degree of traction required for the apposition of the fragments. During the application of the splint, the traction is active; but after the apparatus is applied the traction becomes virtually passive by reason of the downward pull of the arm along the upper gutter, by gravity pulling the upper arm forward and downward, thereby counteracting the usual displacement forward of the lower fragment.

Another advantage derived from this apparatus is to be found in the treatment of compound fractures of the humerus, which are nearly always compound on the outer side, since the dressing may be changed without disturbing the position of the fragments. Another desirable feature is the fact that patients are able to put their clothes on over the splint. Furthermore, it is much more comfortable to wear than any other form of apparatus known to us. Patients who have been in the usual apparatus have commented on the comfort and relief afforded by this splint.

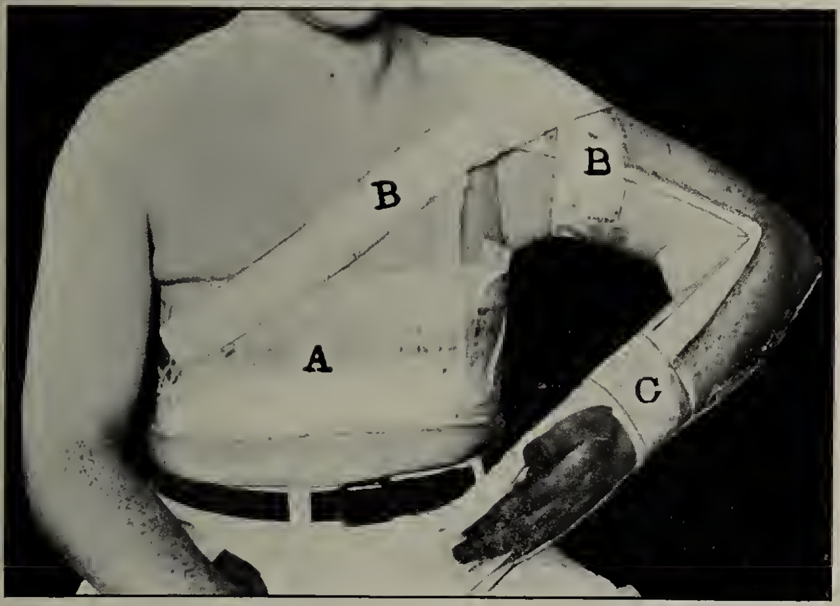

Fig. 5.—Rear view of same subject shown in Figure 3; shows relative position of splint to chest wall and arm; A, adhesive swathe to hold splint in position against chest wall; B, B, straps of adhesive plaster crossing over deltoid muscle to hold splint well up into axilla and also to immobilize the deltoid; C, adhesive plaster strap applied over sheet wadding to hold forearm to splint. Note the unobstructed view which may be had of the whole of the upper arm.

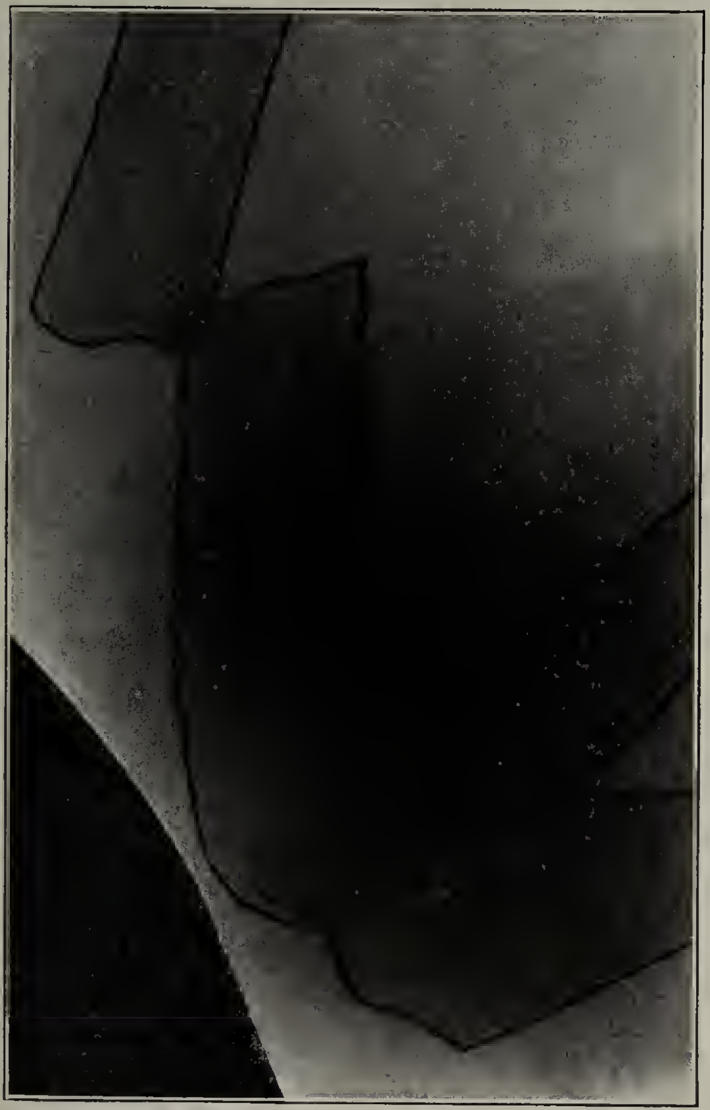

Fig. 7.—Case 1; compound fracture of the humerus. An operation was performed and an attempt made to hold the fragments in position by means of kangaroo tendon. The arm was then put in acute flexion, but considerable displacement resulted, as shown in the diagram, and the arm could not be fixed so as to hold the fragments in position. It was therefore decided to try the splint.

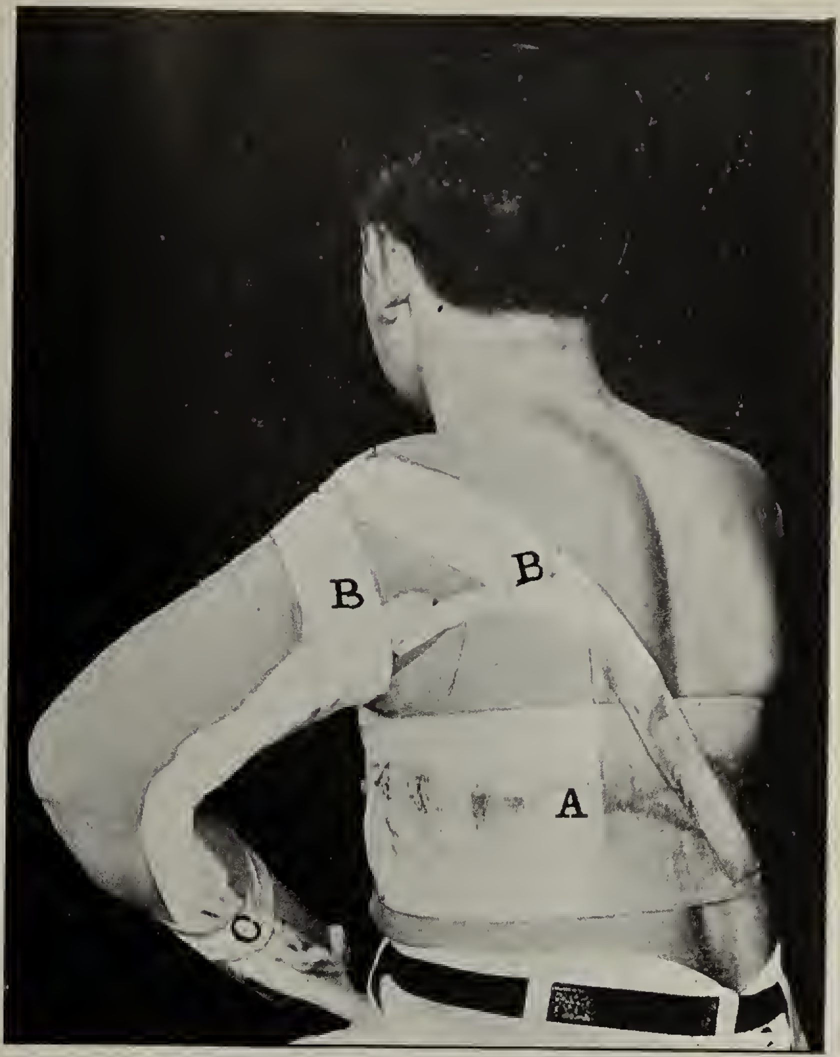

Fig. 6.—Rear view of the same subject shown in Figure 5. Designation by letters same as in preceding figure.

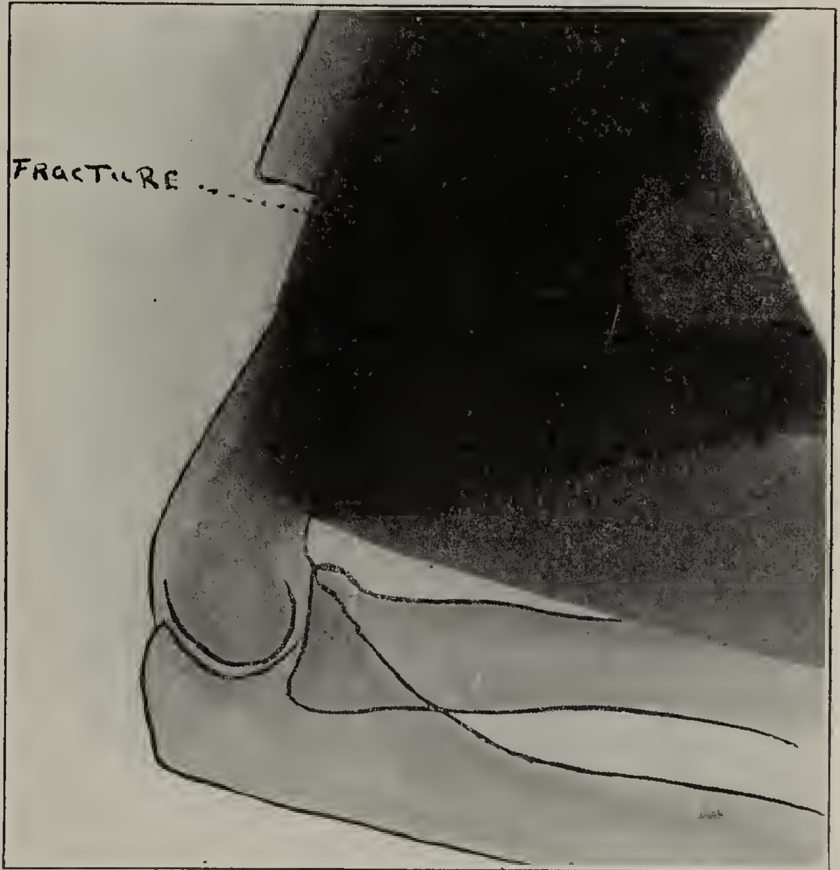

Fig. 8.—Case 1; arm on splint showing still some displacement of fragments; upper fragment displaced slightly outward and lower fragment displaced inward.

The desired traction is obtained by first extending the forearm and carefully placing the proper amount of padding over the lower angle of the splint. The forearm is then flexed, and if the padding has been properly adjusted such flexion will cause the lower fragment of the humerus to be drawn downward, while the upper fragment remains fixed. The degree of traction obtained can easily be varied by the amount of padding placed over the lower angle of the splint, and, as this is rounded off, a great amount of traction may be obtained without fear of injuring the nerves and blood vessels lying in the flexure of the elbow. Practically any amount of overriding may be corrected, as the position of the upper arm is such that the greatest amount of muscular relaxation is obtained, and the traction from the weight of the arm is continuous, though moderate in degree.

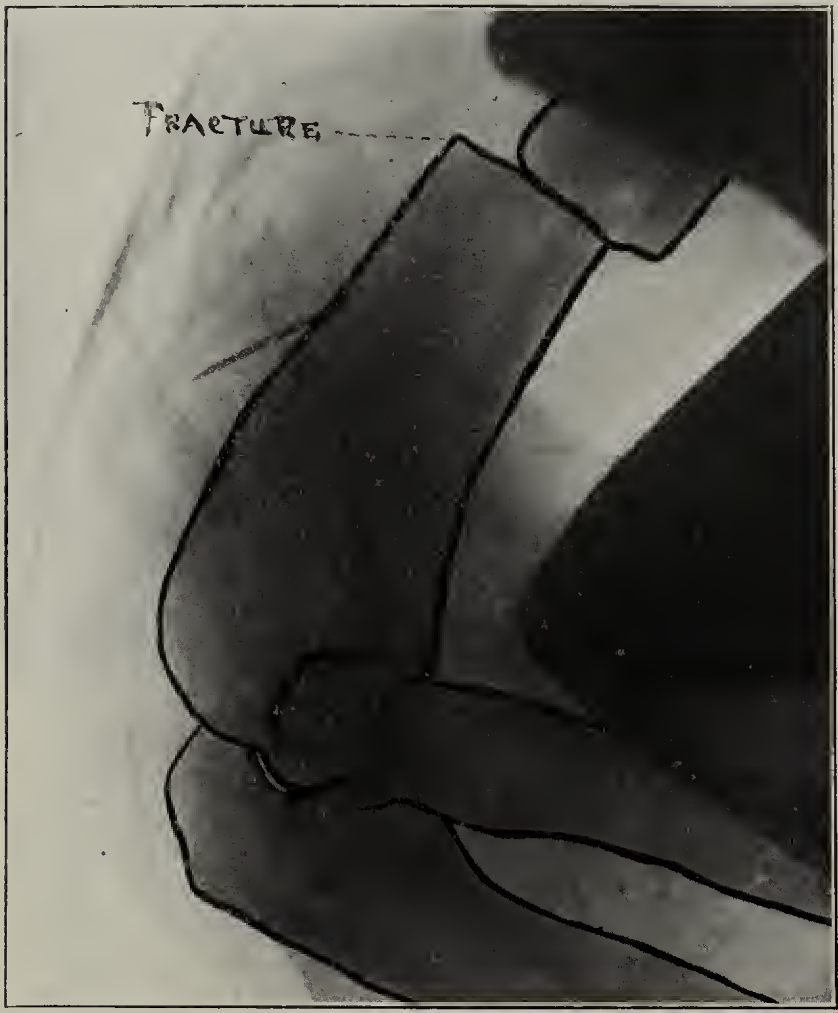

Fig. 9.—Case 1; marked improvement in position due to adjustment of padding; very slight displacement outward of the lower fragment.

The forearm splint acts as a sling, holds the forearm in a semipronated position and carries part of the padding by means of which the traction is obtained.

The splints are made in various sizes for both right and left arms. An adjustable splint may also be made by constructing the upper gutter in two parts, one of which rests in the other. The chest piece and one part of the gutter are attached, while the other gutter is attached to the forearm splint. A series of holes is made in both gutters in such manner that they correspond, and the splint is completed by adjusting the upper gutter to the length of the humerus and then rivetting the two parts together.

The method of applying the splints is very simple and is as follows:

After the proper amount of padding has been placed over the chest piece and upper gutter, the splint is pressed well up into the axilla (Figs. 3 and 4) and an adhesive swathe (A) is passed over the chest piece and around the body (Figs. 5 and 6). The padding is then adjusted over the upper gutter, and the strap (B) is placed in such a manner as to hold the splint well up in the axilla and also crosses over the deltoid so as to hold it fixed, while it also serves to sustain the upper fragment in position. The forearm is then flexed and the strap (C) is applied. A bandage may now be applied if desired and the apparatus is completed.

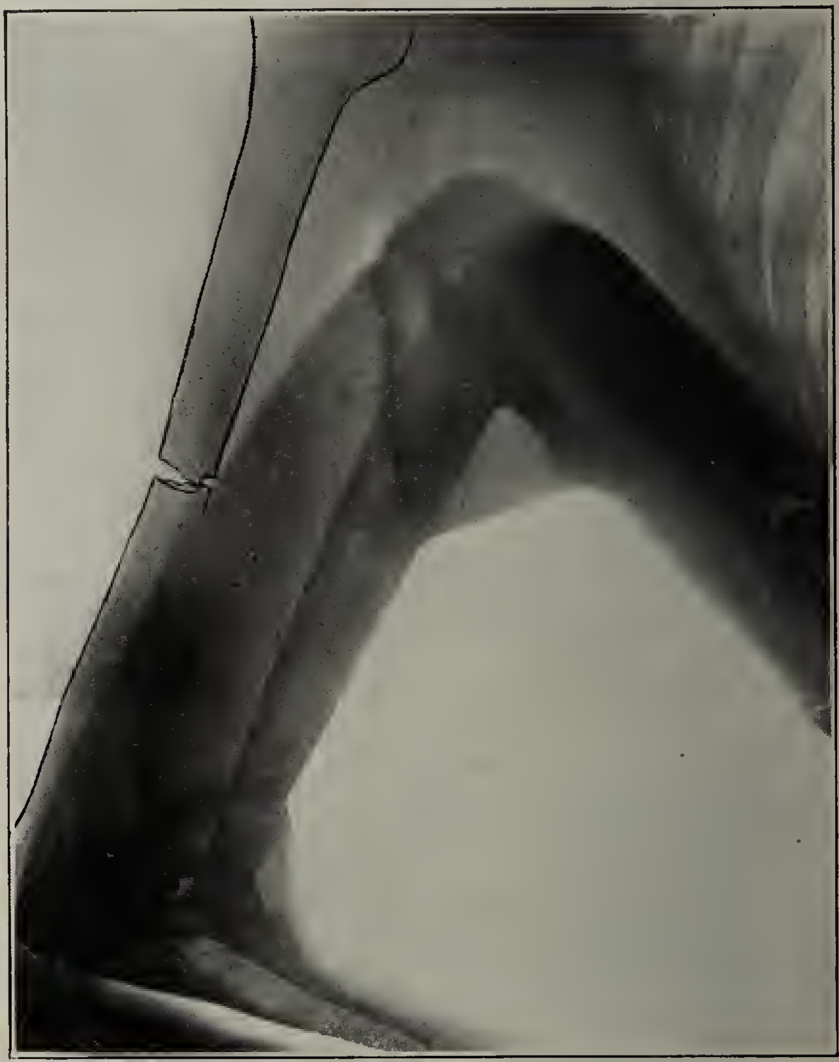

Fig. 10.—Case 2; x-ray showing well the application of the splint and its relation to the chest and upper arm; fracture seen at middle of shaft of humerus in good appostion and excellent alignment.

CONCLUSION

We wish to express our thanks to Dr. F. J. Cotton for many timely suggestions. His opinion of the splint is as follows:

> I had nothing to do with the original planning or designing of this splint, but have had an ample opportunity to test it clinically. The case here noted as Case 1 (Figs. 7-9), a peculiarly difficult case in which to get and maintain position, was in my charge, and there have been several others at various times since then. The splint has, in short, been thoroughly tested on suitable clinical material on our service and has proved eminently satisfactory.
>
> Obviously, its proper application calls for some skill, and it must be watched as must all splints; but in reasonably skilled hands remarkably satisfactory results are possible, even in most difficult cases. I regard it as a very definite step in advance of our previous apparatus for most fractures of the humerus in adults.

"I Read It Through Carefully.—I did not know what it meant, or even what it was trying to prove. This worried me a good deal until I showed it to two men more than usually acute intellectually, and they confessed that it was beyond them. What excuse is there for writing . . . [what] is not perfectly clear and plain to everybody who can read? . . . Obscurity is a common fault." This by a writer in *Printer's Ink*, is worth attention by medical men, who so often write so hastily as to leave clearness out of account.

GIANT-CELL EPULIS OF LOWER JAW

REPORT OF A CASE

ALEXIUS McGLANNAN, M.D.
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GENERAL DESCRIPTION

Epulis is a slightly malignant tumor of the jaw, growing from the connective-tissue cells between the mucous membrane and the periosteum of the alveolar border.

The tumors grow slowly, seldom reach a large size, or cause destruction of the bone. The teeth are often loosened by the growth of the tumor into the root sockets. As far as is known, these tumors never give metastases, but will recur locally if their removal is not complete. Histologically they are sarcomata of low malignancy, giant-celled and fibro-spindle-celled, or vascular fibromata (angiofibroma). An epulis always may be cured by complete excision.

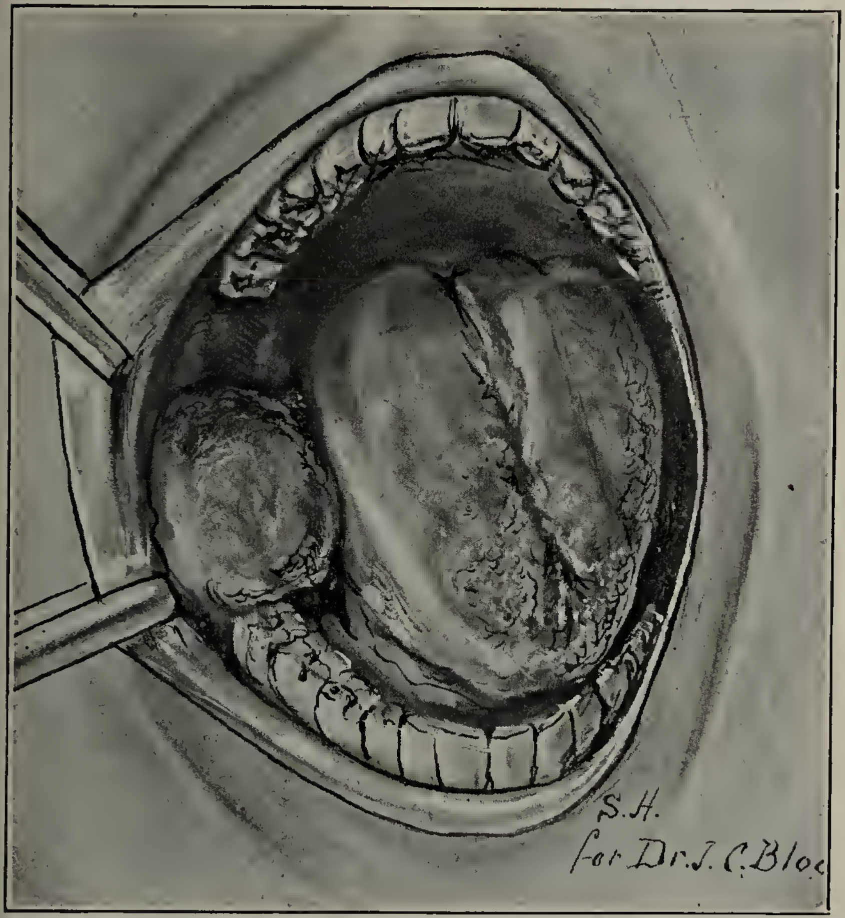

Fig. 1.—Appearance of the tumor in the mouth. The clamps are on the divided cheek. Note the good exposure obtained by this incision. (From a painting made at the operation by Miss Hayes.)

These tumors seem closely related to inflammatory reaction. About 25 per cent. of cases give a distinct history of traumatism as an etiologic factor. A certain number of patients date the growth of the tumor from the extraction of a tooth; but here it is more than likely that the tumor led to the removal of the tooth. In many cases the tumor occurs around normal, firm and evenly placed teeth.

In the clinical history the symptom of onset most frequently is at the tumor itself. The tongue feels the small swelling on the side of the alveolar border of the jaw. Occasionally pain may be the first symptom—toothache or pain in the jaw itself.

The small tumor looks like a gum-boil, but is not so painful or tender; often, indeed, it is not at all sensitive. The swelling begins on the inside of the jaw at the border of the teeth and extends down on the alveolar process. As it grows it surrounds the tooth or teeth and extends on the outer border. The growth is always greatest on the inner side of the teeth, and is never confined to the outer side alone.

The tumor is always firmly attached to the teeth, or to the alveolar border. It shows little tendency to infiltration beyond the alveolar process. On the lower jaw it is distinctly limited by the alveolar border, while on the upper jaw it may infiltrate below the mucous membrane over the hard palate. A vascular epulis may pulsate.

The mucous membrane over the tumor remains intact for a long time. When it ulcerates the surface of the tumor appears red, finely lobulated, and vascular. From such ulcers there are frequent slight hemorrhages.

These epulides occur at all ages, being most common in the third decade of life. They usually have a history of long duration, and are more common in women than in men. The position of the growth is most often about the bicuspids and first molars; it is less frequently found around the incisors, and is extremely rare posterior to the last molar teeth.

Differential diagnosis must be made between epulis and (1) sarcoma of the bones of the jaw, (2) the dentigerous cysts, and (3) adamantine epithelioma.

The alveolar limit of the epulis distinguishes it from the periosteal sarcoma. While these tumors may appear at the alveolar border, the swelling spreads rapidly over the body of the bone. More often the periosteal tumor begins on the body and extends to the border.

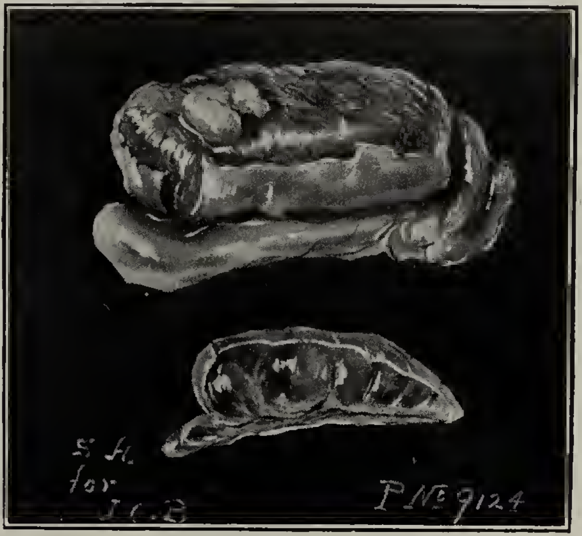

Fig. 2.—The tumor after removal, and on section.

The dentigerous cyst is formed by the distention of the connective-tissue sac about an undeveloped tooth. The distending cyst thins the overlying bone by pressure. The growth shows itself as an asymmetrical swelling of either jaw, situated beyond the alveolar process, covered by intact mucous membrane and a thin shell of bone.

The adamantine epithelioma may be considered a dentigerous cyst whose cavity is filled with proliferated enamel epithelium. It has the same clinical symptoms as the cyst. Both tumors are shown in x-ray pictures as areas of bone absorption, and at exploratory incision are easily recognized by the character of their contents.

Treatment of epulis is by conservative operation. When the tumor is large and spreads over the area of several teeth, an incision is made through healthy mucous membrane, the teeth are extracted, and the tumor with a portion of the alveolar border is removed. An operation of this extent will always cure the disease.

In early cases, and when the tumor takes in only one tooth root, it is sufficient to take the tooth and tumor, dividing the mucous membrane and burning the tooth socket with the Paquelin cautery. Still earlier tumors may be removed by the cautery alone without extracting the tooth. This very conservative treatment of the small tumors is justified, because by this means we are able to avoid deformity and run no risk beyond that of local recurrence, in that these tumors do not form metastases, even after repeated recurrences. When the tumor is a recurrent one, however, it is better to do the radical operation outlined above.

The following case is of interest because of the rare position of the tumor, posterior to all the teeth, in consequence of which a rather extensive operation was required for its exposure and removal.

REPORT OF CASE

Patient (Surg. No. 555)—A white man, aged 50, was admitted to Dr. Bloodgood's wards at St. Agnes Hospital, July 22, 1908, for the cure of a tumor (epulis or giant-cell sarcoma) of the lower jaw. His previous history was unimportant, except for the repeated attacks of quinsy. There was nothing in the history or physical examination to suggest lues. The swelling of the jaw had been present three years, beginning as a small lump on the inside of the angle of the jaw, on the right side. This gave him no pain, and the growth had extended slowly without tenderness or pain. For about a year the last molar tooth on this side had been loose, and during this time the patient had toothache, which he relieved by picking the tumor so that it bled. The growth would bleed occasionally, especially after anything hard was masticated. The patient felt that the original lump began as a result from a carious wisdom tooth whose roots had never been extracted.

Examination.—The fungous swelling extended from the angle of the jaw to the anterior pillar of the fauces, and forward to the second molar tooth. This tooth was loose and tilted inward. The surface of the growth had the appearance of fibrous granulation tissue. It felt soft, but was not friable and did not bleed when handled. The tumor was distinctly limited to the alveolar process, and did not extend on the cheek or tongue. The submaxillary lymphatic glands were palpable.

The patient was given an antiseptic mouth-wash and a chlorate of potash tooth-paste, and put on sterile food for six days preparatory to operation.

Operation, July 28, 1908 (McGlannan).—The ether was administered by Dr. S. G. Davis, by means of his spray and tube. The cheek was split from the angle of the lips to the ramus of the jaw, below the line of the parotid duct. (Fig. 1.) This gave excellent exposure and no trouble was experienced in dividing the healthy mucous membrane and periosteum beyond the tumor. By blunt dissection the periosteum was lifted and a thin shell of bone taken with the tumor. In order to do this the first molar was extracted and a hole drilled just under it. The Gigli saw was passed through this hole and the bone cut through by means of it. The removal of bone was completed with bone forceps and the raw surface burned with the Paquelin cautery. Closing the wound, the mucous membrane of the floor of the mouth and of the outside of the jaw were drawn toward one another with fine silk. The cheek was sutured with fine silk inside for the mucous membrane, and alternate fine and coarse silk on the outside for the skin and muscles. The lip was carefully restored with fine silk sutures. A protective drain was put in the posterior angle of the cheek wound and the anterior portion sealed with foil, cotton and collodion. The face was then put up in a voluminous gauze dressing with a crinoline helmet.

Postoperative History.—The patient made a good recovery. There was a little discharge of pus from the posterior portion

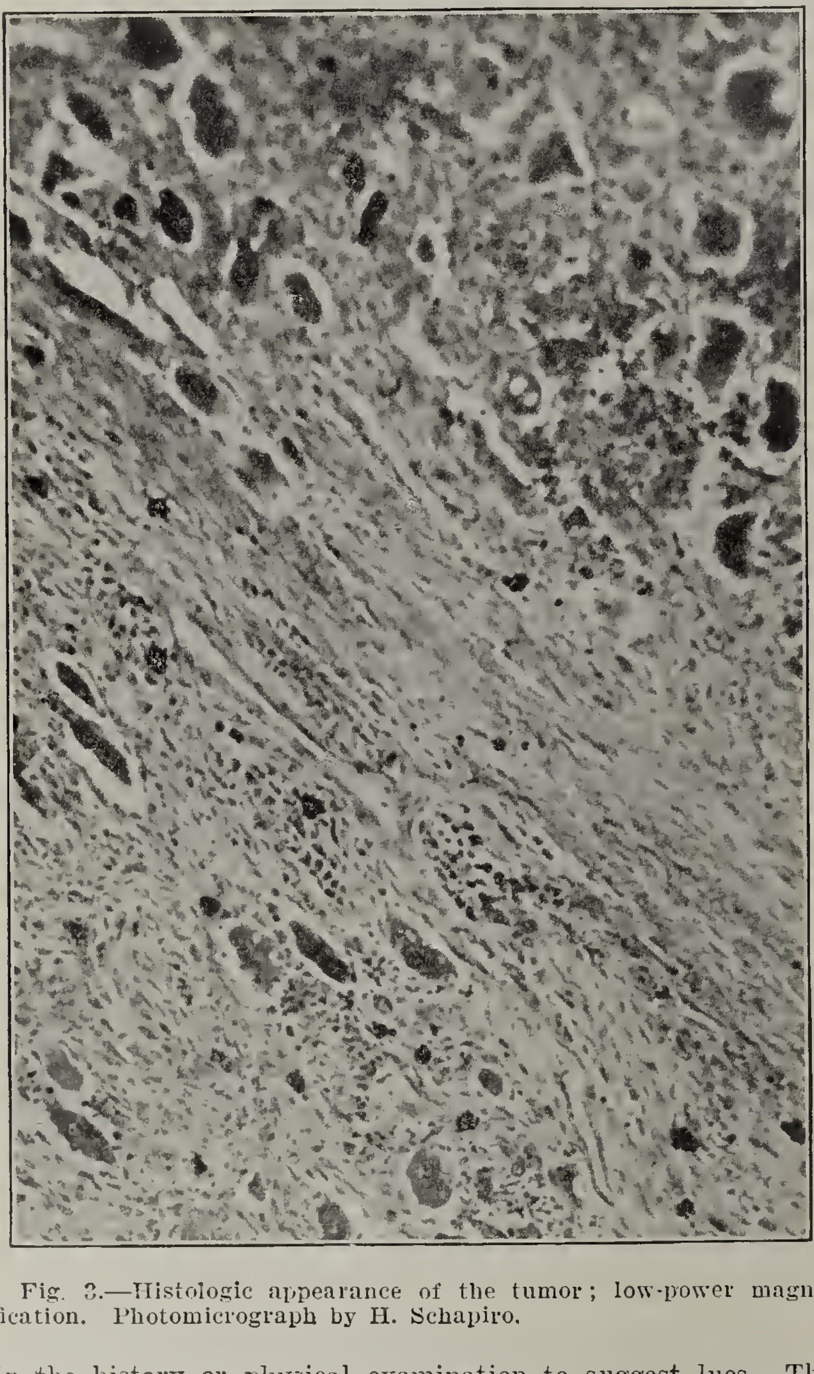

Fig. 3.—Histologic appearance of the tumor; low-power magnification. Photomicrograph by H. Schapiro.

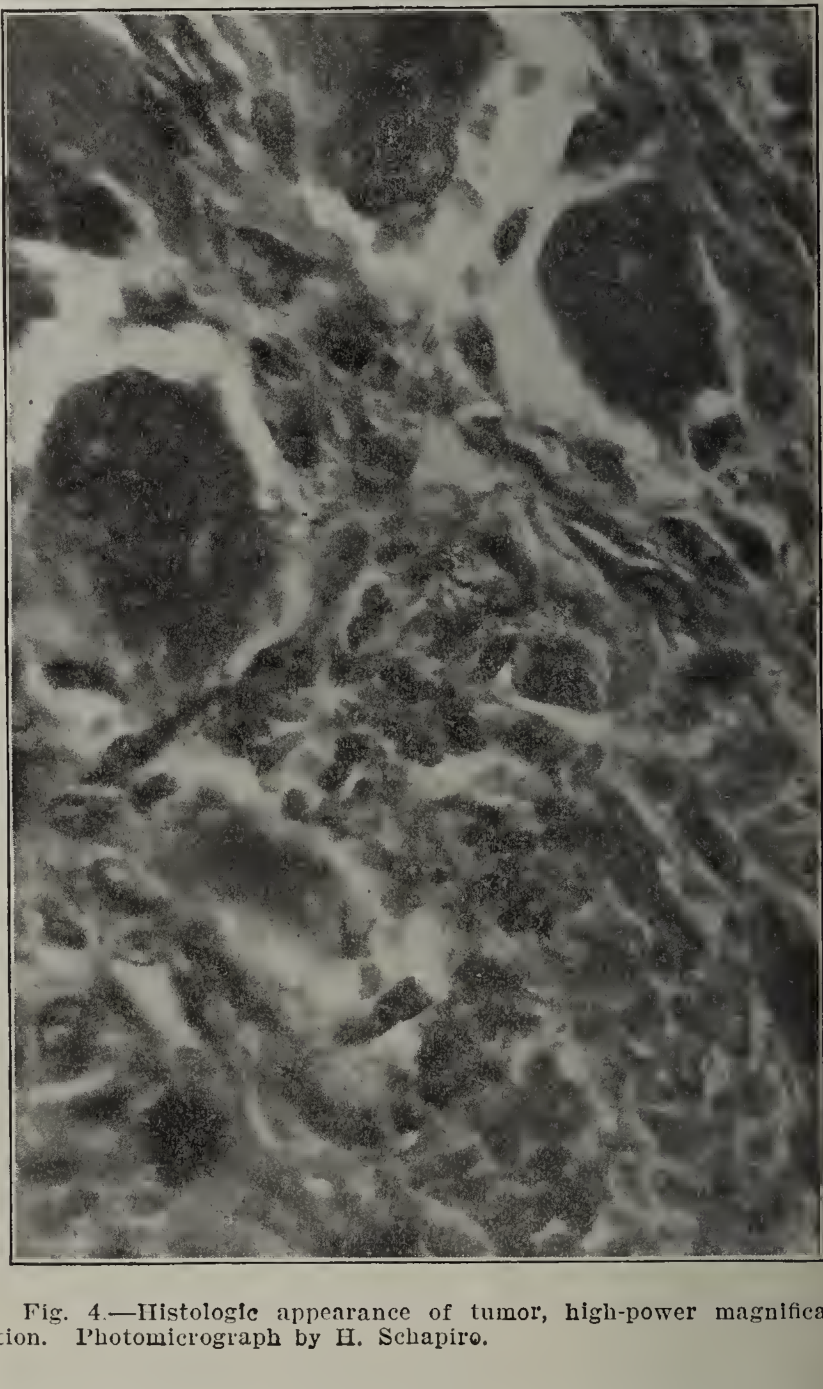

Fig. 4.—Histologic appearance of tumor, high-power magnification. Photomicrograph by H. Schapiro.

of the wound for some days, and a salivary fistula remained for about two weeks. The lip end of the wound healed firmly by first intention. There was no deformity of the mouth, and the scar was entirely concealed by the patient's beard. There has been no sign of recurrence of the tumor.

Pathologic Report (Path. No. 9124).—Gross Description: The fungous tumor is elliptical, 2.5 cm. and 2 cm. in diameter, and elevated about 1.5 cm. It was removed with mucous membrane, periosteum and bone. The tissue was firm and almost entirely covered by mucous membrane. On section the surface was dark red, lighter at the base with perpendicular striations. Nothing was expressed on pressure. The tumor was distinctly circumscribed and did not infiltrate the normal tissues. No tooth roots or cavities were present.

Microscopic Examination: The section showed giant cells in an extremely vascular stroma with marked tendency to fibrosis and distinct lobulation. There was some blood pigment present. The mucous membrane shown is normal.

114 West Franklin Street.

POPLITEAL ANEURISMS

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Surgeon to the Hillman and St. Vincent's Hospitals
BIRMINGHAM, ALA.

I. A POPLITEAL ANEURISM, IN A PATIENT WITH ONE LEG, SUCCESSFULLY TREATED BY THE MATAS METHOD

C. F., a colored miner, aged 41, was admitted to my service at the Hillman Hospital on July 8, 1908, with a pulsating tumor of the left popliteal space. His right leg had been amputated just below the knee, twenty-two years previously, as a result of severe burns. He denied any specific history or injury of this leg. He first noticed a lump, about the size of a lemon, in this region two years before, and said that it always grew larger when he was at work and decreased in size when he kept quiet. He had not had much pain, but the foot had been cold and stiff for the past year. The mass had not increased in size, and pulsated slightly; a bruit could be heard; it was firm and there was some question as to its being an aneurism.

Under ether, with a tourniquet on above the knee, an incision was made down to the vessel, the sac opened and several large clots, which were well organized, were turned out. No blood was encountered until the last clot was removed. This clot showed a groove on its under surface which formed the upper boundary of the blood channel; the openings of the vessel were about 2 cm. apart and were connected by a groove of about the same depth as the one in the blood clot which had been removed. Nature was making an attempt to cure the aneurism and the channel thus formed carried almost the normal blood supply. The openings into the sac were closed with fine silk and the sac was obliterated by infolding and suturing with chromic catgut. A small silkworm-gut drain was introduced and left in place for a few days. The collateral circulation proved to be good. The wound healed by primary union, and the patient was discharged cured at the end of a month.

II. VENOUS "ANEURISM" OF THE POPLITEAL SPACE *

Mr. W. S. A., a merchant, aged 32, a patient of Dr. W. H. Hutchinson of Childersburg, Ala., first consulted me on Nov. 30, 1908, for a vascular swelling of the right popliteal space. He had been under the care of Dr. R. H. Cranford of Moselle, Miss., who after discussing the case with Dr. R. Matas of New Orleans, came to the conclusion that it was an ordinary arterial aneurism and advised him to go to New Orleans for operation. The swelling had first made its appearance about four years before. The patient experienced no pain or discomfort from it until about three months before the consultation, when he began to have a dull aching pain in the calf of the leg and lower part of the thigh. There was nothing in his family history bearing on the condition. He had always had good health and denied any specific trouble. He had an inguinal hernia on the same side, which he first noticed ten years ago following a blow in the groin. He wore a truss and experienced no inconvenience from this. There were no enlarged veins on the legs or any part of the body.

On inspection the popliteal space presented a soft vascular swelling about the size of a large English walnut; no pulsation could be felt, but there was some tenderness on palpation; no bruit; when the patient was lying down the tumor completely disappeared. A diagnosis of venous aneurism was made and operation advised.

The patient was admitted to the private wards of St. Vincent's Hospital a week later, and under ether the swelling was dissected out, a tourniquet having been applied in case there should prove to be an arterial connection. The vein showed a thin saccular appearance and was excised between ligatures, a small branch on the under surface also being ligated. The wound was closed, after inserting a small silkworm-gut drain, and healed by primary union. There was no pain or discomfort after the operation. The patient left for his home at the end of two weeks, and reports at the end of six months that he has been relieved of all pain and is perfectly well.

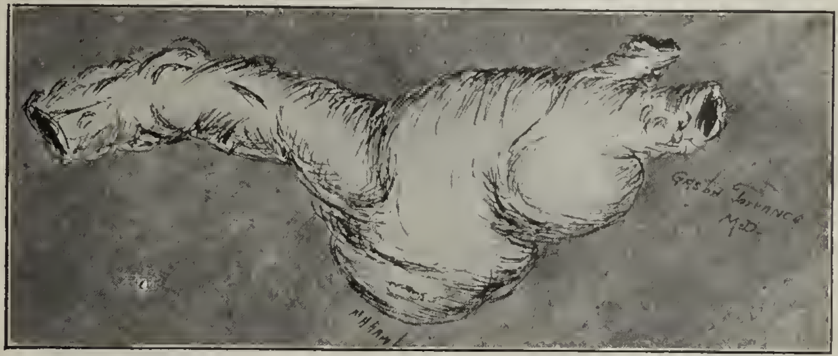

Fig. 1.—Venous aneurism; specimen distended with paraffin and hardened in formalln.

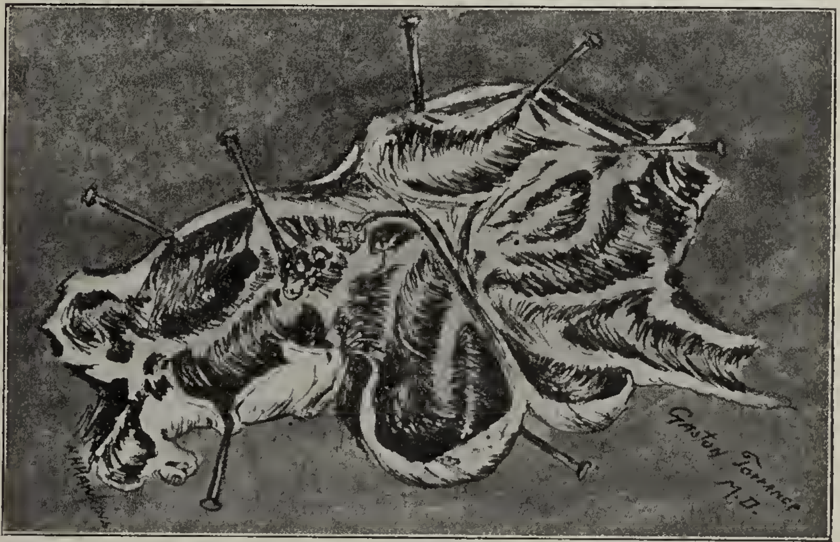

Fig. 2.—Venous aneurism; specimen laid open after having been filled with paraffin and hardened in formalin.

Fetus Born Disemboweled.—Dr. J. M. O'Connell, Ponca, Neb., reports a rare obstetric case as follows: Mrs. E. G., aged 19, a well developed primipara, had her last menstruation September 10, and gave birth, May 12, to an 8½ pounds, male, R. O. A. presentation. The time of labor was fourteen hours, of the first stage, thirteen hours. The babe was delivered with complete evisceration of the intestines, through a transverse laceration of the abdominal walls, adjacent to the umbilical cord on its right, and extending about one inch. Nature's efforts were uninterrupted by anesthesia, or instrumental or other interference. The tissues surrounding the umbilical vessels were not unusually thin in texture. The infant never thoroughly reacted from the shock, and succumbed in eighteen hours. Why should such a condition obtain, unless because the legs of the fetus were flexed the reverse of their accustomed position in the pregnant uterus, thus producing a tense and convex prominence of the infant's abdomen in the actively contracting womb, whose expulsive efforts ruptured the babe's abdomen with the result stated? The literature at my command records no analogous case.

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* Dr. Matas suggests "venous ectasy" or "venous sac" as a more suitable term to be used in this case.

A METHOD OF DIAGNOSTICATING FLOATING KIDNEY BY THE *X*-RAY

SIDNEY LANGE, M.D.
Radiographer to the Cincinnati Hospital
CINCINNATI

The great advance in *x*-ray technic in the last few years has not only put the diagnosis of renal calculi on an accurate basis, but has rendered visible the kidney itself. Not many years ago it was considered remarkable to obtain an outline of the kidney on the skiagram. Now it is a common observation. Indeed, where the technic has been perfected it is a routine matter to obtain the kidney shadow, the technical prerequisites being a soft tube and a quick exposure while the patient suspends respiration. In this way I have been able repeatedly to diagnosticate nephroptosis and have seen the diagnosis verified by palpation or operation.

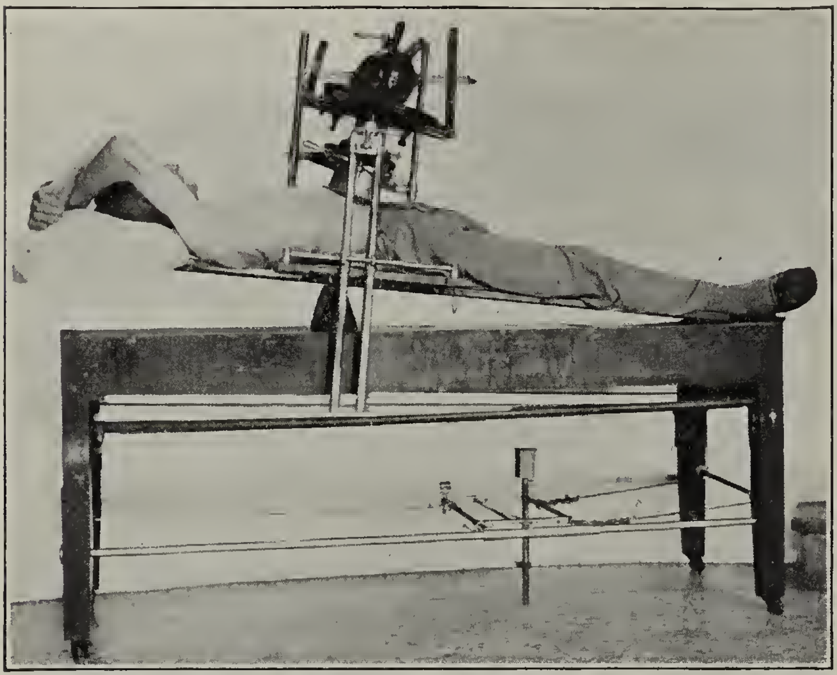


Fig. 1.—Skiagraphing floating kidney, first position.

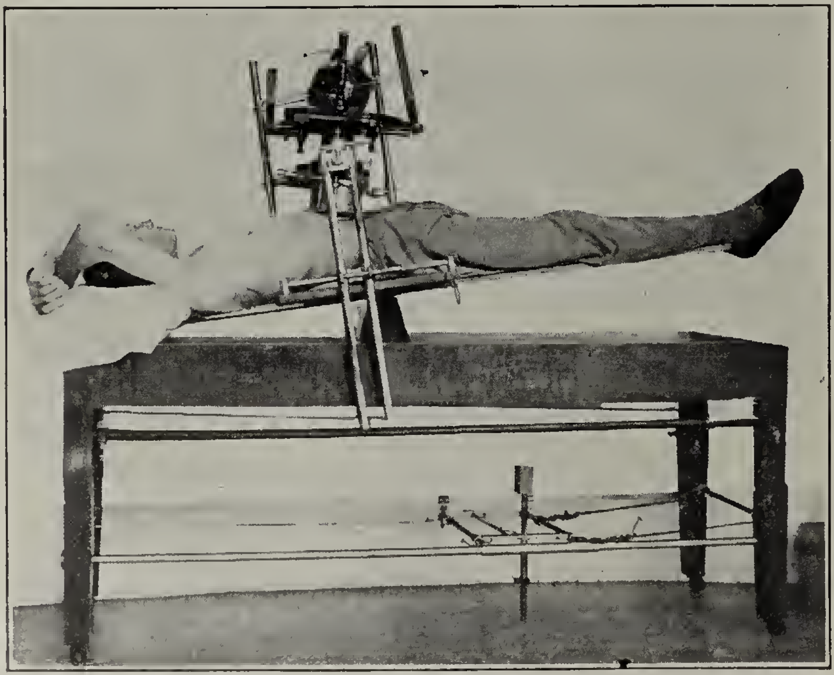


Fig. 2.—Skiagraphing floating kidney, second position.

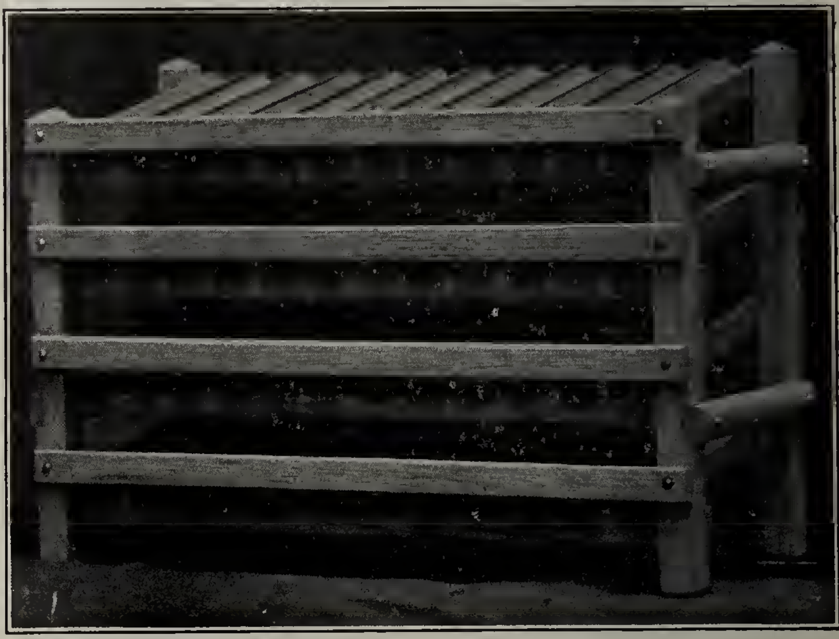
It occurred to me that the *x*-ray diagnosis of floating kidney could be made uncontrovertible by showing the kidney outline in different places on two skiagrams taken at different times or in different positions. The accompanying photographs illustrate a method (suggested to me by Dr. R. W. Thomas) of skiagraphing a floating kidney in two positions. Starting with the patient in the standing position in which the loose kidney descends to its lowest point, the patient is placed on the inclined plane with the feet low, and the kidney region is skiagraphed (Fig. 1). The incline is then reversed, making the head low and allowing the kidney to slide cephalad. Manual pressure may aid in causing the kidney to slide back into its niche. Another skiagram is then made, as shown in Figure 2.

22 West Seventh Street.

TEST-TUBE RACK USED IN THE PREPARATION OF LOEFFLER'S BLOOD SERUM

J. ALLEN JACKSON, M.D.
Pathologist, Central Indiana Hospital for the Insane
INDIANAPOLIS

The technic we use in this hospital in the preparation of the blood serum culture media does not vary from that given in text-books, except in one particular. At the time of coagulation we place the tubes on a rack which we have devised, which is so designed that it will fit in any medium-sized Bausch and Lomb hot air sterilizer, thus giving better results. It will not be amiss, however, briefly to recapitulate the technic.



Test-tube rack. It should be placed so as to secure equal distance from all sides of the sterilizer.

Blood from the bullock, killed preferably by the Jewish method, is received in a clean gallon bottle. The bottle is then placed in the refrigerator and allowed to stand for twenty-four hours, thus allowing the blood to clot firmly.

The serum is pipetted off, care being taken not to break the clot, thus keeping the serum as clear as possible. The serum is then taken and mixed with glucose bouillon in the following proportion: glucose bouillon 1 part, beef blood serum 3 parts.

Tubes are then filled with the mixture, to the depth of 3 or 4 cm. They are then placed on the rack, which gives them the proper slant. They are then placed in the hot-air sterilizer and submitted to a temperature of 85 to 90 C. "The temperature should not exceed 90 C. or fall below 85 C., and the door should be kept closed."[1] At this temperature they are allowed to remain two hours. They are sterilized by being submitted once, in an autoclave, to a temperature of 110 C. (six pounds pressure) for fifteen to twenty-five minutes.

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[1] Mallory and Wright: on "Pathologic Technic."

My friend Mr. Cobb has ingeniously made a very useful and inexpensive test-tube rack, consisting of four upright posts (the two anterior measuring 10 inches in height, the two posterior measuring 11 inches in height), joined by two cross-bars at each end (measuring 6 inches in length) and longitudinally by eight bars (four anterior and four posterior, measuring 15 inches in length). The four anterior are placed at a lower level than the posterior ones, in order to give the "rests" a slope of half an inch. Extending crosswise from the longitudinal bars there are series of "scalloped rests." Each layer will support twelve tubes, and the longitudinal bars support four layers, thus making the capacity of the rack forty-eight tubes. At the foot of each layer there is a thin foot-rest to prevent the tubes from slipping forward.

This apparatus can be modified, increasing the capacity of the rack, but the principle to be borne in mind is the slanting fixed rests made of wood and the proper distance of the tubes from the walls of the sterilizer.

The advantages of this apparatus are: 1. The proper distance from the wall of the sterilizer is secured. 2. An equal distribution of heat is secured for the tubes as nearly as possible. 3. There is an even, smooth and properly proportioned slanting surface in each tube.

I wish to thank Mr. Cobb for the interest he has taken in perfecting the apparatus, as well as Dr. J. J. Hoffman for the accompanying illustration.

BOTTLE IN THE RECTUM

ISAAC L. FIREBAUGH, M.D.
ROBINSON, ILL.

On the morning of May 31, 1909, a man, aged 46, unmarried, came into my office with this statement: "Doctor, I have a bottle in my bowels." Examination showed a large bottle, one end resting well above the sphincters in the hollow of the sacrum, while the other end could be distinctly felt through the abdominal wall just behind and beneath the navel. The patient stated that he had fallen on the bottle at 10 o'clock the night before. About the only symptoms were an irritation of the bladder, with a desire to pass water every few minutes. He was sent to the Robinson Hospital and made ready for operation.

At 10 a. m. an anesthetic was given, a catheter passed into the bladder about a dram of urine drawn, and the sphincters were widely dilated. After an ineffectual effort at extraction with the fingers a slip noose of stout tape was worked up around the body of the bottle, when by traction on the tape and the use of one blade of obstetric forceps used as a sort of vectis and as a skid over the back of the spincter muscles, the bottle was delivered intact. The bottle is 8 inches long and 7½ inches in circumference, and therefore 2½ inches in diameter. There appeared to be little or no laceration. The patient left the hospital that evening and went to work the next morning and has worked ever since.

Pubiotomy in Argentina.—E. Canton has performed the true Gigli operation in 4 and the subcutaneous operation in 20 cases, his list being the first long series of pubiotomies yet published in South America. It forms the leading article in the *Semana Medica*, of March 11, 1909, accompanied by illustrations and the details of the 24 cases. The ultimate outcome was satisfactory and there has been no incontinence or prolapse in any of the patients. All recovered but one, who succumbed during convalescence to pneumonia. All the children were delivered alive but two died soon after birth as labor had been too long under way before the patients arrived at the hospital. His verdict is most favorable.

CASE OF PURPURA FULMINANS

F. E. BERTLING, M.D.
SPOKANE, WASH.

The patient was a healthy young man, aged 18. He awoke in the morning with a severe sore throat. He used hydrogen peroxid as a gargle and went to work as usual. In the evening his throat was not much better, so he used the peroxid gargle again. The next morning I was summoned and found him with a temperature of 106 F. and a very severe membranous angina. Owing to the presence of scarlet fever in the near neighborhood, I made a provisional diagnosis of scarlet fever, but took a culture for diphtheria nevertheless. My scarlet fever diagnosis was apparently justified, for that evening there was a brilliant scarlet rash all over the neck, chest and abdomen, which by the next morning also covered the lower limbs. At noon of this day a bluish-black discoloration appeared on the upper part of each thigh and the lower part of the abdomen. The young man was delirious, his extremities were cold and the discolored area extended rapidly, the patient passing away at 4 a. m. the next morning, about seventeen hours after the first appearance of the purpuric rash and about seventy hours after the first symptoms of illness were noticed. The culture was negative for diphtheria. No autopsy could be secured.

208 Granite Block.

Longer Daylight.—There are a great many things to be said in favor of advancing the clock by one hour during the summer. The principal object is to apportion a larger part of the period of daylight to evening rest and recreation. The close of the working day is so near sunset that by the time the evening meal is over the stretch of remaining daylight is too short for any lengthy outdoor pastimes. Those who have spent part of the summer in northern latitudes, where the later sunset and longer duration of twilight combine to make the summer evenings the most delightful period of recreation, understand perfectly the motive and force of the arguments which have led to the present widespread movement in favor of a longer daylight day. The evening is the ideal time for outdoor recreation. The mind and body are relieved of the stress of the day's occupation, and the temperature is cooler. The arrangement advocated by the National Daylight Association is that from and after 2 o'clock in the morning of the first day of May in each year, until 2 o'clock in the morning of the first day of October, the standard time shall be one hour in advance of the standard time now in use. This result is to be secured by advancing the hands of the clock one hour on May 1 and moving them back one hour on October 1. The change would involve a shortening of the hours of sleep only on the last day of April. Subsequently through the summer months people would get up and retire by the clock as usual, and the regular schedule of railroads, factories and all social institutions would be maintained as before. The public would have the benefit of two or three hours of daylight after the evening meal, instead of one or two hours as under the present arrangement. Some adjustment of railroad schedules would be needed on the two days which marked the opening and close, but with those two exceptions regular schedules could be maintained. A bill before the British Parliament for a change similar to that related above has the indorsement of the Education Committee of the London County Council, of over one hundred municipal corporations and town councils, of the national convention of Royal Burghs of Scotland representing about two hundred towns, and of one hundred and thirty chambers of commerce, associations, and clubs. A similar bill is before the Canadian Parliament, and the special committee to which it was referred says that, in view of the almost unanimous support of the bill, and its facility, it should be put in force as soon as possible. It is probable that a similar bill, which has already received wide journalistic indorsement, will be introduced in France.—Abbreviated from the *Scientific American*.

AN IMPROVED RECTAL IRRIGATING TUBE*

A. L. WOLBARST, M.D.
Consulting Genitourinary Surgeon, Central Islip State Hospital; Attending Genitourinary Surgeon, Beth Israel Hospital and West Side German Dispensaries
NEW YORK CITY

In the treatment of inflammatory conditions of the prostate, applications of heat or cold, by means of a recurrent rectal irrigating tube, are often found to be of considerable value. I have employed most of the models on the market, notably the Kemp and the Chetwood tubes. These tubes seem to me to have two serious disadvantages, which I have tried to remedy in the model here presented (Fig. 1). Both the Kemp and Chetwood tubes are made entirely of glass, pressed-rubber or metal, and when inserted into the rectum are apt to cause severe pain when the hard and firm tip comes into contact with the tender and inflamed prostate; then, too, the inflow of fluid into the rectum is through one or, at most, two openings. These openings are often obstructed by contact with the rectal wall or fecal matter, and the effectiveness is thus diminished.

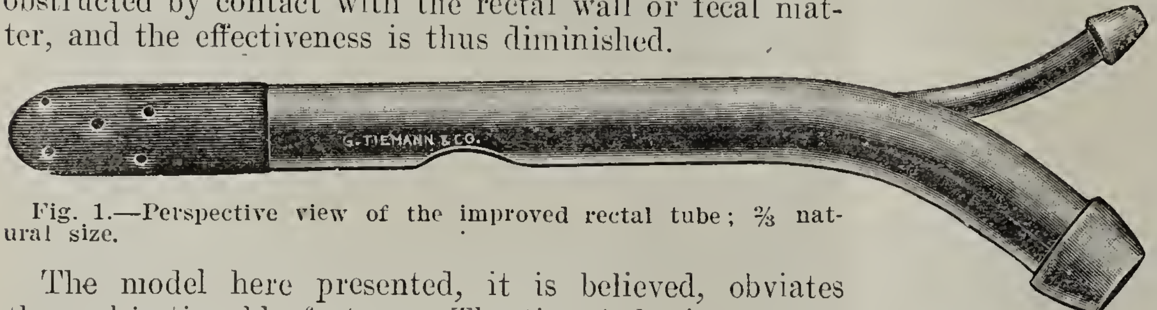

Fig. 1.—Perspective view of the improved rectal tube; ⅔ natural size.

The model here presented, it is believed, obviates these objectionable features. The tip of the instrument is of soft, pliable rubber, which gives easily on contact with the rectal wall, and the flow of fluid into the rectum is through a number of small openings, thus providing a fountain spray instead of a single or double jet.

The apparatus consists of two tubes, a small one inside of a larger. The water enters through the small tube (Fig. 2, A) and fills up the soft rubber pouch (Fig. 2, B), which is perforated with numerous pinhead openings, through which the fluid enters the rectum. Escape from the rectum is only possible through the large opening (Fig. 2, D) in the larger tube (Fig. 2, C). The external sphincter (Fig. 2, F) prevents any outflow at the anus.

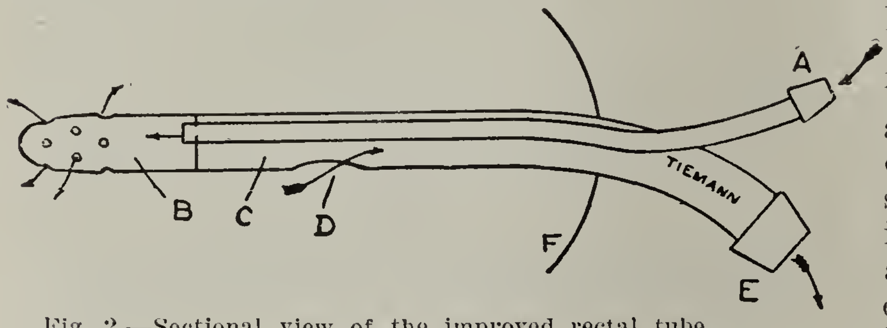

Fig. 2.—Sectional view of the improved rectal tube.

The instrument is made of nickel-plated brass tubing, with a soft rubber tip; the total length is seven inches, including the rubber tip. The diameter is equivalent to 38 of the French scale. The soft rubber tip projects 1⅜ inches beyond the end of the large tube; it is slipped over the bulbous end of a short metal tube, the distal end of which is provided with a male thread, which is screwed into the end of the large tube (Fig. 2, C) and thus securely wedged in place. We are also thus enabled to unscrew the rubber tip and thoroughly clean it and the metal tubes at will.

105 East Nineteenth street.

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* Presented at the meeting of the American Urological Association, at Atlantic City, N. J., June 8, 1909.

A CASE OF VEIN ANESTHESIA

LEIGH F. WATSON, M.D.
OKLAHOMA CITY, OKLA.

I think it worth while to report the following instance of vein anesthesia, a method recently proposed by Bier[1] and described in THE JOURNAL.[2]

History.—R. N., aged 21, on June 24, 1909, stepped on a rusty nail which penetrated the sole of the left foot one inch. The foot and ankle began to swell immediately. The next day he was admitted to Rolater Hospital and treated in the service of Dr. J. B. Rolater. On admission his temperature was 102 F., later it rose to 103 F.

Treatment.—Hot moist dressings of cresol solution were applied and changed frequently and antitetanic serum administered. Under vein anesthesia, an incision two inches long and one and a half inches deep was made over the wound caused by the nail. After thorough curetting the wound was cauterized with phenol, followed by alcohol and then with tincture of iodin, and finally a hot dressing of cresol solution was applied. Fifteen minutes before the operation, the patient received ¼ gr. of morphin sulphate hypodermically. A tourniquet was applied just above the knee. A solution of cocain hydrochlorid 0.2 per cent. in physiologic saline solution was prepared, 15 c.c. (cocain, gr. ½) of this solution was injected into the external saphenous vein in the upper third of the leg. Anesthesia appeared in thirty minutes as a sensation of numbness, but did not extend above the level at which the cocain solution was injected. The wound was allowed to bleed freely as the turniquet was gradually loosened. Sensation appeared almost immediately on removing the tourniquet, although before it was loosened the patient said he felt very comfortable and somewhat sleepy, the latter probably due to the morphin and the sequestration anemia (Dawbarn).

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1. Arch. f. klin. Chir., Berlin, lxxxviii, 1908, No. 4.
2. THE JOURNAL A. M. A., May 1, 1909, page 1466.

Therapeutics

ACUTE RHEUMATIC FEVER

Dr. J. C. Meakins presents the results of his investigations as to the etiology of this disease in "The Medical and Surgical Report of the Presbyterian Hospital of New York City" (vol. viii, December, 1908). His experiments seem to bear out the pretty general belief that this disease is due to the streptococcus, but that there is any one strain of the streptococcus family that is the only cause of this disease seems not to be proved and seems not to be a fact. Meakins has found streptococci in the tonsils of patients suffering from rehumatic fever, and believes that the recurrent attacks of the disease are often due to reinfection from these streptococci which have been harbored in the deeper tonsillar tissue. He believes that the tonsils, and probably the pharynx, are the most frequent portals of entrance of the infection, although they are probably not the only way in which the streptococcus infection reaches the blood. He thinks it probable that the infection may enter the blood through the intestinal mucosa.

The practical application of these investigations is as complete an antiseptic treatment of the mouth, throat and gastrointestinal tract during rheumatic fever as is possible. The mouth and throat should be washed and gargled with peroxid of hydrogen solutions, boric acid and alkaline cleansing solutions almost as frequently and persistently as in follicular tonsillitis and diphtheria. Probably nasal sprays and postnasal cleansing with mild alkaline solutions are also advisable.

The intestinal canal should be kept active with saline cathartics, the excessive action from which may be inhibited with small doses of morphin, as 1/10 of a grain, and the best bowel antiseptic should be administered. It is a fact that the specific for acute rheumatic fever, viz., salicylic acid, is also the best bowel antiseptic that we possess. Therefore, salicylic acid in some form is the drug that should be administered. The best form in which to administer it and the size and frequency of the dose must depend on the individual patient. Theoretically, from the antiseptic standpoint, small doses frequently repeated should be the most efficient.

Salicylic acid is generaly best administered in the form of sodium salicylate as it is absorbed mostly as a sodium salt and as the latter is less irritant to the stomach than the former. Phenyl salicylate (salol) is the pleasantest method of administering it by the stomach, but the phenol it contains may cause irritation of the kidneys, and certainly salol should not be administered if there is albuminuria. The many other preparations of salicylic acid that are bland for the stomach really represent but small doses of the acid; therefore, generally, instead of prescribing an expensive patented preparation of salicylic acid, the dose of the sodium salicylate should simply be made smaller, and unpleasant symptoms will be prevented.

Certainly large doses of salicylic acid, in any form, sufficient to cause salicylism (ringing in the ears, fulness of the head, flushing of the face, irritation of the skin, and slight cardiac disturbance) should be administered only for a day or two. Small doses can be long tolerated without discomfort or any unpleasant or undesirable symptoms. In other words, as soon as the joint pains have become lessened, the dose of the salicylate should be reduced. It should also be remembered that the salicylic acid prepared from vegetables is but little depressant, and perhaps not at all depressant, to the heart, while synthetic salicylic acid is depressant to the heart and should never be given internally.

BOILS

Dr. G. T. Jackson, New York, describes his treatment of these troublesome affairs in the *American Journal of the Medical Sciences*, June, 1909. He believes that boils are entirely due to local infection with staphylococci; that they occur most frequently at parts that are injured or irritated, as the back of the neck, from the chafings of stiff collars; that groups of boils occur from the spreading of the infection; and that the same infection can cause an epidemic of them in groups of associated persons. In other words, he does not believe that a constitutional disturbance has anything to do with the eruption of boils. Anything that causes irritation of the skin, as scabies, and the itching and consequent scratching and abrasion of the skin gives an opportunity for the pus organism to gain access to the deeper tissues.

Although boils are not caused by a constitutional condition, it is certainly true that eradication of the infection is much easier when the systemic condition is perfect than when the normal fighting power or tone of the individual is deteriorated. Therefore, it seems to be true that when there is constitutional weakness and a boil develops others are more likely to occur than in individuals who are otherwise well.

The old-fashioned poultices to hasten the "pointing" of the boil is a very good way of causing the infection to spread and to infect other parts. Such warm, moist, sticky applications most beautifully promote the growth of the germ of infection, and especially after the boil has been opened.

Jackson's method of treating boils, which method he attributes to Dr. George H. Fox, is as follows:

If the patient is seen before the boil has "pointed," "it may be aborted by injecting into it a drop or two of a 5 to 10 per cent. solution of phenol (carbolic acid), or by just touching the raised surface of the boil with 95 per cent. phenol and then covering the boil and the surrounding surface of the skin with an ointment containing from 5 to 10 per cent. of salicylic acid."

If the boil has already pointed, "a small bit of cotton is wound around a sharp pointed stick, which, after being dipped in a 95 per cent. phenol solution, is bored into the soft point of the boil." This is only slightly painful, as the phenol quickly anesthetizes the injured nerves. The pus is thus allowed to escape, and the inside of the boil is disinfected. The indurated mass of the boil should not be squeezed, as by Nature's process the infected region has been thoroughly surrounded by walls of protective leucocytes. Next, "the skin in the region of the boil is washed with peroxid of hydrogen solution or with bichlorid of mercury solution (1 to 1,000), and then a 5 to 10 per cent. salicylic acid ointment is spread on cloth, or several layers of gauze, and gently laid over the boil and surrounding region."

Jackson says that this is generally the end of the boil, but if it is a large one the operation may be repeated on the next day. The ointment should be kept constantly on the affected part for a week. Adjacent boils, or boils on other parts of the body, occurring from a transference of the infection, should be treated in the same way.

If there is severe pain from the distention or congestion of the part affected, instead of using the warm poultices which certainly do relieve pain, although tending to spread the infection, "compresses of hot boric acid solution may be used."

A 10 per cent. salicylic acid ointment may be made as follows:

℞.	Gm.		
Acidi salicyli	5		ʒiss
Unguenti	50	or	℥ii

M. et Sig: Use externally as directed.

The value of the injection of antitoxic serums made from the infection present in the individual, when furunculosis is generalized or when recurrent abscesses occur in different parts of the body, should not be forgotten. Also, in recurrent furunculosis and in multiple abscesses the value of the internal administration of yeast should be remembered.

Determination of Urea and Ammonia.—The proposition of Spiro to combine the determination of urea and ammonia by first eliminating ammonia by the method of Folin and then determining the nitrogen in the residue by the Kjeldahl method is shown by Howe and Hawk, in the *Journal of Biological Chemistry*, February, 1909, to be accurate when applied to mixtures of urea and ammonium chlorid, but they find that it is inaccurate when applied to complex mixtures like the urine because the nitrogen of creatinin and hippuric acid and a part of the nitrogen of the uric acid are determined as urea nitrogen, and it is not possible to apply any correction that will permit one to obtain even approximately accurate data as to the actual urea content of a given urine.

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[*For other information see second page following reading matter*]

SATURDAY, JULY 31, 1909

TROPICAL DISEASES

The address by Dr. McElroy that appears in this issue, besides being a comprehensive review of the recent advances in our knowledge of tropical diseases, emphasizes a need that is becoming more and more obvious, viz.: the necessity of more attention being given in our country to instruction and research in these diseases. In the British Isles they have already more than one institution specially devoted to this subject, and France and Germany, the other chief colonizing countries, are also similarly provided. We should not lag behind; our interest in the tropics is by no means inconsiderable, and we have even in our home territory large regions that are subject to the invasion of tropical diseases and which afford a favorable soil for their development and spread. Uncinariasis, which is generally counted among the tropical diseases, is endemic in our southern states, and the necessity of our recognizing its existence has been accented very recently by the finding of its prevalence in the army recruits that come to the recruiting offices in various parts of the country. Fortunately, this evil is easily met, but there are others that may become more serious.

A creditable amount of work on tropical diseases has already been done in this country, and much more will probably be done, and can be without entirely meeting our responsibilities in this direction. The medical staff of the army, as exemplified by Colonel Gorgas, and the officers of the U. S. Public Health and Marine-Hospital Service, are doing good work in this line, but there should be better facilities for instruction and research work open to the non-official physicians. A postgraduate school with laboratory under government auspices is the remedy Dr. McElroy seems to favor. There is no question but that it could be very properly considered by the government for its own employés and officials in the government medical services. In such an institution the study of these disorders could be thoroughly carried on.

We should have, not only laboratories for the study of, but schools of instruction in, tropical diseases, whether directly supported by the government or by private endowment, to which any competent physician could have recourse. With our extensive immigration from countries where many of these diseases prevail and our growing intercourse with tropical regions, we will soon not have to go far beyond our own boundaries to find the disorders. They will come to us fast enough, and the more prepared we are to meet them the better it will be for us.

THE HYPOTHETICAL QUESTION IN EXPERT TESTIMONY

Medical expert testimony has received a severe blow from the way it has been used in certain prominent criminal trials of late years. It has been pronounced of no value at all, or even worse than that, by judges in the highest courts, and the public generally has come to place but little faith in the opinions of so-called medical experts. This is due to several causes lying behind the unfortunate exhibitions that have directly given rise to this discredit. The subject is well discussed in a recent paper by A. T. Clearwater,[1] who, very justly attributes part of the evil to the bench and bar. His first reason seems really the principal one; that is the lack of any satisfactory standard of expertness, a condition which invites the testimony of charlatans and unscrupulous pretenders. The laxity of trial judges in admitting testimony and the freedom given to lawyers to make it difficult for a self-respecting person to endure their cross-examinations are also mentioned by him and are not matters to be disregarded. A large part of the criticism which has been made lately has been in regard to the use of the hypothetical question, and the propositions for reform have included sometimes the recommendation of its disuse, or at least its restriction. If this refers only to the tremendously long and involved accounts of supposed events, such, for example, as were used in the Thaw trial, it might be considered to have some justice. Even a Lord Macaulay could hardly keep in mind from beginning to end all the supposed facts included in one of these long-drawn-out narrations, and it would be easy for a tricky lawyer to utilize them in tangling up a witness and damaging his standing with the jury. A well-stated case, however, including the main facts of the testimony in as few words as possible, avoiding any overstatement and putting the facts in such a way that they can be readily compared by the jury with the testimony as to the actual occurrences, seems an excellent way to utilize expert opinion. This is the view of Mr. Clearwater. It would be well also if all the expert testimony could be given after the testimony as to fact has been laid before the jury, and to have the hypothetical question of the prosecution submitted to the opinion of witnesses of both sides. In this way it will often be found that they are practically unanimous, and, the question not being as to facts, can be better compared by the jury with the actual facts as they have heard them stated by the other witnesses. There can be no restriction, as he points out, of the right of either party to call in such witnesses as he may deem important for the maintenance of his cause. Therefore, the possible evil of incompetent experts can not be excluded. Clearwater says justly, moreover, that scientific opinion to be of value must be given under undisturbed mental conditions and the insolence and abuse allowed in some courts are unfavorable for this. While this method of examination puts some witnesses on their mettle it throws the majority, this often including the most competent, into a state of mind that is productive of all sorts of possibilities of error. If trial judges will define to the jury the difference between those qualified to speak on the subject and those who are not, as it is perfectly possible for them to do, it will tend, as Mr. Clearwater says, to obviate the evil of mercenary and incompetent experts. He recommends the bill that failed to pass the last New York legislature, providing for a judicial selection of between ten and sixty qualified physicians, as an approach to the solution of this important problem.

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[1] North American Review, June.

This evil of mercenary so-called experts will probably last so long as the courts will tolerate it. There will also probably always be some prejudiced though not bad-intentioned physicians who will pose as experts without being such in the true sense of the word, and there may be plenty of persons of real acquirements and good intentions who can not give an unbiased opinion on subjects in which, for any reason, they are deeply interested. With all these drawbacks, however, it is possible to improve greatly the status of medical expert testimony before the courts and public, but to do this will need the cooperation of the bench and bar as well as of the medical profession.

BACTERIA IN TOP MILK

An interesting and practical point concerning the use of milk in infant-feeding is discussed by Anderson,[1] who has recently investigated the relative proportion of bacteria in the top or cream layer and in the skim milk and sediment.

As is well known, writers on infant-feeding commonly advocate the use of the top layer—a third, fourth or fifth—after the milk has stood for several hours whereby different percentages of fat may be obtained, depending on the length of time the milk has stood. Now Anderson by bacteriologic methods shows in a series of experiments that the top layer contains from ten to five hundred times as many bacteria per cubic centimeter as the mixed milk. For example, in thirty samples of bottled milk examined the average number of bacteria in gravity raised cream was 69,211,000 and in the lower layer 4,360,000 per cubic centimeter. A similar but greater difference exists between the bacterial content of centrifugally raised cream and the milk itself.

It is an interesting fact that when milk is centrifuged or allowed to stand the great mass of bacteria rises with the cream particles while a much smaller number is carried down. Anderson has previously shown[2] that when guinea-pigs are inoculated with cream a much higher percentage die of acute infections than when the sediment is used; and it has been shown by Hess[3] that, if tubercle bacilli are present, the cream contains a larger number of these organisms than the skim milk.

These facts point to the greater danger, not only of acute intestinal diseases, but also of tuberculous infections from the use of top milk as compared with whole milk in infant-feeding. Anderson states that this may be the explanation of the fact that often infants do poorly on such preparations and that possibly the bacterial content may be responsible for this, especially in cases of diarrhea, rather than faulty proteid or fat content.

While these facts give grounds for preference for the use of whole milk over top milk when cow's milk must be used, they are a strong additional argument for the use of mother's milk rather than any modification of cow's milk in infant-feeding.

TO INCREASE THE HOURS OF DAYLIGHT

The interesting proposal to advance the time of day one hour in May and change back again in October is receiving much attention in this country. We have already commented[4] on the British bill, which seems likely to pass. We now learn that a similar bill before the Canadian parliament is almost unanimously supported, while France is about to take up the matter, and one American city is in the throes of discussing the adoption of the plan without waiting for the rest of the country. The National Daylight Association, however, is making a serious proposal to secure this change throughout the United States. There is little to be said against the proposal and very much in its favor, and physicians will no doubt do what they can to further the project. It will certainly be an improvement if we can take more of our sleep in darkness and more of our waking hours in daylight.[5]

Be Thankful.—If you have the sense to realize that this is inevitable, unavoidable, and the way of the world, and if you have the sense to talk over, in a friendly way, the first delicate situation that arises, the difficulties will disappear and recurrences may be made impossible. A man of whom you may have heard as the incarnation of unprofessional conduct, and who has been held up as an example of all that is pernicious, may be, in reality, a very good fellow, the victim of petty jealousies, the mark of the arrows of a rival faction, and you may, on acquaintance, find that he loves his wife and is devoted to his children, and that there are people who respect and esteem him. After all, the attitude of mind is the all-important factor in the promotion of concord. When a man is praised, or when a young man has done a good bit of work in your special branch, be thankful—it is for the common good. Envy, that pain of the soul, as Plato calls it, should never for a moment afflict a man of generous instinct and who has a sane outlook in life.—William Osler.

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[1] Jour. Infect. Dis., 1909, vi, 392.

[2] Bull. 41, Hyg. Lab. U. S. P. H. and M.-H. S., 1908, p. 163.

[3] Pediatrics, New York, August, 1908.

[4] THE JOURNAL, July 25, 1908, pp. 324 and 328.

[5] This subject is further discussed on page 383 of this issue.

Medical News

CALIFORNIA

Personal.—Dr. Newell K. Foster, Sacramento, who recently resigned as secretary of the State Board of Health, was presented by the office force of the board with a cut-glass salad bowl, June 29.——Dr. Ernest B. Hoag, Pasadena, has been appointed director of physical instruction and hygiene in the schools of Berkeley.

News About Hospitals.—The Scandinavian-American Hospital Association, San Francisco, recently organized with Dr. Gustave E. Anderson, president; Dr. Daniel Maclean, vice-president, and Drs. Edward W. Thomas and Paul C. Alexander on the directorate, has made such progress that a hospital building will soon be erected. At present four of the local hospitals are caring for the Scandinavian sick and injured.——The cornerstone of the new Peninsula Hospital, Palo Alto, was laid June 6, with impressive ceremonies. The chief address was made by the Rev. D. Charles Gardner.——The tuberculosis camp at Alta is almost ready to receive patients. Dr. W. Howard has been selected to take charge of the camp. Eight buildings have been erected on the grounds, one with 28 rooms, two with 8 rooms, two with 3 rooms, a single cottage, workshop, dormitory, and stable.——Plans for the new building for the Pomona Valley Hospital Association have been approved by the board of directors. The building will cost between $30,000 and $40,000, will be three stories in height with basement, and will have a male ward, a female ward, maternity ward, and a number of private rooms and sun parlors.——The rear portion of the Livermore Sanitarium conducted by Dr. J. W. Robertson, was destroyed by fire June 4, with a loss of about $50,000. No casualties occurred.——Articles of incorporation have been filed with the clerk of San Bernardino county for the Ramona Hospital Association. The capitalization has been placed at $50,000, and a site has been acquired and plans completed for a three-story concrete structure to cost $18,000.

FLORIDA

Personal.—Dr. Wilbur F. Yarbrough, for six years a member of the staff of the Florida Hospital of the Insane, Chattahoochee, has resigned to engage in private practice.——Dr. Robert A. Willis, Greenwood, has succeeded Dr. J. H. Willis, Quincy, as state convict physician.

Laboratory Authorized.—At the recent meeting of the State Board of Health in Jacksonville, the erection of a suitable building, and the establishment of a bacteriologic laboratory were authorized contingent on the donation by the city to the state of a suitable site for a building.

State Board Elected.—At the regular meeting of the State Board of Health, held in Jacksonville, July 15, Hon. J. A. Hendry, Tampa, was elected president, Dr. Joseph Y. Porter, Key West, was re-elected state health officer. Horace L. Simpson, Pensacola, was re-elected a member of the board and J. G. Christopher was elected a member, vice Harry Fozzard, Jacksonville.

GEORGIA

Location for State Sanatorium.—The site for the Georgia State Sanatorium for the Treatment of Tuberculosis has been selected at Alto, near Mt. Airy. The state has appropriated $25,000 for this sanatorium.

Homeopathic Medical Examiners.—The governor has appointed the following members of the State Board of Homeopathic Medical Examiners: Drs. John G. Lawshe, Richard E. Hinman and Clarence M. Paine, Atlanta; Dr. Robert B. Cuthbert, Rome; Dr. Marsden A. Checkley, Augusta.

County Society Organized.—At a meeting of physicians of Lowndes county, held in Valdosta, the Lowndes County Medical Society was organized with the following officers: President, Dr. James M. Smith; vice-president, Dr. Stephen T. Harris, and secretary and treasurer, Dr. P. C. Quarterman.

District Medical Society Meets.—At a meeting of the First District Medical Society held in Savannah, July 14, the following officers were elected: president, Dr. Alfonzo J. Mooney, Statesboro, and vice-presidents, Drs. D. B. Edwards, Stilson, and Edward T. Coleman, Graymount. Statesboro was selected as the place for the midwinter meeting.

Personal.—Dr. Charles N. Howard, city physician of Columbus, has resigned.——Dr. J. Payson Kennedy, health officer of Atlanta, has been re-elected.——Dr. Willis F. Westmoreland has been elected president of the Atlanta College of Physicians and Surgeons, succeeding Dr. Abner W. Calhoun; Dr. Stephen T. Barnett has been elected treasurer succeeding Dr. Cyrus W. Strickler, elected second vice-president; and Dr. William S. Elkin was re-elected dean and Dr. William P. Nicholson first vice-president of the institution.

ILLINOIS

Not Guilty.—Dr. Charles F. Barstow, Freeport, accused of having performed an illegal operation which caused the death of Miss Janette Reider, was declared not guilty by the jury.

Personal.—Dr. Thomas W. Bath, Bloomington, has been elected surgeon of the Department of Illinois, United Spanish War Veterans.——Dr. Edward W. Stubbs, Aurora, physician of Kane county, was slightly injured and his carriage destroyed in a runaway accident in Aurora, July 19.——Dr. Arthur D. West, Moline, underwent an operation for appendicitis, July 19, at the city hospital.

INDIANA

Personal.—Dr. Harry C. Sharp has been made treasurer of the reorganized board of trustees of the Indiana Reformatory, Jeffersonville.——Dr. Hubert W. Wilson, Michigan City, announces his retirement from practice.

Hospital Notes.—Peru has been offered a public hospital by Capt. A. M. Dukes, provided the city will equip and maintain the institution.——The Lincoln Hospital Association, Indianapolis, has filed articles of incorporation without capital stock, to establish and maintain a hospital for charitable purposes.

Do Not Wish Names Published.—The members of the Wabash County Medical Association have adopted a stringent set of rules setting forth that no member of the association shall allow his name to be mentioned in connection with an operation, and that the names of members be withheld from public print when connected with any professional work.

Examination of Health Officers.—The Indiana State Board of Health announces that the first examination for those wishing to become eligible for appointments as county health commissioners or city or town health officers, will be held in the State House, Indianapolis, September 30. Physicians intending to enter the examination must make application on official blanks before September 23. Blanks and rules governing the examination may be secured from the State Board. The examination will cover generally the fields of hygiene and sanitary science including drug and food inspection, health statutes, rules of the board and vital statistics. Application blanks and pamphlets containing the health statutes and rules will be ready for distribution by the State Board of Health on and after August 10.

IOWA

Health Board Changes.—Dr. Alfred P. Hanchett, Council Bluffs, was elected president of the State Board of Health, July 16. Dr. Louis A. Thomas, Des Moines, was re-elected secretary with the understanding that he resign January 1, when it is understood that Dr. Gilford H. Sumner, Waterloo, will be named as his successor.

Society Meeting.—The Austin Flint Medical Society at its seventh annual meeting in Waterloo, elected the following officers: President, Dr. Michael J. Kenefick, Algona; vice-president, Dr. Paul E. Gardner, New Hampton; secretary, Dr. Claude F. Osborne, Hampton; treasurer, Dr. Will L. Hearst, Cedar Falls; and censor, Dr. Ernest J. Waddey, Waterloo.

Personal.—Dr. Otho C. Buxton, Webster City, was seriously injured by falling down a hay chute in his barn, July 17.——Dr. Abraham J. Hobson, Hampton, suffered a considerable loss by the burning of a part of his office building July 3.——Dr. William W. Pearson, Des Moines, will succeed Dr. David S. Fairchild as dean of the Drake University College of Medicine.——Dr. James H. Cole, Council Bluffs, fell while attempting to board a street car June 25, and fractured his right ankle, necessitating the amputation of his foot.

MARYLAND

Plans of State Lunacy Commission.—The July meeting of the Baltimore County Medical Association was held at Towson, and was given over to the outlining of the tentative plans of the State Lunacy Commission, which are to be presented before the next legislature. The secretary of the commission, Dr. Arthur P. Herring, Baltimore, delivered an address, and the association endorsed the plans.

Personal.—Dr. A. L. Wilkinson, Raspeburg, has entirely recovered from his recent attack of pneumonia.——Dr. R. R. Norris, a police surgeon of Baltimore, resigned July 1, and Dr. Thomas J. O'Donnell has been appointed his successor.——Drs. Emil Novak, Joseph A. Chatard and John Ruhräh have been appointed a committee to manage the Monthly Bulletin of the Medical and Chirurgical Faculty of Maryland.——Dr.

Charles Caspari left Baltimore, July 13, to attend the meeting of the American Pharmaceutical Association at Los Angeles. — Dr. John R. Winslow has resigned as surgeon on the staff of the Presbyterian Eye, Ear and Throat Hospital, Baltimore, to accept a position on the staff of the Baltimore Eye, Ear and Throat Charity Hospital. He is succeeded by Dr. Leo J. Goldbach.

The Loss to the State by Preventable Diseases.—Dr. Marshall L. Price, secretary of the State Board of Health, estimates that the state loses annually more than $50,000,000 from the neglect of methods for the prevention of infectious and contagious diseases. The loss from tuberculosis exceeds $24,000,000, and that from typhoid fever is never less than $5,000,000. The experience of Cuba, Mexico and Panama with yellow fever shows that a disease present for more than three centuries may be practically eliminated at small expense. In order to control infectious diseases, he considers four necessary factors: Prompt registration of cases with the local authorities; cooperation of the patient and his family; cooperation of the medical profession; and cooperation of the general public. The board has completed a most comprehensive system of information regarding infectious diseases. Monthly returns are made from 41 sanitary jurisdictions, including 18 cities and towns and 23 counties. Despite the lack of completeness of these returns, the progress of epidemics can be traced fairly accurately. The influenza epidemic of 1908, and the epidemic of measles which occurred later, were predicted some months in advance. Accurate records are kept of intestinal diseases on the watersheds, especially of typhoid fever, and town health officers are given early information to enable them to protect their water supplies before the outbreak of the epidemic. The present tendency in the control of infectious diseases is to make the bedside the point of attack for all preventive measures. This involves the cooperation of the attending physician, and the sharing between him and local and state authorities of the responsibility. This responsibility should be fixed by law and adequate compensation allowed the physician by the state for his services. Hygienic measures applied at the bedside of the patient will practically eradicate the spread of all infectious diseases. This is especially true in the case of typhoid fever. If the bacilli were destroyed at the time of their discharge from the patient, the disease would disappear in a very few months. The means necessary to produce these results are: Furnishing by the state of packages containing disinfectants, the necessary vessels, napkins, etc., to receive the diseased secretions and excretions previous to their destruction; the issue of report blanks by the health authorities of the state, endorsed by local authorities which give the proper means of prevention, and which are to be returned by the physician; and a fee fixed by law for completing and making a report of the preventive procedures formulated by the state. The essentials of this method were devised in Maryland for the control of tuberculosis, and have been adopted by other states. They could be supplied easily for other infectious diseases. It is estimated that the cost of eliminating these would not exceed $15,000 per year. The same system would be applicable to whooping cough, diphtheria, measles, scarlet fever and influenza. The commoner infectious diseases are naturally more difficult to control but they may be eliminated or reduced to a negligible figure at a relatively trivial expense.

MASSACHUSETTS

Tuberculosis Infection from Telephones.—The Lawrence Anti-tuberculosis League has sent a communication to the local office of the New England Telephone and Telegraph Company, mentioning the possibility of spreading tuberculosis through the medium of the public telephone, urging that suitable means toward the reduction of such danger through efficient, perhaps daily sterilization of the suspected portion, be instituted by the company.

Fined for Illegal Practice of Medicine.—For practicing medicine without a license, William F. Clarke, Boston, is said to have been fined $100 by Judge Ely in the Municipal court. The police charged that Clarke could not legally practice medicine because in 1896 he was sentenced to three to six years in state prison for breaking and entering, and in 1906 he was sentenced to the house of correction for two years for attempting to bribe a juror on the Sinclair case.

Tablet Erected to Pioneer Physician.—A tablet has been dedicated in Cranbrook Church, Kent, England, to Dr. Comfort Starr, one of the first benefactors of Harvard College. Dr. Starr was a native of Cranbrook, but came to Newtowne, now Cambridge, in 1635. His homestead three years later was made the site of Harvard College. Dr. Starr died in Boston in 1659. The tablet sets forth, in addition to these facts, that Dr. Starr was "a distinguished surgeon, eminent, and of a Christian character."

MINNESOTA

Decision Against Physicians.—Dr. Robert W. Campbell, Swanville, is said to have been found guilty and fined $50 and costs for selling drugs without having first secured the necessary license from the state.——In the case of Elizabeth Taugner against Dr. Charles Wirth, St. Paul, in which malpractice and negligence is charged, the jury is said to have brought in a verdict of $2,000 for the plaintiff.

Personal.—Dr. Hannibal H. Kimball, Minneapolis, has gone to Europe.——Dr. William W. Mayo, Rochester, celebrated his ninetieth birthday anniversary, June 1.——Dr. James Hynes, Minneapolis, has taken up his official duties as physician of Hennepin county.——Drs. H. Longstreet Taylor, St. Paul, and Louis B. Wilson, Rochester, have been named as members of the Advisory Committee on Tuberculosis for the state of Minnesota.——Dr. John Jackola, Duluth, has been made assistant to Professor Bier in the Royal Surgical University Clinic, Berlin.

Election.—The annual meeting of the Crow River Valley and Kandiyohi-Swift Medical Societies was held in Willmar June 9, and the following officers were elected for the Crow River Valley Association: President, Dr. George E. Putney, Paynesville; vice-president, Dr. E. Harold Frost, Willmar; secretary, Dr. James W. Robertson, Litchfield (re-elected); and treasurer, Dr. William E. Chapman, Litchfield (re-elected). For the Kandiyohi-Swift Association, Dr. Hans Johnson, Kerhoven, was elected president; Dr. John C. Jacobs, Willmar, vice-president; Dr. Gustavus A. Newman, New London, secretary (re-elected), and Dr. Berton J. Branton, Willmar, treasurer (re-elected).

Hospital Notes.—Plans are being prepared for a five-story addition to St. Barnabas Hospital, Minneapolis, to cost $60,000. This will increase the accommodation of the institution from 85 to nearly 200. The building will be of concrete construction and fireproof.——The Ladies' Auxiliary of the City and County Hospital Association of Albert Lea realized more than $500 as the result of tag day recently.——The staff of internes at the St. Paul City Hospital has been increased from eight to twelve.——Plans are being prepared for the new Elliott Memorial Hospital at the State University. A gift of $160,000 has been made for the building and is at the disposal of the board.——The new Norwegian Deaconess' Hospital, Minneapolis, erected at a cost of $105,000, is nearly completed.

NEBRASKA

Churches Furnish Hospital.—Furniture for twenty-eight rooms and six wards of the new Clarkson Hospital, Omaha, has been provided by the congregations of the churches of the Episcopal diocese of Nebraska, or by individuals as memorials. The value of these gifts is about $5,000. The hospital has an endowment of $30,000 for free beds.

Tuberculosis Colony.—Plans for the establishment of a tuberculosis colony at Pries Lake and the erection of a tuberculosis sanatorium have been practically brought to a head through the incorporation in Omaha of the Oak Park Sanatorium Company. The company has option on the Pries farm, a thirty-five acre tract. It is intended to erect a modern hospital building to cost $30,000 or more, modeled after the Phipps Sanatorium, Denver. The incorporators are Dr. Albert F. Tyler, Omaha; Dr. E. G. Barnhardt, and Thor Jorgensen.

NEW YORK

Oneida County Against Tuberculosis.—The Young Men's Christian Association of Oneida county has joined the fight against tuberculosis, and asked that the State Charities Aid Association allow its exhibit to be made in Oneida county at some early date.

Juries Can Not Judge Insane.—Dr. Robert E. Lamb, medical superintendent of the Matteawan State Hospital, at a conference of superintendents of state hospitals held in Albany on July 20, favored a reform in the commitment and discharge of persons adjudged to be insane criminals. Dr. Lamb read statistics of 43 cases where the release of patients from Matteawan was asked by habeas corpus proceedings. In 34 cases the patients were discharged and of these 14 found their way back either to prison or hospital; 8 showed signs of mental disturbance, 3 were unable to earn their own living, 2 committed suicide, 6 disappeared from view, and one was partially self-sustaining. Of the 43 patients, 12 were charged with murder in the first degree. In regard to the competency of a jury to determine mental disease Dr. Lamb said that to the experience of both law and medicine it appeared little short of farcical.

Buffalo

Personal.—Drs. Harry Mead and Max C. Breuer have gone abroad.——Dr. Robert F. Sheehan has been appointed professor of hygiene at the University of Buffalo to succeed Dr. Henry R. Hopkins, who has been appointed emeritus professor of hygiene.——Dr. Herbert Hill has resigned as professor of chemistry, toxicology and physics.

Work of the Erie County Hospital for 1908.—The medical staff of Erie County Hospital, in a communication to the board of supervisors, states that the average population of the hospital for the year 1908 was 406, and the highest population for any month during the year was 433, in March. "Under proper conditions the institution can care for 350 patients, but by crowding beds in the corridors and sleeping 20 more in an annex of the almshouse building, the surplus has been taken in." For the six months of the present year the average population has been 434, while March shows an average of 472.

New York City

Medical School to Be Remodeled.—Plans have been filed for remodeling the two buildings of the New York University and the Bellevue Medical schools.

Personal.—Drs. Charles L. and Orlando S. Ritch, Brooklyn, have been added to the list of the staff of the State Department of Health.——Dr. and Mrs. John E. L. Davis and Dr. and Mrs. Edward E. Hicks have sailed for Europe.

Funds to Equip Hospital.—The deficiency bill passed by the House of Representatives carries an appropriation of $20,000 to equip the contagious disease hospital at the Ellis Island immigration station.——The Babies' Hospital announces the completion of the fund of $100,000 to erect an addition to the present building. This addition, besides other features, will provide a special ward for the care of prematurely born infants, and a roof garden for tuberculosis and acute intestinal diseases.

Another Ferryboat Becomes a Hospital.—The old ferryboat Susquehanna has been remodeled into a floating hospital and fifty consumptives have been moved on board. Funds were provided for this enterprise by the Brooklyn Bureau of Charities and Miss Mary Harriman.

Congestion of Population.—A conference on congestion and city planning in connection with an exhibit was in progress for about five days at 178 Park Row, under the auspices of the Committee on Congestion of Population in New York. The object of the exhibition was to show that Italians could not live decently on small wages in New York City. Suggestions as to where they might move and better their conditions were dwelt on by the speakers.

Report on Tuberculosis Exhibit.—The Committee on the Prevention of Tuberculosis of the New York Charity Organization Society announces that the fund available for conducting the international tuberculosis exhibition, held from Nov. 30, 1908, to Jan. 17, 1909, amounted to $35,278, of which $23,003 represented contributions. The Russell Sage Foundation made two bequests, one of $10,000 and one of $1,500. The total attendance at the exhibition was 753,927, a daily average of 15,386. The meetings held during the exhibition were addressed by 191 different speakers and were attended by 42,623 persons.

PENNSYLVANIA

Asylum Contracts Awarded.—At a meeting of the State Homeopathic Hospital Commission, held in Allentown, July 20, the contract to continue construction to the extent of $338,600 on the Allentown Insane Asylum was awarded. Three wards, two chapels and three corridors will be built, but this will not finish the institution. For its completion the commission obtained an appropriation of $875,000 from the last legislature, but the governor was forced to cut it to $400,000.——The contract for the construction of the State Hospital for the Criminal Insane, Fairview, has been awarded for $76,500. The cornerstone of the building was laid July 23.

Philadelphia

Nurses' Registration Board Officers.—Dr. William S. Higbee has been elected president of the newly appointed State Board of Examiners for the Registration of Nurses; Miss Roberta M. West, of Erie, vice-president, and Dr. Albert Blackburn, secretary-treasurer. Until June 1, 1910, all persons having qualifications under the act need not be examined for registration.

Tuberculosis Instruction in the Public Schools.—With the opening of the public school year this fall the Pennsylvania Society for the Prevention of Tuberculosis will begin a school campaign against the spread of consumption. Tuberculosis exhibits will be placed in all the grammar and secondary schools and lectures will be delivered to the pupils by physicians on the methods to be employed to eradicate and prevent the spread of the disease. In addition the society hopes to use the school as a neighborhood center and thus reach the homes represented at each school.

SOUTH DAKOTA

Assaulted Because of Quarantine.—Dr. A. O. Fasser, Vale, following an argument regarding the quarantine of a case of scarlet fever, was assaulted and seriously injured. For a time his life was despaired of, but he is now believed to be convalescent.

TENNESSEE

College Incorporated.—The College of Physicians and Surgeons of Memphis has been incorporated by Drs. Heber Jones, Kirkwood McKinney, C. H. Raine, E. Michel Holder, J. Augustus Crisler, Maximillian Goltman, George G. Buford and William Krauss. Application to amend the charter of the College of Physicians and Surgeons was filed in Memphis June 11. It is sought to change the name of the organization and to increase the capital stock from $40,000 to $50,000.

State Board Officers Re-elected.—At the annual meeting of the State Board of Medical Examiners in Nashville, the following officers were re-elected: Dr. Eugene E. Hunter, Elizabethton, president; Dr. William H. Halbert, Nashville, vice-president; and Dr. Charles A. Abernathy, Pulaski, secretary-treasurer. Dr. Frank S. Raymond, Memphis, has been reappointed a member of the State Board of Medical Examiners. Dr. Thomas E. Abernathy, Chattanooga, has been reappointed a member of the State Board of Health.

Society Meetings.—The West Tennessee Medical and Surgical Association, at its annual convention held in Jackson, elected the following officers: President, Dr. Frank James, Memphis; vice-president, Dr. David A. Walker, Trenton; and secretary-treasurer, Dr. Isaac A. McSwain, Paris.——The Medical Association of McNairy and West Hardin counties was reorganized June 7, and the following officers were elected: Dr. W. H. Hodges, McNairy, president; James L. Smith, Selmer, vice-president; Dr. W. T. Bell, Selmer, secretary; and Dr. John R. Smith, treasurer.

Faculties Combined.—Practically all of the details of the merger of the medical departments of the University of Nashville and University of Tennessee were agreed on at a meeting held July 20. Dr. Robert O. Tucker was elected dean and Mr. E. F. Turner, registrar. A committee composed of Drs. Robert O. Tucker, William D. Haggard, Charles Brower, and Joseph P. Keller reported the assignment of members of faculty, and Drs. Charles Brower, Robert O. Tucker and William D. Haggard were appointed committee to take charge of the erection of a new hospital. The following is the assignment of members of the faculty: Dr. William E. McCampbell, professor of theory and practice of medicine and clinical medicine; Dr. Hazel Padgett, professor of nervous and mental diseases and clinical medicine; Dr. Clinton E. Brush, professor of principles of medicine and clinical medicine; Dr. William A. Oughterson, professor of physical diagnosis and clinical medicine; Dr. Hilliard Wood, professor of diseases of eye, ear, nose and throat; Dr. Charles Brower, professor of surgery and clinical surgery; Dr. Perry Bromberg, professor of principles of surgery and genitourinary surgery; Dr. Robert Caldwell, professor of practical and operative surgery; Dr. Thomas G. Pollard, professor of principles of surgery and venereal diseases; Dr. Robert O. Tucker, professor of obstetrics and midwifery; Dr. George Trawick, professor of obstetrics and demonstrator of midwifery; Dr. William D. Haggard, professor of abdominal surgery, gynecology and clinical surgery; Dr. Charles N. Cowden, professor of gynecology; Dr. Holland N. Tigert, professor of gynecology; Dr. Alberto Hudson, professor of anatomy; Dr. E. M. Sanders, professor of anatomy and demonstrator of surgical laboratory; Dr. A. L. Sharber, professor of surgical and visceral anatomy; Dr. Joseph P. Keller, professor of physiology and demonstrator of physiologic laboratory; Dr. Daniel B. Blake, professor of materia medica and therapeutics; Dr. Thomas F. Dunn, professor of materia medica; Drs. W. E. Hibbett and Samuel M. Bloomstein, professors of diseases of children; Dr. W. Frank Glenn, special lecturer on syphilology; Dr. J. T. D. Hinds, professor of chemistry; Dr. James S. Ward, professor of chemistry and demonstrator of chemical laboratory; Dr. Newton S. Evans, professor of pathology and demonstrator of microscopic, bacteriologic and pathologic laboratory; Dr. Charles G. Griffin, assistant demonstrator; Judge Bonnor, professor of medical jurisprudence; Dr. J F. Gallagher, demonstrator of anatomy; Drs. Mason P. Guill, John M. Lee, B. E. Britt and W. F. Fessey, assistant demonstrators of anatomy; Drs. J. W. Bauman, H. T. Brooks, C. W. Brown, N. B. Parrish, R. L. Dozier, J. P. Schell, P. G. Morrissey, E. C. Demoss and N. B. White, clinical assistants.

WEST VIRGINIA

Personal.—Dr. William H. McLain has been reappointed health officer of Wheeling.——Dr. Abel H. Thayer, Grafton, was overcome by heat in his office July 1, but is reported convalescent.——Drs. Edgar B. Plant and John J. Allen, Wheeling, have been appointed coroner's physicians of Ohio county in place of Drs. Edward L. Armbrecht and Joseph R. Caldwell, whose terms have expired.

Anti-Tuberculosis League.—The directors of the Anti-Tuberculosis League of Wheeling at its recent meeting elected Dr. Harriet B. Jones, president, and Dr. Eugenius A. H. Hildreth a member of the executive committee.——Dr. Fleming Howell, Clarksburg, has been elected president of the Anti-Tuberculosis League of Harrison County, and Drs. Charles W. Haltermen, Thomas M. Hood and Selma M. Mason have been made a committee on clinics.

State Board Appointments.—The following members of the State Board of Health have been appointed by the governor: First district, Dr. Charles W. Halterman, Clarksburg, vice Dr. David P. Morgan; Second district, Dr. Luther S. Brock, Morgantown, vice Dr. M. H. Proudfoot, Rowlesburg; Third district, Dr. Martin V. Godby, Peytona, vice Dr. Timothy L. Barber, Charleston; Fourth district, Dr. Alfred N. Frame, Parkersburg, reappointed, and Fifth district, Dr. Robert E. Vickers, Huntington, reappointed.——The State Board of Optometry, organized July 1, at Charleston, has elected Dr. Eugenius A. H. Hildreth, Wheeling, secretary.

GENERAL NEWS AND COMMENT

Hospitals and the Tariff.—We are informed that the provision in the proposed tariff to allow hospitals and municipal laboratories to import, duty free, instruments and apparatus for their own use, has been stricken out by the conference committee.

Tri-State Society Meeting.—At the annual meeting of the Northern Tri-State Medical Society of Ohio, Michigan and Indiana, the following officers were elected: President, Dr. Charles B. De Nancrede, Ann Arbor, Mich.; vice-president, Dr. James A. Duncan, Toledo, Ohio; secretary, Dr. George W. Spohn, Elkhart, Ind. (re-elected); and treasurer, Dr. Joseph A. Weitz, Montpelier, Ohio (re-elected). The next meeting is to be held in December at Fort Wayne, Ind.

Meeting of Sioux Valley Physicians.—The annual meeting of the Sioux Valley Medical Association was held recently in Cherokee, Iowa, and the following officers were elected: President, Dr. Nelson M. Voldeng, Cherokee, Iowa; vice-presidents, Drs. Joseph G. Parsons, Sioux Falls, S. D., and Alfred E. Spaulding, Luverne, Minn.; secretary, Dr. John E. Garver, Sioux City, Iowa, and treasurer, Dr. Samuel A. Brown, Sioux Falls, S. D. The next meeting will be held in Sioux City in January, 1910.

Missouri Valley Meeting.—The annual meeting of the Medical Society of the Missouri Valley will be held at Council Bluffs, Sept. 9 and 10. Dr. Charles B. Hardin, Kansas City, will deliver the presidential address; Dr. Alfred C. Croftan, Chicago, the address on medicine, and Dr. John E. Summers, Omaha, an address on "Cancer a Constitutional Disease. Its Rational Treatment." Dr. Vernon L. Treynor is chairman of the local committee of arrangements, and the secretary, Dr. Charles Wood Fassett, St. Joseph, will send programs and information to all who desire.

Public Health Education Committee.—The new organization of women physicians, authorized by the House of Delegates of the American Medical Association at Atlantic City, to give instructions as to the prevention of disease, has been formed and named the Public Health Education Committee. The Journal has commented on this editorially. Dr. Rosalie S. Morton, New York City, has been selected chairman of the executive committee; Dr. Sarah R. Adamson Dolley, Rochester, N. Y., honorary chairman; Dr. Evelyn Garrigues, New York City, secretary; and Dr. Emma C. Hackett, New York City, treasurer. The other members of the committee are Drs. Lillian H. South, Bowling Green, Ky.; Laura L. Liebhardt, Denver; Margaret Holliday, Austin, Texas; Sarah C. Buckley, Chicago; Rose Talbott Bullard, Los Angeles; and Annie Lee Hamilton, Boston.

Warns Against Agent.—In a communication to The Journal, Dr. Herbert L. Alkire, Topeka, Kan., warns physicians against one L. D. Macy, who claims to represent the Imperial Publishing Co., of New York. He states that Macy's method is to call on physicians for the purpose of selling stereopticon views of anatomy at $45.00, with a discount of $3.00 for cash. On writing to the Imperial Publishing Co., Dr. Alkire was informed that Macy had been dismissed from their service and the physician was advised to take steps to get back money paid. Dr. Alkire reports that he and other physicians are making an effort to find Macy and he is desirous of having any members of the profession notify either Otis Hungate, Topeka, Kan., or himself, should Macy be located.

Immigration and Humanity.—The federal authorities are discussing a recent case in which after some delay, the immigration laws were set aside for humanity's sake. It is stated that an alien, injured at Ridgeway, Ont., could not be taken to a hospital at Welland, Ont., because of the rigid Sunday laws in Canada, so he was taken to Buffalo, which was about one hour distant, in order that hemorrhagic pressure on his brain due to a fractured skull might receive surgical attention. The immigration inspector at first refused him admission to the port of Buffalo on the ground that he was an alien and might become a charge on city or state. After some delay, however, and assurance that neither the city or state would be held responsible for the man, he was allowed to enter the port, was taken to the Sisters' Hospital and an operation performed from which he is recovering.

CANADA

New Wing for Hospital.—The Western General Hospital, Toronto, has erected a new wing at a cost of $100,000.

Personal.—Drs. Herbert A. Bruce, David W. McPhedran, W. Henry B. Aikins and G. A. Stirling Ryerson, Toronto, and Drs. Alexander D. Blackader, Thomas G. Roddick, Francis J. Shepherd and Herbert S. Birkett, Montreal, have gone to Europe.——Dr. Joseph N. Roy, Montreal, has received from the French government the order of the Dragon of Annam on account of efficient services rendered four years ago by Dr. Roy in an explosion on a French warship in Cochin China.——Drs. Harry Meek and Frederick P. Drake, London, have started for Europe.

Maritime Association Meeting.—At the annual meeting of the Maritime Medical Association at Charlottetown, P. E. I., July 14 and 15, the matter of affiliation with the Canadian Medical Association, and the question of reciprocal registration with Great Britain and the Dominion were discussed, the latter being referred to a special committee. Dr. F. Montizambert, Ottawa, director general of public health, delivered an address on tuberculosis, and Lieut.-Col. Carleton Jones, director general of the Army Medical Service, advocated the establishment of a laboratory in connection with the service. The following officers were elected: President, Dr. W. A. Ferguson, Moncton, N. B.; vice-presidents, Drs. J. B. McDonald, Amherst, N. S.; A. G. Ferguson, Dalhousie, N. B.; and Angus A. MacLellan, Summerside, P. E. I.; secretary, Dr. George G. Melvin, St. John, N. B. (re-elected), and treasurer, Dr. George C. Corbet, St. John, N. B.

LONDON LETTER

(From Our Regular Correspondent)

London, July 17, 1909.

Annual Meeting of the British Medical Association

The seventy-seventh annual meeting of the British Medical Association which is to be held at Belfast, July 23-30, under the presidency of Sir William Whitlaw, professor of materia medica and therapeutics in the University of Belfast, promises to be of unusual interest. The number of sections has been increased to fifteen, a new one, "Hematology and Vaccine Therapy," having been formed. As is most fitting, the man who has led the modern development of vaccine therapy, Sir Almroth Wright, will preside over the section and deliver an address on the retrospect and prospect of this mode of treatment. Ethical questions of great importance will also be discussed. For long the practice of some consultants in seeing privately patients brought to them by the family physician has been considered reprehensible. Some members of the profession go farther and think that consultants should see patients, even those who come to them independently of any physician, only in consultation with one. A committee of the association has reported favorably on the recognition of a special class of practitioners who so confine themselves. They think that by this measure the friction and jealousy which often arises between the two branches of the profession would be prevented and medical men would unite more cordially for the advancement of the honor and interest of the profession. The hospitals committee will present a report recommending that no new medical institution shall be opened without consultation with the local medical profession through some organized body, such as a "division" of the British Medical Association. It is recommended that the association of the local medical profession in the general management of hospitals and other medical charities is desirable, in the interests both of the institution and of the profession.

A Fatal Shampoo

Considerable sensation has been caused by the death of Miss Dalrymple, aged 29, daughter of a baronet, while her hair was being shampooed with tetrachlorid of carbon. The hairdresser said that she explained the dry shampoo process to Miss Dalrymple and told her that the fumes were obnoxious and might make her feel faint. The window was wide open and the electric fan was working. When she commenced to apply the shampoo Miss Dalrymple appeared to collapse and never rallied. The manager of the department gave evidence that the shampoo had been used 30,000 times without complaint, but he had known of one or two cases of fainting. The physician who was called to the deceased lady said that there was plenty of ventilation, but there was an odor of tetrachlorid of carbon in the room. He had previously seen a lady who had been made faint by the shampoo and he suggested that a ventilating fan should be fitted up, which was done at once. Dr. Spilsbury, pathologist to St. Mary's Hospital, made a postmortem examination and found that the deceased was a subject of the status lymphaticus, which would predispose to sudden death and render her unduly susceptible to inhalation of the vapor. He considered the dry shampoo absolutely safe to a healthy person and to an unhealthy person if the vapor were not inhaled. He attached no blame to the hairdressers. The jury returned a verdict of death from misadventure. There is reason to believe that the tetrachlorid of carbon shampoo is not quite so harmless as this evidence indicates. Two years ago a case was recorded in the *Lancet* in which a lady had her hair shampooed with the tetrachlorid in a bathroom with the window slightly open. She leant over a basin and the hairdresser poured the liquid over her head. She became unconscious and of a bad color and vomited several times. An important point, which does not seem to have been investigated at the inquest, is the position of the head. If the head is held down over a basin, as in the last case, much more of the drug is inhaled and danger of poisoning is increased. The head ought to be held backward. Formerly petrol was used for the dry shampoo in London, but in consequence of its inflammability a fatal case of burning occurred and its use is now forbidden by law. Then tetrachlorid of carbon took its place. This evidently is the first fatality.

Sanitation in the West Indies

At the request of the government of the West Indies for the services of an expert to advise on the steps which should be taken to cope with the present outbreak of yellow fever and prevent its recurrence Sir Rubert Boyce of the Liverpool School of Tropical Medicine visited Barbados. He found that the epidemic was of small dimensions but scattered all over the island. The local health authorities promulgated wise anti-mosquito measures. But few of the houses of the poor had a water supply laid on; numerous receptacles, chiefly barrels, were used for storing water and a large proportion of these were infected with stegomyia larvæ. As a result the *Stegomyia callopus* is the common house mosquito of Barbados and is still abundant, i. e., can be found in 11 per cent. of the houses. Sir Rubert thinks that it must be got rid of before the island can be considered secure. The water supply of the island is on the whole very good, but there are a few localities in which the stand-pipes are few and far between. Sir Rubert recommends increasing the supply as soon as possible. In the majority of the West Indian colonies it is now a punishable offense to harbor mosquito larvæ on the premises, but Barbados has lagged behind the other colonies.

Relation of Cancer to Chronic Inflammation

In the seventh report of the Cancer Research Laboratories of the Middlesex Hospital, Dr. Victor Bonney has published a most interesting investigation on this subject. Two views have been held as to the cellular infiltration always found in the connective tissue adjacent to primary carcinoma. One school holds that this inflammatory exudate is due to the irritant action of the carcinoma cells; the other that it is a phase of chronic inflammation which paves the way for the malignant proliferation. Dr. Bonney finds in pre-cancerous conditions, such as leucoplakia of the tongue or vulva, the same infiltration of the connective tissue. It is characterized by infiltration of the sub-epithelial connective tissue by lymphocytes and plasma cells in abundance and destruction of the normal elastic tissue. Into the de-elasticized and cellular layer descend the epithelial downgrowths which show the commencement of malignancy. Thus the changes in the sub-epithelial tissues are precedent to, and not a consequence of malignancy.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 15, 1909.

Epidemic of Typhoid Fever at Saint Brieuc

Since June 12 there has been at Saint Brieuc, capitol of the Department of the Cotes-du-Nord, on the English Channel, an epidemic of typhoid fever, which is now at its maximum. There are in the hospital 263 patients (99 soldiers) and 272 being cared for at their homes. An official complaint has been lodged against the civil physicians for not having made the required obligatory declaration of the presence of the disease. Only six declarations had been made when there were hundreds of cases in the city. After a careful official investigation it appears that, during the first ten or twelve days of the epidemic, the declarations were not made by the physicians, not on account of unwillingness, but on account of uncertainty of diagnosis. The mayor called the physicians together in the town hall on June 20, but opinions were contradictory. Some suggested grip, others dengue, others cerebrospinal meningitis, others gastric disease. The hypothesis of typhoid fever was rejected. It was only on June 25 that Dr. Vaillard, inspector general of the service of military health, confirmed the diagnosis of Dr. Térot, physician of the medical hospital, who had recognized typhoid fever. The epidemic appears to be due to the pollution of one of the springs which supply drinking water; an abundant rain fall had washed down fecal matter from rubbish-heaps and carried the bacilli into the valley in which the spring arises. The epidemic is confined to Saint Brieuc and no new case has been declared on the Breton coast.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 14, 1909.

Mortality in German Navy

The death rate in our navy has diminished from year to year; in 1904-5 the mortality was 2.8 per thousand; on the other hand, at the same time the death rate in the British navy was 3.9, in the American 6.48, in the Austrian 3.2. In 1906-7 it was only 2.36 per thousand; of 45,776 sailors only 108 died; 60 from disease, 25 by accident and 23 by suicide.

The Nutrition of School Children

At a recent conference of the central committee of the charities association (*Zentralstelle für Volkswohlfahrt*) Professor Rubner, at present our professor of physiology (formerly of hygiene), delivered a very interesting address on the nutritive condition of the children in public schools. The importance which a sufficient nutrition of public school children has for the further sanitary development of a large part of our population is evident. Rubner very properly claims that the lack in the nutrition of the pupils gives at the same time an insight into the defects in nutrition of the entire people and the effort to remove it involves as an essential factor the improvement of the entire popular dietary.

From an investigation by the central committee it is established that in winter as well as in summer from 0.6 to 1 per cent. of the children of the public schools come to school without any breakfast and 3.5 per cent. in spite of the numerous arrangements for feeding children receive at noon only a scanty cold lunch. A part of the children get a warm meal at least in the evening, but tens of thousands get nothing warm to eat either at noon or at evening and many thousands must go to bed hungry. Arrangements for feeding poor school children have been made by several charitable bodies, but many of these provide simply places where the children may eat without considering that in families whose parents are engaged in industry, the children are not looked after during the period of the day's work but are on the streets and so are exposed to danger. Children's shelters with arrangements for meals are for this reason much more suitable as they accomplish more in the way of education. In these institutions for the most part, some contribution from the parents is required; even in the English law for feeding school children the cooperation of the parents is pointed out as especially desirable. The activity of these shelters should not be limited simply to the months of school but should extend through the vacation.

The directions which Rubner gives for the proper nutrition of children of school age are as follows: Besides the three ordinary meals a second breakfast and an evening lunch should be provided. Milk is to be preferred; alcoholics should be unconditionally forbidden and the use of coffee and tea should be limited; breakfast and dinner should be warm meals, supper can be alternately warm and cold. For children of an average weight of 24 kg. (50 pounds) food having a nutritional value of 1,500 calories is sufficient, that is, about 64 gm. (2 ounces) of albumin, 50 gm. (1⅔ ounces) of fat and 185 gm. (6½ ounces) of carbohydrates should be given. Of this amount one-fifth should be taken with the first and second breakfasts, one-half at dinner and lunch and the rest at supper. The technical side of the feeding of school children should be further developed by a thorough elaboration of the data so far furnished by experience in feeding pupils, as to the cost, the rules for feeding, nutritional value, checking the results by weighing the children, etc.

For the improvement of the conditions of nutrition in the families of workmen having many children the following suggestions are made: 1. Contributions for education or for nourishment on the part of the community on the basis of a physiologically justified minimum standard of nutrition. 2. Increase of the sick benefit for the fathers of families to a full day's wages in money or provisions. 3. Introduction of family insurance in all local industrial and miners' benefit societies with uniform distribution of the burdens thus arising on all members of the societies and the employers of labor. 4. Establishment of organizations for home and childbed nursing on the part of the community and of the Krankenkassen with the assistance of the invalid insurance associations. 5. Establishment of diet kitchens by cities and private organizations. 6. A cheap distribution of provisions from the municipal markets to families with many children who need assistance. 7. Especial arrangements by the communes and insurance organizations for the care and prevention of undernutrition of children during lack of employment.

Death Certificates in Germany

Certifying to a death is not uniformly regulated in Germany. While in many states and cities interment of a corpse is only permitted when the death has been established and certified to by a physician, in other places this certification may be made by laymen appointed for the purpose and in many other places such a certification is not necessary. Professor Schwalbe in his *Deutsche medicinische Wochenschrift* has made a comprehensive report on the present status of the obligatory death certificate. In 1900 the German medical association (*Aerztetag*) passed a resolution that the obligatory death certificate was necessary in the interest of philanthropy and should be given only by physicians licensed in Germany. So far it has only been provided that in case of diseases dangerous to the community, such as leprosy, cholera, typhus, yellow fever, plague and smallpox the authorities in districts in which they are prevalent or which are threatened by them, may order that every corpse is to be submitted to an official inspection by a physician before permission for burial is given.

In Bavaria, Würtemberg, Saxony, Baden, Hesse, Saxe-Weimar, Brunswick, Saxe-Meiningen, Coberg-Gotha, Schaumburg-Lippe, Lübeck, Bremen, Hamburg a death certificate is obligatory, but is furnished by laymen as well as by physicians. In Prussia a medical death certificate is required by police ordinance in a number of large and middle size cities. In some districts the certification is also permitted to laymen. In most parts of the kingdom there exists no obligatory requirement.

In spite of the fact that the Prussian government has frequently urged the introduction of inspection after death and has referred to its importance its extension has been very slow. As the most important tasks of the postmortem inspection may be mentioned the determination of the question whether the death is real or apparent, the furnishing of the cause of death for statistical purposes, the discovery of infectious diseases and of crime. The difficulties of a general obligatory introduction of this measure are the cost, since the poorer people are not in position or willing to pay the physician for an inspection of the dead body and the country communities are very often not in position to carry it out on account of insufficient funds. The assistance of country communities by the resources of the state especially meets the opposition of the conservatives who in general are not inclined to devote much of the state funds to hygienic purposes and to give to physicians much liberty in the correction of sanitary abuses which naturally are much greater in the country than in the cities. Schwalbe calls attention in this connection to the characteristic circumstance that the imperial law for the control of animal pestilence was passed in 1880 and that applying to human epidemics not until 1900, twenty years later.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 11, 1909.

The Vacant Ophthalmology Professorship

The vacancy caused by the death of Dr. I. Schnabel, professor of ophthalmology, seems to create much difficulty. Sometimes a vacant seat at the faculty is left without an occupant for longer than a term, if negotiations have to be conducted with eminent men, who name their terms. But in this case the real reason of the long delay is a difference of opinion between the body of professors (*Professorencollegium*) and the ministry of education. The professors have recommended the appointment of Professor Hess, the director of the eye clinic at Würzburg, who has a high reputation. The ministry, however, is reluctant to call another man hailing from abroad, as there are several German professors already in Vienna. Medical and scientific circles are very anxious that such narrow-minded patriotism shall not overrule scientific and pedagogic requirements. Lately Austria has given a large number of scientists to Germany without arousing protest there, as in Germany only the achievements and scientific importance of the appointees are considered. On the other hand it has happened several times that a physician asked to take over a clinic here had to refuse on account of the unsatisfactory condition of the institute. We are fortunate if a man of the quality of Hess can be induced to take over the old clinic of Schnabel, which can not be compared with his Würzburg eye clinic as regards equipment. The students themselves want a competent teacher and have suffered by not having had a definite program of instruction during the last four months.

The Vienna Poliklinik

The last report for the Vienna Poliklinik, the only hospital in Vienna wholly supported by private contributions, has recently been published. The institute has a hospital with altogether 100 beds, but contains also out-patient departments for all branches of medicine; the number of beds is much too small. The professors and directors of the departments are mostly extraordinary professors of the Vienna University. The number of out-patients last year was 71,987, and the in-patients numbered 2,728. The average stay of patients in the hospital was twenty days. The number of larger operations performed was 1,191. In 1908 a large number of classes for students and postgraduate lectures in German, English and French were held. There were 490 students, among them 140 English and American physicians. The teaching staff of the Poliklinik has suffered severe loss by the deaths of Professor Spiegler (dermatology) and Frühwald (pediatrics). A movement has been initiated to collect funds necessary for the erection of a completely new and up-to-date hospital with another 120 beds, so that hereafter the Poliklinik will be in reality a first-class hospital.

The Cholera Danger

The new outbreak of cholera in Petersburg and Kief and the intimate relations, especially on the frontier, between our country and Russia (the main route from Europe to Russia runs through Austria) have caused the issue of stringent regulations to guard against cholera and a strict quarantine is now imposed on all persons arriving here from Russia. The epidemic has been raging in Russia ever since last year, but it had been kept out from Austria. All importation of leather goods, vegetables, clothes, grain has been stopped on the frontier. Special attention has to be paid to Russian visitors to Karlsbad and other health-resorts.

Clean Your Brakes.—Many a motorist who has complained that the brake linings of his car wear out quickly could prolong the usefulness of these linings by flushing out the brakes when he comes home from a run through the mud. It is impossible to keep grit from accumulating between the braking surfaces, and a little water used now and then will do much to giving you good brakes all the year around.—*The Cooperator.*

Pharmacology

The Harmful Effects of Acetanilid, Antipyrin, and Acetphenetidin

The United States Department of Agriculture Bulletin[1] No. 126, issued July 3, 1909, and which was commented on editorially last week, sets forth the results of an investigation conducted by the Bureau of Chemistry with regard to the harmful effects of acetanilid, antipyrin and acetphenetidin. During recent years the use of these remedies and preparations containing them by the people at large, without the supervision of the physician, has increased rapidly and investigation has shown that coincidently there has been a marked increase in the number of cases of poisoning reported, in the number of fatalities, and in the number of instances of habitual use.

Since the passage of the Food and Drugs Act, June 30, 1906, the attention of the Department of Agriculture has been directed to this subject, particularly in connection with the branding of drug products containing one or more of these agents, and an attempt has been made to obtain full and reliable data with regard to their poisonous qualities with the object of furnishing information to the public which would enable them to understand that these remedies should be employed with caution in the absence of reliable medical advice.

The investigation was conducted along two lines: First, an inquiry addressed to medical practitioners in the United States with regard to their personal experience with these drugs; and, second, the study of the cases of poisoning recorded in medical literature. Nearly a thousand letters, each containing eighteen questions, were addressed by the department to physicians throughout the country, the object being to secure information which would represent as closely as possible the conditions existing among the people at large so far as the harmful effects of the drugs in question are concerned. Four hundred replies were received.

The information obtained with regard to the number of instances quoted in medical literature in which poisoning, death, or habitual use has been known to result from the administration of acetanilid, antipyrin, and acetphenetidin is set forth in Section A of the accompanying table. The information summarized in Section B is based on the data submitted by physicians. Granting that the 525 physicians who did not reply had no cases to report, the question may profitably be asked, if 925 physicians have observed 814 cases of poisoning by these drugs, 28 deaths which are attributed to their use, and 136 instances of habitual use, how many such cases have in all probability been observed by the 125,000 physicians scattered throughout the United States? The summary, C, includes both the number of cases recorded in medical literature and those reported by physicians.

The bulletin contains information with regard to dosage, the extent to which these drugs are employed by physicians, poisoning and habitual use, the nature of the ill effects produced, etc. It also contains references to the recorded cases of poisoning, together with a brief abstract of each case.

POISONING BY ACETANILID, ANTIPYRIN AND PHENACETIN

A.—CASES RECORDED IN MEDICAL LITERATURE

	POISONING.	DEATH.	HABITUAL USE.
Acetanilid	297	13	32
Antipyrin	488	10	..
Acetphenetidin	70	3	1
Total	855	26	33

B.—DATA SUBMITTED BY PHYSICIANS

	POISONING.	DEATH.	HABITUAL USE.
Acetanilid	614	16	112
Antipyrin	105	5	7
Acetphenetidin	95	7	17
Total	814	28	136

C.—TOTAL NUMBER OF CASES

	POISONING.	DEATH.	HABITUAL USE.
Acetanilid	911	29	144
Antipyrin	593	15	7
Acetphenetidin	165	10	18
Total	1,169	54	169

Correspondence

The Need of a Section on Physical Forces in Medicine and Surgery

To the Editor:—The growth of specialism in medical study and practice is justly regarded as one of the most important elements in the recent progress of civilization, even though it be attended by certain disadvantages, which are more or less inherent. The Association, in its re-organized and vigorous life, has fully recognized the principle of this fact by the establishment of many sections. Yet, that all has not been done in this direction that should be done is evidenced by the present position at the annual meetings of the great subject of the use of the physical forces in medicine and surgery.

The member and visitor are confronted at these meetings by the singular fact that a large and flourishing exhibit of physical apparatus and instruments is presented to his view, under the auspices of the Association in its Commercial Exhibit, without opportunity to learn or discuss their value or relative merits in the scientific meetings of the body. Since he is already more or less interested in the subject, he buys apparatus, and, so far as the Association's opportunities to instruct him are concerned, proceeds to employ them according to directions of the salesmen, without that mutual interchange of information so valuable in a special line of work. The result, if not quackery, is a loss of interest in methods of possible value, and much misinformation.

The Association should lead in bringing these methods under scientific rules, and should offer opportunities for intelligent discussion of their problems by its thousands of members, both general practitioners and specialists, who employ them in their daily practice. The British Medical Association has such a section on "electrotherapeutics;" but this designation is unnecessarily narrow, as the work should include roentgenology, hydrotherapy, phototherapy, diagnostic illumination, etc., as well as electrotherapeutics. The best title would probably be that of "Section on the Physical Forces in Medicine and Surgery."

Such a section can be established by the granting of a petition to that effect by the House of Delegates at St. Louis, and I believe that the petition will be granted if a sufficient number of members join in it. The Section on Obstetrics and Gynecology passed a favorable resolution at the Atlantic City meeting, but it was then too late for the matter to be taken up in the House of Delegates.

The purpose of this letter is to ask all members desirous of joining in the proceedings of such a section to write to me to that effect. The letter should state that the writer not only wishes to register in such a section, but will support it actively by attending its sessions. On its receipt by me the name will be added to the list of those desiring to join in this petition. G. BETTON MASSEY, Philadelphia.

1831 Chestnut Street.

International Medical Congress

To the Editor:—Just before sailing for Europe Dr. J. H. Musser, president of the American committee, received this communication from the general secretary of the Congress at Budapest:

BUDAPEST, HUNGARY.

My Very Dear Sir:—Perhaps it might be unknown to you that there is in our town a statue to George Washington. It has been raised by our countrymen in the United States, a sign of gratitude to the country where they are enabled to derive their livelihood now.

The statue to George Washington is situated in a nice part of our town park, a place visited by every tourist. It might possibly be the case that your countrymen would like to visit the statue in a body and in a solemn way.

Should it be so, you would greatly oblige us by communicating us the decision of your countrymen, in order to make it possible for us to put the day and hour of this visit on the program of the Congress festivities, which are to be published in the first number of the *Congress Gazette.*

EMIL GROSZ, General Secretary.

Dr. Musser referred the letter to me with instructions to ascertain the wishes of those who will attend the Congress, and communicate the same to Dr. Grosz.

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[1] The Harmful Effects of Acetanilid, Antipyrin and Phenacetin, by L. F. Kebler, Ph.C., M.D., chief Division of Drugs, Bureau of Chemistry, with the collaboration of Drs. F. P. Morgan and Philip Rupp, assistant chemists.

I should be pleased to have any suggestions, either as to the time or the character of the ceremonies.

Chas. Wood Fassett.

Hotel Ostend, Atlantic City, N. J.

[Comment.—The proposal of Dr. Grosz will doubtless lead to a very pleasant feature of the Congress for the visitors from the United States, of whom there seems to be a large number. Many of these have already sailed, but others will no doubt take up the request of Dr. Musser through Dr. Fassett. From another source we learn that Dr. John A. Witherspoon, Nashville, Tenn., who is on his way to Budapest, has been invited to deliver the address at the Washington statue ceremonies. It is stated that a number of the best hotels in Budapest have practically all their space engaged for the time of the Congress. Just before he sailed Dr. Musser sent word that he had received and distributed the certificates of membership from the Congress authorities to the physicians who had qualified in the United States. We understand that these certificates will secure to the holders reduced rates on the railroads in Europe. Further information can probably be had from the office of Dr. J. H. Musser, 1927 Chestnut street, Philadelphia, or from Dr. Fassett.—Ed.]

Paper Napkins in Gynecologic Examinations

To the Editor:—In gynecologic examinations, cleanliness is of greater importance to the patient than exposure. Apropos of the article on the divided sheet by Dr. Curran Pope, published in The Journal, July 17, I beg to remark that the sheet when tucked about the speculum as suggested succeeds admirably in precluding exposure of the patient, but the procedure is insanitary and abets communicability of infection, unless a clean sheet is provided for each patient and it is doubtful if this is the intention. It is a well known fact that the table or chair of the general practitioner is supplied with a head-rest and sheet, for gynecologic examinations, and that the sheet may be in service too long before renewing; it is doubtful if an equal degree of carelessness is displayed in any other department of office work, in guarding against infection, as in gynecologic examinations.

The less complicated and bulky the sheet the greater the likelihood that proper attention will be directed to cleanliness. An ordinary sheet of printed material or muslin one yard wide and two yards long is sufficient to prevent exposure in any vaginal speculum examination. If, when any style of sheet is used, however, a white paper napkin, folded once to be triangular in shape, is made to encircle the speculum after it is introduced, exposure of the external genitalia is precluded. The sheet need not come in contact with the speculum or surface of the patient and can be used safely for subsequent examinations. A napkin, also, should be used for the pillow or head rest. They are 14 inches square, made of soft material, and are inexpensive.

Charles F. Spangler, M.D., Kane, Pa.

Localized Sweating

To the Editor:—Apropos of the paper by Drs. Wende and Busch on "Localized Facial Sweating, Following Certain Olfactory Stimuli," (The Journal, July 17, 1909, p. 207), I recently came across the following abstract in *Dental Cosmos*, 1906, xlviii, p. 249: Darguies (*Rev. de Stomatol.*, Paris, 1905) reports the case of a woman, aged 39, in whom movements of mastication stimulated the sweat glands in the sternomastoid and infraorbital regions, regardless of season and ceasing at the end of the meal, sometimes being so intense as seriously to interfere with the patient's comfort. Another case has been reported, that of a French army officer in whom the sweating was localized in the right parotid region; this was traced to a blow on the mandibular angle of the same side.

This abstract attracted my attention from the fact that I have frequently noticed, in my own case, a curious hyperidrosis, infraorbital and extending over the malar prominence, on eating apples. I have mentioned the fact to a number of professional friends, none of whom, however, had ever met with a similar experience.

Murray Galt Motter, Washington, D. C.

Book Notices

A Manual of Operative Surgery. By Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D., F.R.C.S., Consulting Surgeon to the London Hospital, and Jonathan Hutchinson, F.R.C.S., Surgeon to and Lecturer on Surgery at the London Hospital. Edition 3, in Two Volumes. Vol. 1, Half Morocco. Pp. 775, with 193 engravings and 17 full-page plates. Price, $6.50. Philadelphia: Lea & Febiger, 1909.

The present edition has been completely rewritten by Jonathan Hutchinson and reflects great credit not only on the editor but on the author. Besides the revision of the text, the illustrations have been gone over carefully and many new ones added. A commendable feature in the present edition is the grouping in one chapter of all the operations on the abdomen, including gynecologic, genitourinary and hernia operations.

Commercial Law Simplified. By Charles C. Simons, of the Detroit Bar. Leather. Pp. 510. Price, $5. Detroit: The Business Man's Publishing Co.

If, as is sometimes stated, physicians are notoriously poor business men, then this work should prove of value to the medical profession. The book is written in non-technical language, the author stating that it is "not for lawyers and does not presuppose on the part of the reader any knowledge of the law or of legal terminology." The work is compiled in question and answer form and contains a particularly complete index. It is well printed and bound in the regulation law sheep binding.

Gonorrhea in Women. By Palmer Findley, M.D., Professor of Gynecology in College of Medicine of University of Nebraska, Omaha. Cloth. Pp. 112. Price, $2.00. St. Louis: C. V. Mosby Medical Book Co., 1908.

Dr. Findley states in the preface that this monograph is published in the hope of awakening physicians to a greater realization of the supreme importance of the subject of gonorrhea in women. The book commences with a historical sketch of the subject, in which Dr. Findley states that the Jews had a fairly accurate knowledge of the disease, as shown by biblical history; and he goes on to trace the disease through history down to the present time. He then takes up etiology, pathology, course of the infection, methods of diagnosis of gonorrhea in the various parts of the genitourinary tract, the frequency of this disease in women, the relation of gonorrhea to social economy, the various methods of prophylaxis and treatment, and then takes up the systemic gonorrheal infections, including gonorrheal septicemia and pyemia, endocarditis and arthritis. The book ends with a comprehensive bibliography.

Dietetics for Nurses. By Julius Friedenwald, M.D., Professor of Gastro-Enterology in the College of Physicians and Surgeons, Baltimore, and John Ruräh, M.D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Edition 2. Cloth. Pp. 395. Price, $1.50. Philadelphia: W. B. Saunders Co., 1909.

This edition differs little from the first one. The article on milk has been rewritten and a chapter has been added on simple methods of detection of food adulterations and preservatives. The recipes are good and practical.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DOMESTIC FOWLS AND TUBERCULOSIS

To the Editor:—Kindly answer the following questions: 1. Has it been proved that barn-yard fowls fed on human tuberculous sputum become tuberculous? 2. Is the tubercle bacillus found in the eggs of such fowls and, if so, is it pathogenic for man? 3. Is the avian tubercle bacillus pathogenic for man?

X.

Answer.—According to recent researches (Weber and Bofinger, Tuberkulosarbeiten a. d. kais. Ges. Am., 1904), the results of which harmonize with most of the earlier conclusions, fowls are not susceptible to infection by tubercle bacilli of the human and bovine types. They are however, readily susceptible to tubercle bacilli of the avian type which are readily distinguished from human and bovine types. Rabbits and mice are susceptible to infection by avian bacilli and spontaneous infections with this bacillus have been observed in white and gray mice and rats, and it is believed that these animals may play an important rôle in the distribution of avian tuberculosis. As a rule the avian bacilli have little effect when introduced into the bodies of guinea-pigs; when large numbers are introduced the animals may die from intoxication but without the development of a genuine tuberculosis. Avian bacilli have also been found in the caseous mesenteric lymph nodes of a three months' old pig. Recent efforts to convert avian bacilli into human or bovine bacilli have failed; in Weber and Bofinger's experiments the avian bacilli retained their original characteristics after having sojourned for two years in the bodies of susceptible mammals.

In view of what has been stated it would seem then that barnyard fowls fed on human tuberculous sputum do not acquire tuberculosis, neither do there seem to be any cases on record of the tubercle bacillus having been found in their eggs. While it is true that one or two instances have been recorded in which avian tubercle bacilli have been found in the human body, yet there is, so far as we know, no evidence that really warrants the conclusion that it is pathogenic for man.

DETECTION OF TUBERCLE BACILLI IN THE BLOOD

To the Editor:—In the answer to the query regarding Rosenberger's method of detecting tubercle bacilli in the blood (The Journal, July 10, 1909, p. 132) it is stated that he works with 5 c.c. (80 m.) of blood. Please advise me of Rosenberger's method of obtaining such a large quantity of blood.

T. W. Causey, M.D., Jesup, Ga.

Answer.—Dr. Rosenberger secures the blood by puncture and aspiration with a hypodermatic syringe.

TREATMENT OF TRICHINOSIS

To the Editor:—Please give the treatment for trichinosis after the parasite has invaded the muscles. X. Y. Z.

Answer.—The treatment is entirely symptomatic: Warm baths and local soothing applications are indicated. Sulphonethylmethanum may be given to promote sleep and in some cases morphin is necessary to relieve pain. Tonics and stimulants may be required later to overcome anemia and emaciation; passive motion and massage will assist in restoring the function of the muscles.

CUMULATIVE EFFECTS OF SUPRARENAL EXTRACT

To the Editor:—What cumulative action is exerted by suprarenal extract? J. Rodman, Dallas, Tex.

Answer.—"Cumulative action" is a somewhat indefinite term. In the sense in which it is ordinarily used, viz., when moderate doses are employed at reasonable intervals for a limited time, there is no evidence that suprarenal extract produces cumulative effects except the arterial degeneration which has been observed after repeated injections in animals. The effect of suprarenal extract or adrenalin on the blood pressure disappears very quickly and it is not probable that cumulative action can be caused by repeated administration. Given by the mouth it does not affect the blood pressure. The dose is from 3 to 5 grains of the dried gland.

The Public Service

Medical Corps of the Navy

Changes for the week ended July 24, 1909:

D. G. Allen, asst.-surgeon, detached from the *Chattanooga* and ordered to the Naval Hospital, Canacao, P. I.

Medical Department of the Army

Memorandum of changes of stations and duties of medical officers for the week ended July 24, 1909:

Morris, Samuel J., capt., ordered to Washington Barracks, D. C., for temporary duty.

Maus, Louis M., col., ordered to St. Paul, Minn., for duty as Chief Surgeon, Department of Dakota.

Gibner, Herbert C., capt., granted leave of absence for twenty days.

Davis, William R., capt., granted leave of absence for twenty days.

Ekwurzel, George M.; Buck, Carroll D.; O'Connor, Roderic P.; Heard, George P.; Brooke, Roger, Jr., capts., ordered to report at Manila, P. I., for examination for promotion.

Usher, Francis M. C., major, granted leave of absence for one month.

Ashford, Mahlon; Huber, Edward G.; Bayly, Rozier C.; Leary, Thomas F.; Kerr, Robert W.; Shields, William S., 1st lieuts., relieved from their present duties in time to proceed to San Francisco and sail Sept. 5 for Philippine service.

Waterhouse, Samuel M., major; Lyster, William J. L., major; Murtagh, John A., capt.; Davidson, Wilson T., capt., relieved from duty in the Philippine division; will sail Oct. 15 from Manila, P. I., for San Francisco.

Dean, Elmer A., major, granted leave of absence for ten days.

Hutton, Paul C., capt., ordered to report at Washington, D. C., for examination for promotion.

Harris, Henry S. T., lieut.-col., relieved from duty at Fort Leavenworth, Kan., and ordered to San Francisco for duty as chief surgeon, Department of California.

Edger, Benjamin J., Jr., major, ordered to Fort Meade, S. Dak., for duty.

Robbins, Chandler P., major, ordered to Fort Terry, N. Y., for duty.

Van Kirk, Harry H, 1st lieut., M. R. C., granted leave of absence for fifteen days.

Fisk, Owen C., 1st lieut., M. R. C., ordered to Fort Hamilton, N. Y., for temporary duty.

Betts, Charles A., 1st lieut., M. R. C., relieved from duty at Fort Lawton, Wash., and ordered to San Francisco, to sail Sept. 5 for Philippine service.

McLeod, Harlow C., 1st lieut., M. R. C., honorably discharged from the service of the United States, his services being no longer required.

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public-Health and Marine-Hospital Service, during the week ended July 23, 1909:

SMALLPOX—UNITED STATES

Georgia: Macon, July 4-11, 2 cases.

Indiana: Fort Wayne, June 26-July 3, 1 case.

Kentucky: Lexington, July 3-10, 2 cases; Newport, 1 case.

Louisiana: New Orleans, July 3-10, 2 cases.

Michigan: Grand Rapids, June 5-12, 1 case; Kalamazoo, July 3-10, 1 case.

Minnesota: Duluth, July 2-9, 5 cases.

Montana: Butte, June 24-July 1, 5 cases.

Oregon: Portland, May 1-31, 9 cases.

Texas: Fort Worth, June 1-30, 4 cases.

Washington: Spokane, June 26-July 3, 1 case.

Wisconsin: La Crosse, July 3-10, 1 case.

SMALLPOX—FOREIGN

Brazil: Bahia, May 21-June 4, 4 cases, 1 death; Rio de Janeiro, May 23-June 12, 22 cases, 12 deaths.

Canada: Halifax, June 26-July 3, 1 case.

Egypt: Cairo, June 3-10, 2 cases, 5 deaths.

France: Paris, June 19-26, 4 cases.

Great Britain: Liverpool, June 19-26, 2 cases, imported.

India: General, May 28-June 5, 1,986 cases, 1,698 deaths; Bombay, June 8-15, 10 deaths; Calcutta, May 20-June 5, 18 deaths: Madras, June 5-11, 4 deaths; Rangoon, May 29-June 5, 1 death.

Indo-China: Saigon, May 22-29, 1 case, one death.

Italy: June 20-27, 20 cases, 3 deaths.

Mexico: Monterey, June 27-July 1, 9 deaths.

Portugal: Lisbon, June 26-July 3, 7 cases.

Russia: Riga, June 26-July 3, 6 cases; St. Petersburg, June 5-12, 23 cases, 6 deaths.

Siberia: Vladivostock, May 21-28, 1 case.

Spain: Barcelona, June 21-28, 5 deaths.

Straits Settlements: Singapore, May 15-22, 1 case.

Switzerland: Geneva Canton, June 5-12, 1 case.

Tripoli: Tripoli, May 22-June 19, 30 cases, 10 deaths.

YELLOW FEVER

Brazil: Bahia, May 2-June 18, 7 deaths; Manaos, June 12-19, 2 deaths.

Ecuador: Guayaquil, May 28-June 12, 6 deaths.

CHOLERA

India: Bombay, June 8-15, 22 deaths; Calcutta, May 29-June 5, 61 deaths.

Indo-China: Saigon, May 22-29, 3 cases, 2 deaths.

Russia: Archangel, June 26-July 1, 10 cases, 4 deaths; Chmalysk, June 25, 1 case; Cronstadt, June 28-30, 5 cases, 1 death; Estland, 1 case; Pleskov, July 1, 1 death; Riga, 1 case; St. Petersburg, June 25-July 1, 11,581 cases, 203 deaths; St. Petersburg, government, June 25-26, 36 cases, 12 deaths.

Straits Settlements: Singapore, May 15-22, 1 death.

PLAGUE

Brazil: Bahia, May 21-June 4, 4 cases, 3 deaths; Rio de Janeiro, May 23-30, 1 case.

Ohio: Canton, May 22-June 5, 90 cases, 70 deaths.

Ecuador: Guayaquil, May 28-June 12, 8 deaths.

Egypt: June 10-July 1, 81 cases, 25 deaths; Alexandria, June 17, 1 case, 1 death; Port Said, June 15-17, 2 cases, 2 deaths.

India: Bombay, June 8-15, 35 deaths; Calcutta, May 28-June 5, 77 deaths; Rangoon, 16 deaths.

Indo-China: Saigon, May 22-29, 1 case, 1 death.

Japan: Tokyo: June 22, 2 cases; Yokahama, June 12-19, 2 cases.

Venezuela: Caracas, June 22, 1 case; June 28, 2 cases.

Marriages

Fletcher L. Brown, M.D., Whiteville, N. C., to Miss Maude Phifer of Morganton, N. C., at Spartanburg, S. C., July 15.

Howard Cameron, M.D., Sacramento, Cal., to Miss Alice M. George of Sparks, Nev., at Elk Grove, Cal., July 14.

Humphrey B. Williams, M.D., Honea Path, S. C., to Miss Jennie Williams of Nashville, Tenn., recently.

T. Richard Paganelli, M.D., Hoboken, N. J., to Miss Grace Beatrice Reardon of Jersey City, April 19.

John H. Hollihan, M.D., New Bedford, Mass., to Miss Edna H. LeFevre, at Govanstown, Md., July 6.

Thurston Gilman Lusk, M.D., to Miss Clementine Tetedoux, both of New York City, July 17.

Charlotte Dodd Stewartson, M.D., and J. Brodie Smith, both of Manchester, N. H., July 14.

John B. Bartram, M.D., Ashland, Ky., to Miss Lillian Maurer of Covington, Ky., July 11.

Spurgeon Floyd Priestley, M.D., to Miss Sophie C. Hausen, both of Stockton, Cal., July 13.

James Henry Turner, M.D., to Miss Bessie Helen Shute, both of Salida, Colo., June 24.

Wenzel Carl Gayler, M.D., to Miss Rosaline Klipstein, both of St. Louis, June 29.

John F. Hawkins, M.D., to Miss Lydia Roessler, both of Baltimore, Md., June 30.

Martin J. Hanna, M.D., Baltimore, Md., to Miss Sarah S. Rust, at Baltimore, July 7.

Ormand E. Hutchins, M.D., to Miss Gene J. Fairfax, both of Warsaw, Ill., July 7.

Carl V. Cole, M.D., to Miss Anna Seely, both of Lake City, Minn., July 14.

Deaths

Joseph Robbins, M.D. Jefferson Medical College, Philadelphia, 1861; a member and officer of the Illinois State Medical Society; once president of the Adams County Medical Society a member of the Tri-State Medical Society; for several years a member of the Quincy Board of Education; from 1901 to 1902 superintendent of the Jacksonville (Ill.) State Hospital; physician and consulting surgeon to Blessing Hospital, Quincy; and president of the medical staff; formerly president of the Quincy Medical Library Association; died in Blessing Hospital, July 19, from cancer, aged 74.

Edwin Holmes Van Deusen, M.D. College of Physicians and Surgeons, New York City, 1851; of Kalamazoo, Mich.; a member of the Michigan State Medical Society; first assistant physician at the New York State Lunatic Asylum, Utica, from 1853 to 1858; superintendent of the Michigan Asylum for the Insane, Kalamazoo from 1859 to 1878; who gave to Kalamazoo its public library; a great benefactor to his city; died at the Interpines Sanitarium, Goshen, N. Y., July 6, aged 79.

Charles Henry Voigt, M.D. University of Pennsylvania, Philadelphia, 1875; a member of the American Medical Association; surgeon for the Allegheny General Hospital since its opening; physician and surgeon to the Wilkinsburg Hospital; died at his home in Allegheny, Pa., July 10, from septicemia due to an operation wound, aged 59.

J. R. Marmaduke Dillon, M.D. Tulane University, New Orleans, 1895; of New Orleans; a member of the American Medical Association; formerly assistant surgeon, U. S. Navy; and house surgeon at the Illinois Central Railroad Hospital, Paducah, Ky.; died suddenly in St. Louis, July 4, from heat prostration, aged 35.

Arthur Earl Beach, M.D. Northwestern University Medical School, Chicago, 1905; a member of the American Medical Association; was found dead in his office in Carroll, Iowa, July 13, from the effects of chloroform, self-administered, with suicidal intent, while despondent on account of ill-health, aged 34.

Jacob B. Casebeer, M.D. Bellevue Hospital Medical College, New York City, 1866; formerly a member of the American Medical Association; a member of the DeKalb County (Ind.) board of U. S. Pension Examining Surgeons, died at his home in Auburn, July 13, from carcinoma of the liver, aged 70.

George Marshall Fox, M.D. Castleton (Vt.) Medical College, 1851; once president of the board of trustees of La Grange, Ill.; from 1864 to 1866, physician of Cook County; died at his home in La Grange, July 14, aged 80.

Junius H. Wattles, Jr., M.D. University Medical College, Kansas City, 1900; of Kansas City, Mo.; formerly president of the Western Veterinary College, Kansas City; died in San Marcos, Texas, June 27, aged 30.

Robert S. Chrisman, M.D. University of Pennsylvania, Philadelphia, 1867; a member of the staff of Pottsville (Pa.) Hospital since its foundation; died at his home July 9, from general debility, aged 67.

Patrick Joseph L. Carberry, M.D. Jefferson Medical College, Philadelphia, 1874; owner of the Hotel Rossmore, Atlantic City, N. J.; died in the Atlantic City Hospital, July 9, from nephritis, aged 60.

Thomas J. Wooldridge, M.D. Medical College of Virginia, Richmond, 1851; a practitioner of Hanover county, Va., for 52 years; died at his home in Richmond, March 5, from senile debility, aged 79.

Samuel Millington, M.D. Eclectic Medical College of the City of New York, 1869; for 47 years a practitioner of Rome, N. Y.; a veteran of the Civil War;; died at his home in Rome, July 13, aged 73.

William I. Edwards, M.D. St. Louis Medical College, 1872; a specialist on diseases of the eye, ear, nose and throat of Nashville, Tenn.; died at his home in that city, July 9, aged 61.

William E. Moore, M.D. College of Physicians and Surgeons, Baltimore, 1881; formerly of Derby, Iowa; died suddenly at his office in Lincoln, Neb., July 8, from endocarditis, aged 57.

M. Augustus Withers, M.D. University of Pennsylvania, Philadelphia, 1852; surgeon in the Army during the Civil War; died at his home in Pottstown, Pa., July 2, aged 79.

William J. Wagner, M.D. John A. Creighton Medical College, Omaha, 1908; died at his home in Hulett, Wyo., July 2, from the effects of accidental poisoning by strychnin, aged 26.

J. Lyman Bulkley, M.D. Albany (N. Y.) Medical College, 1874; of Richmond Hill, Borough of Queens, N. Y.; died at his old home in Sandy Creek, N. Y., July 9, aged 75.

Otis E. Youngquist, M.D. Rush Medical College, Chicago, 1892; a member of the Michigan State Medical Society; died at his home in Escanaba, July 11, aged 40.

Elizabeth Grabe, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1884; died at her home in South Beatrice, Neb., July 10, aged 47.

Edward D. Scott, M.D. Howard University, Washington, D.C., 1895; died at his home in Washington, July 8, from paralysis, aged 52.

William Gregg Ratcliffe, M.D. Toronto School of Medicine, 1899; died at his home in St. Catherines, Ont., July 12, from typhoid fever.

John Wesley Lynn, M.D. University of Georgia, Augusta, 1859; died at his home in Carbon Hill, Ala., June 26.

John B. Huff (license, Ky., 35 years of practice, 1893), died at his home near Herbert, Ky., July 8, aged 73.

John K. Seawell, M.D. Atlanta (Ga.) Medical College, 1861; died at his home in Erastus, Ga., July 7.

Miscellany

Sociology and Medicine

The Conference of Charities and Corrections which held its session at Buffalo, N. Y., recently, was of great interest because of the number of its problems which are so closely linked with those confronting the medical profession —problems in which the physician, nurse, social worker and the philanthropist work jointly for common good. Papers of importance were read bearing on the medical side of sociologic problems, such a paper for instance as "The Health of Immigrants, A Study of Typhoid in Pittsburg," by Douglas C. McMutrie of Pittsburg, in which he stated that there is a perfect ratio in the prevalence of typhoid fever and the increase in immigration. So soon as immigration increases typhoid fever becomes more prevalent. This is due to various reasons, some of which are the lowered resistance of the immigrant, the ignorance on their part in sanitary measures, their indifference to health regulations, possibly due to the fact of their ignorance in reading, their segregation in the slums of large cities, overcrowding and the very poor condition of the water supplies in most large cities. The Rev. Dr. W. S. Friedman of Denver presented an urgent and timely plea against sending consumptives in the last stages to the West. He declared that it was an injustice to the West and a cruelty to the patient. He declared that to send such patients to the West was "sentimentalism run wild, philanthropy perverted, medical malpractice." Every humanitarian impulse urges such patients to remain at home. Their last chance, as hoped for by their friends, becomes their lost chance. The sudden change from sea level to a highland, rarified atmosphere, and the wearing hardships of travel aggravate complications and hasten death.

What the slums of our great cities cost in human lives was graphically brought out by Paul Kellog, director of the Pittsburg Survey, the most detailed investigations ever made into social conditions in any city in the world. Dr. John H. Fulton, of Washington, D. C., presided at a subdivision which came into existence at this meeting, namely a section on social service departments in hospitals and dispensaries. Many physicians, nurses and social workers interested in this newest line of philanthropy met and a committee of three was appointed to draw up a plan of organization. Scores of cases were cited in which improvement in the social conditions and the home surroundings of a hospital patient resulted in his recovery. The social service department also cares for convalescents and aids the diagnostician by seeing that ignorant outside patients get proper treatment and medicine and take them properly.

William Jay Schieffelin of New York, in a paper on "Means of Safeguarding the Sale of Narcotics, Especially Cocain, Opium, Morphin," said: "The requirement of the national Food and Drugs Act that patent medicines must bear on their label the proportion of habit-forming drugs has gone far toward preventing people from ignorantly becoming the victims of the drug habit. There remains now the problem of restricting the sale of habit-forming drugs, especially cocain, to their uses. Cocain is so valuable in surgery that to prohibit its use would cause much suffering. On the other hand at least half of the cocain consumed in this country is used by the victims of the habit. Most of these unfortunates live in questionable districts. . . . The New York commissioners of police have reported that they have already found sixty drug stores that show excessive sales and that the druggists conceal their source of supply by importing from abroad. . . . The suggested remedy is a prohibitive tariff to keep out foreign cocain and an internal revenue tax and license to regulate the cocain made and sold in America. If these measures are adopted the sale of cocain in the United States will be cut in half; the drug habitués will be driven to secure smuggled cocain, which can be identified by the absence of the revenue stamp and the name of the American maker; the abuse of the drug will be checked and the hands of the druggist will be clean."

Dr. H. W. Wiley, in a paper dealing with the subject of foods furnished in public institutions said: "In a recent investigation by the Department of Agriculture, made for the purpose of ascertaining the character of food supplied the inmates of a number of hospitals, asylums for orphans and the insane, almshouses, schools for the blind, deaf and dumb, soldiers' homes, workhouses and prisons, it was found that as a general thing the fare at these institutions is of the plainest kind consistent with necessary food value, and the supplies are generally purchased by the governing bodies, on contract, and with a decided leaning toward economy. As a part of our investigation a number of samples of foods were selected for technical examination. Some of these were found to be very deficient in character, as for illustration—of the total number of coffee samples analyzed, 17 per cent. were found to be of good quality and true to name; the remaining 83 per cent. all contained a varying proportion of immature and dead beans which ranged from 6 per cent. to 29 per cent., and some of the samples contained other impurities such as stems and mineral matter. It is something more than a coincidence that all of the impure samples had been glazed. A sample of dried peas contained weevils and other small insects. One sample of gelatin used in a hospital developed an offensive animal odor on moistening. The dry substance was dusted with wheat starch. A sample of tea, very low grade, was composed of old leaves and contained 13 per cent. of stems. In the case of one institution, we have knowledge that a contractor supplied a lot of over 1,000 pounds of coffee which had been stored near raw hides, and was filthy and utterly unfit for food. A vigilant inspection halted this product before it entered into consumption. At one almshouse we found one grade of coffee supplied to the attendants and a much lower grade to the inmates, as was also the case with butter. From the foregoing, it is perfectly clear that some system of supervision of the dietaries of institutions needs to be developed."

C. F. Langworthy stated that public institutions should have nutrition experts just as public institutions have expert accountants. He objected strenuously to the fixed bill of fares for certain days in each week which is used in so many of the charitable institutions.

The diet of tuberculous patients was discussed by Dr. H. M. King of the Loomis Sanatorium, Liberty, N. Y. He stated that the diet depends on the sex (the male requiring more than the female); the age (the old requiring less than in adult life, 30 years being the age of maximum diet); occupation (laborers requiring for instance more than those of sedentary habits), and that city dwellers require more proteid diet. He does not believe in hyperalimentation in tuberculosis for the reason that in such cases you get digestive disturbances and intestinal toxemia. He said that in tuberculosis a person loses flesh not so much because he is starved as because there is a toxic condition resulting from the disease.

Roy Smith Wallace of New York, spoke on the "Responsibilities and Opportunities of a Health Officer." After showing how great, how important and how vital to the community was the health department of a great city, Mr. Wallace proceeded to criticize what he described as shortcomings of most public health departments. "The work is handicapped by lack of funds and lack of men—capable men who can do more than the perfunctory, routine work of the department; men who are alive to their tremendous opportunities. The trouble is that most health officers are political appointees; they are spoilsmen looking for plums. This is why few men look on the position as an honor to be sought and won by merit. Only by the rarest chance is there a man appointed that lends distinction to the office and even in these instances his subordinates are political appointees. The public health is too vital a matter to be trusted to spoilsmen."

"Milk for Babies" was the subject of a stereopticon lecture delivered by Dr. George W. Goler, superintendent of the department of public health of Rochester, N. Y. Dr. Goler told of the experiment at Rochester of the Municipal Dairy Farm where the milk is obtained under sanitary conditions at a small cost and then delivered to Rochester where the health department maintains milk supply stations in charge of trained nurses and where the mothers from the tenements obtain clean wholesome milk and are taught the proper dietary and care of the infant. By this method Rochester has reduced its mortality of children under one year by one-half as compared with the mortality record of the preceding decade, and it certainly demonstrates that it is a line of endeavor which is certainly worth while.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

California: San Francisco, August 3. Sec., Dr. Charles L. Tisdale, Butler Bldg.

Georgia: Regular, Capitol Bldg., Atlanta, August 3-4. Sec., Dr. E. R. Anthony, Griffin.

College Merger at Nashville

Word has been received from Dr. Hilliard Wood of Nashville that the University of Tennessee Department of Medicine has united with the University of Nashville Medical Department, the new school thus formed to be known as the Medical Department of the Universities of Nashville and Tennessee. The faculty already selected numbers forty-four. Better equipped laboratories and improved methods of laboratory teaching are contemplated. Additional hospital facilities are already being provided for. It is announced that the new school will be operated according to the requirements of the Association of American Medical Colleges.

Nebraska February and May Reports

We are informed that the Nebraska examination report published in The Journal, July 17, 1909, was for the examination held February 3-4, 1909, instead of May 25-27, 1909. The following is the report for the examination held at Lincoln, May 25-27, 1909, furnished by the Secretary, Dr. E. J. C. Sward. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 63, of whom 60 passed and 3 failed. Eleven reciprocal licenses were issued. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Southern California	(1908)	85.8
University of Maryland	(1909)	88.
Hamline University	(1907)	78.7
University of Missouri	(1909)	85.
University Medical College, Kansas City	(1897)	85.
Ensworth Medical College	(1909)	77.5, 78.5, 80, 80.
University of Nebraska,	(1909)	77.8, 81.7, 84.1, 84.2, 85.4, 86.5, 86.8, 87.4, 90.7.
Nebraska College of Medicine,	(1909)	80.6, 81, 81.6, 82, 82.6, 82.7, 83.8, 85.2, 88.
Lincoln Medical College,	(1909)	80.5, 84.7, 85, 85.5, 85.7, 86.5, 86.6, 89.
Creighton Medical College,	(1908) 80.5; (1909)	75, 75.7, 77.6, 78.1, 78.6, 79.2, 79.8, 80.1, 80.1, 81.7, 82.2, 82.2, 82.6, 82.7, 83, 83.5, 83.7, 85, 85.7, 88.4, 88.6, 88.8, 89, 90.

FAILED

College	Year Grad.	Per Cent.
College of Phys. and Surg., Chicago	(1897) 74.5; (1901)	68.8
Ensworth Medical College	(1909)	68.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University Medical School,	(1905) (1907) Iowa; (1907)	Illinois
Chicago College of Medicine and Surgery	(1909)	Illinois
Jenner Medical College	(1908)	Illinois
Rush Medical College	(1894)	Iowa
Barnes Medical College	(1908) Oklahoma; (1896)	Iowa
Marion Sims College of Medicine	(1898)	Iowa
Ensworth Medical College	(1908)	Kansas
Eclectic Medical Institute, Cincinnati	(1909)	Kansas

Minnesota June Report

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the examination held at Minneapolis, June 15-18, 1909. Aside from the written examination, practical tests were given in pathology, bacteriology, histology and urinalysis. The number of subjects examined in was 12; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 77, of whom 59 passed and 18 failed. Eleven reciprocal licenses were issued. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern Univ. Medical School	(1909)	75.1, 76.2, 78.6, 81.2
Harvard Medical School	(1907) 80.6; (1909)	83.8
University of Minnesota, College of Medicine,	(1909)	75.3, 76.9, 77.9, 77.9, 78.1, 79.1, 79.2, 79.2, 79.3, 79.7, 79.8, 80, 80.7, 81.3, 81.3, 81.5, 81.7, 81.9, 82.1, 82.5, 82.7, 82.7, 83, 83.6, 83.9, 84.5, 84.7, 84.9, 85.1, 85.2, 86.9, 87, 87.2, 89.6.
University of Minnesota, Homeopathic Department	(1907)	78.1
Hamline University,	(1908) 77.3; (1909)	75, 75.4, 77.2, 78.4, 78.7, 79.7, 81.9, 84.1, 86.4.
Creighton Medical College	(1908)	82.2
Columbia University, College of Phys. and Surg.	(1909)	81.5
Hahnemann Medical College and Hospital, Philada.	(1909)	84.2
Jefferson Medical College	(1909)	76.1, 76.7, 79.1, 79.7
University of Toronto, Ontario	(1906)	83.4

FAILED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago	(1890)	68.6
Northwestern Univ. Med. School	(1908) 72.6; (1909)	71.3
University of Minnesota	(1909)	73.8, 74, 74.2
Hamline University,	(1907) 66.8, 70.4; (1909)	68.9, 69.9, 70.6, 73.1, 73.7.
Barnes Medical College	(1909)	69.8
St. Louis University	(1909)	67.7
Jefferson Medical College	(1909)	65.4, 65.8, 73.1

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1905) Wisconsin; (1908)	Illinois
Drake University	(1907)	Iowa
University of Iowa	(1904) (1908)	Iowa
University of Minnesota	(1904) Wisconsin; (1905)	N. Dakota
Columbia University, College of Phys. and Surg.	(1895)	Wisconsin
Miami Medical College	(1906)	Michigan
Medico-Chirurgical College, Philadelphia	(1907)	New Jersey
Creighton Medical College	(1909)	Nebraska

Louisiana May Report

Dr. Felix A. LaRue, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, May 20-21, 1909. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 130, of whom 99 passed and 31 failed. Eight candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Arkansas	(1908) 78.; (1909)	82.4
College of Physicians and Surgeons, Little Rock	(1909)	76.2
Kentucky School of Medicine	(1908)	78.6
Kentucky University	(1904)	84.8
Louisville Medical College,	(1898) 78.4; (1905) 77.2; (1907)	76.6
Louisville and Hospital Medical College	(1908)	75.2
Tulane University of Louisiana,	(1884) 86.8; (1901) 87.8; (1909)	75.2, 76.8, 78.4, 79.6, 79.6, 79.8, 81, 81.2, 81.4, 81.6, 81.6, 81.8, 82, 82.4, 82.4, 83, 83, 83.2, 83.4, 83.8, 84, 84.4, 84.4, 84.4, 85, 85.4, 85.6, 86, 86.2, 86.6, 86.8, 87, 87.2, 87.2, 87.4, 87.6, 87.8, 88, 88.6, 89, 89, 89, 89.2, 89.2, 89.4, 89.6, 89.8, 90, 90, 90.6, 90.8, 90.8, 92, 92.4, 93.2.
Meharry Medical College	(1909)	81.8
College of Physicians and Surgeons, Memphis	(1907)	75.0
Vanderbilt University	(1909)	82.6
University of Nashville,	(1907) 83; (1908) 75.6. 87.8; (1909)	83.2, 90.
University of the South,	(1905) 82.4; (1906) 84.2; (1908)	75.4.
University of Tennessee,	(1905) 77; (1909)	80.4, 83.6, 84.6, 85.6.
Memphis Hospital Medical College,	(1898) 75; (1901) 81.6; (1909)	75, 75, 75, 76.6, 77.2, 77.2, 77.6, 78.6, 79, 79.4, 80, 80.6, 83, 85.4, 85.4.

FAILED

College	Year Grad.	Per Cent.
University of Arkansas	(1905) 72.2; (1909)	66.6
College of Physicians and Surgeons Little Rock	(1909)	73.2
Medical College of Georgia	(1908)	51.4
Kentucky University	(1904)	70.4
Kentucky School of Medicine	(1906)	54.2
Louisville Medical College	(1906)	58.
Flint Medical College	(1909)	57.6, 66.4
Tulane University of Louisiana	(1909)	72.4
Maryland Medical College	(1903)	72.2
Meharry Medical College,	(1908) 61.2; (1909)	58.8, 59.4, 72, 72.6, 72.8.
Memphis Hospital Medical College,	(1893) 55; (1901) 61.6; (1908) 42.6, 53.6, 71.6; (1909)	34.4, 62, 63, 65.4, 67.6, 71.1.
University of Nashville,	(1872) 59; (1898) 69; (1908)	70.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1900)	Illinois
Rush Medical College	(1905)	Illinois
Flint Medical College	(1902)	Colorado
University of Michigan	(1900)	Michigan
Kansas City Medical College	(1903)	Kansas
Dartmouth Medical School	(1881)	Illinois
University of Pennsylvania	(1884)	Michigan
Memphis Hospital Medical College	(1903)	Texas

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Optometry Bill Defeated in Connecticut

The optometry bill which has been pending in the Connecticut legislature for several months past has been finally disposed of. The Committee on Public Health and Safety in the House, to which the bill was referred, reported unanimously against it. The report of the committee was accepted and the bill rejected about three weeks ago. The next day a motion to reconsider was made and tabled. Last week the motion to reconsider was taken from the table and lost. The next day in the Senate the report of the committee against the bill was accepted and the bill was rejected without a dissenting vote. This apparent unanimity of action on the part of the Connecticut legislature regarding this bill would indicate that the recent wave of optometry legislation, one of the most foolish and pernicious of recent years, has spent its force and that legislators as well as members of the profession are beginning to appreciate the danger of enacting such ill-advised laws.

Newspaper Support of Association Work

The statement has often been made, and not always without good grounds, that it was exceedingly difficult to interest the newspapers of the country, even the most prominent and influential ones, in the efforts of the Association and its various constituent state societies in the direction of public health sanitation. The enormous influence and power of the great city newspapers has been fully recognized. Unfortunately, they have not always appreciated the importance of the activities of the medical profession or else have apparently felt that they were inspired by ulterior motives. A change of sentiment in this direction has been apparent for some time and editorial utterances have not been wanting, showing that the leading newspapers of the country are beginning to appreciate the importance of the work of the Association and to give it the commendation which it deserves.

PHILADELPHIA NORTH AMERICAN

One of the most gratifying evidences of this awakening sentiment is an editorial which appeared in the Philadelphia *North American*, Saturday, June 12, immediately after the Atlantic City session, under the head "'Forward!' The Doctor's Message." While too long to quote verbatim, the following extracts are given:

"A gathering of doctors to discuss matters of interest to themselves a few years ago would have meant nothing at all to the American public. There would have been much wrangling over petty "ethical" disputes, much of quarreling about polysyllabic prescriptions, much grave and dignified folde-rol to convey the impression that modern medicine is a mystery. The deeper is our gratification in summarizing our observation of the proceedings at Atlantic City this week of nearly 4,000 physicians representing about every state and territory in the United States, and many foreign countries, who met to attend the sixtieth annual meeting of the American Medical Association. Our most temperate estimate of the work of those doctors assembled is that it has been not only a distinct gain for public health, a distinct advancement of the profession of healing, but a profit and a progress for public enlightenment, for civic morality and for the civilization of the nation. We have studied every debate, every address, every resolution presented during the Atlantic City meeting. We have failed to detect a single proposal or utterance intended to further the selfish interest of an individual or a clique or any institution or group of institutions or to exalt a narrow doctrine or any theory not universally accepted by scientists. We have been unable to pick out even one suggestion demanding consideration which did not have its inspiration in a broad, beneficent spirit of uplift not for a class or a community alone, but for the whole race. . . .

"There was not a man in that great gathering who had a dollar or an office to gain—many had much to lose—by any pronounced stand on the liquor question. Yet these are some of the messages to their countrymen by those calm scientists:

> Study has shown that alcohol is a death-dealing agent and not the panacea that it is supposed to be.
>
> Americans need stimulants less, perhaps, than any civilized people, for the climate and life, with its changeableness, uncertainty and haste, are stimulants enough without adding more artificial ones. The safer course for the American is to abstain entirely from alcoholic drinks.
>
> Alcohol prescriptions and narcotics of all kinds often start incurable habits.

"There was advocacy that will stir thought throughout the length and breadth of the land for a national department of public health as a means of prolonging life in America with these remarkable suggestions:

> There should be national or federal control and supervision of all streams, navigable rivers, fresh water lakes and dairies throughout the country. This would go far toward stamping out typhoid fever conditions and consumption, for it would mean a cessation of the pollution of all bodies of water and ridding of all dairies of diseased milch and beef cattle.
>
> Less destitution would prevail by carefully enforcing the laws of emigration. A greater amount of happiness would prevail due to a saving of from 25 to 50 per cent. in lessening the death rate of human life, and thus from an economic point of view would result in an extension of the period of life, which would in turn result in a complete evolution of the human race.

"But more impressive to us than all else—more thought-provoking even than the urging of still stronger battling against tuberculosis, bad sanitation, bad food, bad water and every other factor in the creation of disease—was the consistent striking by those doctors at the root and not the fruition of degeneracy, disease and death. Scarcely a speaker failed in the discussion of his topic to delve straight down to care of the child. The thought of all was summarized in the resolutions declaring that supervision of the health of school children is essential for the welfare of the race, and that the education of children in sanitation and the use of preventives should be made part of the studies.

"These are but running comments on the proceedings of the largest and ablest society of physicians in the western world But examine all that they did in detail and if any act or utterance be found not in harmony with the splendid impulse they gave toward the perfection of preventive medicine, we shall confess an error and an oversight. Yet every doctor who aids in the promotion of hygiene and preventive medicine is reducing disease and thereby lessening the likelihood of large professional profits.

"Try to put a halo about the head of any one of those big, broad men and you will be laughed at for your pains. Call him altruist or philanthropist and you will gain no more thanks than if in your folly you called him quack or charlatan. They are very human, these doctors—else they would not be good doctors. For they know humanity as it is given to no others to know it. Men may lie to their lawyers. To their spiritual counselors they may persist in plausible hypocrisy. But no man may keep up the mask of his soul between him and his doctor. For 'when the body triumphed and the last poor shame departed, these abode our agonies and wiped our sweat away.'

"These are the ones who see humanity in the raw—see man's nature stripped by pain of every garment of falsity and convention. It is not of the great chemist nor the great biologist we speak; only in slight degree of the surgeon or the specialist. But of the practicing physician, who sees all sorts and conditions of men and more nearly than any other fellowman, we say that above all others he would be excusable if he became a selfish, self-centered, hardened cynic.

"And when instead we see a display of such splendid humanitarianism as has been presented by the American Medical Association, we can only avow our belief that in their calling there is some subtle, intangible inspiration, which to a greater or less degree, implants in every true physician a spirit that guides his conduct for the general above his own good—a flash of the supernal light that makes of the world's greatest, 'gods, for they knew the heart of men; men, for they stooped to fame.'"

THE NEW ORLEANS ITEM

Even more interesting, because apparently written on the individual initiative of the editor, without the stimulus of a great medical meeting, is an editorial which appeared in the New Orleans *Item*, June 25, outlining as it does a plan for cooperation between the profession and the public almost identical with that proposed sometime ago and which the Association has been hoping soon to establish. The following paragraphs from the *Item* editorial, which was entitled "Our Medical Friends and Disease," should be widely copied and carefully considered:

"It is remarkable how few physicians understand and practice the art of presenting health topics to the public. The ideal medium for conveying information on preventable diseases in the daily newspaper. Medical societies recognize this stupendous medium for treating suffering humanity by practically authorizing those of its members who show a disposition to communicate with the public on the subject of disease. They leave the great problem involved in the advance of science to discussions conducted in technical terms in their own associations. We do not approach the subject from a commercial viewpoint, but we do know that there is a very widespread interest on the part of all the people on health topics. We feel that thousands of cases of illness would be prevented if there appeared in each newspaper in the country every day a clear and simple discussion of some side or phase of disease prevention and cure. There should be some agency in the United States of America, sufficiently patriotic, sufficiently intelligent to furnish the daily press with well-prepared articles of a public character on health topics. Preferably these articles should come from a committee of the American Medical Association and should bear their stamp. It might come from the Federal Government or an association of the health officers of the various states of the United States, as well as the health officers of the large cities of the United States. The world is waking up to the possibility of the prevention of disease and to the desirability of informing all of the people through newspapers, magazines and periodicals which reach all the people, regarding the best method of living. . . .

"Ask any intelligent physician how much of his practice comes from people having preventable diseases. They will tell you that almost all diseases are preventable. Tuberculosis is an avoidable and preventable disease. Nine-tenths of all the insanity that people have comes from improper forms of living. Smallpox is one of the few diseases that medicine recognizes and takes the proper steps to prevent. Typhoid fever, malaria, dysentery, whooping-cough, pneumonia and a number of other diseases are preventable. There are poisons, pains and aches, shocks, burns and wounds, and hundreds of other troubles that afflict people, and cause unending pain and suffering that can be either avoided or cured by the spread of information and a general knowledge of the remedies for these troubles.

"As we have to live and must read something, and as we all go to school and must study something, why should we not learn about these things that are practical, and educate ourselves and others so that while we are alive we may be as healthy as possible. We should know the effect on the human system of the various foods that we eat, of the various things that we drink, of the tobacco that we smoke, of the hours that we keep. We should know how much sleep we need, and how to get the best result from it. The schools are teaching hygiene and some knowledge of the better care of the body, but the work is not going forward as fast as it might. It is by no means as thorough as it should be, nor is it popularized to the extent that it might be.

"The world is growing better along these lines, but it could grow better at a very much more rapid rate. New Orleans should not need education along these lines as much as other cities. The greatest physician in Louisiana, the greatest man in the practice of medicine in the South, should be chairman of its health board, and around him he should have a staff of physicians consisting of the pick of the specialists in all lines. Ten dollars should be spent for the public health for every dollar that is spent now. . . .

THE LOUISVILLE JOURNAL

As an evidence of public interest not only in the discussion of general questions but in the specific reforms as well, the following editorial on "The Campaign for Sanitation," from the Louisville (Ky.) *Journal*, shows how readily the leading newspapers respond to efforts for better sanitary conditions:

"The State Board of Health is making a commendable effort to impress on the people of Kentucky the importance of sanitation. The recent visit of Mrs. Caroline Bartlett Crane has done much to arouse popular interest. Dr. J. N. McCormack is now visiting various towns in western Kentucky, and in his lectures is urging city and county officials and local health boards to more active endeavor.

"It is a grievous fact that in many communities there is very little attention paid to these all-important matters. The simplest rules of ventilation and cleanliness are ignored in public buildings and places of assembly. In the majority of the small towns there is no systematic or coordinate plan for the insurance of sanitary conditions, and in some of the larger towns affairs of sanitation are woefully neglected. Even in cities where health boards are active the inspection, often, is less careful than it should be. The simple process of keeping the streets clean seems to be beyond the ability of the average city administration. Water accumulates in gutters and mudholes to remain for days, breeding mosquitoes and malaria. In the long time between cleaning streets are covered with all manner of rubbish that is both unsightly and insanitary. If these conditions prevail in some of the main-traveled thoroughfares, what must be the predicament in some of the alleys —to say nothing of back yards?

"While it is not possible to abolish disease, there is much that could be done, in large towns and in small, that would indubitably have a tendency to improve the health of the dwellers therein. There are ponds that might be drained, weeds that might be cut, plague spots that might be eliminated and nuisances of various kinds that might be abated. Every town has its breeding places for germs, for flies and for mosquitoes. Scientists declare that it is possible for one ordinary housefly to carry thousands of germs. Physicians look on the fly and the mosquito as two of the most powerful agencies for the transmission of disease. Despite these well-known facts, many towns are doing practically nothing toward the eradication of these pests. . . .

"Dr. McCormack and other state health officials deserve the highest commendation for the intelligent and continuous efforts they are making toward the improvement of conditions in Kentucky. Results may be slow of attainment, but something has been gained all along the line. With the continuation of a vigorous and well-directed campaign there is much that may be achieved, although there be difficulties, almost innumerable, to overcome."

The enormous power of the daily newspapers as a means of reaching and educating the public can not be overestimated. Intelligent and active cooperation between the organized medical profession and the public press of the United States could do more to save human lives and to prevent unnecessary sickness than could be secured by any other possible agencies. If the medical profession will furnish instruction and if the newspapers will disseminate it, the sanitary regeneration of the country can speedily be brought about.

Society Proceedings

NEW JERSEY STATE MEDICAL SOCIETY

Annual Meeting held at Cape May, June 23-25, 1909

The officers elected were noted in The Journal, July 10, page 123.

Progress in Medicine

Dr. Thomas H. Gray, East Orange, delivered the Oration in Medicine, which contained a review of the progress made in medicine during the memory of physicians now in practice. He thought that there should be a national board of medical examiners, just as there is a national pure food law.

Chloroform Anesthesia in Throat Operations

Dr. Frederick P. C. Demarest, Passaic, considered chloroform the best anesthetic to use in adenoid operations on children under 12 years of age, because ether was irritating to the respiratory tract, producing a flow of mucus, which greatly embarrassed the operator. It takes a more skilled anesthetist to administer chloroform than to administer ether. The chloroform must be pure and fresh, not having been opened or exposed to a bright light, and must be given by the drop method.

DISCUSSION

Dr. George Edward Tuers, Paterson, thought that the field of chloroform as an anesthetic was large, and admitted that it was being used more and more every day. Compared with other anesthetics, he regarded it as the most pleasant by far, and also the most dangerous; the quickest to anesthetize, and the quickest to kill.

Dr. Walter S. Cornell, Philadelphia, emphasized the necessity of mixing air with the chloroform. He thought there should be some arrangement of wire-net with gauze over it, or that the finger should be placed under the gauze in such a manner as to admit air.

Dr. Theodore F. Livengood, Elizabeth, said that less and less is being heard about deaths due to chloroform, because better qualified men administer it. He then described the manner in which the discovery that suspension with the head down and the legs elevated would resuscitate a person dying from the effects of chloroform had been made in carrying some rats by their tails after they had been chloroformed and were apparently dead. He considered chloroform a good anesthetic in cases in which it was practicable to do a rapid operation, but not in those cases in which prolonged periods of anesthesia was necessary.

The Influence of Sleep on Arteriosclerosis

Dr. W. W. Beveridge, Asbury Park, said that similar changes to those occurring in the hearts and blood vessels of elderly persons frequently occurred in the young, and were not physiologic, but pathologic. Nutrition probably had something to do with the cause of these derangements. He thought that a more thorough study of the constitution of the cells of the body might lead to greater knowledge regarding the secondary changes produced by this condition. He then referred to the physiologic function of the sleeping state as being one of the most important in the body, having to do with nutrition and the repair of the wear and tear caused by the day's activity. The amount of sleep required was in proportion to the amount of nutrition needed. He believed that the retrograde changes incident to old age might be retarded by a more careful study of the processes that go on in sleep and affect the nutrition of the cells.

DISCUSSION

Dr. W. G. Schauffer, Lakewood, did not agree with the view of Dr. Beveridge that sleep, properly made use of, could counteract the degenerative changes in the arterial system and in other organs of the body. He also differed with Dr. Beveridge in the opinion that arteriosclerosis was more or less easily diagnosed. He admitted that some of the methods of treatment now employed caused regeneration of the tissues, but said that others did not. He thought that the fallacy in the paper was the view that sleep gave the food a chance to be absorbed and changed into the elements that built up cells.

Dr. Philip Marvel, Atlantic City, divided the principles emphasized in the paper into the regenerative influence of nutrition on cell life or cell energy and the assumption that sleep is the process that presides over the processes that convert the nutrition or nutritive elements into cell life or energy. He said that no one knew just what sleep was, and therefore could not determine what sleep did. So far as the voluntary forces of the body were concerned, rest was sufficient to restore them. The involuntary forces, however, continued much the same, no matter whether the person was sleeping or waking. He said that no one could tell to what extent any of the individual forces involved in metabolism entered into the reparative or recuperative effect on a cell. The cell was a composite body, which under various influences was made to do different things; and the forces of the body were in some way relative to the unit of the cell. Therefore, it was hard to say that sleep was that force which so controlled the forces of life as to add to the longevity of the average individual.

Dr. Beveridge thought that the fact that we did not know what sleep was did not constitute a good reason for not discussing it. He said, however, that something was known about sleep; and the fact that it occupied one-third of one's lifetime made it important to learn more about it.

President's Address: Recent Advances in Medical and Surgical Work

Dr. David St. John, Hackensack, said that medicine, with surgery, was becoming an exact science; and that while great advances had been made in the diagnosis and cure of some diseases, there were others about which investigators were still in doubt. Among medical methods of diagnosis and treatment recently engaging attention, he mentioned tuberculin therapy, the use of vaccines made from dead typhoid bacilli, the Flexner treatment of cerebrospinal meningitis, the use of extract of leucocytes in the treatment of pneumonia, the treatment of erysipelas with polyvalent serum, the serum treatment of chronic nephritis, the Wassermann seroreaction in syphilis, and the Rogers-Beebe serum for treatment of exophthalmic goiter. The advances in the surgical field, he stated, had been equally promising. Among these he mentioned the successful suturing of wounds of the heart, the starting of the heart's action by rhythmical compressions and by injection of fluids after this action had ceased, the suturing of arteries to veins in transfusion, the new method of treating aneurisms devised by Matas of New Orleans, and the transplantation of parts of the body into a different animal. With these great advances already made, the future, he thought, was full of promise.

Oration in Surgery: Diagnosis of Acute Abdominal Infections

Dr. George Brewer, New York City, limited himself to a consideration of two border-line subjects having largely to do with the differential diagnosis of acute abdominal infections: acute unilateral septic infarction of the kidney, and acute perforation of an intestinal diverticulum.

Of the former, he recognized three clinical types: (1) the severe, which progresses to a fatal ending unless treated by nephrectomy; (2) the intermediary, in which the initial symptoms are severe, but the evidence of grave progressing disease is wanting; and (3) the mild, which requires no operation, and is of surgical interest only because it accounts for cases in which, after an attack of appendicitis, operation reveals no lesion whatever. Acute diverticulitis, he divided into four groups: (1) mild; (2) more severe and progressive; (3) cases in which there has been a rupture of the diverticulum with the formation of a localized abscess, either intraperitoneal or extraperitoneal; (4) cases in which rupture of the diverticulum into the peritoneal cavity has taken place. The symptoms of acute diverticulitis are practically identical with those of acute appendicitis, except that it may occur on the left side of the abdomen.

(*To be continued*)

AMERICAN ACADEMY OF MEDICINE

Thirty-fourth Annual Meeting, Hotel Dennis, Atlantic City, N. J., June 5-7, 1909

(Continued from page 225)

SYMPOSIUM ON EXCEPTIONAL CHILDREN NOT NEEDING SEGREGATION

Classification of Exceptional Children as a Guide in Determining Segregation

Dr. Maximilian P. E. Groszmann, Plainfield, N. J.: Segregation in its full meaning refers only to those children who have to be taken out of human society altogether, temporarily or permanently. Unsegregated exceptional children may require special schools or special classes in ordinary schools. To give a clearer understanding of the problem of exceptional children I desire to submit a tentative classification and terminology as a working basis:

A. NORMAL CHILDREN.
  1. Typical children.
  2. Pseudo-atypical children.
  3. Atypical children proper.
B. SUBNORMAL CHILDREN.
  1. Defective children.
  2. Children of arrested development.
  3. Children of rudimentary or atavistic development.
C. ABNORMAL CHILDREN.

No classification can differentiate all individuals. It is extremely difficult to determine a normal standard so as to preclude ambiguity. Deviations from the normal standard do *not* invariably imply a corresponding decrease of usefulness for human progress. In one detail or another a different viewpoint may suggest other or additional terms for special types. This classification is intended to be one of children and not of adults. It also does not imply rigidity of types. Those children called pseudoatypical need little or no segregation. Special or ungraded classes in schools will help these. From the special class, however, the pseudoatypical child may be speedily returned to the ordinary classes. Too often a purely medical cure is considered sufficient—for example, a case of adenoids. Such a child may need very expert educational treatment for some time after its cure. Of the atypical group neurotic and neurasthenic children require temporary segregation, or at least education in special schools where their entire life can be remodeled. Of the children of the subnormal group, those who are merely incomplete or defective are most encouraging. With the children whose development is permanently checked before maturity is reached this paper has little to do. Redemption through prevention may come in the next generation.

Necessity of Expert Medical Inspection of Public Schools

Dr. Albert Rufus Baker, Cleveland: The school teacher's opinion as to what constitutes an exceptional child is often an erroneous one. Teachers will frequently credit the myopic child with more gray matter than it has, and the bright child, suffering from hyperopia, astigmatism or adenoids, may be called a dunce. It is often the school teacher who assigns impossible tasks, rather than the pupil, who needs medical supervision. The medical inspector should be specially trained and should devote his entire time to the work and should not be, as is frequently the case, a recent graduate who is given a few hundred dollars a year for making perfunctory visits to the schools. In Cleveland the school physician is paid $600 annually and a better class of men is attracted. To me the only practicable solution is the employment of expert examiners who shall devote their whole time and energy to making these examinations.

The Leakage in Our Educational System

Margaret Bancroft, president Bancroft Training School, Haddonfield, N. J., (paper read by Dr. Farrington): The inability of a certain percentage of school children to make normal advancement is a familiar phenomenon. The final result is a leakage of educable material into the streets, the jails and the custodial schools. A close study will show that practically every case of slow advancement is due to physical disability. The work of saving these children the handicap of imperfect education or the calamity of custodial life is primarily the duty of parents and teachers. An understanding of elementary physiology, psychology, hygiene, etc., should be required of every person who assumes the responsibility of parenthood or undertakes to rear and educate children. Ignorance of the elementary facts of life, growth and education on the part of parents or teachers may result in grave injury to the children. The medical profession must bear the responsibility of a large part of this ignorance which exists. We are in the habit of speaking of the mentally defective children as if the real mind of the child were at fault. The defect will be found in the injured cortex, the undeveloped association fibers, the broken axis cylinders, the blighted sensory organs, or the weak metabolic processes, and not in the higher faculties which compose the personality. We need organized and systematic instruction of parents by physicians. We need really practical courses in physiology, psychology, hygiene, etc., conducted by able physicians, in the curricula of our normal schools. We need experimental laboratories in connection with our public school systems, in charge of fully trained persons, competent to examine children who deviate from the normal work or progress of the regular grades, and to plan and execute efficient special methods of training to correct this deviation. We need better taught and more widely read physicians. Above all, we need a more optimistic spirit in handling exceptional children in order that difficult cases may not be pronounced hopeless and the children packed off to custodial schools, a procedure which is little short of criminal. The people need to be taught the truth about these things, and the opportunity to give such instruction is in the hands of the medical profession. When adequate knowledge has been imparted, the work of stopping the leakage in our educational system will be an easy task, for enlightened public opinion is all-powerful.

Care of Exceptional Children by the Children's Bureau of Philadelphia

DRS. WALTER S. CORNELL and J. PRENTICE MURPHY, Philadelphia: The paper is a study of 70 cases out of 6,824 children considered by the bureau for care during 1908. Two great principles underly this work: (1) The superiority of the private home over the institution as an environmental influence; (2) the basic normality rather than abnormality of the exceptional child. The second principle is proved, first from the standpoint of the physician, as these children show no particular stigmata other than those simply due to neglect, such as squint from hyperopia, high palates from adenoids, flat chests from nasal obstruction or poor nutrition. Active types of exceptional children, those with excess of physical energy but no training, require rather long training which is best given in an institution. Backward children (defective intellect plus temperamental eccentricities) first need bracing in institutions usually but can be provided for at times in family homes direct. For morally difficult children very little scientific work is being done. There is at present no good institution for this class of children. Those standing in immediate need of strict discipline are best treated in private homes, but this is attended with such cost as to be unwise. Difficult girls present a more serious problem than boys. To care for them in institutions is the best plan in most cases. Causes of exceptional children in the family are irregular occupation, lack of training and ignorance, drunkenness; outside of the family, bad housing, inadequate and poorly adjusted school facilities, lack of playgrounds. Of the 70 children forming the basis of this paper 49 have improved, 12 being returned to their own homes. Of the 21 not improved, 12 were sent disciplinary institutions for further treatment and 9 are still in their own homes.

(*To be continued*)

AMERICAN NEUROLOGICAL ASSOCIATION

Thirty-Fifth Annual Meeting, Held in New York, May 27-29, 1909

(Concluded from page 317)

Organic Basis of Emotional Expression Illustrated by Involuntary Laughing and Weeping

DR. CHARLES K. MILLS, Philadelphia: The main object of this paper is to demonstrate the probable cerebral mechanism of emotional expression, in other words, to prove the existence in one of the basal ganglia of a reflex, emotive or mimetic center related by connecting tracts to both exciting and inhibiting emotive centers in the cerebral cortex, and by emissive tracts to the centers for facial expression in the bulb, and to spinal centers for movements of the limbs concerned with the expression of emotion. Some of the conclusions which I believe to be warranted by the study of several cases are: 1. In the thalamus or lenticula or in some undetermined region at the base of the brain a center for mimetic expression is located, although von Bechterew's view as to the thalamic center could not be regarded as absolutely demonstrated. 2. This center is connected with a prefrontal cortical evoking center, and also with an inhibitory motor center. 3. The pathway from the prefrontal center is probably by way of the anterior limb of the internal capsule and one of the segments of the lenticula. 4. The pathway for the motor inhibitory center is probably by way of a tract at or near the knee of the capsule. 5. The emissive tract from the basal emotive center to the nuclei of the bulb and spinal cord is probably independent of the pyramidal tracts, although passing in close contiguity with this tract. 6. The cortical centers, evoking and inhibitory, concerned with emotional expression are more highly developed in the right cerebral hemisphere than in the left; in this way contrasting with the speech centers with their high development in the left hemicerebrum.

DISCUSSION

DR. MORTON PRINCE, Boston: Attempts have been made by psychologists and neurologists to solve this problem, but it is so large and has so many aspects that it is a very difficult one. We must assume that all automatic movements are organized somewhere. The only question is, where? Recently Roussi has undertaken to reinvestigate this whole problem both by experimentation on animals and from the clinical material found in Dejerine's and Marie's and other clinics in Paris. His work seems very careful. He has come to the conclusion that the sole function so far established in the optic thalamus is sensory. He contradicts strongly the location of movement of any kind, whether mimetic or otherwise, in the optic thalamus. He has gone over the work of others carefully, and if his experiments stand the optic thalamus would have to be eliminated as a center.

DR. M. ALLEN STARR, New York: I hope that in the review of the literature Dr. Mills will give due credit to Dr. Seguin, who published a paper which has been reprinted in his "Opera Minora," and which contains almost every fact that Dr. Mills has presented. Clinically I have been accustomed to divide cases of disturbances of emotional expression into two separate and distinct classes: first, the cases to which Dr. Seguin called especial attention, of emotional disturbances connected with the pons varolii with or without involvement of the optic thalamus; and Dr. Ernest Sachs, whose studies on the optic thalamus are more thorough and convincing than those of anyone else in the last ten years, is present, and I think it would add to the proceedings to invite Dr. Sachs to express his opinion as to the emotional centers in the optic thalamus. Second, the cases that show emotional disturbances in which the lesion is above the level of the crus where we have distinct hemiplegia, usually transient and passing off leaving a lack of emotional control.

DR. ERNEST SACHS, New York: During the past year and a half I have been engaged on experimental work on the thalamus in the laboratory of Sir Victor Horsley, and some of this work may throw light on the question Dr. Mills has raised. There is evidently a distinct connection between the thalamus and the cortical facial center, for a lesion in the lower part of the lateral nucleus of the thalamus leads to degenerations which go exclusively to the facial center, while the region dorsal to this sends fibers to the arm and leg centers. Furthermore, my work has shown that only the lateral part of the thalamus, that portion outside of the lamina interna is connected with the cortex. The median and anterior nuclei are only connected with the caudate nucleus. The center median seems to be only an association center among the thalamic nuclei and gives origin to some of the fibers of the posterior longitudinal bundle. The hypothalamus is not intimately connected with the thalamus as heretofore supposed, but bears a much closer relation to the globus pallidus of the lenticular nucleus. As to the functions of the thalamus much still has to be done, but certain points already seem to be disproved. There is no evidence of any lachrymation arising from thalamic stimulation, as the Russians under v. Bechterew have claimed. Screaming, when it does occur, only is pronounced when the termination of the fillet fibres are irritated, and this should probably be interpreted as meaning that the current has produced a strong sensory impulse in response to which the animal screams. The motor phenomena in the median part of the thalamus are mainly concerned with movements of the eyes usually conjugate in type and this may be a superior peduncle response.

Dr. J. J. Putnam, Boston: I wish to corroborate Dr. Starr's opinion. I have seen the bulbar patients act in the manner described by Dr. Starr, yet with no particular emotion. There is a fairly close resemblance in some stages between the movements which go with pleasure and those which go with grief, and one seems to be an intensification of the other. In the other class of cases in which one sees a lesion with somewhat similar state the emotion is certainly much more strongly present, and yet the patient is not conscious of pleasure or the reverse.

Dr. Hugh T. Patrick, Chicago: This group of symptoms is more apt to occur in bilateral or multiple lesions. One of the principal elements is probably a lack of inhibition. It is nearly always possible to start one of these patients to laughing or crying by appropriate suggestion. One may talk to one of these patients in a sympathetic or lugubrious tone and he will begin to weep, and change to the jocular vein and he will begin to laugh.

Dr. Charles L. Dana, New York: I have studied lately the syndrome of optice thalamus lesions, and we know now definitely what happens in an ordinary optic thalamus lesion. It seems to me that the old idea that the thalamus has something to do with expression is not correct and certainly not unless the thalamus is injured on both sides. Acute lesions of the pons are associated with explosive laughter and crying. In my experience, the location of the lesion when there is an explosion of laughter or crying has been almost always in the lenticular zone. The disturbance is often associated with disturbance of speech, as certain forms of jargon aphasia. So far as clinical and pathologic investigations go, we have to point to the lenticular zone and pons as being the places which are anatomically localized as the most important seats for the mechanism of expression.

Dr. F. X. Dercum, Philadelphia: I have had under observation for some time past a case of motor aphasia with forced laughter; the patient laughs almost continuously, as some of our patients with bulbar palsy laugh. Here, again, we have reason to infer that there is possibly a lesion of the lenticular zone.

Dr. C. K. Mills, Philadelphia: I have already given full recognition and consideration to the writings of Seguin and Roussi. My own views are that the part the mechanism has in evoking the control of emotion is a complicated one; that a center, concentrated part of the neural mechanism, does reside at the base of the brain. I am not sure that it is in the thalamus. I am inclined to think that it is in the lenticular zone. With regard to whether emotion itself precedes the evoking of the emotional expression, my own cases, at least, several of them, would seem to indicate that emotion, as we ordinarily understand it, does not precede the expression of painful or of pleasurable emotion in either weeping or in laughter.

Tic Douloureux of the Facial Nerve with Cure by Physiologic Extirpation of the Geniculate Ganglion

Dr. L. Pierce Clark and Dr. Alfred S. Taylor, New York (Dr. Clark's report): It has been fairly well proved that the facial is a mixed nerve, that its sensory ganglion is the geniculate ganglion and its sensory root the *pars intermedia* of Wrisberg. This ganglion is of the spinal type and, therefore, eligible to inflammations, as, herpes zoster, and degenerations, as, tic douloureux. It is probable that not a few neuralgic conditions of the ear are derived from disease of the sensory part of the fascialis and not, as commonly supposed, of reflex origin from the teeth, nose or throat. The neuralgic area of the facial as concerns otalgia is the anterior wall of the external auditory canal and the skin just in front of the ear. This is also supplied by a branch of the trifacial, but, if all other parts of the trifacial are unaffected, pain in this area doubtless has its seat in the facial. When all other antineuralgic measures have been exhausted without relief it is logical to assume that, as in trifacial neuralgia, operation should be done, consisting in case of the facial, of physiologic extirpation of the geniculate ganglion by cutting the pars intermedia. A patient, Mrs. E. T., aged 28, in February, 1907, began to have stabbing pain just in front of the left ear which later became of daily occurrence and lasted from two to three hours. Ear, eye, throat and general medical examination gave negative results, hence the conclusion was reached that the pain was a true tic douloureux of the geniculate system and physiologic extirpation of the geniculate ganglion was recommended. This was performed by Dr. Alfred S. Taylor, whose report follows.

Dr. Taylor's Report: The patient was referred to me by Dr. Clark with the request that the geniculate ganglion be removed, but researches on the cadaver showed this to be impracticable on account of the danger of doing injury to surrounding structures; therefore it was decided to cut the sensory root in the posterior fossa of the skull. An osteoplastic flap was turned down in the occipital region, the dura incised with the base of the flap toward the midline and its upper border just below the lateral sinus; the cerebellum was retracted and the pars intermedia exposed at the internal auditory meatus and cut. The seventh nerve and the upper part of the eighth nerve. The result was a complete facial palsy and deafness of the left ear, but complete relief of pain. The facial palsy is slowly improving and hearing has been completely restored.

The Reflexes in Hysteria

Dr. Philip Coombs Knapp, Boston: Babinksi has claimed that hysteria is incapable of modifying the tendon reflexes. and some of his followers have also contended that the skin reflexes are not altered. This is contrary to the old teaching that the skin reflexes are diminished over the anesthetic area, and that the tendon reflexes are often exaggerated on the paralyzed side in hysterical hemiplegia. I have studied the reflexes in 100 cases of hysteria in which there was a diminution of sensibility in one side of the body. I take exceptions to Babinski's claim that such a hemianesthesia was due to unconscious suggestion by the physician. I found some exaggeration of the tendon reflexes in 86 cases and considerable exaggeration in 41; a greater percentage than is found in normal persons. I feel skeptical as to the existence of true ankle clonus, loss of knee-jerk or Babinski's reflex due to hysteria. The reflexes were found to differ on the two sides in 76 cases. In 57 cases the tendon reflexes differed on the two sides, the knee-jerk differing in 37 and the ankle-jerk in 30. In 38 cases the tendon reflex was greater on the anesthetic side; in 19 on the sound side. The plantar reflex was absent in only 2 cases, out of 24, and the abdominal reflex was diminished or lost in the anesthetic side in 24 cases out of 51. These cases therefore show that hysteria apparently modifies both the skin and tendon reflexes.

DISCUSSION

Dr. Morton Prince, Boston: I agree with Dr. Knapp regarding Babinski's theory. I do not believe that hysteria is merely a matter of suggestion or that the anesthesia encountered is entirely an imaginary condition. There is no question that in hysteria there is a great increase of suggestion and that therefore you can produce as many states as you please. You can produce anesthesia and modify it, you can draw the boundary line wherever you please, but that does not show that there is not an essential anesthesia in hysteria.

Dr. Charles L. Dana, New York: I have made tests on the reflexes in hysteria and have come to conclusions quite opposite to those of Dr. Knapp. Many years ago I reported a study of thirteen cases of true hysteria and in all of them I found reflexes lessened on the paralyzed hemianesthetic side. Since then I have noticed the same condition. I have always taught that in hysterical states the knee-jerks are rather diminished on the affected side.

Dr. F. X. Dercum, Philadelphia: I have found the reflexes very commonly unequal on the two sides. On placing the legs in exactly the same position in the majority of my cases I have found the knee-jerks plus. Dr. Dana finds the opposite. The difference may be due to our methods of examination.

Dr. Hugh T. Patrick, Chicago: This matter of reflexes is ordinarily very difficult. We have all seen at different times a difference in the knee-jerks in the normal person, the difference depending on the amount of clonus which the patient passed into the quadriceps at the time we strike the tendon. The same thing carried a bit further has satisfactorily explained the difference in deep reflexes in hysteria.

Dr. C. K. Mills, Philadelphia: I agree entirely with Dr. Knapp in his presentation of this subject.

Dr. P. C. Knapp, Boston: The statement that the reflexes may be made to vary with the method of our examination is far-fetched. The reflexes do vary according to the method employed, but many of us certainly are capable of examining the reflexes and determining whether they differ on the two sides in an ordinary case of hemiplegia and whether they are diminished in the case of tabes. That is something we are supposed to know as part of our art as neurologists.

Thrombosis of the Cervical Anterior Median Spinal Artery; Syphilitic Acute Anterior Poliomyelitis

Dr. William G. Spiller, Philadelphia: With the exception of the case reported in this paper, I know of no instance in which thrombosis has been demonstrated by necropsy to be confined to a small portion of the anterior cervical supply. The case is a contribution to syphilis as a cause of acute anterior poliomyelitis; to the position of the fibers of pain and temperature in the anterior part of the lateral columns and of the fibers of tactile sensation in the posterior columns; and to the pathology of brachial paraplegia. It demonstrates that occlusion of a limited portion of the anterior arterial system of the spinal cord or medulla oblongata produces a symptom-complex that should be capable of diagnosis even without necropsy. The case is as follows: About 4 years previous to his paralysis the patient had what was supposed to be spinal meningitis, from which he recovered. He had been in excellent health, and was employed at the time the paralysis occurred in an ice house, and with another man had been lifting blocks of ice weighing about 100 pounds. Fifteen or twenty minutes after lifting the last block he began to have pain between the shoulders, and felt numb and weak in the upper extremities. Ten or fifteen minutes later he felt weak and numb in the lower limbs. He gradually recovered the use of the lower limos, although they remained somewhat spastic. He had normal sensation of touch everywhere. Sensations of pain and temperature were much affected in the lower and upper limbs and trunk. He was almost completely paralyzed in the upper limbs, and these limbs were much wasted. The microscopic examination showed that the lesion was thrombosis. The whole anterior part of the cord from the fourth cervical to the first thoracic segment inclusive was much degenerated. The pyramidal tracts were only slightly affected. The lesion affected the blood supply of the anterior part of the cord. The thrombosis was probably syphilitic in origin.

DISCUSSION

Dr. Bernard Sachs, New York: Everyone who has seen much of spinal syphilis will agree that anything resembling poliomyelitis in connection with spinal syphilis is an extreme rarity. I was busy with this subject ten or fifteen years ago and during that period I did not see a single case that could be relegated to this group. It seems to me that the only safeguard to put around one in endeavoring to interpret a condition of this sort during life is to insist that, in addition to the special symptoms, there should be some other symptoms pointing to a constitutional syphilis before it would be safe to make a diagnosis of syphilitic anterior poliomyelitis.

Pathogenesis of Tabetic Arthropathies Based on the Anatomic and Histologic Study of Two Cases

Dr. Alfred Gordon, Philadelphia: A degenerative state of the peripheral nerves is an essential element in the causation of the arthropathy, yet another factor is necessary, and this is trauma. In view of the hypotonia, loss of tendon reflexes and loss of sensations, traumata of the joints may occur very readily and pass unnoticed. In two of my cases, slight traumata became the starting points for later arthropathies. The smallest nerve branches distributed within and around the affected articulations (knees and foot), also the blood vessels have been carefully examined microscopically. Identical nerve branches and blood vessels were taken from the unaffected side of the body and equally examined for the purpose of control. Degenerative conditions were found in the nerves on both sides. Very slight changes were found in the blood vessels. The conclusion is that while degeneration of peripheral nerves is a *sine qua non* in the genesis of tabetic arthropathies, trauma is an indispensable element.

Pain in Tabes Dorsalis an Important Diagnostic Point in Differentiating from General Paresis

Dr. E. D. Fisher, New York: The pains of tabes are lightning-like and distributed in the peripheral nerves either in the upper or lower extremities, are girdle-like or band-like and of a duller character. They occur either in the lumbar or dorsal region or in the form of the paroxysmal crises of pain involving the various visceral organs—stomach, bladder, heart, etc. These pains in typical cases of general paresis are rare, though we have general paresis of the tabetic type, that is, with irregular spinal symptoms in which pain is present. I direct attention to this one symptom to emphasize my opinion that we have two distinct diseases in general paresis and tabes dorsalis.

DISCUSSION

Dr. Graeme M. Hammond, New York: I can not attach the same importance to the pain symptom that Dr. Fisher does. We do not see all patients with tabes suffering from sharp, lancinating pain. In fact, one patient I now have under treatment, a man of great intelligence, who has had tabes for the past 10 years and has all the symptoms of tabes, including the classical Argyll-Robertson pupil, has not had a single pain during the whole course of the disease. On the other hand, I see cases of paresis in which I can not distinguish the pains complained of from the typical pains of many tabetics. They are sharp, lancinating in character in the legs or in the arms; generally in paresis they are in the arms as well as in the legs, but they are of distinctly the same type. The symptom of pain, therefore, is not one which can be relied on in making a differential diagnosis.

Dr. H. N. Moyer, Chicago: I would like to know what typical symptoms a tabetic ought to have. There may be such, but they do not come frequently under my observation. The last speaker spoke of the typical changes in the cord; so far as my examination of cords has gone I have not found typical changes. Unquestionably tabes passes into paretic dementia of the typical sort. Not as commonly as is generally supposed, but undoubted cases are seen. I remember a classmate whom I had under observation for 12 years. There was no question of his having typical tabes. He had pain and staggering when he walked. In the last year of his life he passed into typical paretic dementia and fortunately I was able to get the cord and brain and the changes in the brain were the characteristic changes that are seen in paretic dementia and in the cord were also found the typical changes of tabes.

Dr. E. D. Fisher: I purposely made my statement as sharp as I could to bring out just the discussion which has taken place. Dr. Hammond's experience about the course of the disease in patients without pain in tabes is, of course, a common one. We may find a patient with tabes when all the symptoms are those of ataxia. Those irregular cases are the ones that I would say are apt to pass into general paresis.

Surgical Treatment of Athetosis and Spasticities by Muscle Group Isolation

Dr. Sidney I. Schwab and Dr. Nathaniel Allison, St. Louis (Dr. Schwab presented the paper): Athetoid and spastic conditions of organic origin are essentially similar processes due to several factors; the essential mechanism is nervous in origin.

The term "muscle-group isolation" implies the isolation of the muscle or group of muscles which are at fault in the production of contracture deformity or athetosis. It is made effective by cutting off from the central nervous system the connection along which the abnormal impulses, active in causing spasticity or athetosis, are transmitted. This is done by isloating the nerve and injecting it with an alcoholic solution. There results an immediate paralysis of the physiologically stronger group of muscles without interfering with the free muscular use of the antagonists. At this point physiologic exercises planned to further strengthen the antagonists may be used.

DISCUSSION

Dr. B. Onuf, New York: It so rarely happens that we get therapeutic suggestions at meetings that when we do get them I do not believe a speaker should make excuses for it. I have observed that athetosis is essentially a symptom of diseases which are acquired at a very early age. I have not seen a single case of athetosis in which the lesion which caused it was acquired in adult life. I explain this to myself theoretically by assuming that there was an interruption in the pathways between the cortex and lower centers at an early date and then these lower centers acquire a certain independenc and movements are acquired which are entirely independent of the will. If this is the case, then if the offensive muscles are paralyzed for a period of six months these lower centers may again forget and the cortical centers again gain their ascendancy.

Dr. S. I. Schwab: In case of athetosis we not only paralyze the muscles, but their sensory supply totally, because there is a theory that athetosis also depends on the abnormal sensory impulse as well.

Hereditary Spastic Paraplegia with Report of Seven Cases

Dr. John Punton, Kansas City, Mo.: Hereditary spastic paraplegia is comparatively rare. In the 7 cases I report heredity was the chief etiologic factor and was of great diagnostic and prognostic value. The first group consists of 4 cases, viz.: the mother, aged 59, in whom the disease had its onset after her marriage at the age of 23; a son, aged 34, in whom it began at 16; a son aged 32, in whom it began at 15; a son aged 24, in whom it began at 14 or 15. The second group consists of 3 cases, viz.: the mother, aged 43, in whom the disease began at 33; a daughter aged 7 years, in whom it began at 6 years; a daughter aged 5 years, in whom it began in infancy. As the disease is incurable the only measures to be taken are prophylactic and consist in discouraging marriage in persons with a tendency toward this disease.

Occupation Neuritis of the Thenar Branch of the Median Nerve; A Well-Defined Type of Occupation Atrophy of the Hand

Dr. J. Ramsey Hunt, New York: A well-defined clinical type of atrophy of the hand results from an occupation neuritis of the thenar branch of the median nerve, which is induced by a compression of the small motor branch of the median nerve, as it emerges from beneath the anterior annular ligament of the wrist. This thenar branch is purely motor, and innervates the abductor pollicis, opponens pollicis, and the outer head of the flexor brevis pollicis. This group of cases is characterized clinically by a sharply defined atrophy, confined to the distribution of this nerve. The thenar eminence presents a "scooped-out" depression, lying between the outer border of the first metacarpal bone and the inner head of the flexis brevis pollicis. There are present well-marked reactions of degeneration in the affected muscles; and objective sensory disturbances in the distribution of the median nerve are absent. This type of atrophy interferes very little with the usefulness of the hand, as all the other muscle groups are normal. I would also call attention to another well-defined type of occupation atrophy of the hand described by me (*Jour. of Nerv. and Ment. Dis.*, 1908) which is dependent on an occupation neuritis of the deep palmar branch of the ulnar nerve as it passes between the tendinous origins of the abductor minimi digiti, and the flexor brevis minimi digiti. In this type, all the intrinsic muscles of the hand are paralyzed, with the exception of those which are supplied by the median nerve, and here as in the thenar type of occupation atrophy, sensory disturbances are entirely absent. The deep palmar branch of the ulnar being a purely motor nerve. The importance of these two types of occupation (motor) neuritis becomes immediately apparent from the resemblance which they bear to the Aran-Duchenne type of spinal atrophy. This resemblance is enhanced by the well-known fact that progressive muscular atrophy, beginning in the small muscles of the hand, not infrequently develops with occupations necessitating an over-activity of these members. There is no question but that cases which belong to one or the other of these two groups of occupation atrophies, without sensory disturbances, are not infrequently erroneously diagnosed spinal atrophies. Hence their clinical and diagnostic importance.

Horizontal Oscillation of the Eyeball in Paralysis of the Orbicular Branches of the Facial Nerve

Dr. L. Pierce Clark and Dr. H. H. Tyson, New York: It is fairly well known that in Bell's palsy the upward and inward or outward rotation of the eyeball is a physiologic act and is not pathognomonic of any special type of palsy as it may be shown in a normal person. Schlesinger has reported one case of horizontal oscillation and a few other observers have noted the same phenomenon. It consists of a see-saw oscillatory movement of from 40 to 60 vibrations a minute; when a persistent forceful attempt is made to close the lids, the opposite eye participates in the movement. The explanation is as difficult as that for ordinary nystagmus.

How Should the Paroccipital Fissure Be Represented in Fissural Diagrams?

Dr. Burt G. Wilder, Ithaca, N. Y.: Commonly this and the parietal fissure are interpreted and represented as, respectively, the occipital and horizontal components of the intraparietal fissural complex. In apes and monkeys, young and adult, they are always continuous; the fetal conditions are unknown. In the human fetus they always commence independently and remain separate in about 40 per cent. of hemicerebrums, but unite sooner or later in the other 60 per cent. In many, perhaps most, of the cases of superficial continuity the original isthmus may be recognized as a more or less deeply submerged vadum or shallow, and it is a fair question whether cases in which the fissure at this point is less than one-half the greatest depth at either side should not be regarded as cases of separation rather than of continuity. Superficial continuity is two or three times as common as separation on the left side, but on the right separation is more common, about 55 per cent. In the light of existing knowledge, I conclude that fissural diagrams should include the dorso-caudal aspect of this region, with continuity of the two fissures on the left and separation on the right; when only one lateral aspect is shown the fissures should still be separate, but there should be a statement as to the conditions in the lower primates and in the human fetus and average adult.

Dreams as a Diagnostic and Therapeutic Aid

Dr. B. Onuf, New York: Diagnostic aid may be obtained from the study of the amalgamation, or mixture of two or more different characters into one which occurred in a dream; also by noting the reversal of rôles played by different characters of real life as it occurs in dreams. Assistance in treatment of certain conditions may be secured by suggesting a dream to take place in a hypnotic or posthypnotic condition. For example, in case of a woman who had an aversion to beans and sweet cabbage which appeared to be purely psychic it was suggested that she dream in a hypnotic state that she was eating these articles with great relish. The result was that it had temporarily the desired end.

Other Papers Read and Specimens Exhibited

"Distribution of Encephalic Hemorrhages," by Dr. S. D. W. Ludlum, Philadelphia; "Exhibition of Lantern Slides Illustrating Pathologic Conditions," by Dr. M. Allen Starr, New York; "Clinical Report of a Case of Sarcoma of the Motor Area of the Left Hemisphere," by Dr. C. Eugene Riggs, St. Paul, Minn.; "Two Cases of Tumors of the Pons," by Dr. Philip Zenner, Cincinnati; "Mongolian Idiocy," by Dr. W. N. Bullard, Boston; "Case of Subcortical Auditory Aphasia with Description of the Anatomic Lesion," by Dr. Albert M. Barrett, Ann Arbor, Mich.; "Illuminated Glass Reconstructions of Brains," by Dr. Adolf Meyer, New York; "Contribution to Our Knowledge of the Idiopathic Otalgias and Their Surgical

Treatment," by Dr. L. Pierce Clark, New York; "Case of Primary Degeneration of the Pons, Cerebral Peduncles, Medulla, and, to a Less Extent, of the Cerebellum, Associated with Primary Degeneration of the Cortico-Spinal Tracts, with Autopsy," by Drs. T. H. Weisenburg and S. D. Ingham, Philadelphia; "A Study of the Zoster Zone of the Geniculate Ganglion of the Facial and the Jugular Ganglion of the Vagus," by Dr. J. R. Hunt, New York.

AMERICAN SURGICAL ASSOCIATION

Annual Meeting Held at Philadelphia, June 3-5, 1909

(Concluded from page 320)

Prevention and Treatment of Sequels of Perineal Prostatectomy

Dr. James E. Moore, Minneapolis: Perineal prostatectomy is a life-saving operation, but a grave one, and should not be undertaken lightly. It is accompanied by a mortality rate of a little over 6 per cent. and over 17 per cent. of the operations are either complete failures or are followed by some sequel that makes the operation far from satisfactory. Owing to the age and bad condition of these patients there must be a mortality rate. The nature of the operation is such that complications and sequels are bound to occur, but at the present time the mortality rate is too high and the sequels too common. According to the latest statistics 7.4 per cent. of these operations are failures, but in competent hands the patient should always experience sufficient relief to justify the operation, though he may not be completely cured. When a patient continues to suffer pain and tenesmus after the operation it is usually due to a pocketed bladder, diseased kidneys, or an incomplete operation. The prostate is an important sexual organ, and its removal by any route or method is sure to have a decided effect on the procreative powers of the patient. Owing to the reticence and untruthfulness of patients it is impossible to state how often this sequel follows, but it is certain that it occurs so frequently that every patient who is comparatively young in years should have this possible contingency stated to him before the operation is performed. Injury to the rectum is probably the most frequent complication, often causing death, and when a patient survives he is liable to have a urethro-rectal fistula. Unskilful use of fingers, downward pulling by retractors and too tight packing with gauze are the usual causes, and by guarding against these causes this should be avoided. When the rectum is torn it should be repaired immediately. This will often fail but succeeds often enough to justify the effort. Stricture is a more common sequel than is generally believed, and is due to extensive removal of the prostatic urethra. We expect injuries to the urethra from other causes to result in stricture, and there is no reason why it should not follow this operation. Enough of the upper wall of the prostatic urethra should be preserved to secure an unbroken mucous surface extending from the bladder to the meatus. Extensive dissection of the perineum, especially when cross cuts are made, is conducive to stricture. Projecting portions of the urethra are sometimes left which constrict the flow of urine by acting as valves. Dribbling or incontinence is an occasional sequel of perineal prostatectomy and is due to injuries to the neck of the bladder and to the compressor urethræ muscles. Instruments introduced into the bladder to draw the prostate down should be used with the utmost care, lest they injure the neck of the bladder. The compressor urethræ is the important sphincter and should be preserved by entering the prostatic rather than the membranous urethra. The treatment of incontinence when once established seems to be hopeless. Perineal fistula is a rare sequel and is usually due to the deposit of lime salts, the removal of which relieves the condition. Epididymitis is an occasional sequel, but is usually of little consequence beyond the discomfort it causes, and is very often due to the injudicious passing of sounds.

Suprapubic Prostatectomy

Dr. Arthur Dean Bevan, Chicago: Splendid results have been obtained by performing both the suprapubic and perineal operations, and considering the ages of the patients on whom these operations have been done the mortality is low. Suprapubic enucleation of the prostate has the widest field of usefulness. All things considered, the cure is more complete by the suprapubic than by the perineal route. The suprapubic is less dangerous and less formidable than extensive perineal dissection. No injury is done to the musculature or perineum by the suprapubic route; there is little danger of injuring the rectum, and little probability of stricture or fistula following.

Discussion on Prostatectomy

Dr. A. J. Ochsner, Chicago: He who has done prostatectomy both perineally and suprapubically a number of times must be impressed with the great ease with which the prostate can be enucleated from above. I have removed a large number of prostates by the perineal route, and a number by the suprapubic, and have been impressed with the simplicity and ease with which the operation can be done suprapubically.

Dr. Alexander Hugh Ferguson, Chicago: My first 25 prostatectomy patients were operated on by the suprapubic route. Of this number I lost eight. I dislike to return to that method. I now resort to the perineal route. One can operate on almost any kind of enlarged prostate successfully through the perineum. If accurate statistics were collected, it would be found that the mortality is twice as high by the suprapubic as by the perineal route.

Dr. Joseph Ransohoff, Cincinnati, Ohio: The mortality from the suprapubic operation can be greatly reduced if we make perineal drainage by means of a puncture from above.

Dr. Maurice H. Richardson, Boston: I have seen many surgeons operate for the removal of prostates, but never saw one who could see what he was doing to the urethra. Speaking as an anatomist, I have never been able to tell whether I was tearing the urethra to pieces or not when operating perineally or suprapubically. Other surgeons have told me the same thing. The mortality comes from the advanced age of patients and not from the operation *per se*.

Dr. S. Stillman, San Francisco: I have a decided preference for the suprapubic operation when the urine is healthy; when the urine can not be rendered healthy, the mortality from the suprapubic or perineal operation can be overcome by following a suggestion which has been given to the surgical profession by Sir William Macewan.

Dr. A. Primrose, Toronto: My experience has been confined almost entirely to the suprapubic route. Infection of the pelvic cellular tissue is the cause of mortality in some cases in which the suprapubic route has been resorted to. It seems feasible to remove the prostate by the transperitoneal route in some cases, and, if necessary, establish perineal drainage

Dr. John B. Murphy, Chicago: I operated on the prostate first by the perineal route, and then the suprapubic. Finally, from an experience of 123 cases I found I could take out the small, firm, hard prostate more easily and safely from below; while the large, thick, juicy prostate I could remove more easily and with greater safety to the patient from above.

Dr. Leonard Freeman, Denver, suggested a method of controlling hemorrhage in connection with the suprapubic operation.

Dr. James Moore: I expect in five years from now to hear Dr. Bevan read a paper on the complications and sequels of suprapubic prostatectomy. Dr. Murphy stands on solid ground in that he fits the operation to the case in hand, and does not try to make every case fit one particular operation.

Dr. A. D. Bevan: The evidence is conclusive in favor of the suprapubic operation from the standpoint of completeness of the cure and the freedom from complications.

One Hundred and Thirty-One Consecutive Cases of Fibroid Tumors of the Uterus Demanding Operation

Dr. Archibald MacLaren, St. Paul, Minn.: When should a fibroid tumor of the uterus be operated on? When it commences to increase in size or to cause symptoms. I think with Richardson that the same rule should be followed as in ovarian cysts or in appendicitis in the interval; but that a small subperitoneal tumor need not be removed if it is not increasing in size. It is not always possible to be certain that a given tumor is uterine and not ovarian in origin; the usual error is to diagnose a small ovarian tumor as a fibroid. on account of its smooth, hard solid feel. The subject of this paper is the last 100 consecutive hysterectomies for fibroid disease and also the myomectomies, 31 in number, which have been performed during this same period. The question of first importance is the age of the patient. A young woman should always have myomectomy, if possible. After a myomectomy the tumor may reform or other small growths, which were too deeply buried in the uterine wall or too small to be palpated, may increase in size, cause a return of the symptoms and necessitate a second operation. This has only occurred three times in my total experience of over 60 myomectomies. Myomectomy has been done during pregnancy 4 times with one miscarriage. I would not advise the removal of a uterine tumor in a pregnant uterus which was producing no symptoms. In regard to the mortality, there have been 5 deaths in the 131 cases, or 3.8 per cent.; 3 per cent. in the series of 100 hysterectomies; and 2 deaths in the myomectomies, making 6 per cent. This looks like an unjustifiable mortality for myomectomy, but as both were accidental deaths in no way due to the myomectomy, they ought not to be charged to this operation. The first was due to the giving way of the catgut purse-string suture about the stump of the appendix, which had just been removed. The second death was probably due to the leaking of a gall bladder which had been opened and drained through a stab wound, several gallstones having been found at the time of the operation for the removal of a fibroid.

One of the principal dangers of myomectomy, as well as hysterectomy, is postoperative hemorrhage. The gradual formation of a hematocele, which occasionally follows either operation should be carefully watched for; I have been in the habit of putting in vaginal drainage at the time of the operation when there was any difficulty in preventing oozing. And twice after myomectomy I have made a vaginal section on the third day, opening up and draining such hematomata with the most gratifying results. In my earlier work I lost 2 patients in whom the pus in the cul-de-sac was due to the infected, broken-down blood clot which had caused the fatal septic peritonitis which was not discovered until the autopsy. To the recognition and drainage of these accumulations of blood more than to any one thing do I ascribe my improved results over a few years ago, when I used to find them at the postmortem. The danger of a fibroid tumor producing a suppurative pelvic peritonitis is considerable. In the 100 hysterectomies, 3 came to me with pelvic abscesses complicating the tumor, either due to a perforative appendicitis or to the necrosis of the tumor, or to compression of diseased appendages. Supravaginal amputation has been my operation of choice in performing hysterectomy, and only in malignant disease or suspected malignancy have I reverted to complete removal of the uterus, and for two reasons: First, because it is a less dangerous operation in my hands; and second, because I have never seen a fibroid tumor grow in the stump of the cervix after a supravaginal amputation. Large sized catgut for the vessels, No. 3 or 4, is the best ligature material; or No. 2 double. It is awkward for tying the uterine arteries deep in the pelvis and much greater force has to be used than would be necessary on the surface, so the ligature must be larger and stronger. It is always wiser to cut the uterine arteries beside the cervix before picking them up, for they lie very close to the ureter. The only time that I ever injured the ureter was in one of my earlier operations when the uterine artery was ligated *en masse* before cutting the artery.

DISCUSSION

Dr. Maurice H. Richardson, Boston: I have had a large experience in operating for the removal of fibroid tumors of the uterus, and I feel that there is a greater danger attending myomectomy for the removal of multiple tumors than hysterectomy. If you are going to give a patient a most safe procedure in a case of multiple fibroids of the uterus, it is better to do supravaginal amputation. This opinion is based on personal experience after many years of operating on these growths.

Surgery of the Large Intestine

Dr. William J. Mayo, Rochester, Minn.: Anatomically the large intestine is a connected whole, but embryologically and physiologically it can readily be divided at the splenic flexure into two well-defined parts. The proximal half is derived from the mid-gut and is an important part of the nutritive system as it absorbs about half of the fluids and 10 per cent. of the solids. The descending colon and the sigmoid are derived from the hind-gut, have an antiperistaltic motion, and act as a fecal storehouse. In the large intestine lymph drainage follows the arterial supply, but the lymphatics are not numerous and in the sigmoid are very sparse. Mobilization of the large intestine for operation is most important, and can be readily accomplished by cutting the outer peritoneal fold, which does not contain important structures, where it is reflected to the abdominal wall and lifts the gut from its bed. In this way the large intestine can be drawn outside the abdominal incision and the cut ends easily approximated after extensive resections. The inner leaf of the mesentery is very long, extending practically to the midline, and contains the arteries, nerves and lymphatics. After mobilization the arteries should be tied and divided at their origin, and the entire mesentery with the fat and gland cleanly dissected from the deep structures. The right inferior angle of the duodenum must be identified and separated in operations about the ascending colon and hepatic flexure. The ureters are attached to the peritoneum after crossing the common iliac arteries, and must be isolated, especially on the left side, to prevent injury. If a neighboring organ, such as the small intestine, stomach, bladder or uterus is adherent, it should be coincidentally resected, providing the disease is still local. In cancer of any part of the cecum, ascending colon, or hepatic flexure, all the large intestine proximal to the disease should be removed with at least six inches of the ileum, and an ileocolostomy performed between the proximal ileum and transverse colon. In cancer of the transverse colon, splenic flexure, descending colon and sigmoid, union must be made between the two segments of the large intestine, not so safe a union as that between the ileum and colon. It can be made end-to-end if sufficiently covered by peritoneum, otherwise end-to-side, or lateral, where the peritoneum is sound. If obstruction is marked, the three-stage operation of Mikulicz-Paul is advisable. In low sigmoid cancers the combined abdominal and perineal operation is best. In fleshy males the posterior, and in debilitated females the Quenu-Tuttle operations give good results in low sigmoid tumors. One hundred resections were done, with 12 deaths; for cancer, 61 times, with 8 deaths. Twenty-four cases were carcinoma of the cecum and ascending colon, with 3 deaths; transverse colon, including the hepatic and splenic flexures, were removed for carcinoma 7 times, with 1 death; descending colon and sigmoid were excised for carcinoma 30 times, with 4 deaths. For benign disease 39 times, including inflammatory disease, tuberculosis, diverticulitis, etc., 4 deaths.

Resection of the Sciatic Nerve

Dr. Kenneth A. J. Mackenzie, Portland, Ore., exhibited a patient with molluscum fibrosum, who developed, first, a tumor of the ulnar nerve, which was removed by another surgeon. Subsequently the patient developed a tumor of the sciatic nerve, which grew slowly at first, but after traumatism grew rapidly. Severe pain was transmitted to the foot from the pressure caused by the tumor. Operation consisted in removing the sciatic nerve *in toto*, with good result. Patient walks well considering that the nerve was entirely removed and the nerve supply cut off from the groups of muscles that were involved.

Operative Treatment of Fractures

Dr. John B. Walker, New York, reported six cases in which he operated for the relief of deformity following fractures, with good results.

Rare Hernias

Dr. William B. Coley, New York, reported a case of strangulated retroperitoneal hernia of the intersigmoid fossa, and one very rare (probably unique) case of interparietal ventral hernia at McBurney's point.

Suggestions for the Operative Correction of Syphilitic and Other Deformities of the Nose

Dr. John B. Roberts, Philadelphia: I call attention to the importance of the reconstructive surgery of the external nose. I state that the cosmetic improvements possible are not fully appreciated by medical men or by the public at large. The inherent difficulty in these operations is obtaining and maintaining sufficient projection of the reconstructed organ and preventing cicatricial closure of the nostrils. The early recognition of syphilitic lesions of the nasal bones and cartilages and the prompt institution of efficient antisyphilitic treatment will prevent the occurrence of many conspicuous disfigurements. Blows on the nose in childhood often cause dislocation of the nasal cartilages and bones. These lesions are untreated because of negligence in examination immediately after the injury. The frontal method is probably the best for total rhinoplasty. Flaps taken from the cheeks do well in partial rhinoplasty. Brachial flaps may sometimes be used with advantage. Portions of cartilage or periosteum from other regions of the body may be used to give rigidity to the tissues transferred to the nasal region. Paraffin injections into the subcutaneous tissues are sometimes used as an adjunct. Loss of the cartilaginous external nose below the nasal bones is probably best repaired by Keegan's frontal method. Nélaton's frontal method, which consists in incorporating a portion of costal cartilage in the frontal flap, is valuable when the bony nasal bridge is missing. My method of repairing the sunken nose of syphilis with flaps from the cheeks and midfrontal region is described as a successful operation. Suggestions for repairing irregular deformities of various kinds are made in the paper.

A Method of Combining Exploration and Decompression for Cerebral Tumors Which Prove to Be Inoperable

Dr. Harvey Cushing, Baltimore: The usual osteoplastic method of exploration of the cerebral hemispheres for a tumor, which, after exposure, proves to be inoperable, is usually transformed into a palliative or decompressive measure by the removal of the osseous layer of the resected flap. This frequently leads to undesirable consequences, owing to the unnecessarily extensive protrusion which may occur when the brain under tension is protected by scalp alone. In these cases the bone flap may be preserved and a sufficient hernia, under the protection of the temporary muscle, be provided for, through the removal, while the flap is temporarily resected, of the area of bone which underlies the temporal muscle. Thus the advantage of the usual subtemporal decompression can be combined with the more extensive cortical exploration permitted by a temporary osteoplastic resection.

Unusual Case of Gunshot Wound of the Brain

Dr. Joseph Ransohoff, Cincinnati, Ohio: This was a case of gunshot wound of the brain from a 32-caliber rifle. The patient was shot in the right temple in May, 1899. The immediate left-sided hemiplegia which followed the injury disappeared within a year. Three years later general convulsions supervened, the attacks coming on every three or four months without any focal point of origin being in evidence. The *x*-ray showed the bullet split into three parts, one evidently in the zygomatic fossa, one in the temporal fossa, and the largest fragment just within the skull on a level with the cribriform plate and probably in or near the cavernous sinus. Later left-sided paralysis supervened gradually, but I did not see the case again while alive. Death ensued with coma in twelve hours after the onset of the acute symptoms, nearly ten years after the injury. The autopsy revealed an abscess in the right temperosphenoidal lobe with a small piece of the bullet firmly encapsulated in the abscess wall. The largest fragment shown by the *x*-ray had become innocuous and embedded in the cavernous sinus.

The following papers were also read: "Treatment of Tetanus," by Dr. W. W. Hutchings, Detroit; "The History and Microscopical Study of Fifty Consecutive Cases of Excision of the Thyroid," by Dr. Francis J. Shepherd and Dr. Charles E. Duval, Montreal; "Transplantation of Skin Flaps," Dr. J. M. T. Finney, Baltimore; "Sudden Death: A Study of Certain Cases Occurring During Physical Exertion or Psychic Shock," by Dr. John B. Blake, Boston; "Inequalities of the Right and Left Femora," by Dr. A. T. Bristow, Brooklyn, New York; "Vesico-Intestinal Fistula," by Dr. F. W. Parham, New Orleans.

Medicolegal

Right of Action of Woman Negligently Injured and Caused to Abort

The Court of Appeals of Kentucky holds, in Big Sandy & Cumberland Railroad Co. vs. Blankenship, an action brought by the latter party, that a negligent act, inflicting bodily injury on the plaintiff, a woman enceinte, whereby her child dies and is caused to be born prematurely, gives the woman the right of action against the wrongdoer for her injury, including the mental and physical suffering endured as a natural and proximate result of the injury to her person.

The cases of Tunnicliffe vs. Bay Cities Consolidated Railroad Co., 102 Mich. 624, and Hawkins vs. Front Street Cable Co., 3 Wash. 592, were cited as holding that a recovery by the mother against one negligently causing the death of the child in her womb and its premature birth is not allowed. But the question decided in the first-named case, the court says, was that the loss of the society and prospective earnings of the child is not a proper element of damages in an action by a married woman for injuries which resulted in a miscarriage.

In the case at bar the instruction of the trial court did not allow a recovery for any sentimental suffering not involved in, and attendant on, the physicial pain endured by the plaintiff and accompanying the injury, and the miscarriage caused by it. While it may be true that no scales have yet been invented by the law for weighing purely sentimental grief, it is also true that none are known to the law which separate mental suffering caused by physical injury into its various elements and apportion some as actionable and others as nonactionable.

Distress of mind caused by and accompanying a physical injury is an element of damage which the law compensates. It is no more true that all minds do not suffer alike than that all bodies are not equally susceptible to pain. While physiologically all pain may be said to be mental as the law uses the term, it is recognized that pain is physical when a nerve is impinged. But there is always some mental pain. The latter grows out of the former, is produced by it, and is the former extended as a physiologic consequence. It would be as impossible in speculation as in fact to say how much of the mental suffering was the cooperation of the nerves of the brain with those of the body, and how much was psychologic. Hence the law attempts no separation, but allows a recovery for all the suffering, both bodily and mental, which is the direct result of and accompanies a physical injury. If the injury inflicted is continuing or develops in stages, as from a fracture to septicemia, and thence amputation, it is deemed one injury, and all pain caused by and accompanying it throughout its several stages is an element of the damages which may be recovered. So if a bodily injury is inflicted on a pregnant woman, which directly or in natural consequence results in a miscarriage, the latter event is deemed a part of the original injury.

The other case cited and relied on by the defendant company (Hawkins vs. Front St. Cable R. Co.) goes further than this court understands the authorities to justify, and further than this court is willing to follow. It was there held that proof that an unborn child died and was prematurely delivered because of negligent injuries to its mother is not sufficient to establish her right to recover substantial damages for the injury. The court held that if the plaintiff showed "impairment of health and suffering growing out of the death and premature birth of her child, which would not have attended its birth at the usual time, either alive or dead, and also that the child's death is attributable to a negligent injury which she received," she could recover for her suffering and impaired health. "But," the court added, "she must show the injury by appropriate evidence, and the mere proof that the child died, and was prematurely delivered, as a result of the accident, would not be sufficient to presume substantial damage therefrom." The reasoning of the Washington Supreme Court in that case is that the pregnant woman must in time have delivered the child, and that as the pain of its birth was inevitable that it was prematurely brought about could not alone be actionable; that, in order to allow the woman to recover for the miscarriage caused her, she must have suffered pain, or ill health, which would not have followed at the usual time of the birth of the child dead or alive. Whether the pain of childbirth was greater in the one instance than in the other was not shown. Whether the mother would have suffered more pain at a subsequent time, or whether her health would then have been impaired, this court fails to see how it could have been shown.

But it is this court's opinion of the law that the woman has the right to bear her child in Nature's way and time. When by negligent violence to her person she is caused to give it premature birth, whether it be dead or alive, or whether the pain attending its birth be greater or less than at the ordinary season, she is damaged. She is made to suffer physically and mentally at a time when she otherwise would not have to suffer. The great function of her sex has been interfered with. We all know that Nature penalizes heavily infractions of its laws on this score. Such an event can not be unimportant to the woman either as it affects her body or mental equilibrium.

If one enters my house tortiously and disturbs my peace, the law gives compensation. If by noises, odors or unsightly objects he tortiously interferes with my free enjoyment of my premises, he is liable to me. If he negligently causes my cow to abort her calf, he is liable for the injury to the cow and the loss of the calf. If, then, he negligently injures the body of a woman, disturbing and deranging Nature's functions so that the fetus of her child is destroyed, and she caused to abort it, why may not she have legal complaint against the wrongdoer for her bodily suffering, and her mental suffering accompanying and growing out of it? If in the collision she had had a tooth knocked out, there would be no doubt of her right to action, although had she lived she would have lost the tooth in every probability; and maybe have suffered as much or more pain from it and in having it pulled than she experienced in having it knocked out by the defendant's negligence.

An award of $500 damages is referred to as "very modest," and judgment therefor affirmed.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

July 17

1 Enzyme Treatment for Cancer. W. S. Bainbridge, New York.
2 *Study of Tremors. M. Neustaedter, New York.
3 Gastric Surgery of the Present Day. R. C. Coffey, Portland, Ore.
4 Treatment of Specific Urethritis (Gonorrhea) in the Male. J. R. Hayden, New York.
5 A New Sphygmomanometer. J. Rudisch, New York.
6 *Simple Method for Preparing a Useful Stain. R. W. King, Las Animas, Colo.

2. **Tremors.**—Neustaedter has devised an instrument for recording the sort of movements in each tremor, so that they may be differentiated. His apparatus consists of a kymograph, a tambour of the Marcy type, with a string attached to the lever and fastened by a hook to a piece of rubber adhesive plaster, and a recording tambour with a paper writing point. The two tambours are connected by a rubber tube. The affected part is placed in a comfortable position and the adhesive strap attached to it. The author has made 328 tremograms of all the diseases in which tremor exists, and finds that the different types of tremor may be distinguished by the records they make. The difference between tremors is of kind, not of degree, and every form of tremor is distinctive of a group of diseases. No definite relation exists between one form of tremor and another. The frequency of movements has no bearing on the character of the tracing. There is no material difference between the movements of the two sides of the body.

6. **Simple Method of Preparing a Useful Stain.**—King describes a method for preparing a stable blue stain which is used in making a modified Romanowsky staining fluid. The following is the working formula:

	gm. or c.c.		
Methylene blue (Grublers)	1	or	gr. xv
Sodium acid carbonate (C. P.)	5		gr. vij
Sodium acid sulphate (C. P. crystal)....	7		gr. viij
Distilled water, q. s.			

Dissolve the methylene blue and the sodium acid carbonate in 100 c.c. of distilled water. Transfer to a porcelain dish (500 c.c.) and evaporate to dryness directly over the flame, a wire gauze being used to distribute the heat. The solution should be allowed to boil gently until from one-half to two-thirds of the water has escaped. The heat is then somewhat reduced, evaporation hastened, and spurting prevented by occasionally tilting and rotating the dish so as to cause the fluid to flow on the sides of the dish. When perfectly dry, and almost cool, add the acid sodium sulphate previously dissolved in from 10 to 15 c.c. of distilled water. Rotate and tilt the dish to bring this acid solution in contact with all the stain in order to insure complete neutralization of the sodium carbonate present. When effervescence ceases, again evaporate to complete dryness over the flame. Remove the stain by means of a small spatula and keep as free from moisture as possible.

Boston Medical and Surgical Journal

July 15

7 *Pathologic Physiology of Intracranial Tumors. H. Cushing, Baltimore.
8 Aural Complications in the Exanthemata. C. R. C. Borden, Boston.
9 *Lactic Acid Bacteria in Chronic Suppurative Nasal Conditions. J. L. Goodale, Boston.
10 Specimen of an Encapsulated Brain Abscess: Congenital Occlusion of the Cartilaginous Canal. H. P. Mosher, Boston.
11 *Anesthesia for Adenoid and Tonsil Operations. A. H. Miller, Providence, R. I.

7. **Intracranial Tumors.**—Cushing says that contrary to the common belief, brain tumors are of frequent occurrence, and possibly there is no disease in which the symptoms are more often overlooked or incorrectly interpreted. For the sake of successful palliative or curative measures, a precocious diagnosis is necessary, and a careful clinical study of all suspected cases at an early stage, with a more intimate knowledge of the local and general pressure phenomena, will tend toward this desired goal. A more widespread familiarity with the early appearance of the neuroretinal edema and congestion is needed, and also the understanding that this condition is merely a stage in the process of choked disk. Inversion or interlacing of the boundaries of the color fields, heretofore regarded as pathognomonic of hysteria, has been found to be a fairly constant early phenomenon in tumors.

One recognized characteristic of the brain under pressure is its tendency to herniate through a cranial defect, and as there is normally an opening at the foramen magnum a certain degree of protrusion is usually present there. In the presence of such a condition, the withdrawal of the cerebrospinal fluid from the spinal meninges by a lumbar puncture is often hazardous, as it may tend to a sudden wedging of the bulb in the opening, with anemia and paralysis of the vital centers.

The pituitary body proves to be one of the most important of the ductless glands. It not only may be the primary seat of a new growth, but in the case of intracranial tumors elsewhere, particularly when they are accompanied by hydrocephalus, its function may secondarily become disturbed in ways which are clinically recognizable. The conducting paths in the brain are more often affected by simple pressure from tumors than by actual destruction, and the removal of the growth or simple relief from pressure may often lead to a surprisingly rapid restoration of function. For an accurate focal diagnosis a thorough, early examination is often necessary, for with an advancing lesion symptoms at a distance may greatly confuse the clinical picture. A considerable percentage of patients who present themselves for surgical treatment are so nearly blind that a study of the visual fields, which should be one of the most helpful localizing signs, is precluded. From a histologic point of view the classification of brain tumors is most unsatisfactory, and the general behavior and manner of growth of many of them does not conform with accepted views. Some gliomata may be definitely encapsulated and favorable for operative removal, and many tumors of this supposedly malignant type may undergo cystic degeneration or gelatinous transformation.

9. **Lactic Acid Bacteria.**—During the past four months Goodale treated a series of cases by cultures of bacteria generating lactic acid. These cases included conditions of atrophic rhinitis with ozena, and chronic suppuration of the various sinuses. The preparation was sent twice a week from the laboratory, in 2-oz. bottles, and a sufficient quantity was given to the patient to use in an atomizer. Fresh material was given them every week, with instructions to keep it in a cold place, and to observe aseptic precautions so far as possible in handling it. The patients were told to cleanse the atomizer with alcohol before introducing the culture fluid, and in the case of atrophic rhinitis with crust formations to remove the crusts as completely as possible before employing the spray. Goodale is of the opinion that a distinct effect has been produced by the culture in some cases of ozena, characterized by generalized crust formation. The results appear to be comparable to those produced by argyrol. It remains to be seen, however, whether more than a temporary effect is produced. In localized chronic suppurative sinusitis, attended by hypertrophy and polyp formation, no effect could be detected.

11. **Anesthesia for Adenoid and Tonsil Operations.**—Miller's apparatus has been used in nearly 1,000 tonsil and adenoid operations and provides for the continuous etherization of such cases without in any way interfering with the operation. It consists of a vaporizer which is worked by a foot pump and of several accessory implements which may be connected with the vaporizer by a long rubber tube. The features of this apparatus are:

1. It will vaporize 15 oz. of ether in an hour and will readily provide sufficient anesthesia in an adult with the face uncovered for a laparotomy of an hour's duration.
2. Neither the inlet nor the outlet tube dips into the ether. For this reason it is impossible to force liquid ether back into the patient's air passages.
3. The atomizer of the vaporizer sprays directly into the outlet tube. Thus the vaporizer is very sensitive to changes in the air pressure supplied to it.
4. The length of the outlet tube is such that when the ether spray reaches the top of the tube it has been converted into a vapor, imperceptible except from its odor.

The accessories which complete this apparatus are a mouth gag which has an ether tube incorporated in one of its jaws, a mouth tube similar to the tube of the Junker apparatus, a soft rubber nasal tube and a double nasal tip. For the adenoid operation the mouth gag or the double nasal tip is selected.

New York Medical Journal

July 17

12 Microscopic Diagnosis of Intralaryngeal Growths, from a Practical Standpoint. J. Wright, New York.
13 *Diagnosis of Intestinal Tuberculosis. J. Walsh, Philadelphia.
14 *Remissions in General Paralysis: Three Cases, including Postmortem Examination. M. J. Karpas, New York.
15 Pneumococcus Arthritis. A. Strickler, Philadelphia.
16 *Chloroform Dropper Ampoules. F. H. McMechan, Cincinnati.
17 Reflex Mechanism and Clinical Significance of the Important Reflexes. S. P. Goodhart, New York.
18 One Hundred and Fifty Consecutive Laparotomies. E. R. Secord, Brantford, Canada.
19 Acute Veronal Poisoning. J. L. Eckel, Buffalo.

13. **Intestinal Tuberculosis.**—According to Walsh the symptoms diarrhea, abdominal pain, tenderness and rigidity mean very little or nothing in the diagnosis of intestinal tuberculosis. The presence of an ischiorectal abscess in an advanced case adds to the probability of intestinal ulceration. The diagnosis of intestinal tuberculosis can not be made with the slightest degree of certainty from our present known symptoms, and since the condition carries with it such an unfavorable prognosis, in order to reassure the patient, the nurse, and the physician himself the diagnosis should not be made so that the patient will have a better chance for hopeful treatment.

14. **Remissions in General Paralysis.**—Karpas reports three cases of general paralysis in which remissions occurred. Two cases were of the tabetic and one case was of the cerebral form. Two patients were decidedly elated and grandiose and one showed a definite depression with general slowness in action and thought. Remission in the first case lasted one year, in the second case about two years, and more than five months in the third case. It is interesting to note that in none of them heredity or psychotic traits were demonstrable, and, moreover, the remission did not occur at the time of infection or suppuration. Syphilis could not be satisfactorily ascertained, but doubtless it could be excluded. In the second patient there were suspicious signs of luctic infection, such as sterility and history of nocturnal headaches. The disease picture, save for the remission, presented no anomalous traits; in each instance the diagnosis of general paralysis could be made without reservation.

16. **Chloroform Dropper Ampoules.**—The dropper ampoule, described by McMechan, is a glass container, the end of which elongated into a cone-like projection, turned at the tip and ending in a bead-sealed capillary tube. On the shoulder of this container is a second capillary projection similarly sealed. The ampoule holds about thirty grams of chloroform, an amount seldom exceeded in the ordinary run of narcoses for single operations. The container is marketed in strong cardboard boxes fully protected from breakage, thus making it a handy package for the emergency or obstetrical bag. To use the dropper ampoule it is only necessary to break off the bead-like tips of the capillary endings. This is most readily accomplished by previously nicking the neck of the tube with an aluminum file supplied in the container, or by clipping off the bead tips with a scissors. The elongated end of the container thus becomes the dropping point and the capillary ending of the shoulder bubble the air inlet. The pressure of the index finger on the capillary ending of this shoulder bubble regulates the influx of air, and the frequency of the drip may be retarded or increased at will. Also the angle at which the container is held plays an important part in regulating the rate at which the chloroform may be made to drop.

Lancet-Clinic, Cincinnati

July 10

20 Tonsils as Portals of Infection. W. Mithoefer, Cincinnati.
21 Hydriatic Treatment of Cardiac Lesions. C. Pope, Louisville.
22 Protracted Birth of Second Intrauterine Twin. B. M. Ricketts, Cincinnati.
23 Vaginal Injuries and their Rôle in Puerperal Infections. W. D. Porter, Cincinnati.

Northwestern Lancet, Minneapolis

July

24 Surgery of the Kidney and Ureter. R. E. Farr, Minneapolis.
25 Notes on a Trip Abroad. W. A. Jones, Minneapolis.
26 Case of Exstrophy of the Bladder. A. T. Mann, Minneapolis.
27 Epidemic Infantile Paralysis. D. M. Strang, Northfield, Minn.

International Clinics, Philadelphia

Vol. II, Nineteenth Series

28 Immunization Against Typhoid. H. Shoemaker, Philadelphia.
29 Mineral Waters in Syphilis. C. de la Carrière, Paris, France.
30 Diagnosis and Treatment of Pneumonia in Children. L. Fischer, New York.
31 Psychasthenia. B. C. Loveland, Syracuse, N. Y.
32 Tuberculous Serofibrinous Pleurisy and its Treatment. H. B. Allyn, Philadelphia.
33 Hyperchlorhydria. G. M. Niles, Atlanta, Ga.
34 Congenital Familial Splenomegaly with Chronic Acholuric Jaundice. F. P. Weber, London, Eng.
35 Diabetes. E. F. Wells, Chicago.
36 Congenital Idiopathic Dilatation of the Colon (Hirschsprung's Disease). P. Daniel, London, Eng.
37 Surgical Pneumothorax as Treatment for Phthisis. F. Dumarest, Paris, France.
38 Present Status of the Cammidge Reaction. E. H. Goodman, Philadelphia.
39 Treatment of Abscess in Hip Disease. H. Schwatt, Philadelphia.
40 Kraurosis Vulvæ. R. F. Woods, Philadelphia.
41 Diagnosis of Pelvic Diseases in Women. C. W. Hibbit, Louisville.
42 Intraocular Tumors. L. Buchanan, Glasgow, Scotland.
43 Refrigeratory Facial Paralysis: How it is Produced. H. O. Reik, Baltimore.
44 Anorectal Fistula and its Treatment. B. Asman, Louisville.
45 Psychometric Methods in Diagnosis, Prognosis, and Treatment of Cerebral Disorders. T. A. Williams, Washington, D. C.
46 Perithelioma Testis. F. G. Bushnell, London, and H. N. Fletcher, Brighton, Eng.
47 Pathogenesis of Spontaneous Cerebral Hemorrhage. A. G. Ellis, Philadelphia.

Journal of Infectious Diseases, Chicago

June

48 *Susceptibility of Gophers, Field Mice, and Ground Squirrels to Plague Infection. G. W. McCoy, U. S. P. H. and M.-H. S.
49 *Immunity of San Francisco Rats to Infection with *B. Pestis.* G. W. McCoy, U. S. Public Health and Marine-Hospital Service.
50 *Immunologic Observations in Ulcerative Cystitis Caused by Pseudodiphtheria Bacillus. E. C. Rosenow, Chicago.
51 **Bacillus Bulgaricus.* P. G. Heinemann and M. Hefferan, Chicago.
52 Bactericidal Substance in Leucocytes. T. Watabiki, Tokyo, Japan.
53 *The Tubercle Bacillus in Milk. G. McConnell, St. Louis, Mo.
54 *Cultures of Bacilli Isolated from Milk. A. F. Hess, New York.
55 Characteristics of the Streptococci Found in Scarlet Fever. B. van H. Anthony, New York.
56 An Epidemic Among English Sparrows Due to *Bacillus Cloacæ.* T. H. Glenn, Chicago.
57 *Opsonic Index in Acute Articular Rheumatism. R. Tunnicliff, Chicago.
58 So-Called Agglutinoids. E. C. L. Miller, Detroit.
59 *Bacterial Integrity of Celloidin and Parchment Membranes D. D. Todd, Chicago.
60 *Rocky Mountain Spotted Fever in the Rabbit. L. Gomez, Manila, P. I.
61 *Influence of the Ingestion of Dead Tubercle Bacilli on Infection. M. J. Rosenau and J. F. Anderson, Washington, D. C.
62 *Relative Proportion of Bacteria in Top Milk (Cream Layer) and Bottom Milk (Skim Milk), and its Bearing on Infant Feeding. J. F. Anderson, Washington, D. C.

48. **Plague Susceptibility and Immunity.**—McCoy concludes that gophers are not sufficiently susceptible to infection with the plague bacillus to be of any importance from an epidemiologic point of view; that field mice are about as susceptible as rats, but coming in contact with man but rarely, they probably will not be a serious factor in the spread of plague. Ground squirrels, on the other hand, are of the utmost importance in plague epidemiology.

49. **Id.**—A considerable immunity to plague was found among the wild rats of San Francisco, especially the old ones, and this immunity is held to be natural in most cases.

50. **Ulcerative Cystitis.**—A pseudodiphtheria bacillus was found constantly in the urine and predominated in the smears from the scrapings of the ulcers. The serum of the patient had a high agglutinating power on this bacillus, and the phagocytic power of the leucocytes varied in a manner specific for this bacillus. Injection of killed bacteria increased the opsonic power of the serum for the bacteria injected and the phacocytic activity of the patient's leucocytes appeared to increase after the injections and more when in their own serum than when in normal serum.

51. **Bacillus Bulgaricus.**—This bacillus appears to be widely distributed in nature, occurring normally in human feces, in the feces of cows and horses, in a variety of sour and aromatic foods, in normal saliva and gastric juice, in various fermented milks, in ordinary milk and in soil. It grows best in milk or media composed of whey, peptone and glucose. In milk it may produce more than 3 per cent. acidity, the acid being composed approximately of 6 per cent. volatile acid and 94 per cent. lactic acid (optically inactive). It is suggested that the presence of this bacillus in normal saliva may cause dental caries on account of its acid producing powers. It is self-evident that the presence of *B. bulgaricus* in human feces after ingestion of milk fermented by it, is not proof of its permanent acclimatization in the digestive tract, as it may be present normally.

53. **Tubercle Bacilli in Milk.**—McConnell's investigations indicate that the greater the number of sources from which milk is derived the greater the likelihood of infection by tuberculosis, and that commercial pasteurization, by the flask method is sufficient to destroy the tubercle bacillus.

54. **Id.**—Hess found tubercle bacilli 17 times in 107 samples of milk retailed from 40-quart cans in New York City. Of 8 strains studied minutely, 7 were found to be bovine in character, and one was found to belong to the human type. This is the first time that tubercle bacilli of the human variety have been isolated from milk, and indicates another source of danger from contamination by tuberculous persons.

57. **Opsonic Index in Acute Articular Rheumatism.**—The opsonic index for the so-called *Micrococcus rheumaticus* (Beattie, Poynton and Paine) and *Streptococcus pyogenes* follows the same course in acute articular rheumatism. When the joints become involved and the temperature rises, the index falls below normal, to rise again above normal as the joints and symptoms generally improve. The opsonic index, therefore, does not help to differentiate *M. rheumaticus* from *S. pyogenes.* The results of the study indicate that streptococci play an essential part in acute articular rheumatism.

59. **Bacterial Permeability of Membranes.**—Contrary to the accepted view, celloidin and parchment membranes are not impermeable to the passage of all bacteria. Inasmuch as the typhoid bacillus, among other bacteria, may escape through such membranes, the accepted results of experiments on the longevity of the typhoid bacillus in water require re-testing.

60. **Rocky-Mountain Spotted Fever.**—Gomez says that the rabbit is susceptible to the virus of Rocky-Mountain spotted fever as cultivated for a long time in the guinea-pig. The disease is milder in its symptoms than that produced in the monkey and guinea-pig. The blood of rabbits at the height of the disease is ineffective for guinea-pigs. It has been possible to transmit the disease from one rabbit to another through six animals successively. The blood of rabbits which have recovered contains bodies which protect against the disease, such bodies being largely or entirely absent from the blood of normal rabbits.

61. Abstracted in The Journal, June 12, 1909, p. 1949.

62. **Bacteria in Top Milk and Bottom Milk.**—It was found that top milk sometimes contains from 10 to 500 times as many bacteria per c.c. as the mixed milk. This may explain why infants sometimes do not thrive on modified milk made from top milk. When milk is centrifuged the great mass of bacteria goes up with the cream, a much lesser number being carried down with the sediment. The skim milk contains fewer bacteria per c.c. than the cream or sediment layers. Centrifugally raised cream contains more bacteria per c.c. than gravity raised cream from the same milk.

Long Island Medical Journal, Brooklyn

July

63 Heredity. W. A. White, Washington, D. C.
64 Salpingo-Otitis Media. S. B. Allen, Brooklyn.
65 Chronic Constipation in Infants and Children. Le G. Kerr, Brooklyn.
66 Intestinal Obstruction Due to Meckel's Diverticulum. R. W. Westbrook, Brooklyn.
67 Two Cases of Eclampsia, Clinically Suggestive of the Newer Pathology. O. P. Humpstone, Brooklyn.
68 Pyelitis of Pregnancy: Results of Postural Treatment and Renal Lavage. P. M. Pilcher, Brooklyn.

Archives of Internal Medicine, Chicago

June

69 *Experimental Production of Chronic Nephritis in Animals by the Use of Uranium Nitrate. E. C. Dickson, San Francisco.
70 *The *Treponema Pallidum.* B. White and O. T. Avery, Brooklyn, N. Y.
71 *Production of Edema. R. M. Pearce, New York.
72 *Protein Metabolism in Addison's Disease. C. G. L. Wolf and H. C. Thatcher, New York.
73 *Mild Uncinaria Infections. C. C. Bass, New Orleans.
74 Current Ideas on Aphasia. A. W. Hoisholt, Stockton, Cal.
75 *Diagnostic Value of Hemolysis in Cancer. R. Ottenberg and A. A. Epstein, New York.
76 *Influence of the Soft Tissues of the Arm on Clinical Blood Pressure Determinations. T. C. Janeway, New York.
77 *Effect on Heart of Experimental Obstruction of the Left Coronary Artery. J. L. Miller and S. A. Matthews, Chicago.
78 *Serum Disease. G. H. Weaver, Chicago.
79 *Disease of the Optic Nerve as an Early or Earliest Symptom of Multiple Sclerosis. A. Gordon, Philadelphia.
80 Anaphylaxis. J. G. Anderson and M. J. Rosenau, Washington, D. C.

69. **Chronic Nephritis in Animals.**—By the use of uranium nitrate Dickson was able to produce in animals lesions which closely resemble those found in subacute and chronic diffuse nephritis in man. A long continued mild intoxication with this drug led to the production of a "subchronic" (Weigert) interstitial nephritis which appeared to be progressive. A series of several attacks of subacute uranium nephritis led to extensive fibrotic changes in the kidney which in some cases went on to the stage of a granular atrophy. In a certain number of cases this condition was associated with polyuria. Dickson also found that a single severe attack of acute parenchymatous nephritis may be followed after some weeks by a more or less severe fibrosis, which in some cases goes on to extreme granular atrophy. In other cases, however, the recuperative power of the kidney is such that only a moderate fibrosis results.

70. **The Treponema Pallidum.**—From the review of certain staining methods, and from the observations made in the bacteriologic examination of syphilitic and non-syphilitic lesions, White and Avery reach the following conclusions:

> 1. The staining method as described by Schereschewsky appears to be the most satisfactory one for general use.
> 2. The presence of the *Treponema pallidum* in a suspected lesion may undoubtedly be considered as establishing the specific nature of the infection.
> 3. A negative result does not necessarily exclude the presence of syphilis. In this event further examinations should be made, and, when these lead to negative results a proper period of time should be allowed to elapse in order that the appearance of the secondary symptoms may establish the diagnosis.

In the clinic of the House of Relief (Brooklyn) the finding of the treponema has been considered as affording a positive diagnosis. The treatment when begun immediately on the report of a bacteriologic diagnosis has led to gratifying results.

71. **Production of Edema.**—Pearce made an experimental study of the relative etiologic importance of renal injury, vascular injury and plethoric hydremia. In uranium nephritis the ease with which edema is produced when an excess of water is administered illustrates the importance of hydremia in the causation of edema. The influence of vascular injury is not very plain in the uranium experiments, but is conclusively shown in those in which ricin, venom and arsenic were administered in the course of a chromate nephritis; in all of these the influence of hydremia is also evident. A consideration of all the results recorded appears to demonstrate conclusively that, under the conditions of these experiments, plethoric hydremia and vascular injury have equal value with nephritis in the production of edema, and that none of these three factors acting alone, and no combination of two acting together, is sufficient to cause edema. The experiments with nephrotoxic immune sera point to the possibility that substances, presumably endotheliotic and capable by vascular injury of aiding in the production of edema, may be contained in serum.

72. **Protein Metabolism in Addison's Disease.**—Wolf and Thacher studied the nitrogen and sulphur metabolism in a patient who had Addison's disease and who was on a purin-free diet. The desamidating capacity of the patient (capacity to reduce amid nitrogen) and his capacity to transform the sulphur of the cystin group into sulphuric acid were absolutely comparable to that of normal individuals. A considerable degree of acidosis was observed which is not accounted for by any factor which was found in this examination. The endogenous metabolism of the patient, as represented by the kreatinin and uric acid outputs was below that of normal subjects.

73. **Mild Uncinaria Infections.**—Bass employs a method for detecting the ova of the uncinaria which he considers better than any other. A quantity of feces is well diluted with water, 1 in 10, and strained through gauze to get rid of coarse particles. This is centrifugalized, the fluid poured off, the centrifuge tube refilled and centrifugalized again until all the diluted feces have been used. The precipitate is rewashed several times with water as long as anything can be washed out. To know just how long to continue the centrifugalization is the secret of success. One must learn just what is the proper time for his centrifuge. It should be carried out at high speed and just long enough to throw the eggs to the bottom. Too long centrifugalization defeats the purpose. With a centrifuge running 3,500 revolutions a minute, ten seconds at first, when there is much matter, and then four to five seconds is usually the proper time. The centrifuge must be steady. This gets rid of most of the very small things, those having flat rough surfaces and those having a specific gravity about that of water. Now the precipitate should be washed before using calcium chlorid solution of a specific gravity up to 1050. This disposes of everything having a specific gravity below 1050, and the precipitate may now be examined. There frequently remains a considerable amount of material, much of which is appreciably heavier than the eggs and of such a character that it interferes much with their recognition. This material may be removed by centrifugalizing with a solution sufficiently heavier than the eggs. A solution with a specific gravity of 1,250 is very satisfactory. In such a solution the eggs go to the top. With an appropriate pipette one may remove a few drops from the surface and examine, or, what is still better, pour off some of the top fluid containing eggs, dilute with water sufficiently to bring the specific gravity below 1050, and centrifuge again. The precipitate will now contain most of the eggs contained in the original amount of feces, and may all be put on one slide and examined. One such slide contains as many eggs as could be found in several hundred ordinary slide preparations of feces. With this technic, Bass was able to recover 96 per cent. of 1,000 eggs put in one ounce of feces, 94 per cent. of 100 eggs in the same quantity, and 60 per cent. of 10 eggs in one ounce.

75. **Hemolysis in Cancer.**—As the result of a careful investigation, Ottenberg and Epstein arrive at the conclusion that hemolysis can not at present be relied on as an aid in the diagnosis of cancer.

76. **Blood-Pressure Determinations.**—Janeway records two cases which he thinks demonstrate clearly that an influence of the soft parts of the arm on clinical blood-pressure determinations does not exist, and that discrepancy between clinical blood-pressure estimations and direct manometric readings from the same limb, if found, must be explained either by resistance of the arterial wall or by errors in the readings.

77. **Obstruction of the Left Coronary Artery.**—Miller and Matthews found that either main trunk of the left coronary artery may be ligated without seriously disturbing the heart. In the cases reported by the authors, ligation of the descendens 25 mm. or less from its orifice, after previous ligation of the circumflex, always caused cardiac standstill. The left ventricle stopped beating first. When either of the two main branches of the descendens is ligated and the animal is allowed to recover, no evidence of cardiac disturbance is apparent for a period varying from one to three months, when very acute symptoms of cardiac insufficiency develop which rapidly prove fatal. The previous administration of strophanthus permits much more extensive ligation of the coronary arteries without serious consequences.

78. **Serum Disease.**—Weaver prefers the terms "serum disease" and "serum reaction" to other expressions which have been used in speaking of the symptoms provoked by injections of alien serums. The reaction is dependent on the proteins of the serum and bears no relation to the antitoxin or other antibodies contained in the serum. In general, the serum of one species of animal is toxic when injected into an animal of another species. The occurrence of a serum reaction after the injection of antidiphtheria horse serum is determined in part by the susceptibility of the individual and the toxic properties of the particular serum administered, but in largest measure by the total quantity of serum employed. Precipitated serum calls forth reactions in about the same proportion of cases as does whole serum in corresponding bulk.

The interval between the injection and the appearance of the reaction varies from a few minutes to three weeks or more. The majority of reactions appear before the eleventh day. The length of incubation is dependent on the number of injections and the quantity of serum. When a primary injection, after an interval of ten days or more, is followed by a secondary one, the subsequent reaction is apt to be intensified and to occur after a shorter incubation period. Serum reactions following secondary injections correspond to the phenomena of anaphylaxis in experimented animals which may be provoked by various serums and also by many other substances of a protein nature. While the administration of antidiphtheria horse serum is usually devoid of danger, in rare instances persons who have been rendered hypersensitive by previous injections or in some hitherto unknown manner may be made alarmingly ill and may even die as the result of such injections.

Certain precautions should be observed in the injection of horse serum. When there is a history of asthma, etc., the possible danger should be stated distinctly before serum is administered. For the protection of other members of the profession who meet similar experiences all fatal cases should be reported. The rare occurrence of unfavorable results from the use of antidiphtheria serum should not deter the physician from urging its administration in every case of diphtheria.

79. **Eye Symptoms in Multiple Sclerosis.**—In the last seven years 56 cases of multiple sclerosis have come under Gordon's observation in the clinics of various hospitals and in private practice. They all presented the cardinal classical symptoms of the affection. These 56 cases presented clinically nystagmus, staccato speech, intention tremor, exaggerated patellar and Achilles tendon reflexes on one or both sides; some of them also presented a history of apoplectiform seizures and vertigo. Twenty-three patients showed changes in the optic nerves. Of these 23 Gordon excludes 5, in whom the optic neuritis and atrophy were the earliest or the only sign of the disease; 18 presented changes in the papillæ, together with other symptoms of multiple sclerosis. In how many of these cases the changes in the optic nerves developed first could not be determined, as they came under observation when the entire symptom-group was present. Close questioning, however, revealed the fact that some indefinite disturbance of sight in one eye first attracted the attention of 8 of these 18 patients.

As to the changes themselves, the 18 patients presented the following at the time of the examination: Optic atrophy was present in 11 patients, in 8 of whom it was unilateral (on the left), in 2 more marked in the left eye than in the right, and in 1 bilateral and equal. In the last 3 the optic atrophy always began on one side, but was rapidly followed by the involvement of the other eye. In the 8 patients with unilateral involvement the condition remained confined to the same side for a long time, but finally the other eye became involved. In the remaining 7 patients of the series retrobulbar neuritis was present at the beginning for a period of from 2 to 5 months and optic atrophy developed later. Vision in all the 18 was at first very much impaired. Scotomata were present, more on one side than on the other. In the 11 with unilateral optic atrophy scotomata were conspicuous on both sides. The central vision was preserved in the majority of the 18 cases. The acuity of vision was not in direct proportion to the involvement of the optic nerves.

The chief interest of the subject lies in the optic nerve changes as a very early or as the only symptom of multiple sclerosis. Gordon has had 5 such cases during the last 7 years. In the first 3 the involvement of the optic nerves with disturbance of vision appeared first, and many months later the classical symptoms of multiple sclerosis began to develop. In the fourth case, if it is one of multiple sclerosis, the eye symptoms are the only signs of the disease. Three and one-half years have elapsed since visual disturbances made their first appearance. So far, the islets of sclerosis are confined to the cerebrum. In the fifth case, in addition to the optic atrophy which had been in existence seven years, there are only two physical symptoms of multiple sclerosis.

Journal Tennessee State Medical Association, Nashville

June

81 Squint and its Treatment. W. Dotson, Gallatin.
82 Surgery of the Thyroid. R. M. McCown, Knoxville.
83 Cancer of the Breast. G. R. West, Chattanooga.
84 Amebic Dysentery and Appendicostomy. J. P. Bates, Nashville.
85 Membranous Croup. G. E. Vaughan, Clarksville.
86 Leukemia. R. J. McFall, Cumberland City.

Washington Medical Annals

July

87 Hygiene and Sanitary Science. G. M. Kober, Washington.
88 Life of Thomas Sydenham, M.D. J. B. Nichols, Washington.
89 *Five Hundred and Fifty Cases of Typhoid in Children. S. S. Adams, Washington.
90 Perplexing Complications Found in Gallstone Surgery. I. S. Stone, Washington.
91 Pneumococcus Leptomeningitis. D. S. Lamb, Washington.
92 Stricture of the Urethra. H. A. Fowler, Washington.
93 Keloid of the Labium Majori. D. P. Hickling, Washington.
94 Epithelioma of the Jaw. E. A. Balloch, Washington.

89. **Typhoid in Children.**—Of the 550 cases cited by Adams, 420 patients were treated during July, August, September and October. There were 296 boys and 254 girls; 23 were under two years, 77 at 11 years of age, which represents the minimum and maximum ages. As early as 1872 the oyster was recognized as a carrier of the bacilli in one case. Perforation was found in 17 cases, all being of the ileum; 28 deaths resulted from hemorrhage. Rose spots were present in 133 cases, but, as about 20 per cent. of the cases occurred in negroes, the percentage is not accurate. Epistaxis was found in 4.9 per cent., in one case being fatal. Convulsions occurred in 16 and post-typhoidal insanity in 9. The fever is described as being mild in 264; moderately severe in 132; severe in 142; irregular in 2; sudoral in 10. There were 48 relapses, 4 cases having 2 each. There were 65 deaths, a rate of 11.8 per cent., a number of the children having died within 24 hours after admission. From 1872 to 1882 the mortality was 30.76 per cent.; from 1882 to 1891 it was 20.33 per cent.; from 1892 to 1903 it was 11.1 per cent.; from 1903 to 1908 it was 7.9 per cent. Various methods of treatment have been pursued during the time stated, and of late liberal feeding is assumed to shorten convalescence and prevent post-typhoidal complications.

Cleveland Medical Journal

June

95 Treatment of Chronic Intestinal Autointoxication. F. Forchheimer, Cincinnati.
96 Significance of Coordinated Reflexes in Differentiating Between Functional and Anatomic Diseases of the Nervous System. C. F. Hoover, Cleveland, Ohio.
97 The Medical Expert Witness. D. C. Westenhaver, Cleveland.
98 Medical School Inspection in Cleveland. J. H. McHenry, Cleveland.
99 Diagnosis and Treatment of Brain Tumor (continued). A. Peskind, Cleveland.
100 Nitrous Oxid and Oxygen Anesthesia in Comparison with Ether Anesthesia. G. W. Crile, Cleveland.

Journal Cutaneous Diseases, New York

July

101 Pseudoxanthomatous Lymphangioma. W. S. Gottheil, New York.
102 Principles and Clinical Application of the Wassermann Reaction. H. F. Swift, New York.
103 *Eruptions Occurring after Abdominal Operations. F. J. Shepherd, Montreal.
104 The *Spirochæta Pallida:* Its Easy Demonstrability; Brief Review of its History. U. J. Wile, New York.

103. **Eruptions after Abdominal Operations.**—Shepherd, in an attempt to discover the cause of the skin eruptions seen so often after abdominal operations, found that these occurred most often in patients who were given an enema of soap suds made from common yellow soap, but if castile soap were substituted no eruption followed. This was corroborated by the fact that in exchanging the yellow for the castile soap in other patients who had these eruptions it was found that the yellow soap produced rashes, whereas the castile soap did not. It was then found that the cheap and common yellow soap contained a considerable quantity of resin, and to this Shepherd believes we must attribute the cause of many of the rashes seen after abdominal section.

Journal Advanced Therapeutics, New York

July

105 Association of Altered Metabolism with Circulatory Changes and Treatment. B. S. Price, New York.
106 *Electricity in the Relief of Pain. F. H. Humphris, London, Eng.
107 So-Called Chronic Rheumatism or Septic Arthritis, Caused by Urethral Strictures and Various Post-Strictural Infections. J. W. Torbett, Marlin, Tex.
108 Morton Wave Current in Diseases of the Prostate Gland. B. H. Jackson, Scranton, Pa.
109 All too Frequent Cytolysis of Cancer. J. A. Riviere, Paris.

106. Abstracted in The Journal, Nov. 28, 1909, p. 1891.

Western Medical Review, Omaha

June

110 Progress of Medicine. L. M. Shaw, Osceola, Neb.
111 Function of the Laboratory in Clinical Medicine. A. D. Dunn, Omaha.
112 Centennial Anniversary of the First Ovariotomy. P. Findley, Omaha.

Bulletin Johns Hopkins Hospital, Baltimore

July

113 *Pellagra in Maryland. W. S. Thayer, Baltimore.
114 *Osteoplastic Carcinoma of the Prostate. G. Blumer, New Haven, Conn.
115 *Relative Aortic Incompetency of Muscular Origin. J. M. Anders, Philadelphia.
116 Old-Time Medical Education. J. J. Walsh, New York.

113. **Pellagra.**—Thayer reports a case of pellagra seen in the vicinity of Baltimore which presented several peculiar features which, taken in connection with the impalpability of the thyroid and the dryness of the skin suggested the possibility of hypothyroidism. It was accordingly determined to start treatment with thyroid, beginning with three 2-gr. (0.13 gm.) doses of desiccated thyroids a day. The change in the patient's condition was immediate and remarkable. On the very

day that the treatment was begun the patient passed for the first time a quiet night. For several weeks this dose was continued, and then for several months the patient took from 4 to 5 grains (0.26-0.32 gm.) daily. The improvement was rapid, the mental, cutaneous and gastrointestinal symptoms entirely cleared up, and since then the patient has remained well. She has found that whenever she has tried to stop the use of the thyroid, of which she is now taking 2 grains (0.16) a day, a sense of heaviness and dulness has returned, so that Thayer is convinced of the necessity of continuing the treatment. From the effects of the thyroid, together with the symptoms above referred to, Thayer suggests that it is not impossible that this is an instance of hyperthyroidism; the mental symptoms might well be associated with this condition; but the cutaneous, the buccal, the gastrointestinal manifestations were so striking that it was difficult to discard the suspicion of the existence of pellagra.

114. **Osteoplastic Carcinoma of Prostate.**—Blumer summarizes his paper as follows:

1. Carcinoma of the prostate gives rise to metastases in the bones in a much larger proportion of cases than any other form of carcinoma; probably in at least two-thirds of the patients in whom the disease is allowed to run an unobstructed course.
2. The clinically apparent bone metastases may be single. If occurring in the long or flat bones they may be taken for primary bone tumors and removed as such. If occurring in the vertebræ they frequently give rise to spastic paraplegia.
3. There is a diffuse form of bony involvement without evident deformity of bones in which intense pain in the bones, often associated with spinal stiffness and accompanied by the general signs of a malignant growth, is the prominent symptom.
4. Symptoms pointing to the urinary tract as the original site of the disease are lacking in perhaps one-third of the patients.
5. In all instances where a male patient, especially one over sixty, presents himself with an apparently primary tumor of a bone or with signs of paraplegia, or with bone pains of obscure origin, a complete examination of the urinary system is indicated, even though no symptoms of urinary disorder be present. Needless to say, the mammary gland, the thyroid, and the region of the adrenals should also be explored.
6. The high percentage of cases of bone metastasis in this form of tumor, and the relative rapidity with which it may take place, make it imperative that carcinoma of the prostate should be recognized and removed at as early a date as possible.

115. **Relative Aortic Insufficiency.**—Anders places the cases of muscular relative incompetency at the aortic orifice in three well-defined divisions: (a) cases of muscular and nervous origin that supervene in the course of fibrous myocarditis and other less serious conditions of the myocardium, independently of valvulitis or advanced organic changes in the aorta; (b) cases secondary to chronic valvulitis affecting the mitral segments with failure of the left ventricle, and (c) cases occurring in the course of or following acute infective diseases due to the action of the toxins on the myocardium. Cases of purely nervous origin may also be encountered occasionally. He emphasizes the fact that functional incompetency of the aortic segments due to dilatation of the left ventricle is not sufficiently recognized.

Journal New Mexico Medical Society, Albuquerque

July

117 Milk Sickness. G. K. Angle, Albuquerque.

118 Alcoholism—Acute and Chronic. W. S. McCormick, Albuquerque.

119 Surgical Empyema. D. H. Carns, Albuquerque.

120 The Meddlesome Doctor. J. H. Bradshaw, Orange, N. J.

121 Trachoma. F. H. Tull, Albuquerque.

122 *Sterilization of Criminals and Other Defectives by Vasectomy. W. T. Belfield, Chicago.

123 Traumatic Epilepsy of 24 Years' Standing Relieved by Operation. M. K. Wylder, Albuquerque.

122. Published in the *Chicago Medical Recorder*, and abstracted in THE JOURNAL, April 10, 1909, p. 1211.

Providence Medical Journal

July

124 *Medical Progress During the Past Thirty Years. F. B. Fuller, Pawtucket, R. I.

125 Appendicitis Complicating Pregnancy. C. O. Cooke, Providence.

126 Infant Feeding. W. H. Jordan, Providence.

124. Abstracted in THE JOURNAL, July 10, 1909, p. 138.

Military Surgeon, Washington, D. C.

July

127 Career of the Army Surgeon. R. Park, Buffalo.

128 Diseases of the Soldier and their Prophylaxis. E. L. Munson, U. S. Army.

129 Account of the Ravages of Scurvy in Lord Anson's Fleet During a Voyage Around the World, 1740-1744: Notes Concerning British Naval Hygiene at that Time. A. Farenholt, U. S. Navy.

130 Is the Poor Physical Development of Southern Recruits Due to Uncinariasis? W. P. Chamberlain, Jackson Barracks, La.

131 Biographic Sketch of Azel Ames, M.D. J. M. Swan, Philadelphia.

132 Diseases and Injuries of Ear Occurring Among Troops During War or Peace Maneuvers—Their Prevention and Treatment. J. J. Kyle, Indianapolis.

133 Penetrating Injuries of the Brain—Recovery. W. A. Gills, Richmond, Va.

California State Journal of Medicine, San Francisco

July

134 Melancholia and Other Manifestations of the Depression Psychosis. C. Quinan, San Francisco.

135 Backache (continued). C. M. Cooper, San Francisco.

136 Fallacies in the Weaning of Infants. A. Brown, San Francisco.

137 Fat as a Disturbing Factor in Infant Feeding. L. Porter, San Francisco.

138 Arthritis Deformans. L. D. Mead, San Francisco.

139 Passive Motion. S. J. Hunkin, San Francisco.

140 The Malaria Zone. D. F. Ray, Stockton.

141 Local Anesthesia. V. G. Clark, San Diego.

142 Our State Board Examination. H. D'A. Power, San Francisco.

143 Demonstration of Enlarged Spleen. W. F. McNutt, San Francisco.

144 Pulmonary Tuberculosis as Affected by Certain Other Diseases. J. C. King, Banning.

Mississippi Medical Monthly, Vicksburg

July

145 Prophylaxis of Insanity. J. M. Buchanan, Meridian, Miss.

146 Use and Abuse of the Nitrites. P. W. Rowland, Oxford, Miss.

147 Nervous Reflexes and Complications Due to Pregnancy: Their Causes and Treatment. I. H. C. Cook, Hattiesburg.

Louisville Monthly Journal of Medicine and Surgery

July

148 Disease of the Labyrinth. K. L. Stoll, Cincinnati.

149 Psoriasis. J. V. Shoemaker, Philadelphia.

150 Anesthesia, with Report of 2,000 Administrations. T. K. Van Zandt, Louisville.

151 Value of Chlorin in the Production of Immunity against Tuberculosis. F. C. Wilson, Louisville.

Southern California Practitioner, Los Angeles

June

152 Obstruction of the Bowels. T. A. Stoddard, Santa Barbara.

153 Fraternal Insurance. C. W. Pierce, Los Angeles.

154 Plea for Conservative Treatment of the Uterus and Adnexa. L. D. Johnson, Whittier.

155 Rubeola, Rubella, and Scarlatina: Prophylaxis and Treatment of Typical Cases. S. A. Adams, Los Angeles.

156 Centralization of Power—A Necessity in Health Work and Sanitation. D. J. Frick, Los Angeles.

157 Need of Fumigation of Second-Hand Clothing and Articles. L. M. Powers, Los Angeles.

Philippine Journal of Science, Manila

February

158 *Atoxyl in Treatment of Malaria. J. J. Vassal, Nhatrang, Annam.

159 Methods of Studying the Structure of the Central Nervous System. R. B. Bean, Manila.

160 Dengue in Indo China: Epidemic on Board *Manche*. J. J. Vassal and A. Brochet, Nhatrang, Annam.

161 Filtration Experiments on the Virus of Cattle Plague with Chamberland Filters "F." E. H. Ruediger, Manila.

162 *Suppression of a Cholera Epidemic in Manila. A. McLaughlin, U. S. Public Health and Marine-Hospital Service.

158. **Atoxyl in Malaria.**—Atoxyl used alone, according to Vassal, does not exercise a specific action in malaria. Associated with quinin, it is capable of bringing about a rapid improvement in health and of hastening convalescence. In cachexia and chronic forms of malaria, quinin with atoxyl appears to be more efficacious than quinin alone. Atoxyl in large doses is sometimes borne with difficulty and may even give rise to accidents.

162. This article appeared in full in THE JOURNAL, April 10, 1909, p. 1153.

Journal Oklahoma State Medical Association, Muskogee

June

163 State Medicine. J. M. McComas, Elk City.

164 *Cancer of the Female Breast. J. N. Jackson, Kansas City, Mo.

165 Ileocolitis or Dysentery. H. M. Williams, Wellston.

164. **Cancer of Breast.**—Jackson emphasizes the fact that at least 90 to 95 per cent. of all tumors of the breast are malignant, and no possible intelligence can proclaim which of the remaining 10 per cent. will remain benign. There is no known cure for any tumor of the breast, benign or malignant, except through surgical removal. From 25 to 50 per cent. of cases

of breast cancer are permanently cured by radical surgical removal. With early diagnosis this could be raised to 80 per cent. Every tumor of the breast, therefore, should be considered malignant and treated as such at the very first moment of its detection. unless incision has proved it benign, in which instance, local excision should at least be insisted on. To trifle with tumors of the breast is, therefore, practically nothing short of criminal.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

July 3

1 Advisability and Method of Operating in Acute Inflammation of the Appendix from the Third to Sixth Day. G. M. Moullin.
2 *Electrical Reactions of Bacteria Applied to the Detection of Tubercle Bacilli in Urine by Means of a Current. C. Russ.
3 The Opsonic Test. F. R. Walters.
4 *Multiple Aneurisms of the Aortic Arch and Thoracic Aorta. H. E. Jones and T. H. C. Benians.
5 *Routine Use, by the Open Method, of a Mixture of Chloroform and Ether. F. W. Hewitt and J. Blumfeld.
6 *High-Frequency Currents and Their Medical Application. C. F. Bailey.
7 Multiple Intracranial Tumors with Involvement of Both Auditory Nerves. G. N. Biggs.
8 New Method for Attempting to Secure Sphincteric Control after Colostomy. C. Ryall.
9 Unusual Case of Extradural (Peri-Sinus) Abscess of Otitic Origin and its Relation to Melancholic Stupor. J. A. Jones.
10 Abscess of the Pancreas. S. S. Pringle.
11 Chronic Middle-Ear Suppuration with Involvement of the Labyrinth. M. Yearsley.

2. **Electrical Reactions of Bacteria.**—By much experimentation Russ found that certain bacteria, under the influence of a suitable current, congregate at one or other electrode. The congregation varies with the nature of the electrolyte, and is probably due to an affinity between the products of electrolysis and the bacteria. It occurs with killed as well as with living bacteria. The congregation by electrical currents affords a means of collection and examination, and was found of greater detective capacity in certain of the experiments undertaken than was the centrifuge. The differences in behavior of various bacteria are such as to suggest the possibility of utilizing the method for purposes of specific discrimination, but in this particular the data hitherto obtained are insufficient to warrant definite statements.

4. **Multiple Aneurisms of Aorta.**—The patient in this instance complained of: 1. A pulsating swelling over the inner end of the left clavicle of about the size of a small hen's egg. This swelling was first noticed three months previously. It was very painful and tender and rapidly increasing in size. 2. Slight cough and shortness of breath. 3. A coldness and numbness of the extremities, especially the hands and feet, which he could not keep warm. 4. Hemoptysis; small clots occasionally; no further large quantity was expectorated after the hemoptysis at the commencement of the illness. 5. Inability to use his right eye. This was found to have been present since birth and was on account of a "congenital ptosis." The tumor had expansile pulsation, was dull on light percussion, and gave a sense of fluctuation. The skin over it was slightly reddened. The area of cardiac dulness was slightly increased, but resonance was present between this and the dulness over the tumor. The heart sounds were normal. Anemia was marked and the superficial veins of the upper part of the thorax were slightly dilated. The pressure of the carotid pulse was 108. No pulsation was palpable at either wrist; the right temporal was palpable, but not the left. The carotid pulses were markedly unequal and asynchronous; no tracheal tugging was present, nor was there any laryngeal paralysis. The voice was somewhat hoarse, but the cough was not "brassy." No glands were felt. The hands and feet were rather cold. There were crepitations present at both apices, while at the right apex the breath sounds were bronchial in character and at one spot whispering pectoriloquy was present. There were proptosis and divergence of the right eye, but the eye movements were free. The pupils were small, but unequal, and reacted both to light and accommodation. The fundi and media were normal. There was no history or sign of past syphilis. The patient was extremely temperate and had never done any really hard manual labor. The temperature was raised to 100° F. at night. The urine was normal.

Skiagrams taken on admission showed three distinct bulgings of the thoracic aorta: (1) in the descending aorta; (2) at the junction of the transverse and descending arch; and (3) of the ascending arch near the spot where the right innominate artery takes its origin.

The interesting features of the case are: 1. The absence of any of the usual determining circumstances of aortic aneurism—viz., syphilis, alcohol, hard work, etc., or of any evidence of a long-sustained high blood pressure. 2. The extraordinary tendency for clotting and attempts at spontaneous cure. Even when rupture took place and oozing commenced this stopped for a few days, a large clot forming, until the final more extensive rupture proved immediately fatal. 3. The old history of hemoptysis, evidently one of the dilatations (probably that of the descending arch) ulcerating into the trachea two years previously. The ulceration on the trachea was seen postmortem, and, although old tubercle was present at the left apex, no extensive tuberculous process had invaded the lung, making it practically certain that the large sudden hemoptysis was of aneurismal origin. The spontaneous cure of the aneurism of the right side with cessation of symptoms followed two and a half years later by it again becoming patent after the appearance of the larger and more rapidly growing dilatation of the left side. 5. The multiplicity of the dilatations.

5. **Chloroform and Ether Anesthesia.**—The mixture employed by Hewitt and Blumfeld consists of 2 parts by volume of chloroform and 3 parts by volume of ether. The mask employed is essentially a Skinner's mask and consists of a wire frame, over which is stretched a single layer of thin flannel. The mask thus formed presents an oval opening 5 inches by 3 inches and is capable of close adaptation to the face. The vault of the mask is high enough not to touch the nose when its rim rests on the face. The size of the mask and the material with which it is covered are important details. In using the mixture a gradual process is followed. The mask is applied to the face, and, after a few breaths, the mixture is added, a few drops at a time. A regulating drop bottle is used capable of delivering the mixture in isolated drops, in a rapid series of drops, or in a continuous stream. During the first two minutes the mixture is poured on the mask in such small quantities at a time that there is never more than a quarter of the mask moist. From this time it is added more freely until, roughly speaking, in the case of men the whole surface of the mask, in the case of women three-quarters of the surface, and in the case of children one-half of the surface, is kept moist with the liquid. As a rule, at least four minutes pass between the beginning of the administration and the moment when the maximum quantity to be used is on the mask.

The cases in which the method has been employed include all the graver abdominal procedures. In age, patients have ranged from the infant of 14 months to persons over 80 years of age. Several patients were markedly alcoholic, others were asthmatic and orthopneic; one patient was suffering from pneumonia, and in this case oxygen was simultaneously administered through a tube passing through the mask. In a series of hospital cases the average amount of the mixture consumed was one ounce in 14 minutes; the least used was half an ounce in 22 minutes (feeble infant); and the most used was three and a quarter ounces in 30 minutes (fat alcoholic woman). Recovery takes place rapidly without any after-effects, provided, of course, that the patient has been properly prepared. In several cases there was vomiting once or more after recovery of consciousness. In practically all cases there was, 24 hours after operation, complete freedom from nausea. The method has been employed successfully in over 360 cases.

6. **High-Frequency Currents.**—Bailey directs attention to the fact that experiments on animals and plants, observations on human beings not founded on the individual experimentees' own statements, showed that there are four marked effects of electric energy produced, uncomplicated by chemical effects, by high frequency currents: (1) Increased cell activity, in-

creased metabolism; (2) return of a locally inflamed tissue to its normal; (3) either general vascular dilatation or contraction, according to the particular method used; and (4) "inhibition," diminished sensory or motor excitabilty. So that where any of these effects is desired and where the remaining effects are not prejudicial, or can be very much diminished or abolished, high-frequency treatment may be of real value, and for these reasons has a prospect of considerable therapeutic use in the future.

British Medical Journal, London

July 5

12 Tedious Recovery from Illnesses. Sir D. Duckworth.
13 *Surgical Treatment of Rheumatoid Group of Joint Affections. R. Jones.
14 Arthrotomy of Knee. C. B. Lockwood.
15 Aspects of Life-Insurance from Standpoint of the Medical Examiner and the Agent. A. G. Gullan.
16 Osteitis Deformans. R. M. White.
17 *Danger Arising from Use of Plated Instruments in Ophthalmic Operations. W. C. Rockcliffe.
18 Value of Expert Radiography and Cystoscopy in Detection of Obsolesced Tubercle in the Kidney. E. H. Fenwick.
19 Quinin Dermatitis. W. Gripper.
20 Strychnin Poisoning: Recovery. G. M. Blair.
21 Aortic Systolic Murmur: Prognosis and Treatment. C. W. Lawson.

13. **Surgical Treatment of Rheumatoid Joint Affections.**—Jones advocates more frequent surgical intervention to correct the deformities incident and subsequent to joint disease, and cites cases in support of his contention.

17. **Danger of Plated Instruments in Ophthalmic Practice.**—Rockcliffe cautions against the use of plated instruments in eye surgery because the plating may peel off and give rise to very serious complications. He reports a personal experience of this kind where, following a cataract extraction under ordinary conditions, an acute panophthalmitis developed, necessitating the removal of the eye. The instruments used during the extraction were inspected and the plating was found to be peeling off. Evidently the piece which caused the trouble and which was recovered from the anterior chamber, entered there during the iridectomy.

Clinical Journal, London

June 23

22 Short Circuits of the Lymphatics in Cancer of the Tongue, Breast, and Organs of Generation. C. B. Lockwood.
23 Treatment of Cardiac Pain. A. Morison.
24 Action and Conservative Vital Reaction, Especially in Regard to Idiosyncrasies. F. P. Weber.

Journal of Obstetrics and Gynecology, London

June

25 *Three Cases of Rupture of the Uterus Treated by Abdominal Hysterectomy. T. W. Eden.
26 *Complete Rupture of the Uterus. A. L. Smith.
27 Septic Thrombosis (Puerperal) of the Pelvic Vessels. W. B. Bell.

25. **Rupture of Uterus.**—Eden's views on the treatment of rupture of the uterus are summarized as follows:

1. Incomplete rupture of moderate severity, involving only the lower half of the broad ligament, may be treated expectantly by drainage or packing.
2. Abdominal section for exploration of the injury and arrest of hemorrhage will, as a rule, be required.
3. According to circumstances this may be followed (a) by packing and drainage; (b) by subtotal hysterectomy.
4. In most cases of extensive rupture, whether complete or incomplete, removal of the uterus is required.
5. In the less serious cases of extensive rupture not attended by serious bleeding, vaginal hysterectomy may be performed, but this operation has been practiced in comparatively few cases.
6. Suture of the rent is, in the present state of our knowledge, not to be recommended, except in the special circumstances mentioned above.

26. **Id.**—Smith reports 10 cases, 8 of which occurred in a hospital and constituted the total number of such cases seen during twenty years among 10,989 deliveries. The remaining 2 cases were seen elsewhere. In 8 cases the rupture occurred in the lower uterine segment. In 2 cases the upper segment was also involved. In one case not only was the retracted portion of the uterus ruptured as a direct result of the extension of the tear in the lower segment, but there was also another complete tear and several incomplete fissures in the upper segment. In 9 cases it was the posterior wall which gave way, the rupture occurring once on the right side, 4 times on the left and once in the mid-line. Unfortunately in 3 of the cases the notes do not definitely state the position of the rent. In only one case did the rupture occur through the anterior wall. The mortality was 90 per cent. In 2 cases death occurred so rapidly that no time was allowed for anything to be done.

Medical Press and Circular, London

June 23

28 Treatment and Diet in Infantile Gastroenteritis. L. Delmas.
29 Passive Hyperemia. R. A. Stoney.
30 Banti's Disease with Pulmonary Phthisis and Herpes—Death from Hemorrhage. A. Don.
31 Fleas as Transmitters of Plague. Professor Shiga.

Journal of Tropical Medicine and Hygiene

June 15

32 *Filarial Periodicity and Its Association with Eosinophilia. C. D. Whyte.

32. **Filarial Periodicity and Eosinophilia.**—Whyte conducted rather extensive investigations in this direction, and as the result of his findings he concludes that variations are found in different individuals in the maximum number of circulating filariae. In his series of cases the number varied from 8 to 143 per cm. Variations are also determined by the rate at which the filariæ emerge from and retire to the lungs and larger arteries. He also found that they do not appear in maximum numbers at midnight, but that, on the other hand, the number is often less at that hour than before and after. However, the time when the greatest number of organisms appear in the blood, though varying in different cases, is fairly constant in the same case. Finally, filariasis is associated with eosinophilia, and the degree of eosinophilia often corresponds with the number of microfilaria in the circulating blood.

Archives des Maladies du Cœur, etc., Paris

June, II, No. 6, pp. 321-382

33 *Action of Roentgen Rays on the Thymus. C. Aubertin and E. Bordet.
34 Megaloblasts, Normoblasts and Pycnoblasts; Relations between them and their Evolution in Chronic Myeloid Leukemia. H. Béclère.
35 Acute Lymphocyte Leukemia. H. Eschbach and J. Baur.
36 Case of Pulsus Alternans Induced by Digitalis. E. Guilleaume.

33. **Action of the Roentgen Rays on the Thymus.**—Aubertin and Bordet give illustrations of the microscopic findings in cats and rabbits, confirming the possibility of destroying or at least completely transforming the thymus by exposures to Roentgen rays. They found it possible to destroy the thymus by this means without altering the other organs in the mediastinum, and it is possible that radiotherapy may prove useful in treatment of a tumor in the thymus.

Lyon Chirurgical

June, II, No. 1, pp. 1-126

37 Painful Varieties of Congenital Dislocation of the Hip Joint. (Formes douloureuses de la luxation congénitale de la hanche.) G. N. Josserand and A. Rendu.
38 Astragalectomy in Treatment of Fractures of the Astragalus. G. Gayet.
39 Treatment of Cancer of Ampulla of Vater by Circular Resection of the Duodenum. G. Cotte.

Presse Médicale, Paris

June 19, XVII, No. 49, pp. 441-448

40 Experimental Study of Surgery of the Stomach. (Contribution expérimentale à la chirurgie de l'estomac.) A. Frouin.

June 23, No. 50, pp. 449-456

41 The Oosporoses. H. Roger.
42 *Disinfection from Prophylactic Standpoint. J. Courmont.

June 26, No. 51, pp. 457-464

43 Nodular Erythema and Tuberculosis. (Erythème noueux et tuberculose.) A. -B. Marfan.

42. **Efficient Official Disinfection.**—Comby recently stated that the contagious diseases at Paris do not seem to be kept under control now any better than of old, and the official disinfection service actually does more harm than good, as it merely lulls the people into a sense of false security. Courmont takes exception to his statement, declaring that the trouble is that the municipal disinfection is not properly carried out, as it is not based on the true principle of efficient disinfection, which is to watch over the patient from the onset and during the course of the disease and prevent the dissemination of contagion. He cites his own experiences in the department of the Rhône, where the disinfection service is admirably organized and efficiently arrests contagion. The main point is for the service to be notified of the case of con-

tagious disease as soon as possible, by telephone, not waiting for the mail. Then, also as rapidly as possible, by automobile, the disinfecting force repairs at once to the case, bringing bags, disinfectants, printed instructions, etc., and aiding the physician in controlling the contagion at this most critical moment. The first duty of the service is to rush to the patient and surround him with prophylactic measures; then, when the disease is over, to sterilize the contaminated bedding and clothing, and, thirdly, to disinfect the apartment. The disinfecting service is in charge of a trained and well-paid specialist, free from other duties, and he is obliged to supervise the disinfection, whether done by his force or by outsiders. A portable oven is most convenient for sterilization of bedding, etc., in country districts. Courmont does not regard the scarlet fever scales as contagious in themselves, although they may be the vehicle of the virus. He adds that measles should be dropped from the list of diseases requiring notification, as the contagion occurs before differentiation and the germ is not long-lived or resistant. The ideal prophylaxis is, of course, he says, for the patient to be taken at once to the contagious hospital as soon as the disease is diagnosed, and this is the rule in the Scandinavian countries, where rich and poor alike go at once to the hospital under these conditions. Until this becomes the rule in other countries the reliance must be on the municipal disinfection service. In conclusion he emphasizes anew that in hygiene every useless measure is dangerous, and that all such prophylactic measures should be reduced to the indispensable minimum.

Revue de Médecine, Paris

May, XXIX, No. 5, pp. 337-424

44 *Progressive Myopathic Atrophy. L. Landouzy and L. Lortat-Jacob.
45 *The Meninges in Scarlet Fever. (Infection méningée, réaction méningée et méningites scarlatineuses.) R. Benard.
46 *Pathogenesis and Symptomatic Importance of Paralysis of the Left Laryngeal Recurrent Nerve. ii. (Paralysie récurentielle.) E. Guder and R. Dufour.

44. An article on this subject by the same author appeared in the *Bulletin de l'Académie de Médecine*, Feb. 23, 1909, and was abstracted in The Journal, April 3, 1909, page 1147.

45. **The Meninges in Scarlet Fever.**—Benard says that a simple reaction on the part of the meninges generally subsides, but the hemorrhagic and suppurative forms have been invariably fatal in the cases on record. Lumbar puncture is able to differentiate a scarlatinal meningitis when the symptoms may indicate either an incipient complicating meningitis or a malignant form of the scarlet fever. Repeated lumbar puncture may have a curative action in case of a simple reaction and may aid, in connection with warm baths, in the purulent meningitis. A few rare cases are on record of recovery from streptococcus meningitis, but he knows of none of recovery from scarlatinal meningitis. He reviews the literature on the subject, remarking that in the majority of cases the scarlatinal meningitis was secondary to otitis.

46. **Paralysis of Left Recurrent Laryngeal Nerve.**—Guder and Dufour report 79 cases and discuss the various etiology. In 4 instances the paralysis was the result of compression from a cancer and in a number of others of compression from tuberculous glands. In 2 cases no cause could be discovered for the paralysis except mitral stenosis, but in many such cases in the literature their coexistence, they think, was probably merely a coincidence, a sufficient other cause for the paralysis having been discovered at autopsy. Aortitis or aneurism was evidently responsible in 16 of their cases. In 4 the paralysis occurred in connection with tabes, in 7 with goiter, in 11 with operations for goiter, and in only 17 did it prove impossible to trace the paralysis to its cause, although a long preceding infectious disease was possibly responsible in some of them.

Archiv für Kinderheilkunde, Stuttgart

L, pp. 1-476. Last indexed April 17, p. 1298

47 Fifty Years of the *Archiv*. A. Baginsky.
48 *Cutaneous Tuberculin Reaction. (Wert der Pirquetscheu Reaction.) S. Müller.
49 *Pathogenesis of Intestinal Hemorrhages in Infants. (Darmblutungen im Säuglingsalter.) W. Sochaczewski.
50 Congenital Heart Defects. (Zwei Fälle von angeborenen Herzfehler.) S. Bach.
51 Deviation of Complement in Scarlet Fever. (Ueber Complementablenkung bei Scharlach.) P. Sommerfeld.
52 Injury of Infants with Gastrointestinal Disturbances from Fat in Food. (Zur Theorie der Schädigung magendarmkranker Säuglinge durch fetthaltige Ernährung.) J. Neumann.
53 Acetonuria in Scarlet Fever. F. Proskauer.
54 Primary Intestinal Tuberculosis in Children, with Special Regard to its Relations with Primary Tuberculosis of the Respiratory Apparatus. L. Mendelsohn.
55 Infant Feeding. (Ergebnisse auf dem Gebiete der Säuglingsernährung in den letzten Jahren.) P. Biedert.
56 Pyloric Spasm and Fat in the Diet. (Pyloruskrampf und Fett in der Nahrung.) Id.
57 Liver Cysts in Children. (Lebercysten im Kindesaiter.) W. P. Shukowsky.
58 Blue Disease from Congenital Anomalies. (Morbus caeruleus [Blausucht] bedingt durch eine grosse Reihe angeborener Anomalien des Herzens und anderer Organe.) F. Theodor.
59 Leukemia in Boy of Nine. (Bemerkenswerter Fall von Leukämie bei einen 9jährigen Kuaben.) P. Kränzle and H. Rehn.
60 Chronic Appendicitis in Children. (Appendicite chronique chez les enfants.) J. Comby.
61 *Danger of Transmission of Syphilis in Modern Infant Asylums. J. Cassel.
62 *Statistics in Regard to Inherited Syphilis. Id.
63 *Importance of Serodiagnosis for Congenital Syphilis. (Bedeutung der Sernmdiagnostik für die congenitale Lues.) M. Joseph.
64 Nocturnal Motor Neuroses of the Head in Children. (Die nächtlichen Kopfbewegungen der Kinder.) C. Stamm.
65 Two Cases of Infantile Scurvy. (Barlowsche Krankheit.) L. Concetti.
66 Serodiagnosis of Experimental Hyperthyroidism. (Begriff uud Methode der bei der Diagnose des experimentellen Hyperthyreoidismus angewandten Complementablenkung.) F. Valagussa.
67 Chemistry of Children's Urine on Diet Rich or Poor in Albumin. (Acidität, Ammoniak, Phosphorsäure und Gesamtstickstoff im Kinderharn bei eiweissarmer und eiweissreicher Ernährung.) A. Vozarik.
68 Origin of Congenital Stridor. (Ueber eine anatomische und klinische bemerkenswerte Anomalie des Laryngotrachealrohres nebst kritischen Bemerkungen über die Aetiologie des Stridor laryngis congenitus.) J. Trumpp.
69 *Appendicitis in Children. (Appendicitis der Kinder.) G. Alsberg.
70 *Dosage of Drugs at Different Periods of Growth. (Dosierung der Arzneimittel in den verschiedenen Wachstnmsperiodeu.) W. Troitzky.
71 Research on Pertussis. (Keuchhustenuntersuchungen.) G. Arnheim.
72 Enlargement of Spleen in Typhoid. (Milztumor im Typhus abdominalis.) A. Solaro.
73 *Diagnosis of Tuberculosis of the Bronchial Glands in Children. (Diagnosestellung der Bronchialdrüsentuberculose im Kindesalter.) O. Cozzolino.
74 Bacteriology of the Blood in Digestive Disturbances in Infants. (Bacteriologische Blutbefunde bei Ernährungskrankheiten im Säuglingsalter.) A. Caau.
75 Amount of Nourishment Required for Artificially Fed Infants. (Nahrungsbedarf künstlich ernährter Säuglinge.) K. Oppenheimer.
76 Determination of Complement iu Child's Serum. (Complementbestimmungen des kindlichen Serums.) H. Koch.
77 Motor Function of the Stomach. (Die motorische Function des Magens.) H. Roeder.
78 Relations between Weight and Nursing Capacity in Working Women. (Beziehungen zwischen Körpergewicht und Stillen bei der Arbeiterfrau.) G. Tugendreich.

48. **Cutaneous Tuberculin Test.**—Müller gives the findings in 497 children tested with tuberculin according to von Pirquet's technic, described in The Journal, Feb. 27, 1909, page 675. The findings sustain the value of this test in the dubious cases and its reliabilty. In 2 of the children the clinical diagnosis of tuberculosis was denied by the findings of the test, and it was supposed that the test had failed in these instances, but autopsy revealed another origin for the symptoms and not a trace of tuberculosis could be discovered.

49. **Intestinal Hemorrhage in Infants.**—Five cases are reported from Baginsky's clinic to show the causes liable to induce intestinal hemorrhage in infants. The symptoms in one case suggested spasm of the pylorus, but autopsy disclosed an unsuspected duodenal ulcer. In another case the source of the hemorrhage was not discovered, as the tendency was promptly arrested by two subcutaneous injections of 20 c.c. of 3 per cent. solution of gelatin, with buttermilk for the sole food. The four-months child was dismissed in good condition in two weeks, although the first stool had been merely seven tablespoonfuls of dark red blood. In another case nothing could be discovered at autopsy to explain the intestinal hemorrhage, except purulent meningitis and thrombosis in the longitudinal sinus. The hemorrhage in another accompanied an atypical miliary tuberculosis: diffuse tuberculosis of the bowel had led to perforation and ileus, the syndrome suggesting invagination.

61. **Prophylaxis of Transmission of Syphilis in Foundlings' Homes, Etc.**—Cassel comments on the difficulty of preventing transmission of unsuspected syphilis in institutions of this kind. Among the 744 infants at the Berlin asylum in his

charge 8 proved to have inherited the taint of syphilis, but nothing was observed to suggest its presence until the child was from four to thirteen weeks old. There was no trace of rhinitis in some of these syphilitic children during the time they were under observation. The alarm was given in one case only by the rapid enlargement of the liver. Five of the 8 children died, one from visceral syphilitic lesions and one from erysipelas complicating purulent rhinitis. The Wassermann test is proving extremely useful for sifting out suspects among the infants and wet nurses, but, if negative, must be repeated from time to time. The attendants must be constantly warned and reinstructed in prophylactic measures and the physician in charge must be on the alert to detect the first signs of inherited syphilis in the children, examining them anew every day and recording the condition of the nursing children at least twice a week, even with negative findings. The attendants are admonished repeatedly in regard to prophylactic measures and the importance of reporting the slightest trace of disturbance on skin or mucosa on themselves or their charges. Even with all this care one of the attendants developed syphilis, possibly acquired outside but probably owing to infection from one of the infants. Children given out for adoption before the fourth month are liable to show signs of inherited syphilis later and cause disaster in their new home. Müller knows of such occurrences and mentions a recent example where an infant of two and a half months was taken into a family with other small children and very soon after manifested severe inherited syphilis. If syphilis or gonorrhea is discovered in a child in the asylum it is isolated and the attendant puts on a special overgarment in entering the isolated space; the resident physician is responsible for strict and unceasing compliance with his directions. The wet nurses are inspected by a specialist before being given children to nurse, but even with scrupulous care there may be trouble, as in one case in which the nurse and her child had passed the examinations, but the infant later developed severe manifestations of syphilis.

62. **Statistics of Inherited Syphilis.**—Cassel states that statistics show 1.18 per cent. syphilitics among 17,448 infants at his Berlin policlinic, including 3 cases of syphilitic twins. One of the twin children seemed to have escaped, but when approaching the age of 2 spontaneous fractures occurred and the Wassermann test gave positive results.

63. **Serum Reaction in Congenital Syphilis.**—Joseph cites examples to illustrate the great benefit that may follow treatment based solely on the findings of the Wassermann test in dubious cases of inherited syphilis in young children, apparently normal except for some slight affection. In one case it was a "rheumatic" trouble in the arm, which yielded promptly to mercurial treatment. Vigorous treatment is indicated the moment the diagnosis is assured, he affirms, because what is often assumed to be tardy manifestations of inherited syphilis in many instances is in reality infection acquired since birth. The frequency of acquired syphilis in young children has recently been emphasized anew. In one such case a year-old child was infected by his father, but remained apparently healthy, and only a single course of mercurial treatment was given. At the age of 33 multiple sclerosis developed; it might possibly have been prevented by more thorough mercurial treatment while a child. In another case the Wassermann test was positive in a young man who showed no signs of syphilis but whose wet nurse had been discharged on account of syphilitic manifestations. Mercurial treatment was advised. In another case nothing could be found to explain the undoubtedly syphilitic destructive lesions of the palate in a boy of 13 with positive Wassermann findings. Vigorous treatment has arrested the process, but the source of the infection is still a mystery.

69. **Appendicitis in Children.**—Alsberg summarizes thirteen cases from his experience; in nearly every instance there had been a preceding infectious sore throat. The colic-like pains of the chronic forms of appendicitic peritonitis are often mistaken by the parents for indigestion and the children are tormented with purgatives, etc., as small children generally refer to the region of the umbilicus and stomach the disturbing sensations induced by chronic appendicitis.

70. **Dosage of Drugs for Children.**—Troitzky compares clinical experiences with a series of experimental researches, all of which sustain his assertions that drugs act differently in children according as the children are growing fast or not. During the periods when there is exceptionally active growth a smaller dose of the drug has a more vigorous action than a much larger dose during the periods of comparative arrest in the physical development. During these quiescent periods larger doses should be prescribed than would otherwise seem advisable in proportion to the age and weight. During the periods of active growth and during convalescence from disease a small dose acts as effectually as a much larger one under other conditions.

73. **Early Diagnosis of Tuberculous Bronchial Glands in Children.**—Cozzolino has been able to diagnose tuberculous bronchial glands in 18 children since 1900, all between 2 and 13, the diagnosis being confirmed by the course of the cases. There were generally more or less anemia and dyspepsia, and the superficial veins were prominent. The cough suggested that of pertussis in some of the cases; sometimes it was accompanied by vomiting. He found de la Camp's sign particularly instructive. This is the relative dulness on percussion of the spinous processes of the fifth and sixth thoracic vertebræ. It was positive three times in the five children examined for it, while only one of these children had an area of tenderness between the shoulder blades (Petruschky's spinalgia). In 4 of the 18 children the unilateral restriction of breathing (Grancher's sign) was marked. He remarks further that it requires much pains and judgment to interpret the Roentgen findings aright in these cases; they are more conclusive with calcified glands.

Archiv für Verdauungs-Krankheiten, Berlin

June, XV, No. 3, pp. 325-440

79 *"Potato Diet" in Treatment of Obesity. (Zur Methodik der Entfettungskuren.) G. Rosenfeld.
80 *Treatment of Gastric Ulcer. (Behandlung des Magengeschwürs.) E. Mayerle.
81 *Pathology and Therapy of Mucomembranous Colitis. D. B. King.
82 *Periodical Stomach Disturbances. (Zu den periodischen Magenkrankheiten.) W. Büttner.
83 Examination of Entire Pharynx and Adjoining Regions. (Ortho-Hypopharyngoskopie.) F. Schilling.
84 *Bacillus longus* in the Stools in Two Cases. (Vorkommen "langer Bazillen" im Stuhl.) F. A. Schaly.

79. **The "Potato Diet" in Treatment of Obesity.**—Rosenfeld reports continued success with and advocates wider adoption of his method of treating obesity which he introduced four years ago. He here describes the bases for it and the mechanism of its action. The diet must be kept up for months or for a year or so, and on this account it must be palatable and satisfying. The main features are the supplying of the necessary amount of albumin, the prohibition of fat, the diet scanty in calories, but with plenty of carbohydrates, especially in the form of potato, with large amounts of cold water for the beverage, rest in bed and frequent meals. The feeling of satiety depends on the filling of the stomach, and it seems to be immaterial to the stomach what it is filled with. The food must be such as to fill the stomach while supplying merely small amounts of nourishing substances. Potato, water and soups fulfill these requirements and aid in reducing the fat. Every quart of cold water (10 C., or 50 F.) ingested causes the consumption of 27 calories to bring it to body temperature—that is, equivalent to the consumption of 3 gm. fat. As "filling" foods must be selected, fat should be avoided. Small, frequent meals prevent the development of a too hearty appetite, as also repose, especially bed rest. The diet, therefore, is, for the first meal: Tea with saccharine and 30 or 40 gm. of rolls with marmalade or the like; the second meal is 10 gm. of cheese and water; the third 100 gm. apple and water; at noon 2 glasses of water, 1 or 2 plates of soup with potatoes and vegetables, lean meat and salad without oil. During the afternoon, tea with saccharine, 6 prunes and water; later, 100 gm. apple. For supper, 2 eggs and potato salad or lean meat and vegetables. The principal advantage of this diet is that the patients do not feel the restrictions and do not become irritable or nervous. The only by-effect noted was occasionally backache, which probably was due to the change in the attitude of the spine as the abdomen lost

its fat. The patients thrive on this diet and feel better in every respect, as he shows by a number of examples. Caution is necessary with diabetes, and the amount of fluids ingested had better be kept below 2 liters if there is general dropsy. The reduction of weight on this diet is from the loss of actual fat. It often requires more than six months to bring the patient down to his normal weight, and it is wise to keep up this diet a few days in each week to maintain the benefit.

80. **Treatment of Gastric Ulcer.**—Mayerle reviews the various methods in vogue and reports his results in 71 cases of gastric ulcer in which he applied Lenhartz's method. The list includes 29 recent, bleeding gastric ulcers, 17 chronic and 25 uncomplicated recent cases. His verdict is favorable on the whole, as smooth recovery was noted in 65 per cent., slow recovery without recurrence in 11 per cent., and with recurrence in 14 per cent. In 10 per cent. no benefit was apparent, or it was transient, while in 7.1 per cent. the diet was not tolerated. In no case was any injury apparent from the diet commenced immediately after the hemorrhage. Occasionally the Lenhartz diet seemed to increase the tendency to hyperchlorhydria and the allied hypersecretion. In these cases it was found necessary to increase the proportion of fat in the diet, while reducing the proportion of albumin. In the chronic cases with reduced acidity a diet with less albumin, moderate fat and carbohydrates predominating answered the purpose better.

81. **Mucomembranous Colitis.**—King bases treatment on diet, purgatives, enemas, massage and electricity. The food must be rich in waste, the fat in form of cream, butter and bacon, but castor oil and cod liver oil are the main reliance. The trouble is a local condition caused by irritation from stagnating fecal masses in persons with a tendency to neuroses. Treatment must aim to insure regular stools and to tone up the nervous system in general. Neither factor alone answers the purpose. He advises institutional care, even for the mild cases, for four or six weeks. The severer cases require a course of treatment continued for from six months to two years or longer. The patient must spend the first six weeks in bed. He impresses on his patients the importance of maintaining this diet, with gymnastic exercises before bathing in the morning, urging also the necessity for keeping occupied during the entire day. Operative measures do not offer much chance of success in the severer cases, which resist systematic treatment.

82. **Periodical Stomach Disturbances.**—Büttner discusses a group consisting of genuine periodical hypersecretion, genuine periodical vomiting and genuine periodical cardialgia. There are two forms of periodicity, he declares, that of which neuralgia is the type and that of epilepsy. In the latter the attacks recur like an explosion from accumulation beyond a certain point, after which there is a period of calm until the accumulation reaches this point again. He is inclined to accept these two forms as evidence of the central or peripheral origin of the disturbance. This point is important for differentiation, as he shows by examples, including the case of a man of 35 who had acquired syphilis at 21 and had taken several courses of mercurial treatment. Every few weeks or months intense pains in the stomach occurred for a few hours, but no vomiting or headache, neurasthenia or migraine, and no signs of tabes. The assumption of gastric crises is justified by the characteristic periodicity of the cardialgia; the serum reaction may give the clue in such cases.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XIV, No. 1, pp. 1-166. Last indexed April 10, p. 1215

85 Cesarean Section. (Historisches und Kritisches über den Kaiserschnitt.) F. A. Kehrer.
86 The "Isthmus of the Uterus" and Placenta Formation at this Point. (Der Isthmus utero und die Placenta isthmica.) H. Bayer.
87 The Operative Era in Obstetrics, and Vaginal Cesarean Section with Contracted Pelvis. (Die neue Aera der Geburtshilfe und die Anwendung des vaginalen Kaiserschnittes bei engem Becken.) A. Dührssen.
88 Technic of Extraperitoneal Cesarean Section and Delivery through the Utero-Abdominal Wall Fistula. (Technik des extraperitonealen Uterusschnittes und der Entbindung durch die Uterusbauchdeckenfistel.) H. Sellheim.
89 Anatomy and Etiology of Congenital Hyperanteflexion of the Uterus. K. Hegar.
90 Chemical Research on Lutein Content of the Corpus Luteum during Pregnancy. (Luteingehalt des gelben Körpers während der Gravidität.) J. Wallart.
91 Simultaneous Tubal Pregnancy on Each Side. (Gleichzeitige doppelseitige Tubarschwangerschaft.) A. Labhardt.
92 Case of Trophoneurotic Lesions after Stovain Spinal Anesthesia. (Trophoneurotische Erscheinungen nach Lumbalanästhesie.) A. Mayer.

Berliner klinische Wochenschrift

June 14, XLVI, No. 24, pp. 1101-1148

93 *Nausea. I. Boas.
94 *Connection between Stomach and Gynecologic Disorders. (Zusammenhang von Magen- und Frauenleiden.) L. Lewisohn.
95 *Gastric Ulcer and Digestive Gastrosuccorrhea. (Magengeschwür und digestiver Magensaftfluss.) K. Grandauer.
96 Etiology of Trachoma. Halberstaedter and S. v. Prowazek.
97 Fracture of the Talus. R. Levy.
98 *The Syphilis Seroreaction in the Cadaver. (Luesreaktion an der Leiche.) E. Seligmann and G. Blume.
99 *Experimental "Salt Fever." (Salzfieber bei normalen und anaphylaktischen Kaninchen.) H. Davidsohn and U. Friedemann.
100 Staining Technic for Spermatozoa. (Neue und beste Methode für den Nachweis der Spermatozoen.) A. de Dominicis.
101 Criticism of Tests for Sugar in Urine. (Kritik zur Harnzuckerbestimmung mit dem Glukosimeter nach Zeehandelaar.) F. Goldmann.
102 Umbilical Cord Infection and Hemorrhage. (Nabelerkrankungen des Neugeborenen.) E. Runge.

93. **Nausea.**—In Boas' opinion, the symptom of nausea has received insufficient attention from medical men. He enumerates the causes, including parasites, especially intestinal, arteriosclerosis, retention of urine from prostatic hypertrophy, brain tumors, uremia, and icterus. In these cases the nausea is accompanied by other more prominent subjective and objective symptoms. It is rare in gastritis, but may be found in connection with vomiting in conditions of stasis, and is common when there is abnormal formation of gas in the stomach or intestine. Of the cases in which nausea is the prominent symptom the majority are in females and a close connection with the various phases of menstruation is found. Genital and other hemorrhages are apt to induce it. Slighter causes may suffice to evoke it and it is frequently purely of psychic origin. A condition of under-nutrition is generally present. Nausea is not closely connected with the taking of food, but is more influenced by position and is usually removed or lessened by recumbency. The symptom probably depends on a vasomotor disturbance of the cerebral circulation which is favored by anemia, but with which the stomach itself has nothing to do, as is shown by the fact that the secretory activity of the organ is unaltered, or, if there is a slight deviation, it is in the direction of hypoacidity rather than hyperacidity. The diagnosis is usually easy, but, especially in men, careful physical examination should eliminate all possible organic causes. Even in women, too ready recourse to a psychic explanation may cause a beginning pregnancy to be overlooked. The prognosis is usually good, although there are rare obstinate cases. If the malady is very chronic a long course of treatment will be needed. In treatment proper psychic measures should be instituted and rest should be insisted on as the most important remedy. The diet should be easily digestible, palatable, and sufficiently nourishing. Hot compresses to the head have been useful in Boas' experience. Massage is objectionable in the early stages and forced or excessive feeding should be avoided. The bromids are useful in cases of moderate severity. Chloral, which may give good results in mild cases, fails utterly in the severe ones. Chloroform is palliative, but of no permanent value, and cocain has proved disappointing. Morphin in small doses hypodermically is indicated only in the severe cases, and here Boas regards its use as questionable on account of possible serious consequences and of the uncertainty of its effect. While medicinal treatment is of little value, rest and patience will usually lead to success.

94. **Connection Between Stomach and Gynecologic Affections.**—Lewisohn analyzes the clinical history of 100 cases in which there were both stomach and gynecological disturbances. Excluding all with an independent stomach trouble or general affection or enteroptosis, 34 are left in which the pathologic process in the genital apparatus seemed to be connected as a causal factor with the stomach affection. The list includes inflammatory processes in 16, displacement of the uterus in 5, and both in 10, a myomatous uterus in 1 and postoperative disturbances in 2. In only 7 cases were the stomach disturbances noted before the gynecologic; in 5 they

commenced about the same time, and in the others the stomach trouble did not appear until some time after the other had been installed. In the majority of cases treatment of the gynecologic affection did not attenuate the gastric trouble, although a number of cases are on record in which gynecologic treatment cured stomach disturbances of long standing, resisting internal treatment. Lewisohn states that examination of the stomach content during menstruation and pregnancy does not give a correct impression of the secretory functions of the stomach. The gastric acidity was subnormal in the majority of his cases, but others have reported normal findings or hyperacidity. The nervous affection of the stomach in these cases is preceded by some change in the general nervous system, and this latter requires treatment. The gynecologic lesion may be responsible for this general nervous disturbance and thus, indirectly, for the secondary stomach trouble.

95. **Gastric Ulcer and Digestive Hypersecretion.**—Grandauer states that the experiences at Strauss' clinic at Berlin with 48 cases of gastric ulcer and 27 suspects indicate a close connection between digestive hypersecretion and the presence of an ulcer. The ulcer is not merely an accompaniment of the digestive hypersecretion but helps to maintain it. The practical conclusion is that a course of treatment as for gastric ulcer is indicated in every case of hypersecretion in which there is the slightest suspicion of a tendency to ulcer. Butter and cream aid in combating the hypersecretion and help to keep the patient in good condition. Strauss has recently warned that the Lenhartz diet requires a certain amount of caution. Fat is one of the most essential factors in the treatment of gastric ulcer associated with hyperacidity.

98. **The Seroreaction to Syphilis in the Cadaver.**—The findings were positive in 28 and negative in 72 of the cadavers examined, the details of the cases showing that the Wassermann test is a useful aid in pathologic anatomic research. At the same time, diseases causing much debility, such as phthisis, sepsis and cancer, seem to induce a tendency to production of substances which give a positive reaction to the complement-fixation test. The details of the 100 cases are tabulated.

99. **"Salt Fever" in Rabbits.**—This communication from Heubner's hygienic institute at Berlin states that intravenous or subcutaneous injection of a salt solution induced an aseptic "salt fever" in the rabbits, much more pronounced with half the dosage when anaphylaxis had been previously induced. Grape sugar, alien blood serum and Ringer's solution all had this same fever-inducing effect.

Correspondenz-Blatt für Schweizer-Aerzte, Basle

June 15, XXXIX, No. 12, pp. 401-432

103 Topography for Localization in the Brain. (Neue Gesichtspunkte in der Frage nach der Lokalisation im Grosshirn.) v. Monakow.
104 Hydrophthalmus. Siegrist.

Deutsche medizinische Wochenschrift, Berlin

June 17, XXXV, No. 24, pp. 1049-1088

105 *Treatment of Itching Skin Lesions. (Behandlung der juckenden Hautkrankheiten.) Klingmüller.
106 Is it possible to Differentiate Ileus by Constriction from Band Above? (Ist die Abgrenzung einer Strangobturation vom Obturations- und Strangulationsileus berechtigt?) Wilms.
107 Changes in Views and Tasks in Field Surgery. (Veränderung unserer kriegschirurgischen Anschauungen und Aufgaben.) Kayser.
108 *Buttermilk in Infant Feeding. (Ueber den derzeitigen Stand der Buttermilchernährung gesunder und kranker Säuglinge.) H. Koeppe.
109 Natural Difficulties in Way of Breast Nursing. (Natürliche Schwierigkeiten beim Stillen.) C. Stuhl.
110 Unreliability of Roentgen Exposures for Interruption of Pregnancy. (Zur Frage der Schwangerschaftsunterbrechung durch Röntgenbestrahlung.) H. E. Schmidt.

105. **Treatment of Itching Skin Lesions.**—Klingmüller remarks in the course of his description of the various methods of treatment that baths should be used more frequently than is the case at present for diffuse skin affections with general itching. Carbonated baths are specially useful when there is a nervous basis, and sulphur baths are particularly effectual in extensive eczematous disorders. Alcohol rubs, following with powder or salve, are useful and refreshing, cleansing without soap and water. He has frequently been gratified with the effect of sponging over the entire body in extensive itching conditions with a mixture of 0.2 part mercuric chlorid, 20 parts glycerin, 100 parts perfumed spirit and alcohol to 400 parts. Complete exclusion of air may relieve the itching and will prevent injury from scratching. For these reasons he applies a starch bandage over all the other dressings or applications in case of an itching dermatosis, especially on the legs. The same result may be accomplished by applying a varnish which dries rapidly, such as a combination of equal parts of zinc oxid, talcum, glycerin and distilled water, with or without addition of some disinfectant. This varnish shuts out the air and the glycerin keeps the skin soft, while the tendency to itching is attenuated. A plaster may be found useful for circumscribed dermatoses. The greatest progress in the treatment of itching lesions of late years has been realized by radiotherapy. He has made extensive use of the Roentgen rays especially for the subacute and chronic forms of itching dermatoses; good results have been obtained in pruritus vulvæ; the dosage is below that inducing a visible dermatitis. He has been successful also with violet and ultraviolet rays, using them to a slight erythema dosage. It is thus possible to arrest the itching in extensive eczema and with other dermatoses, and the rays are also liable to effect a complete cure.

108. **Buttermilk in Infant Feeding.**—Koeppe declares that the superiority of buttermilk in ions adapts it better for infant feeding than cow's milk. Human milk contains little albumin, little ash and large proportions of ions; cow's milk much albumin, much ash, few ions, while "buttermilk gruel" contains much albumin, much ash and quantities of ions. Cow's milk contains casein in the form of casein salt, while in buttermilk it is in the form of casein acid, which explains its greater digestibility. He regards the introduction of buttermilk into infant feeding as not only a progress in respect to practical results but also in the deeper insight it allows into the desiderata of infant feeding. He approves of the "buttermilk gruel," which is made of sour cream, the acidity not too pronounced. The buttermilk must be fresh each day; one liter is mixed with 60 gm. cane sugar and 15 gm. wheat flour, boiled up three times and then distributed in sterilized bottles each representing one meal. The ions in the buttermilk evidently cause inversion of the cane sugar to some extent.

Medizinische Klinik, Berlin

June 13, V, No. 24, pp. 875-914

111 *Cirrhosis of Liver. (Leberzirrhose.) G. Hoppe-Seyler.
112 Chronic Non-Tuberculous Bronchial Lesions. (Chronische Bronchialerkrankungen mit Ausschluss der Tuberkulose.) Posselt. Commenced in No. 22.
113 *Nervous and Mental Disturbances in School Children. (Die psychischen Erkrankungen der Schulkinder.) G. Flatau. Commenced in No. 23.
114 *Nail Extension Treatment of Fracture of Femur. (Zur Nagelextensionsbehandlung der Oberschenkelbrüche.) A. Schwarz.
115 Hydriatic Treatment of Neurasthenia. A. Fuerstenberg.
116 *Prognosis in Tuberculosis. (Die Prognosenstellung bei der Tuberkulose mit besonderer Berücksichtigung der Balneologie, nebst Bemerkungen über die Frühdiagnose und Tuberkulintherapie.) A. Wolff-Eisner.
117 Viscosity and Albumin Content of Blood on Various Diets. (Viskosität und Eiweissgehalt des Blutes bei verschiedener Ernährung, besonders bei Vegetariern.) H. Determann.

June 20, No. 25, pp. 915-952

118 *Puerperal Eclampsia. L. Seitz.
119 Nature of Osteomalacia. (Wesen des osteomalazischen Knochenprozesses.) G. Axhausen.
120 Physicotherapy of Scoliosis and Ankylosis of Joints. (Physikalische Behandlungsmethoden.) Klapp.
121 Phototherapy in Hands of General Practitioner. Siebelt.
122 Preparation of Digitalis. (Zwei Digitalisfragen aus der Praxis.) C. Focke.
123 Mechanism of Action of Baths in Heart Disease. (Welches sind die erwiesenen Vorgänge der Zirkulation beim Gebrauch von Bädern, die zur Restitution des Herzens führen?) Jacob.
124 Growth of Hair on the Body. (Behaarung des Leibes.) F. Schilling.
125 Action of Mineral Waters on the Intestines. (Mineralwasserwirkungen auf den Darm.) H. Kionka.
126 Treatment of Syphilis. E. Welander.

111. **Cirrhosis of the Liver.**—Hoppe-Seyler emphasizes the importance of curing or attenuating the gastrointestinal disturbance of the first stage of cirrhosis of the liver. The diet must aim to prevent putrefaction and fermentation in the digestive tract. The food should be light and finely divided or fluid, with little fat, no salads and no raw fruit or cheese. Medicinal disinfection of the intestine is impossible except by stimulating the bowel functioning with laxatives including

courses of mineral waters. A trip to a watering place benefits mainly by giving the patient a chance to change his mode of life and diet; a stay in a sanitarium may also prove of benefit, teaching the patient how he must live thereafter. Treatment along these lines will often arrest the disease if not too advanced, and the patient can resume his occupation without much disturbance from the digestive tract and liver. In a more advanced stage stronger measures are necessary, but tapping is not required unless the diaphragm is pushed up so much that there is dyspnea or the secretion of urine interfered with by the pressure on the kidneys. The condition of the heart and kidneys is of the greatest importance as chronic myocarditis is frequent; heart tonics may be necessary and the patient should be warned to avoid efforts liable to cause injury of the heart. Salt must be avoided, and meat extractives, especially when there is a tendency to edema. Diuretics may prove useful if ascites develops, and the collateral circulation should be promoted.

113. **Psychic Disturbances in School Children.**—Flatau concludes his long study of this subject with the statement that the main task is in prevention, and in this the school, the parents and the physician must cooperate. He denounces the way in which parents punish the child for actions in school for which he was sufficiently punished there; the legal principle *ne bis in idem* does not seem to apply to school children, he remarks. If spurred to undue ambition they are liable to become nervous and lose interest.

114. **Nail Extension in Treatment of Fractures of the Thigh.**—Schwarz has been applying Steinmann's method of applying traction to the fractured femur by a weight hanging from a nail driven into the femur just above the condyle on each side. The results have been good in all but one of his eighteen cases; in this the fracture was so close to the condyle that the introduction of the nails transformed the simple into a compound fracture, the resulting infectious process proving fatal. Except when the fracture is near the condyle and when the extravasation of blood extends down as far as this point, the nail extension seems to answer its purpose admirably.

116. **Tuberculin Reactions in Early Diagnosis and Prognosis.**—Wolff-Eisner comments on the importance of the new tuberculin local reactions as inaugurating a new era in our insight into tuberculosis and into the indications for treatment. He maintains anew that the greatest progress has been realized by the ocular or conjunctival test, which alone of all the tuberculin-diagnostic methods reveals exclusively the active tuberculous processes, not the quiescent. It is much more instructive and delicate, he says, than the seroreaction in syphilis, the so-called Wassermann test, which is a test-tube technic, not a biologic reaction. His experience with the ocular test in 4,500 cases has confirmed the fact that a pronounced positive ocular response offers a more favorable prognosis than a weak response or than no response when there are other signs of tuberculosis—the absence of a response in unmistakable tuberculosis shows that the vital processes are flagging. The longer a cutaneous reaction persists the better the prognosis, as the durable reaction indicates active defence on the part of the organism. A negative reaction to the cutaneous tuberculin test in the presence of manifest signs of tuberculosis should be accepted as an indication of an unfavorable prognosis. We thus have come into possession of a means of estimating the prospects of recovery which has proved infallible in his experience, with the single exception that the negative response in a pregnant tuberculous woman may become transformed into a positive response if her system is promptly relieved of the strain of the pregnancy. The complete change in conditions that follows the induced abortion may restore the reacting power and improve the otherwise unfavorable prognosis.

118. **Present Status of Puerperal Eclampsia.**—In the course of this article Seitz states that there are fully twenty cases of puerperal eclampsia on record in which there were no convulsions and presumptive diagnosis was confirmed only by the autopsy findings. The toxic nature of the disturbances seems evident; Stroganoff is the only one who still clings to the assumption of an infectious origin. Neither biochemical, nor serologic nor experimental research has established any special toxicity in the placenta in eclampsia. Zweifel's theory that the disturbances are the result of intoxication from meat lactic acid is discountenanced by specialists in metabolic chemistry who regard the lactic acid as a secondary product, "rather a consequence than a cause of the convulsions." At the same time, administration of alkalies is proving a valuable symptomatic means for restoring the waning alkalinity of the blood, and Seitz advocates its more general use. Sweating procedures do not seem to benefit; probably the toxin is of a colloid or big molecular composition which prevents its elimination in the perspiration, and the sweating may do actual harm, as it leaves the toxin more concentrated from the thickening of the blood. Zweifel combines venesection with saline infusion. Decapsulation has been done in 32 cases, but should not be attempted until delivery has failed to relieve. Bumm advocates artificial respiration, long continued, to maintain regular heart action and respiration and ward off cyanosis with its peril of pulmonary edema. As long as the blood pressure is high and the pulse good the heart can be counted on as a rule, but if the blood pressure drops heart tonics are indicated.

Münchener medizinische Wochenschrift

June 15, LVI, No. 24, pp. 1217-1264

127 *To Render the Tissues Less Sensitive to Roentgen and Radium Rays. (Desensibilisierung gegen Röntgen- und Radiumstrahlen.) G. Schwarz.
128 Passive Transmission of Hypersusceptibility to Tuberculosis. (Passive Uebertragung der Tuberkuloseüberempfindlichkeit.) J. Bauer.
129 Diagnostic Importance of Diastolic Murmurs in Dilatation of the Aorta. (Diagnostische Bedeutung diastolischer Geräusche über Erweiterungen der Aorta.) G. Hoppe-Seyler.
130 *Clinical Experiences with Intravenous Injections of Suprarenal Preparations in Collapse. (Erfahrungen über intravenöse Suprarenininjektionen bei schweren Herz- und Gefässkollapsen.) M. John.
131 *Panhysterectomy for Sterilization of Tuberculous Pregnant Women. (Sterilisation tuberkulöser schwangerer Frauen durch die Totalexstirpation des graviden Uterus mit seinen Adnexen.) E. Martin.
132 Relation between Accidents and Tumors. (Beziehungen zwischen Unfall und Geschwülsten.) Gebele.
133 To Cut Open Casts. (Billiges und bequemes Verfahren zum Aufschneiden von Gips- und Wasserglasverbänden.) W. Neumann.
134 Official Vital Statistics for Berlin. (Lehrreiche Angaben aus dem statistischen Jarhbuch der Stadt Berlin.) A. Fischer.

127. **Reduction of Sensitiveness to Roentgen and Radium Rays.**—Schwarz noticed that dry seeds were not affected by exposures to Roentgen rays, and germinated afterward apparently unmodified. Seeds beginning to germinate, however, were rapidly and seriously modified by even slight exposures. This connection between the quiescent and active metabolism and the sensitiveness to the action of the Roentgen rays suggested that if the metabolism in a part could be artificially reduced the region would be desensitized—to borrow a term from photography. He here describes experiments in this line which confirm his assumption that reduction of the metabolic processes in human tissues reduces the sensibility to Roentgen and radium exposures. He gives an illustration of one experiment: A girl of 11 being treated for nevus of the forearm had two square radium capsules applied, one lying loose on the arm, the other strapped down so tight that it compressed the skin and expelled the blood, thus checking the metabolism. The dermatitis under the loose capsule was marked and required two weeks for complete subsidence, while under the compressing capsule there was only transient, slight hyperemia. The same effect was obtained with Roentgen exposures of two square spots on the side of the head, one compressed and the other not. The hair dropped out of the non-compressed square, while the compressed square patch showed no effect from the Roentgen exposures. He does not venture to decide what technic is best for the purpose of checking the metabolism: mechanical pressure, elastic traction, compressed air, congelation or a chemical—he is now experimenting with each and is confident that this desensitization will aid materially in Roentgen and radium treatment, both of the skin and of deeper regions.

130. **Intravenous Suprarenal Preparations in Collapse.**—John reports seven cases which illustrate the life-saving benefit possible in cases of threatening cardiovascular collapse. This measure may succeed in tiding the patients past the danger point when everything else has failed. His clinical experience

confirms in every respect the results of experimental research. It seems possible that doses may prove effectual smaller than those hitherto advocated. In one of the cases he failed to follow up the remarkable benefit from a single injection, and ascribes the fatal outcome to his shrinking from continuing the injections.

131. **Sterilization of Tuberculous Pregnant Women by Hysterectomy.**—Martin advocates vaginal panhysterectomy as a comparatively simple means of arresting the pregnancy in tuberculous women whose condition requires this. He reports ten cases in which this was done with the restoration to comparative health of the women. One reason for removing the ovaries is the physiologic tendency to take on fat after the premature menopause. This is a favorable factor in the struggle against tuberculosis. The hysterectomy is done under spinal anesthesia, the whole requiring less than twenty-four minutes, and the women recovering promptly. The cases in which this is indicated are those with mild or moderate tuberculosis and the pregnancy in its first third; the ocular tuberculin test is often useful in defining the indications.

Wiener klinische Wochenschrift, Vienna

June 17, XXII, No. 24, pp. 839-874

135 *Auricular Fibrillation and Absolute Irregularity of the Heart. (Vorhofflimmern und Arhythmia perpetua.) C. J. Rothberger and H. Winterberg.
136 Influence of Intravenous Injections of Cholera Antitoxin on Course of Disease. (Einfluss der intravenösen Injektionen des antitoxischen Anticholeraserums.) A. Jegunoff.
137 *Aseptic Intestinal Anastomosis. (Darmanastomosen.) L. Moszkowicz.
138 *Importance of Determination of Antitrypsin in Puerperal Conditions. (Verwertbarkeit von Antitrypsinbestimmungen bei puerperalen Erkrankungen.) H. Thaler.

June 24, No. 25, pp. 875-910

139 Behavior of Bowel Wall as Osmotic Membrane in Inflammation. (Verhalten der Darmwand als osmotische Membran bei akuter und chronischer Enteritis.) E. Mayerhofer and E. Pribram.
140 Subperitoneal Cholecystectomy. (Zur Technik der subperitonealen Gallenblasenexstirpation.) R. Frank.
141 Treatment of Phlyctenular Ophthalmia. (Behandlung der phlyktänulären Augenerkrankungen auf Grundlage ihrer Aetiologie.) A. Schütz and R. Videky.
142 Trachoma Bodies. (Trachomkörperchen.) F. Gutfreund. Id. (Die sogenannten Trachomkörperchen vom Standpunkte der bisherigen Forschungen über die Aetiologie des Trachoms.) W. Reis.
143 Disturbances in Breathing in Tabes. (Atemstörungen bei Tabes dorsalis.) H. Eppinger and L. Hess.
144 Testing Color Vision in Railway Employés. (Zur Frage der bahnärztlichen Farbensinnprüfung.) J. Rosmanit.

135. **Fibrillation of the Auricles and Irregular Pulse.**—The electrocardiogram has thrown light on the mechanism of the absolutely irregular pulse; Rothberger and Winterberg think that they have discovered with it that the irregularity may be due to fibrillation of the auricles. This may subside at times, explaining the occasional lapses into normal rhythm. The fibrillation may extend throughout the whole heart, and may be the explanation for certain cases of sudden death in arrhythmia perpetua. The behavior of the auricles, whether they are beating, standing still or whether there is auricular fibrillation, is instructively shown in the electrocardiogram.

137. **Aseptic Enteroanastomosis.**—Moskowicz gives illustrations of his method of anastomosis with which the parts are sutured before the lumen is opened.

138. **Antitrypsin Test with Puerperal Lesions.**—Thaler announces that the antitryptic index is exceptionally high in cases of puerperal fever with an unfavorable outcome. He found the Fuld method of determining the trypsin simple, convenient and reliable, the increase in the antitryptic index proving a valuable aid for diagnosis of pregnancy and for the prognosis of puerperal affections.

Zentralblatt für Chirurgie, Leipsic

June 19, XXXVI, No. 25, pp. 889-928

145 Improved Illumination for Interior of Bladder. (Lichthebel bei Sectio alta.) Meisel.

Zentralblatt für Gynäkologie, Leipsic

June 19, XXXIII, No. 25, pp. 865-896

146 *Injection of Adrenalin to Prevent Hemorrhage while Clearing out the Uterus after Abortion. (Adrenalininjektion zur Vermeidung der Blutung bei Entfernung von Placentarresten nach Abort.) O. Grasser.
147 *Two Fatalities from Adrenalin in Gynecologic Operations. (Warnung vor Adrenalin.) N. N.

146. **Adrenalin Injections to Prevent Hemorrhage in Curetting the Uterus.**—Grasser has been using adrenalin for three years as a preliminary to clearing out the uterus after abortion when there is reason to anticipate much hemorrhage. He injects directly into the vaginal portion of the uterus 1 c.c. of physiologic salt solution, or of a 1 per cent. solution of cocain, to which two or three drops of a 1 per thousand solution of adrenalin have been added. The fluid is injected at two points, 1 or 2 cm. deep, and after waiting for ten minutes the curetting can proceed. He has never witnessed any injurious effect from the adrenalin in this concentration, while the saving of blood has been remarkable and there has been no tendency to after-hemorrhage.

147. **Warning Against Adrenalin.**—An anonymous writer relates two fatalities following injection of adrenalin into the vaginal portion of the uterus. The first patient was a woman of 47 with total prolapse of the uterus, the vaginal portion of which was much hypertrophied. Under chloroform the fluid, consisting of 1 c.c. of adrenalin solution in 10 c.c. of 0.8 per cent. salt solution, was injected at three points when suddenly retching occurred, respiration and pulse stopped, and it proved impossible to revive the patient. Ten days later the same syndrome with instant death occurred in a similar case, the patient being a robust woman of 33 with a hemorrhagic metritis and fibrous hypertrophy of the neck of the uterus requiring wedge resection. Some of the fluid used was injected into rabbits but showed no injurious by-effects. The dose was very small in these cases, not more than 0.0003 gm. of active adrenalin, while he has injected twice this amount in more than fifty other cases without mishap.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 13, XXX, No. 70, pp. 737-752

148 Intestinal Parasite in Snails Pathogenic for Man and Animals. (Presenza nelle feci e nell'intestino della lumaca di una nuova specie di pseudorabdite.) P. Barabaschi.

June 15, No. 71, pp. 753-760

149 *Serum as Hemostatic for Hemophilics. (Sull'uso del siero come emostatico nelle emorragie degli emofiliaci.) L. Gangani.

June 17, No. 72, pp. 761-768

150 *Vaccination in Tuberculosis. A. Germani.

June 20, No. 73, pp. 769-784

151 Frequency of Relapses in Malaria after Operations or Venesection. (Le recidive malariche postoperative e da salasso.) P. Marogna.

June 22, No. 74, pp. 785-792

152 *The "Apex Beat." (Ictus cordis.) E. Caccianiga.

June 24, No. 75, pp. 793-800

153 Tuberculosis and Mediterranean Fever. M. Gioseffi.

149. **Serum as Hemostatic in Hemophilia.**—Gangani found it possible to arrest with serum threatening hemorrhages in a boy nearly four years old, whose maternal grandmother and paternal grandfather were hemophilic. Success was not complete until he supplemented the diphtheria antitoxin first used with fresh rabbit serum. He is convinced that failures in the experience of others are due to the fact that the serum used was too old, or modified in some way. The injection of 10 or 20 c.c. of serum should be repeated and pushed beyond the maximum generally accepted, he declares, and the fresher the serum the better the results. He injected 20 c.c. of antitoxin and 75 c.c. of rabbit serum in the course of eighteen days in the case reported.

150. **Vaccination Against Tuberculosis.**—Germani reviews the history of specific treatment and vaccination against tuberculosis and reports ten cases in which persons unusually exposed to tuberculous infection and predisposed were apparently saved by vaccination according to Maragliano's technic. This is the inoculation of the arm with a tuberculous vaccine to create a tuberculous abscess without living bacilli, and thus to activate the production of defensive antibodies. His experience has confirmed the harmlessness of the method and he urges its application, especially in industrial centers, as an important link in the chain of measures against the white plague.

152. **The Apex Beat.**—Caccianiga in examining 45 individuals, healthy or sick, found that the actual apex of the heart did not correspond with the location of the so-called apex

beat in a single instance. In four the distance between was over 2 cm., the interval being longest in those with some cardiac defect or disturbance. According to his experience, the apex beat is the impulse from a part of the ventricle above and to the right of the actual apex.

Policlinico, Rome

June, XVI, Surgical Section, No. 6, pp. 241-284

154 *Secreting Function of the Epithelial Cells of the Thyroid in Relation to Cervical Sympathectomy. (Funzione secretiva delle cellule epiteliali della tiroide, in rapporto alla simpaticectomia cervicale.) F. Casagli.
155 *Action of Iodin on Tuberculous Tissues. (Ricerche chimiche sull'azione dello iodio nei tessuti tubercolari.) D. Leonardo.
156 *Experimental Research on Anastomosis of the Vasa Deferentia. (Ulteriori ricerche sull'anastomosi del condotto deferente.) U. Dall'Acqua.

154. **Secretion in the Thyroid in Relation to Sympathectomy.**—Casagli describes experimental research on the behavior of the thyroid after sympathectomy. His experiments were made on rabbits five or six months old, treated by unilateral or bilateral cervical sympathectomy at one or two sittings. The results speak against the assumption of fibers in the sympathetic inhibiting secretion in the thyroid or with any direct influence on the secretory function of the gland. He is convinced, therefore, that there is no rational basis for functional suppression of the cervical sympathetic in treatment of exophthalmic goiter.

155. **Action of Iodin on Tuberculous Tissue.**—Leonardo discusses the history of iodin in treatment of tuberculous affections and describes microscopic examination of the tissues after local or general injections of an iodo-iodid solution in tuberculous and various other lesions—a total of 22 cases. His findings show that iodin has a different action on tuberculous tissue, but that this action differs according as the drug is injected locally or not. In general injections it has a general tonic effect, raising the opsonic index. When injected directly into a tuberculous focus it induces a local irritative process and consequently attracts to the spot both leucocytes and serum and thus a larger quantity of bactericidal and antitoxic substances.

156. **Anastomosis of the Vas Deferens.**—Dall'Acqua has been experimenting on 60 dogs and rabbits with 12 different methods of anastomosis between the stumps of the severed vas, comparing them and the ultimate outcome with similar research reported by others. The final results indicate that the best technic for reconstruction of the vas after it has been severed is by direct anastomosis by suture, using catgut No. 00.

Riforma Medica, Naples

June 14, XXV, No. 24, pp. 651-666

157 Action of Certain Toxins in the Blood in Trypanosomiasis. (Azione di alcuni veleni del sangue nelle tripanosomiasi.) G. Fusco.
158 Behavior of Glycogen in the Human Parathyroids in Disease. (Come si comporta il glicogene nelle paratiroide dell'uomo nelle malattie.) P. Guizzetti.

Hygiea, Stockholm

May, LXXI, No. 5, pp. 417-511

159 *Ascending Tuberculous Infection of the Kidneys. (Njurtuberkulos af urogen infektion.) G. Ekehorn.
160 Technic for Operations on the Kidneys. (Till operationstekniken for operationer å njurarna.) Id.
161 *Treatment of Laryngeal Tuberculosis. N. Arnoldson.
162 Iodized Catgut, especially for Operations on Stomach and Intestine. (Om användandet af jodkatgut, speciellt vid operationer å magsäck och tarm.) J. A. Hedlund.

159. **Ascending Tuberculosis of the Kidneys.**—Ekehorn has had 16 nephrectomies done in his service since 1906 and in 8 cases of tuberculous kidney the infection was evidently of urogenic origin. This may occur with a tuberculous affection of the epididymis or prostate or of the other kidney or of both. In one case a tuberculous epididymitis had existed for twenty-five years at least, although long comparatively latent. In the fifteenth year transient hematuria was observed for a time. Another patient had been operated on eleven years before for tuberculous epididymitis, and when symptoms of a renal process were detected the kidney was removed within six months, and the patient, a man of 45, seems in good health at present. Ekehorn's 5 cases of involvement of the second kidney teach the important lesson that in every case of renal tuberculosis in which the symptoms can be traced back for three, four or five years, extreme caution is necessary in estimating the indications for operative intervention. It is possible and even highly probable that the kidney apparently causing the disturbances, which is tender and palpable, is the kidney secondarily involved. If this kidney is removed the patient is left without any functioning kidney, as happened in one of the cases reported. The patient was a woman of 24 and autopsy revealed that the assumed sound mate was contracted, only 6 cm. long, and evidently the source of certain renal symptoms observed twelve years before. In another case there had been kidney symptoms for a number of years in a woman of 43. No operation was attempted but autopsy revealed an old tuberculous process in one kidney and pronounced dilatation of the ureter and kidney pelvis on the other side but no tuberculous involvement of them or of the kidney, although the ureter near the bladder showed microscopic round-celled infiltration.

161. **Treatment of Laryngeal Tuberculosis.**—Arnoldson deplores the general frequent neglect of laryngologic treatment in sanatoria, urging that specialists should be at hand to apply suitable treatment. He insists further on the necessity for more active measures, citing M. Schmidt's statement (1907) that since he has instituted more active measures his proportion of recoveries has increased from 2.5 to 20 per cent.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. Part VIII. Gout. By Prof. Dr. H. Strauss, Professor of the Third Clinic, Royal Charity Hospital, Berlin. Authorized American Edition. Translated Under the Direction of Nellis Barnes Foster, M.D., Associate Physician to the New York Hospital. Cloth. Pp. 70. Price, $1. New York: E. B. Treat & Co., 1909.

The Unknown Life and Works of Dr. Francis Joseph Gall. The Discoverer of the Anatomy and Physiology of the Brain. An Inaugural Address delivered before the "Gall Society" on May 15. 1909. By Bernard Hollander, M.D., Physician to the British Hospital for Mental Disorders. Paper. Pp. 31. Price, one shilling. Published for the Gall Society by Siegle, Hill & Co., 2, Langham Place, London, W.

Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Prof. Edmund Von Neusser, M.D., Professor of the Second Medical Clinic, Vienna. Authorized English Translation by Andrew MacFarlane, M.D., Professor of Medical Jurisprudence and Physical Diagnosis. Part III. Angina Pectoris. Cloth. Pp. 71. Price, $1. New York: E. B. Treat & Co., 1909.

Physician and Nurse. An idealization. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia. An Address delivered before the Graduating Class of the Philadelphia School for Nurses, May 24, 1909. Paper. Pp. 22. Philadelphia School for Nurses, 2219 Chestnut St., Philadelphia.

Obstetrics. Edited by Joseph B. De Lee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, with the Collaboration of Herbert M. Stowe, M.D. Vol. V, The Practical Medicine Series. Cloth. Pp. 236, with illustration. Price, $1.25. Chicago: The Year Book Publishing Co., 1909.

Third International Congress for School Hygiene. Paris, March 29-April 2, 1910. Announcement. Paper. Pp. 66. Secretary, M. C. Dr. Dufestel, 10 Boulevard Magenta, Paris. American Secretary, Dr. T. A. Storey, % College of the City of New York, New York City.

The Report of the National Conservation Commission and a Chronological History of the Conservation Movement. Bulletin No. 4. Paper. Pp. 52. Issued by The Joint Committee on Conservation, 43 Wyatt Building, Washington, D. C.

Electricity in Gynecology. By May Cushman Rice, M.D., Professor of Gynecology and Clinician in the Illinois School of Electrotherapeutics. Cloth. Pp. 159, with illustrations. Price, $1. Chicago: L. I. Laing & Co., 1909.

Thirty-eighth Annual Report of the State Board of Education Together with the Sixty-third Annual Report of the Commissioner of Public Schools of Rhode Island. January, 1908. Cloth. Pp. 154.

State Hospitals Bulletin, New York. Published Four Times a Year by Authority of the State Commission in Lunacy. Vol. II, No. 1, May, 1909. Paper. Pp. 320. Price, 50 cents.

Transactions of the Florida Medical Association, Held at Pensacola. April 1909. Paper. Pp. 289.

Festskrift vid Tuberkulos-Konferensen I Stockholm. 1909. Paper. Pp. 136, with illustrations. Utgifven af Svenska Nationalföreningen Mot Tuberkulos.

Nicholas Senn. An Appreciation, Published under the auspices of the Nicholas Senn Club of Chicago. By S. M. Wylie, M.D., Paxton, Ill. Cloth. Pp. 27.

Infinity or Nature's God. By F. J. Duggan, M.D., Grand Forks, N. D. Flexible Leather. Pp. 136. Price, $1.50.

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Address

A BRIEF CONSIDERATION OF THE PULMONARY COMPLICATIONS OF ONE THOUSAND LAPAROTOMIES

CHAIRMAN'S ADDRESS IN THE SECTION ON SURGERY OF THE AMERICAN MEDICAL ASSOCIATION AT THE SIXTIETH ANNUAL SESSION, 1909

JOHN C. MUNRO, M.D.
BOSTON

I wish to report very briefly all of the cases that exhibited any postoperative pulmonary complications in the last thousand consecutive cases of abdominal section (including hernia) under the care of Dr. J. T. Bottomley and myself at the Carney Hospital. I have selected this number because it represents the period of work when our operative and nursing clinic has become better crystallized, because we are almost sure of our aseptic results and because the majority of our operations are performed under a better technical coordination than in the early, formative period of our work. I have read each history so that there should be no omissions.

Thirty-nine per cent. (387) of the operations were for appendicitis, 21 per cent. (209) for hernia, 19 per cent. (188) for pelvic lesions, 10 per cent. (106) for diseases of the liver and pancreas, 6 per cent. (57) for lesions of the stomach and duodenum, 3 per cent. (36) for intestinal diseases, and 2 per cent. (17) are unclassified (omentum, spleen, retroperitoneal glands, etc.).

Thirty-four patients exhibited signs and symptoms pointing to trouble in the respiratory organs, but of these we can justly exclude all but 11 as not being postoperative pulmonary complications in the strict sense of the word. That is, 2 patients had pulmonary tuberculosis, 1 had asthma, 8 had cough with pulmonary râles before operation, some of them exhibiting cardiac lesions as well. None of these gave us any anxiety, the cough being merely a source of discomfort for a few days only. Four patients without preoperative signs or symptoms developed temporary cough without bronchial or pulmonary signs. One elderly man with broken cardiac compensation had slight edema of the lungs; 4 patients with pre-existing bronchitis had slight postoperative cough, and, finally, one septic pelvic case with cardiac disease developed a cough from edema and 2 patients with bronchopneumonia were not made worse by operation. All of these can be excluded from the class of postoperative pulmonary complications.

The cases that do interest us and which will bear closer analysis are those in which a bronchitis or a pneumonia developed out of a clear sky and in which examination before operation demonstrated no sign or symptom of a pathologic lesion in the chest.

There were 4 cases of simple bronchitis, 2 of these occurring after aseptic operation, developing on the second, sixth and seventh days, respectively, and lasting for a few days only. The fourth case developed in a patient with a large appendiceal abscess and fecal fistula, and was followed by a left femoral phlebitis. One case of bronchopneumonia appeared in a fat woman nine days after operation for septic gall bladder, and a second fatal case developed after Cesarean section, the patient having been infected prior to her entrance to the hospital.

CASE 1.—Man very septic with a large appendiceal abscess suddenly developed pneumonia on the seventh day and died within 48 hours.

CASE 2.—An emaciated man with extensive cancer of the pylorus developed persistent hiccough on the fifth day after gastroenterostomy and a pneumonia five days afterward which proved fatal in a few days.

CASE 3.—An elderly man with an inguinal hernia showed signs of pneumonia within 48 hours of operation and died two weeks later of acute cardiac dilatation.

CASE 4.—Young girl operated on in the interval for appendicitis. Convalescence was normal for four days, the patient being up and around the ward. She then exhibited signs of a bronchitis and six days after operation developed pneumonia with empyema and a septic nephritis from which she recovered. The operative field was aseptic throughout. We learned later that at the time of operation she was recovering from a severe cold, though there were no signs of trouble in the lungs. Had this been known earlier the operation would have been postponed.

CASE 5.—Middle-aged woman on whom we had done a cholecystostomy. Progress was satisfactory for seven days, when she developed typical pneumonia from which she recovered.

The diagnoses were made or corroborated in almost every instance by Dr. H. A. Christian and Dr. T. F. Leen, in charge of the medical service, and it is to their cooperation and management in many cases that we can ascribe the low mortality.

If, therefore, we exclude the cases of simple cough without pulmonary signs, and the cases of bronchitis or bronchopneumonia in which there were signs and symptoms already existing at operation, we have 11 cases of postoperative pulmonary complications, 4 of which proved fatal, a mortality of 0.4 per cent. In no other fatal case in our service could the result be ascribed to pulmonary complications as evidenced by the clinical signs or by autopsy when obtained.

The contrast of this mortality with that reported from most of the active foreign clinics, a mortality ranging from 3 to 5 per cent. or over, leads us to believe that possibly our routine methods in preparation, etherization and after-care may be a factor of some moment.

That our results are not perfect is to be regretted and the source of our failures must be carefully analyzed. Age and sex apparently play no part. Before undertaking this analysis I believed that most of our patients with cough, bronchitis, etc., came coincidently with the advent of unskilled etherizers, but the facts do not bear out this supposition. All of our cases came in the months from December to May, months in which our climate in Boston is at its worst.

Must every case be ascribed to the use of ether as an anesthetic? Other clinics report similar calamities after chloroform, local anesthesia, etc.

Must not the element of chance be reasoned with to some extent? Personally I have seen as many pneumonias develop in patients in whom an operation had been postponed for a reason entirely foreign to their physical condition as I have reported here. This fact nevertheless should not give countenance to our shirking any responsibilities. In short, analyze cases as carefully as I can, I have failed to find any definite cause or causes which can be eliminated in future.

To obtain these results we have used ordinary rather than extraordinary precautions—precautions that can be used in any hospital. The operative field is cleaned with as little slopping as possible, on the operative table. The rest of the body is well protected throughout the operation, which is performed in a warm but not overheated room.

The anesthetic is pure ethyl chlorid, followed by pure ether given in as small a quantity as possible by the drop method on open gauze. Morphin and atropin are given just before starting the anesthetic. After operation, the patients are kept well protected from exposure, but we try to prevent overburdening with blankets to avoid sweating.

In practically all cases. except inguinal and femoral hernias, the patient is set upright in bed at once after operation or within a few hours, and the majority are out of bed in forty-eight hours and are given as liberal a diet as they can be persuaded to take. All are encouraged to move the body and extremities, and they are given water liberally to keep down thirst and to prevent the dirty dry mouth that comes with lack of moisture.

The whole subject of postoperative care, especially with reference to the various complications, has been growing more and more in evidence in the last few years, and it is as a modest contribution to one phase of this subject that I have ventured to offer this short paper.

"Thymus Death" and Removal of the Thymus.—Hutinel suggests that the thymus may not always be responsible for the sudden death of children with eczema a day or two after they are admitted to the hospital. It may be due to a kind of anaphylaxis. Triboulet has witnessed a dozen cases of sudden death of infants with eczema within twenty-four or forty-eight hours after entering the hospital, and Hutinel has had the same experience with infants with varicella and scabies. The skin in these cases is open to the penetration of germs and poisons, and micro-organisms were almost always found in the blood. The surprising feature is the suddenness of the fatality. Marfan has had a number of similar experiences. Veau, in a communication published in the *Bull. Soc. de Pédiatrie de Paris*, March 16, remarks that the pathology of the thymus seems to have only one symptom, that is, sudden death; but it may yet be possible to detect the hypertrophy of the thymus in time to permit of its safe removal. He has found eight cases on record in which the thymus was removed, with immediate success and no fatality. The thymus is easily shelled out, he says; as soon as its recess is opened the thymus protrudes and it is easily enucleated, after which the vessels can be readily ligated. The operation is simple and easy; the only difficulty is to recognize the signs of trouble in time.

Original Articles

THE COLON TUBE AND THE HIGH ENEMA

HORACE W. SOPER, M.D.

ST. LOUIS

The question of how far into the colon it is possible to introduce a soft rubber "colon tube" appears to be as yet not definitely settled. The majority of physicians in this country and in France seem to be of the opinion that the tube must be passed through the sigmoid flexure in order effectively to administer a nutrient enema. In Germany, Nothnagel[1] (in 1898), Naunyn[2] (1896), Boas[3] (1903), and others maintained that the soft tube always coiled up in the ampulla or dilated portion of the rectum and could not be made to pass through the sigmoid. Wachmuth's[4] early work in 1862 laid the foundation for the general belief that the long tube could be passed high up into the colon. Cadge[4] and G. Simon[5] were among the first to deny this, basing their opinions on experiments on the cadaver.

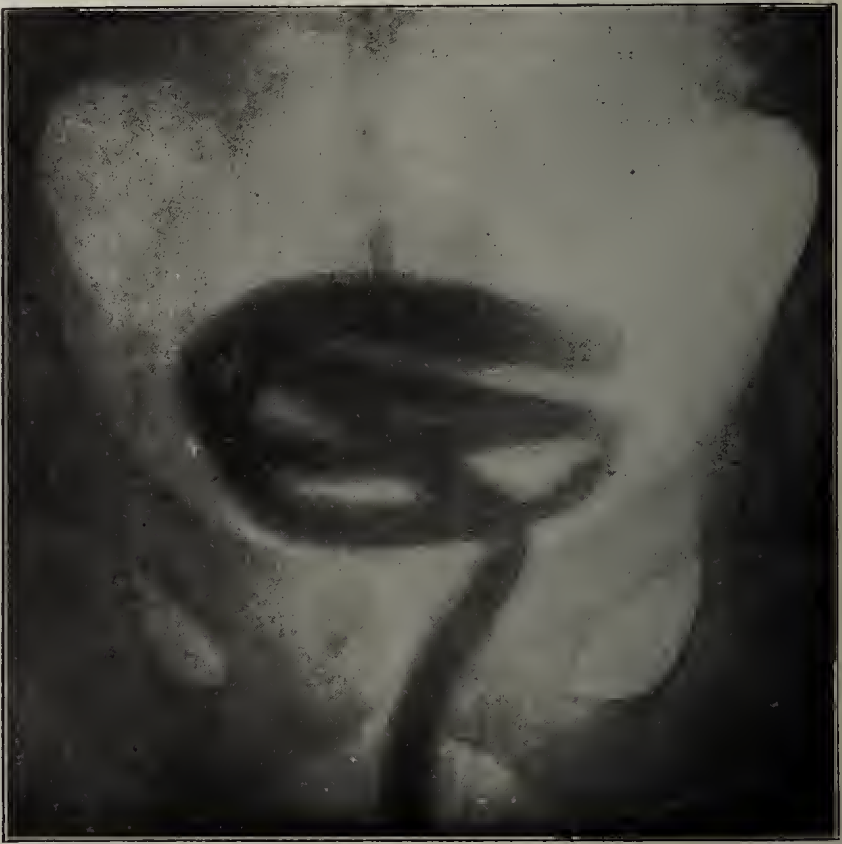

Fig. 1.—Skiagram showing long rubber tube coiled on itself in the dilated portion of the rectum.

Kuhn[6] devised a metallic spiral sound which he claimed by manipulating the sigmoid externally could be passed through into the colon. Schüle[7] by means of radiographs proved that it was impossible for the spiral sound of Kuhn to reach farther than the middle of the sigmoid in either the living or dead.

Rieder,[8] of Munich, in 1904, succeeded by means of x-ray pictures in demonstrating the fact that enemata of water, milk and oil mixed with subnitrate of bismuth introduced through short rectal tubes reached the cecum.

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[1] Spezielle Pathologie u. Therapie, 1898, xvii.

[2] Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, 1896, p. 131.

[3] Zur Behandlung chronischer Dickdarm Katarrh. Berl. klin. Wchnschr., 1903, xxii. 497.

[4] Quoted by Lilienthal.

[5] Uber die Ernführung langer elasticher Bohre und über forcierte Wasserinjektionen in den Darmkanal. Arch. f. klin. Chir., 1873, xv.

[6] München. med. Wchnschr., 1896, xxvii-xxxix.

[7] Uber die Sondierung und Radiographie des Dickdarms, Arch. f. Verdauungskr., 1904, x.

[8] München. med. Wchnschr., 1904. xxxv. 1548.

Craemer,[9] discussing Rieder's[10] paper before the medical society of Munich, cited a case of fistula of the ileum through which oil appeared, the enema being given through the ordinary short tube.

v. Aldor,[11] in 1903, advocating the use of high enemata in chronic catarrh of the colon, asserted that he used soft rubber tubes 9 mm. (⅓ in.) in diameter and 80 cm. (32 in.) in length which he passed into the descending colon.

Boas,[3] replying to v. Aldor, denied the possibility of passing a soft rubber tube into the sigmoid and asserted that the so-called high enema was an illusion. He maintained that by means of auscultation one may determine the passage of liquids to the cecum, introduced through the ordinary short rectal tube. He cites a case of cecal fistula through which water injected through the short tube (4 to 6 inches in length) appeared within a few minutes.

V. Aldor,[12] in 1905, reiterated his former views, publishing two x-ray pictures, one with a tube coiled up in the rectum, the other with a tube apparently in the descending colon. Unfortunately the bony landmarks can not be seen in the radiographs he shows, and the exact anatomic relations can not be defined. V. Aldor lays great stress on the "right way" of passing the tube. He places the patient on his left side, the well-oiled tube being introduced slowly, withdrawing a little when resistance is felt and then again advancing. He explains the actions of liquids in cases of fistula of the colon as being caused by abnormal reverse peristalsis which he assumes to be present in these cases. He insists that in normal individuals the fluid introduced by means of a short tube collects in the ampulla recti and never reaches the colon.

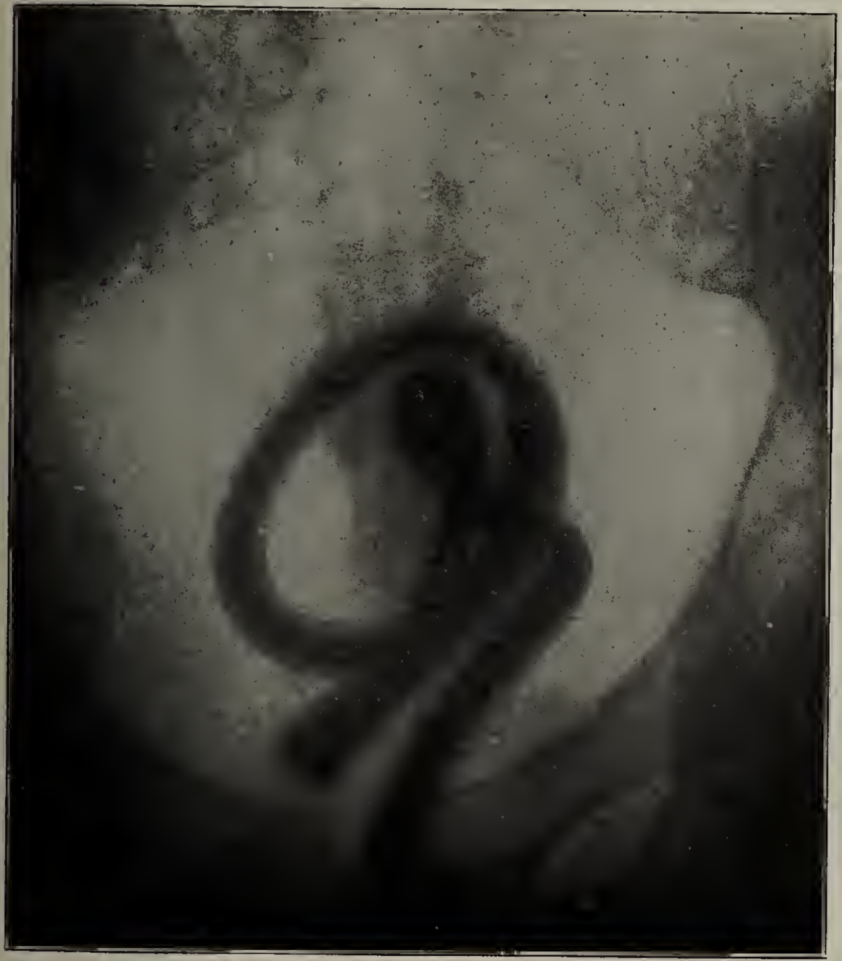

Fig. 2.—Another view of the same condition as in Figure 1.

Rosenberg[13] and Lilienthal,[14] in a long series of experiments (working independently), attempted to follow v. Aldor's method, supplementing it by means of the sigmoidoscope and the knee-chest position. Both arrived at the same conclusions, which they verified by x-ray photographs, that: (1) the soft rubber tube invariably coiled up in the rectum; (2) the elastic woven tube and metallic spiral sound could be passed only to the bend or apex of the sigmoid flexure where they impinged on the wall, the long mesentery of the sigmoid stretching out in a fan-like manner, permitting no further progress; (3) by means of the sigmoidoscope the soft tube could be made to reach the center of the sigmoid, but no farther, the longest distance being 30 cm. (12 in.).

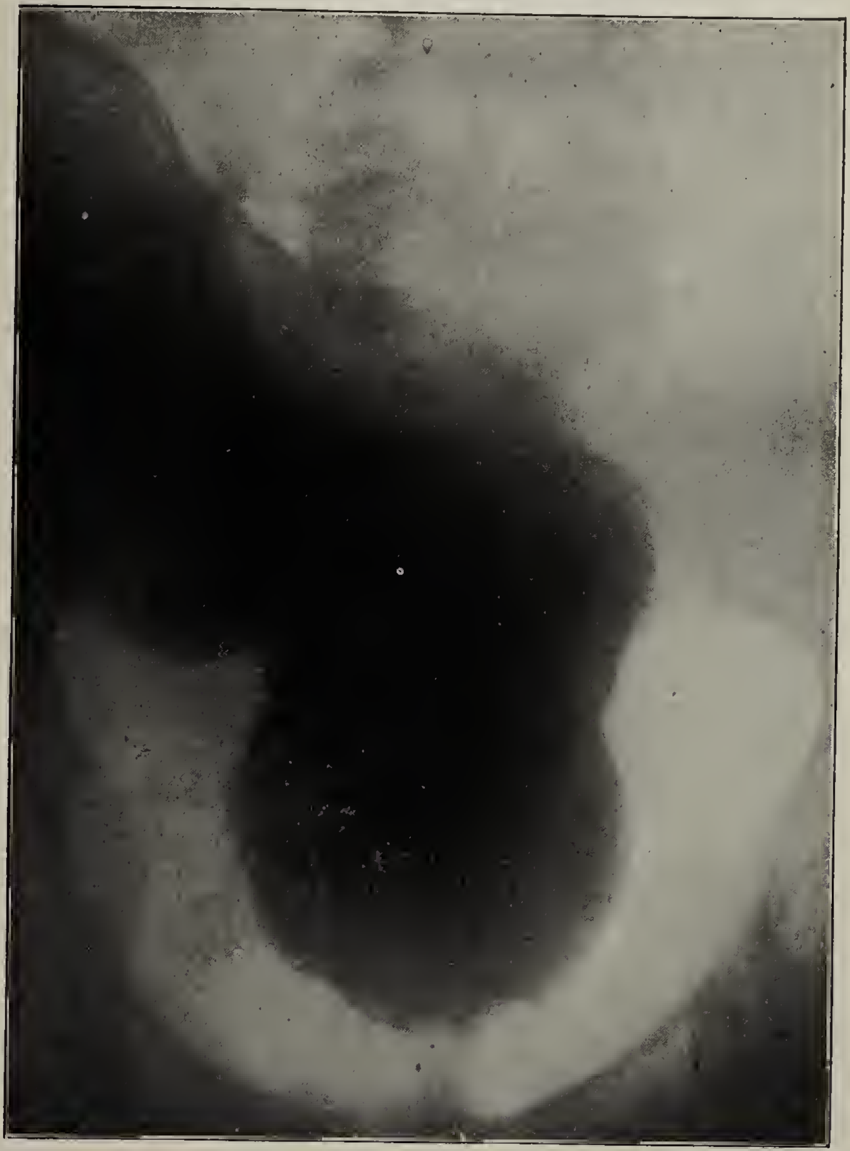

Fig. 3.—Skiagram showing the outlines of the ampulla recti with the anal canal of Symington; taken 2 hours after the administration of an enema of oil and bismuth.

Recently G. S. Hanes,[15] of Louisville, Ky., states that he has succeeded in passing the colon tube through both the splenic and hepatic flexures of the colon. He fails, however, to show any pictures with such a tube in position, but shows several radiographs of the coiled tube in the ampulla. J. M. Matthews,[16] in discussing Hanes' paper, stated that "he thought a good rectal bougie of sufficient consistence could be introduced into the colon."

During the past eighteen months I have conducted a series of experiments in which I have attempted to pass long soft rubber blunt-end tubes with side openings into the rectum, the patient being in the side and in the knee-chest positions. Sixty cases were examined. In some a mixture of oil and bismuth, in others of bismuth and water, was allowed to flow through the tube simultaneously with its introduction. In others merely the well-oiled tube was used. The position of the tube was then verified by means of a specially constructed fluoroscopic apparatus. The radiographs which I present as exhibiting the results of my experiments were taken by Dr. R. J. Carman.

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[9] München. med. Wchnschr., 1906, iv, 196.

[10] München. med. Wchnschr., 1906, lii.

[11] Behandlung chronische Dickdarmkatarrhe mit hohen Eingiessungen, Berl. klin. Wchnschr., 1903, xix.

[12] Der Wert der hohen Darmeingiessungen, Berl. klin. Wchnschr., 1905, xxxiv, 44.

[13] Darmsondierung, Deutsch. med. Wchnschr., 1905, xiii, 498.

[14] Sondierungversuche des Colons, Arch. f. Verdauungskr., 1906, xii, 140.

[15] The Introduction of Tubes, Bougies and Metal Instruments into Lower Bowels, with Radiographic Illustrations, Kentucky Med. Jour., 1909, iv, 173.

[16] Kentucky Med. Jour., 1909, p. 182.

Figures 1 and 2 illustrate the manner in which the tube invariably coiled up in the dilated portion of the rectum. In many cases I felt sure from the ease in which the tube entered that it was surely in the colon, but always found it coiled as before. In both figures the length of the tube introduced was 22 inches.

Figure 3 shows graphically the outlines of the ampulla recti with the anal canal of Symington. The radiograph was taken two hours after an enema consisting of 500 c.c. (1 pint) of oil and 100 gm. (3¼ oz.) of bismuth subnitrate. It is here that the folding of the tube occurs. The fluid one hour before had reached the cecum.

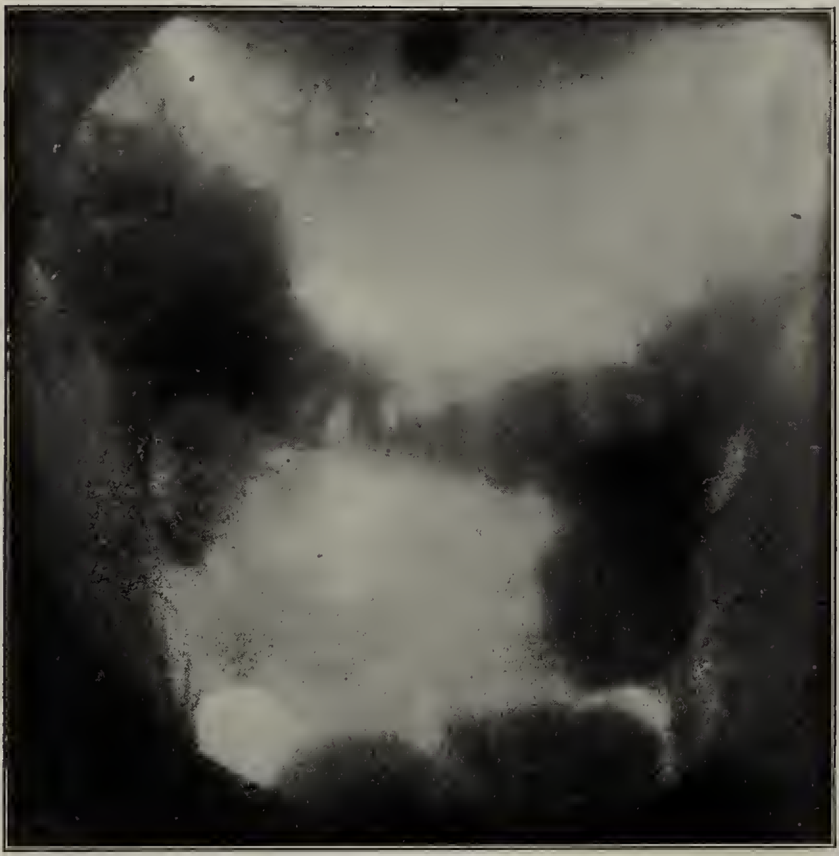

Fig. 4.—Skiagram of the ascending, transverse and descending colon and a portion of the cecum fairly well filled with an oil and bismuth enema.

In Figure 4 an enema of the same ingredients as in Figure 3 was given through a soft rubber tube introduced 4 inches into the bowel with the patient lying on his left side. He remained in this position for one hour when the radiograph was taken. The ascending, transverse and descending colon and a portion of the cecum are seen to be fairly well filled.

Figure 5 shows the tube high up in the colon passing up on the right side, then curving to the left and reaching the diaphram near the median line. This, the only case in which I succeeded in introducing the soft tube higher than the dome of the rectum, proved to be a case of Hirschsprung's disease or congenital idiopathic dilatation and hypertrophy of the colon. Even here it was necessary to use the sigmoidoscope to introduce the tube. This raises the question of anomalies of the sigmoid and colon, especially the straight and dilated, or slightly bent sigmoids. All the text-books on anatomy that I have consulted are silent on this subject. In the literature all the references to such conditions were of the same character, *i. e.*, to cases of dilatation and hypertrophy of the lower segment of the colon, particularly of the sigmoid flexure. V. Aldor's case above referred to strongly suggests the possibility of such an anomaly as is shown in the figure.

In conclusion, I believe that it is only in those rare cases of abnormal development of the sigmoid that it is possible to introduce a soft rubber tube higher than six or seven inches in the rectum without it bending or coiling on itself. With the aid of the sigmoidoscope only the middle of the sigmoid can be reached. The practice of allowing liquids to flow through simultaneously with the introduction of the tube serves to smooth out the kinks and adds to the illusion that the tube is going higher.

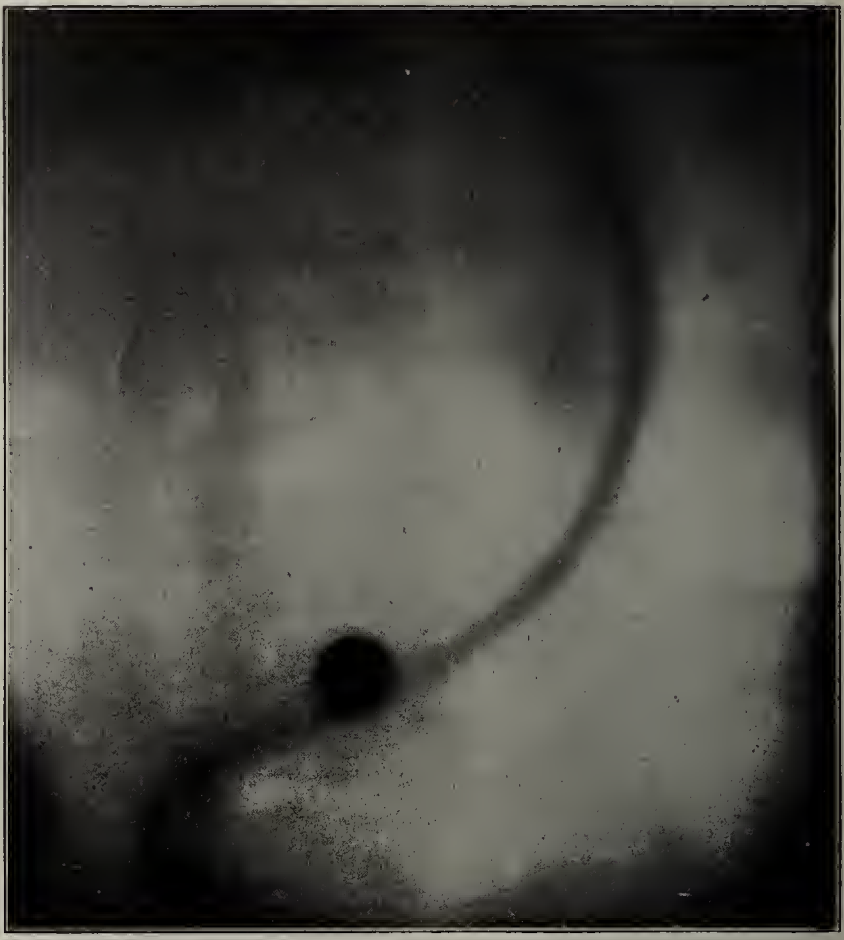

Fig. 5.—Skiagram showing the rectal tube high up in the colon in a case of Hirschsprung's disease.

The short tube, 6 inches in length, is therefore best for all sorts of enemata (a), when water, etc., is introduced for the purpose of causing fecal evacuations, using the fountain syringe or funnel and long tube in the usual way. It is possible, as I have frequently demonstrated, thoroughly to cleanse the entire colon by using a large caliber (½ in.) short tube. This is connected by rubber tubing with a large funnel elevated from 3 to 4 ft. above the patient, pouring in the solution until he experiences a feeling of distention or desire to evacuate, then lowering the funnel until the outflow has ceased, repeating this maneuver in exactly the same manner as in gastric lavage.

The short tube is also best (b) when retention of liquid is desired, as in administering saline solution, oil, nutrient material, etc. The attempt to pass the tube higher into the bowels is not only unnecessary but, because of the coiling that inevitably occurs, such a manipulation tends to produce irritability of the bowel. This, of course, will very probably cause expulsion of the fluid.

OTOLOGIC AND RHINOLOGIC COMPLICATIONS OF SKULL FRACTURE *

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Fractures of the base of the skull are interesting to the aurist and rhinologist for several reasons.

First, the lines of fracture frequently cut the bones containing the special organs of sense, which are his special field of work. Second, the intracranial lesions take place largely in areas of the brain in which he is especially interested. Third, a study of traumatic lesions of the brain may broaden considerably his knowledge of certain cranial symptoms which are in a measure allied with those produced by diseased conditions of the ear and nose invading the tissues within the skull. Also, they are of interest because knowledge of the causes and sequelæ enable the specialist in diseases of the ear and nose to more thoroughly understand what has actually taken place within the skull, when he may be called in consultation with neurologist or surgeon for aid in diagnosis in suspected cases of basal fracture; or to give expert testimony in the courts of law when the ear has been involved.

Unless one has especially studied the extent of the fissures, he is usually amazed to find the amount of injury which the basal bones may receive. The injury may be found in any part of the base, but a study of a number of cases will reveal certain areas to be more fragile than others. (The sella turcica, petrous portion of the temporal, great wing of the sphenoid and orbital plates of the frontal, are the ones most often involved.) The injuries usually cross the suture lines at rather wide angles and seldom follow close to them for any distance.

The lines of fracture occasionally pass from one extremity of the skull to the other, either from before backward, or from side to side (Figs. 1 and 6). The fractures are not necessarily caused by extremes of violence; the most extensive fracture I know of, having occurred in a man who simply fell backward, striking his head on the floor (Fig. 1). In this case the lines radiated in every direction on three sides of the head. Another man fell from the top of the telephone pole and while the fall proved fatal, the autopsy showed the fracture to be relatively short in extent.

The accompanying illustrations show the location, extent, and injuries of fractures of the base of the skull, with special reference to hemorrhage from the ear. Below each illustration will be found a brief case history of that particular injury.

The fracture lines usually begin at, or near, the point of injury and run in a zig-zag course across the base of the skull. The dura, because of its intimate attachment, is usually ruptured with them. The lines often cut through the grooves for prominent blood vessels. Thus the lateral sinus and middle meningeal artery are often ruptured and cause alarming and fatal hemorrhages. Again, when the point of injury is in the frontal or parietal bones, the force of the accident frequently travels diagonally or straight downward into the basal bones and spends its force there. This is an unfortunate tendency, in as much as fractures of the base are more fatal than those of the vault, and are less open to operative measures for relief.

Doubtless one great reason why hemorrhage of the ear is one of the most frequent symptoms, is because of the location of the temporal bone. Situated as it is, practically in the center of the skull, it receives within its body the fractures from surrounding areas. Thus it is cut when the point of contact is in the frontal region, the fracture reaching it before its violence is spent. The same is true of injuries of the occipital and parietal regions, for the same cause. In fact, the petrous portion of this bone frequently marks the end of a fracture and is cut in several directions, the lines spreading over its surface like the lines of a fork, the single fracture extending from the point of injury to this bone forming the handle (Fig. 2). However, when we consider the number of foramina, cavities, etc., in the petrous portion, this does not seem strange.

Hemorrhage from the ear naturally follows, and in a measure we can roughly estimate, in a number of cases, the possible line of fracture by imagining it to extend from the external injury to the affected temporal bone, even though it may occur on the opposite side of the head. In connection with this much has been said of *contre coup*. Doubtless hemorrhage from the ear occurs in this manner, but I am inclined to believe that it does so less frequently than is generally supposed. When autopsy records tell of fractures 8, 9 or 10 inches in length one does not need the *contre coup* hypothesis to account for any symptoms present (Figs. 1 and 6).

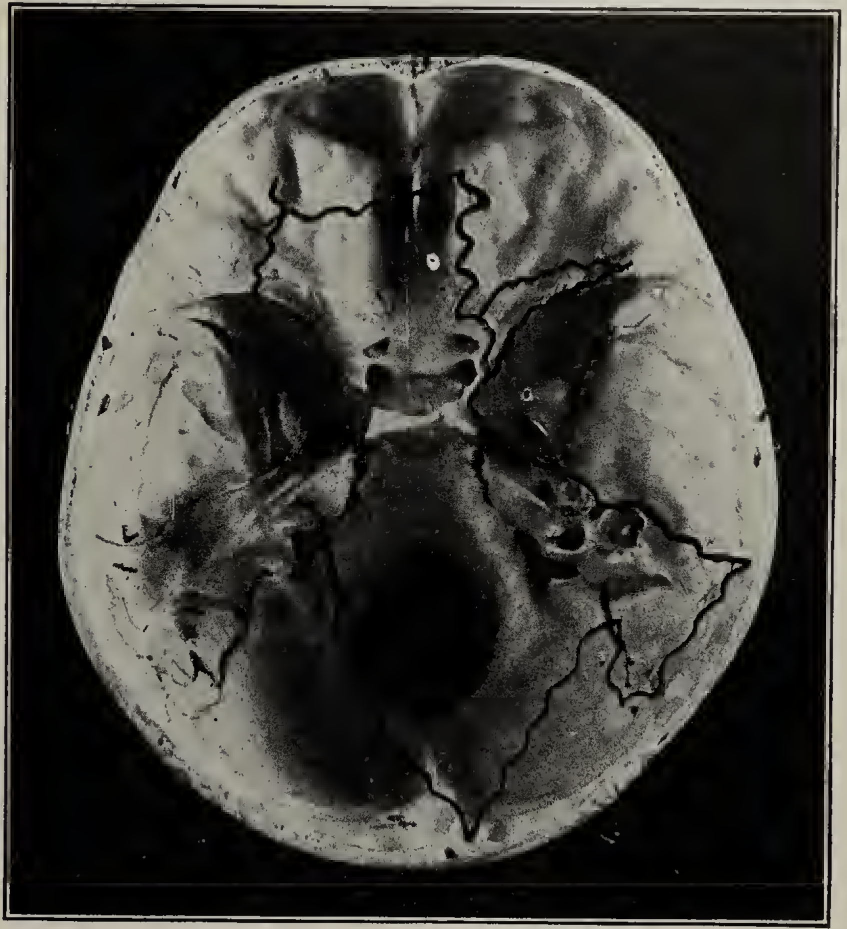

Fig. 1.—R. B., fell backward, striking the head on the floor. The autopsy showed the pupils unequal. There were crusts of blood in both auditory canals, and crust in anterior nares. Dura was tense, congested and bulging. Surface of brain was bathed in bloody fluid, but there were no blood clots. Frontal lobes were soft, mushy and blood stained. Ventricles were not distended. A small area of clot was found in upper part of pons. There was an area of softening in right lobe of cerebellum.

In a record of 35 autopsies I find the parietal bones to be the ones most frequently injured, they having been involved in 18 cases. The squamous portion of the temporal was cut through in 13 and the petrous portion in 12. Injury to the remaining bones of the skull—in their order of frequency—occurred as follows: Occipital, 12; frontal and orbital, 12; great wing of the sphenoid, 10; sella turcica, 10; cribriform plate, 4; body of sphenoid, 3; crista galli, 3; lesser wing of sphenoid, 2; occipital plate of sphenoid, 1, and the ethmoid plate, 1, while the groove in the occipital bone for the lateral sinus was found to have been cut four times.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In the series of 408 cases under consideration, 221 patients had hemorrhages from either one or both ears; it occurred in 202 on one side only and in 19 on both. The amount varied from a slight trace of blood to a persistent flow of the same fluid for a considerable time. A small percentage presented a flow of serous or meningeal fluid from the ear. Autopsy records show the hemorrhages to have occurred from the middle meningeal and other cranial arteries, from the small vessels of the dura, pia, and diploe of the cranial bones, and in several instances from rupture of the lateral or longitudinal sinuses.

So far as I can determine, hemorrhages from the ear, either in large or small amounts, are not especially important as influencing the ultimate prognosis. In a series of 142 cases, with hemorrhage present, it occurred on the side of the injury in 62.3 per cent., on the side opposite the injury in 16.5 per cent. and on both sides in 11.2 per cent. The location in the remaining 10 per cent. was not mentioned by the records. Of the 408 cases collected in the series, 62 were classed as fractures of the vault and 346 as fractures of the base.

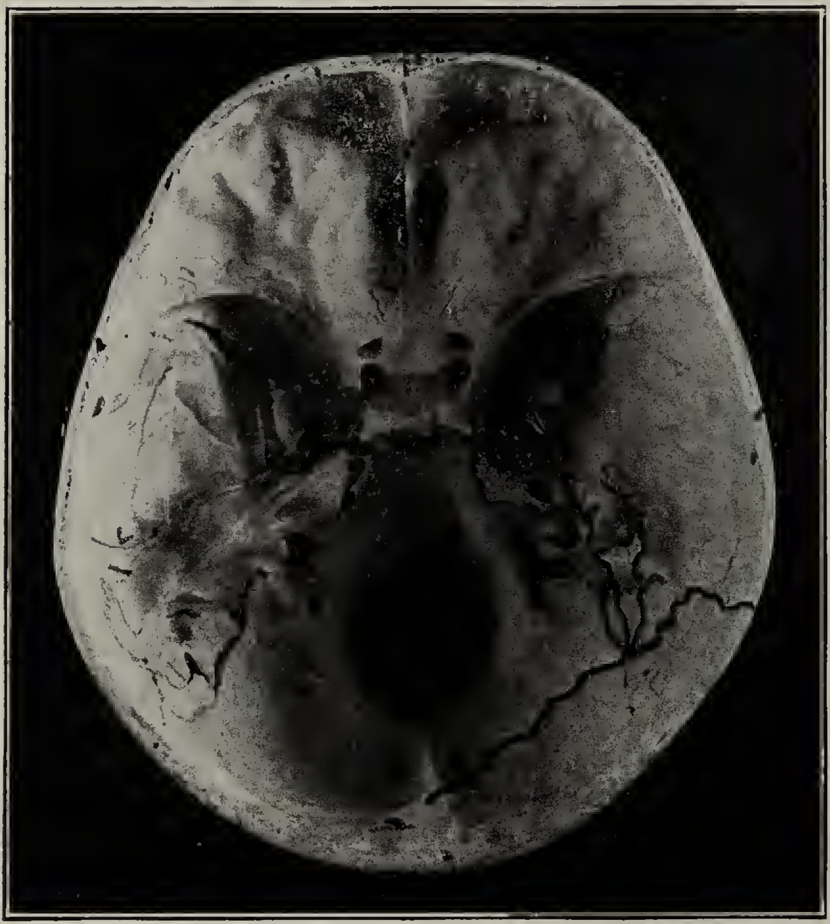

Fig. 2.—J. A. H., aged 67, male, fell down hatchway. He was conscious; pupils were equal and reacted; pulse was 48; respiration 30. There was a ragged wound of the left occipital region, and fracture of right arm; he was mentally confused (later); knee-jerks were absent. The following day he was stupid, delirious and had hemorrhage from right ear; Erysipelas set in the following day; thirteen days later there was elevated temperature; no localizing symptoms. He gradually grew weaker and died.

Autopsy: There was a large amount of yellowish purulent material spread over the cerebrum, and also over the cerebellum and down the cord. Three ulcerated areas were found at base of right side of the brain; one at base of fundal lobe; one on right side of anterior portion of temporal. The right middle ear was filled with a dark mass of clotted blood. A yellowish thrombus was found in the longitudinal sinus.

If one wishes to make a careful study of this subject he will find many articles by certain eminent authorities taking up exhaustively the different phases of the injuries. The writings of Cushing,[1] Brun,[2] Ballence,[3] Thomas,[4] Walton,[5] Bullard,[6] Hartley[7] and others deal minutely with the diagnosis and surgery of the head, from the viewpoint of the surgeon and neurologist. It is my intention, however, to present the matter from the point of view of the otologist and rhinologist, taking up very superficially the symptoms as they presented themselves in the hospital records and certain interesting facts taken from the autopsy records of cases directly connected with this series. In this manner I hope to present the subject in a condensed form in such a way as to enable the busy practitioners of our specialty to review the subject briefly and to find therein some interesting and instructive points of knowledge which may be useful at some future time.

Desiring to learn more of the subject, I consulted the records of the Boston City Hospital for a period covering seventeen years, and I have a more or less complete record, tabulated and charted, of something over 400 cases, from the study of which I offer the following facts and figures for your consideration:

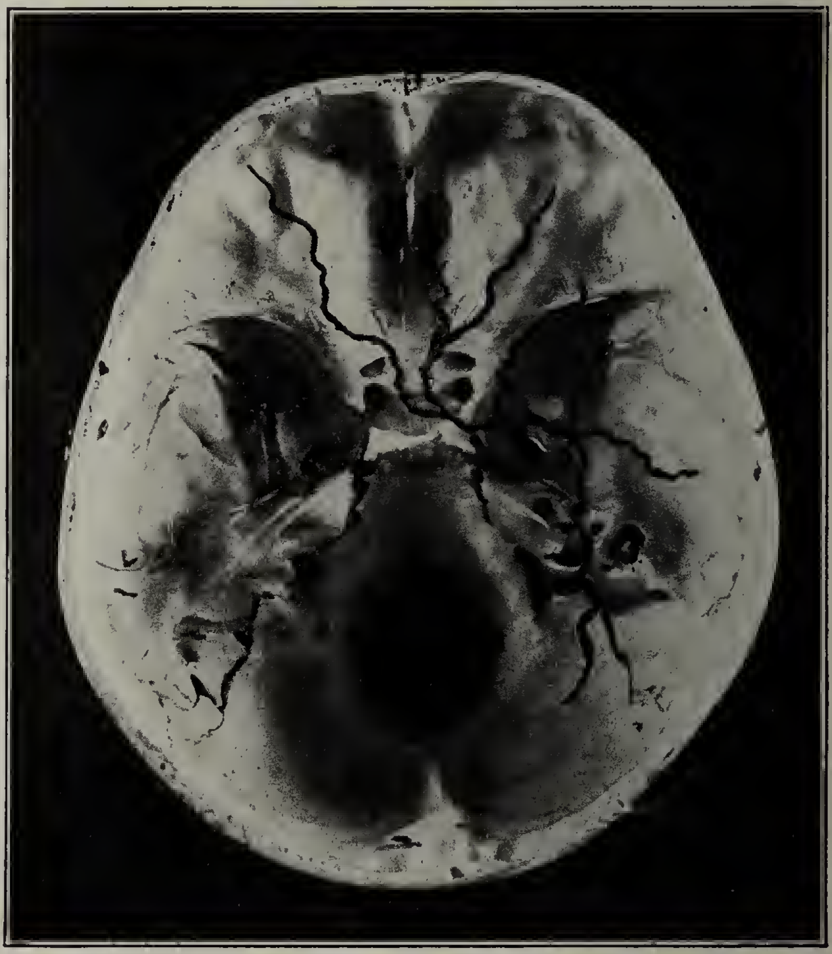

Fig. 3.—G. A. M., male, age not given, fell 10 feet, striking stone steps. When picked up he was unconscious; pupils were dilated, with no reaction. There was a wound over the left frontal region. He had a slight convulsion; external sensation lost. He had strabismus and head was contracted to left; there was paralysis of right side of body and face.

Autopsy: There was a moderate amount of blood in the vessels of the pia at the base of the brain; a small amount of reddish, yellowish fluid was found in the lateral ventricle, and there were two small masses of clotted blood in the fourth ventricle. The hemorrhage extended into fissures of Sylvius and Rolando. There was no laceration of brain tissue.

First in order is sensorium. Here, as in other symptoms, we have a wide range of possibilities. We find our patient conscious, unconscious, or in a condition of

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1. Keen's "Surgery," Vol. iii, p. 64-90; THE JOURNAL A. M. A., Jan. 16, 1909, p. 184.
2. Beit. zur klin. Chir., 1903, xxxviii, 192.
3. Acland and Ballence: St. Thomas Hosp. Rep., new series, 1894.
4. THE JOURNAL A. M. A., July 25, 1908, p. 271.
5. Ann. Surg., 1904, xl, 654.
6. Proc. Mass. Med. Soc., 1902, p. 269.
7. THE JOURNAL A. M. A., Jan. 9, 1909, p. 99.

semiconsciousness. In a series of 307 cases in which, in the records, the mental condition was distinctly stated, 168 patients were unconscious and 58 conscious, the remaining 81 being in the intermediate stage of stupor, sluggishness or confused or dazed mentality. The mental condition naturally has a considerable bearing on the severity of the case, and on the treatment and prognosis. Of those patients conscious on admission 13 per cent. died and 87 per cent. were discharged relieved. On the other hand, of those unconscious on admission 51 per cent. died, while of 9 admitted in a comatose state 66 per cent. died, and of those admitted whose mental condition was in the intermediate stages the mortality was comparable to that occurring in unconsciousness.

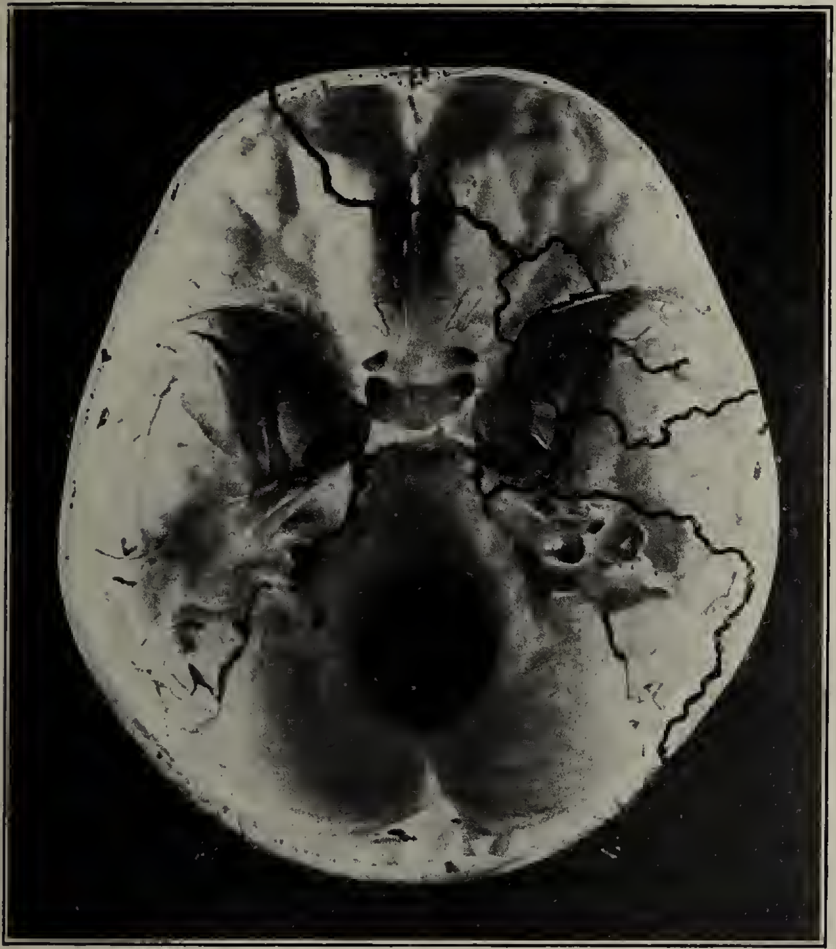

Fig. 4.—W. L., male. There was no external injury; the right pupil was dilated and reaction was sluggish. The man vomited a pint of dark blood, and there was bleeding from the left ear. Pulse was 44. There was no paralysis. Temperature was 96 F. on admission; the following morning it was 102; respiration was shallow. He died from failure of respiration.

Autopsy: Small subdural clot was found over the fissure of Rolando, 2 cm. anterior and posterior. Convolutions of right side of brain were markedly flattened. The surface of the parietal lobe showed two small softened areas; these extended into brain substance 3 mm. There was a clear, watery fluid in the left ventricle. The right middle ear and antrum were filled with clotted blood; the drum was intact.

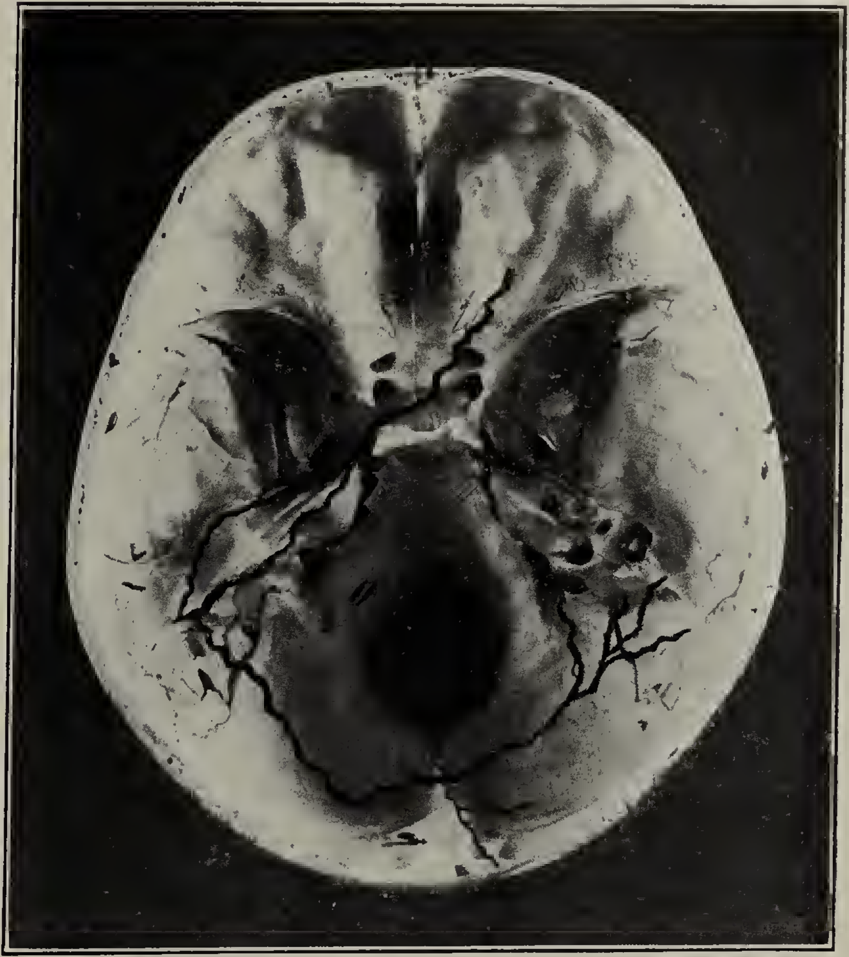

Fig. 5.—R. McG., male, age unknown, was struck by electric car. Pupils were equal and did not react; respiration was stertorous and rapid (45); pulse was 60 and knee-jerks were exaggerated. There was no vomiting. The wound was 2 inches long over the right parietal region; there was bleeding from ear. He did not move the left leg; the face and head were turned slightly to the right. His condition was practically hopeless, and he died shortly after admission.

Autopsy: There was considerable subarachnoid hemorrhage over the entire area. There was laceration of the tip of the frontal lobe, and of both temporosphenoidal lobes; there was also hemorrhage into right side of posterior portion of the pons.

Next in order of importance comes the examination of the pupillary reactions, a very wide range of conditions existing. The greater number are, strange to say, normal, and it is surprising to note the grave symptoms which may be present with normal pupillary reaction. In 339 individuals 161 had normal pupils, but of those 24 per cent. died. Next in order of frequency are those patients in whom one pupil is dilated, the dilation usually occurring on the side of the injury. As a rule this is not to be regarded as an especially dangerous symptom, my records showing that two-thirds of these patients recovered. On the other hand, when the pupils were unequal and there was no reaction to light, only 27 per cent. recovered. Of 8 individuals in whom the pupils were equally dilated and no reaction was present 7 died. The finding of this symptom, then, should be regarded as a very grave condition. Contraction of one or both pupils is to be regarded as more serious than dilatation. Equal is more common than unequal contraction, and the records show about 50 per cent. of deaths when either occurs.

Decidedly the worst pupillary symptoms which I found noted were wide dilation of one pupil and contraction of the other to a pin point. Eight such instances are recorded and each was followed by death, this being the one symptom which was invariably fatal.

Unfortunately, in the early part of my investigations I failed to appreciate the significance of ecchymosis of the orbital region and of exophthalmos. For this reason I am unable to give figures as to the frequency of these conditions, but, judging from my study of the autopsies and from memory of the cases, I can state that they are commonly found but are not especially important so far as prognosis is concerned.

We are led to believe that a slow pulse rate is perhaps the cardinal symptom of intracranial involvement, and I had expected to find it present in the majority of cases, only to be greatly surprised at finding it otherwise. In over 400 cases in which the pulse was distinctly recorded I find it to be below 60 in only 14. To be sure, it was between 60 and 70 in 30 cases, but this could hardly be said to be an especially slow pulse. It was between 40 and 45, three; between 45 and 50, five, and between 50 and 60, eight times. Thus, comparing these figures with the entire number it is seen that the pulse was below 60 in a trifle over 4 per cent. of the cases.

Cushing[1] regards the slow bounding pulse as an effort on the part of Nature to overcome anemia of the brain and that it is instrumental in saving the patient's life.

Efforts have been made to reduce the pressure of the pulse by venesection or lumbar puncture, but this procedure is not endorsed by Cushing, instances of either sudden death or markedly weakened condition of the patient, following the procedure, being cited. It seems to me that the reason why slow pulse is not more often found in this class of cases is because the pressure is usually more uniform over the surface of the brain than it is in the case of abscess, tumors, etc.; also the lesions in fractures of the base are usually superficial and extend over wide areas; whereas in tumors, encapsulated abscess, etc., the areas under pressure are deeper and much more sharply defined. Again, the pressure from hemorrhage is liable to be well forward in the temporosphenoidal lobes.

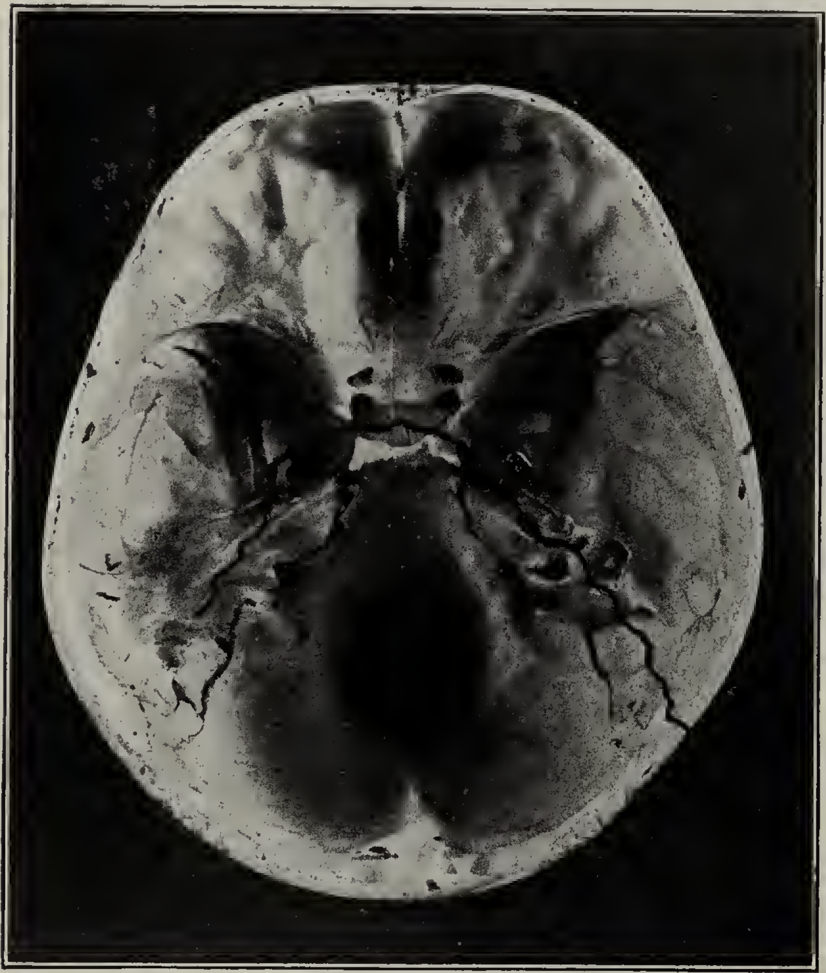

Fig. 6. —M. S., male, was found unconscious on sidewalk, assaulted. Pulse was 100; pupils were equal and reacted; reflexes were normal. There was bleeding from left ear and a slight lacerated wound of right auricle. He vomited several times. Temperature was 103 F. Four days later temperature was 104 F., and the man died.

Autopsy showed a firm dark blood clot in cortex of brain (temporosphenoidal lobe), with contusion and softening of frontal and temporal lobes. The bruised areas were covered with blood clots. The ventricles were normal.

Slow pulse may develop after admission of the patient to the hospital and when present denotes either the beginning of meningitis, extension of hemorrhage backward and inward, or an increase of the cerebral fluids in the deeper parts of the brain.

On the other hand, a rising pulse is a distinctly bad symptom, denoting either failure on the part of Nature to maintain the cerebral circulation against increasing pressure or absorption into the circulation of infection from the cranial cavity. In the first instance anemia of the brain from pressure will soon cause death from failure of the respiration; in the second, naturally, death comes from toxemia and exhaustion.

In the majority of cases death is caused by pressure resulting in failure of the respiration, there being a number of cases on record in which the heart continued beating several hours after respiration ceased, the patient having been kept alive during the interim by artificial respiration.

In 80 per cent. of the cases in this series the pulse ranged between 70 and 100, and in 15 cases the records spoke of it as being slow, but did not mention the number of beats.

Temperature ranged from 95.1 to 110.8 F. In five cases it was subnormal and the patients died in a few hours. The high temperature mentioned occurred just before death and was subnormal at the time of admission. In three of such cases, just prior to death, the temperature rose to 107, 108.5, and 110.8 F., respectively. Elevation of temperature occurred a number of times from outside causes, such as pneumonia, erysipelas, septic wounds, and once from the prosaic cause of measles. On the whole, except for marked cases of meningitis, the temperature did not seem to play an especially important rôle.

Respiration is the most important symptom to be considered, for it was the failure of this function which usually caused death. I found the records gave the respiration as stertorous in 41 cases, as rapid and labored in 7, as slow and labored in 5, as slow in 5, irregular in 4, Cheyne-Stokes in 3, blowing in 1, infrequent in 1, and gasping in 1. Many of those patients, however, recovered.

Vomiting, another cardinal cerebral symptom, was not especially prominent. I find it mentioned in 55 cases, but in only 5 was it persistent or considerable. In many cases it consisted simply in the vomiting of blood once or twice, with no return throughout the case. Once there was nausea without vomiting.

Convulsions are referred to 25 times throughout the records. In 3 they were general; in 11 one-sided; in 8 they occurred at or near death, and in one they were limited to a continuous winking of the right eyelid. A number of patients having convulsions recovered.

Facial paralysis occurred in 24 cases. It suddenly came on from two to ten days after admission, though in a few it was present on admission. As a symptom it was much the same as when resulting from other causes, and was persistent, being present at the time of discharge of patient from the hospital. In fact, of all the nervous manifestations in many cases it was the last to be recovered from.

Delirium is common, varying from very mild to almost maniacal attacks. It occurred in both mild and severe cases. This is not strange, considering the class of people most of the patients represent and the frequent abuse of alcoholic liquors among them. Children and some women developed great mental excitement without active delirium. Delirium in the records is especially mentioned in thirty-three cases.

The nervous symptoms of this particular series of cases have previously been reported in detail by Dr. J. J. Thomas.[4]

Age is of no special importance and of little use in prognosis, except in young children. Here we find the most spectacular injuries with recovery. A number of young children appear in the series with a history of falling from second, third and fourth-story windows; as having been struck by automobiles, fire engines, express wagons, etc.; but these young patients recovered, in many instances, in a surprisingly short time. It occasionally happened, however, that the shock was too great for even the soft cranial bones of childhood. Vomiting is more common on the whole among children than in adults. This symptom is especially present soon after the accident and occurs in many children who ultimately recover. It must always be borne in mind that in all fractures of the skull alarming symptoms may develop at any moment, even when the case appears simple and uncomplicated, and I wish to mention here a case of importance, illustrating the extreme need of keeping patients quiet and under observation after such injuries. A child was brought to the hospital after having fallen from a second-story window, having landed on a brick pavement. It had all the symptoms of extreme shock and was treated for the condition in the usual way. In a very short time it had apparently recovered. In fact, the improvement was so rapid the question was raised as to changing the original diagnosis of "fracture of the base of the skull" to "concussion of the brain." A day or so later the parents removed the child from the hospital, against the advice of the surgeons. Shortly afterward the child was returned to the hospital with decided symptoms of meningitis, from which it died in a few days, and at the autopsy the base of the skull was found fractured in every direction. Had the unfortunate child been allowed to remain quietly in the hospital she might have recovered and have been little or no worse for the injury.

Autopsy records offer valuable information to those who are not especially familiar with the subject. Here we find indisputable evidence of the extent of these particular injuries.

Both tumors and encapsulated abscesses are bodies of definite dencity and form. In hemorrhage we have a softer body to contend with, and consequently a different group of symptoms, notwithstanding the fact that the location is often identical.

Hemorrhage with or without clot does not appear to cause such definite symptoms as do tumors and abscesses. On first thought this seems strange, but the difference is explained by autopsy findings. Both tumors and abscesses are usually well embedded in the brain tissues; hemorrhage and clots, on the other hand, spread themselves over a considerable surface. The pressure of a tumor or a tense abscess may be likened to the pressure obtained from placing a marble, or even a billiard ball, within the skull. The pressure from free blood, or from a clot, might be compared to that of a pad of rubber or folded gauze. This I regard as the reason why marked cerebral vomiting, slow pulse and choked disc are not more generally found in these cases. In my studies of 35 autopsies I found it common to have an entire lobe of the brain compressed over its whole external surface. This condition is illustrated in (Fig. 4). Occasionally an entire hemisphere is under compression, and one or two cases show pressure from flattening of the hemispheres on both sides of the brain.

Consider for a moment the terrible pain which would arise from pressure of clots sufficient to compress the entire external surfaces of the hemispheres of both sides of the brain. In this particular instance the pressure assumed the action of the jaws of a vise, squeezing equally from each side toward a central point.

Hemorrhages or clots are found in nearly every possible area within the skull, in certain localities, however, much more commonly than in others, being noted in the greatest number over the temporosphenoidal and frontal lobes. Extradural hemorrhage is less often found than intradural; this is because of the rigid attachment of the dura to the bone and the lack of large vessels outside it. When extradural hemorrhage occurs, however, it comes either from venous hemorrhage from the diploetic bone, or else it finds its way through a rupture or tear in the dura, being internal in its origin. Hemorrhage occasionally is found in the deeper areas of the brain, in the ventricles, and even has been found in the spinal canal, though such cases are rare.

Contusions of the brain are more or less common and occur most frequently in the temporosphenoidal and frontal lobes. Lacerations are more often found and may occur in any of the lobes, one record even showing laceration of the cerebellum (Figs. 2 to 5).

If the brain tissue has been under pressure for any length of time we find areas of softening present, the extent varying from small spots to quite large areas, as shown in Figures 1 to 4 and 6, one case showing a softened condition of the entire base of the brain.

Infected areas of the lobes are occasionally found, and in this class we find practically only the temporosphenoidal and frontal lobes involved. Infected fluid within the dura is more common and was present in four cases, and an autopsy diagnosis of meningitis was made in three of these. Pus was found in the middle ear once and a pus pocket just outside the sella turcica once.

Blood was present in the middle ear and mastoid four times (Figs. 1, 2 and 4); in the lateral ventricle once. Excess of fluid was found in the lateral ventricle in five cases. Bloody fluid was present in four, pus in two and fluid blood in one. Blood was also found in the nose in one case (Fig. 1) and in the mouth in one.

Rupture of the middle meningeal artery was found twice and rupture of its anterior branch twice. Rupture of the lateral and longitudinal sinuses has been found at autopsies, but was not present in this series.

Edema of the brain occurred but once.

Irregularity of pupils was present in three cases and the pupils were equally dilated in one (Fig. 5). Exophthalmos was present but once in the autopsies.

Within the year THE JOURNAL of the American Medical Association has published articles by McKernon[8] and Coakley[9] dealing with intracranial infections from the ear and nose. A study of the two articles will show certain marked contrasts between lesions produced by the invasion of infection from the ear and nose and those of fractures of the skull, where, in the majority of cases, pressure from hemorrhage was the predominating factor.

The treatment of these cases, at the present time at least, is the field of the general surgeon. Many of these patients recover, from 15 to 25 days being the usual period of confinement in the hospital. The mortality in those patients requiring surgical measures in fracture of the vault is comparatively small, but in those with fracture of the base it is very high.

I have purposely omitted the subject of deafness from this paper. It is practically impossible to examine the hearing of these patients for some days after admission to the hospital because of unconsciousness or great prostration. It is my intention, however, to make a special study of this particular phase of the subject and to report it in detail at some future time.

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[8] THE JOURNAL A. M. A., Jan. 9, 1909, p. 102.
[9] Id., p. 108.

In closing I wish to thank the surgeons of the Boston City Hospital for the use of their records, and that institution itself for the great mass of material it has furnished me for study.

The following are some statistics of the cases:

SENSORIUM

Conscious:		Unconscious:	
Relieved	52	Relieved	63
Dead	4	Dead	105
Semiconscious:		Dazed, drowsy or stupid:	
Relieved	27	Relieved	20
Dead	15	Dead	18
Comatose:			
Relieved	3		
Dead	6		

PUPILS

Normal:		Dilated equally, no reaction:	
Relieved	119	Relieved	4
Dead	38	Dead	7
Dilated equally, reaction normal:		Unequal dilation, reaction normal:	
Relieved	1	Relieved	47
Dead	1	Dead	19
Unequal dilation, no reaction:		Widely dilated, no reaction:	
Relieved	16	Relieved	1
Dead	38	Dead	8
Contracted equally:		Contracted unequally:	
Relieved	8	Relieved	..
Dead	7	Dead	2
One pupil dilated, other contracted to a pinpoint:			
Relieved	0	Dead	8
Divergent Strabismus	1	Convergent strabismus	1
External strabismus	1	Irregular pupil	2
Hemorrhage from the eye	1		

NYSTAGMUS

Relieved (slight)	1	Dead	4

PULSE

Under 40	1	90 to 100	16
40 to 45	3	100 to 110	15
45 to 50	4	110 to 120	7
50 to 60	8	120 to 160	13
60 to 70	30	Slow, rate not recorded	15
70 to 80	31	Pulseless	1
80 to 90	27		

TEMPERATURE

Normal	351	104	3
99	7	105	2
100	6	107	*1
101	4	108.5	*1
102	2	110.8	*1
103	4		

* Few hours prior to death.

Subnormal on admission:

95	1	(died few hours later)
96	2	(died few hours later)
97	4	(died few hours later)

RESPIRATION

Stertorous	41	Cheyne-Stokes	3
Slow and labored	5	Slow	5
Rapid and labored	7	Infrequent	1
Irregular	4	Gasping	1

Many of the above recovered.

VOMITING

Number having this symptom present	55
Number having persistent vomiting	5
Nausea without vomiting	1

CONVULSIONS

Number noted in the records	25
General	3
One-sided	11
At or near death	8
Continuous winking of right eyelid	1

A number of patients having convulsions recovered.

HEMORRHAGE FROM EAR

From one ear only	231
From both ears	29
Hemorrhage from one or both	260

TOTAL CASES RECORDED

Fracture of the base of the skull	346
Fracture of the vault of the skull	62
Total	408

AUTOPSIES (35 cases)

CLOTS OR HEMORRHAGE

Intradural	20	In spinal canal	1
Extradural	10		

FLATTENING OF LOBES FROM PRESSURE

Temporo-sphenoidal	9	Both hemispheres	1
Frontal	5	Right hemisphere	1
Occipital	2	Entire base	1
Parietal	1		

AREAS OF SOFTENING

Frontal	6	Entire base	1
Temporo-sphenoidal	5	Cerebellum	2
Parietal	2		

EXCESS OF FLUID IN LATERAL VENTRICLE (FIVE CASES)

Bloody fluid in lateral ventricle	4
Pus in lateral ventricle	2
Free blood in lateral ventricle	1

FRACTURES OF THE BONES OF THE SKULL

Parietal	18	Frontal	5
Squamous portion of temporal	13	Cribriform plate	4
		Lateral sinus	4
Petrous portion of temporal	12	Crista galli	3
Occipital	12	Body of sphenoid	3
Great wing of sphenoid	10	Lesser wing of sphenoid	2
Sella turcica	10	Ethmoid plate	1
Orbit	7	Zygoma	1

CONTUSION OF BRAIN

Temporal lobe	2	Frontal lobe	3

LACERATION OF BRAIN

Frontal lobe	7	Occipital lobe	1
Temporal lobe	7	Cerebellum	1

INFECTIONS

Purulent fluid within the dura	4	Meningitis	3
Infection of temporal lobe	2	Pus in middle ear	1
Infection of frontal lobe	1	Blood in middle ear	3

CONDITIONS OF PUPILS

Irregular Pupils	3	Dilated and equal	1

484 Beacon Street.

ABSTRACT OF DISCUSSION

Dr. J. F. Barnhill, Indianapolis: I have seen a few cases of fracture of the base of the skull in which there was hemorrhage from the external auditory canal, cases with such symptoms, so far as I can judge, as have been described by Dr. Borden, but I had no opportunity to make postmortems in any of them. The cases that interested me most were in children. I have seen two cases in children in which there was hemorrhage from the external auditory meatus. In one the hemorrhage was so severe that it was impossible to check it except by firmly tamponing the external auditory canal. Children react from these injuries marvelously well. Both of these children were unconscious for several hours and both suffered profound shock. One had irregular pupils. But both recovered as rapidly as it would be possible to recover from any other serious injury. In one, as soon as the hemorrhage was checked I found a large rupture of the drum membrane which extended through the posterio-superior portion of the drum head and through the neck of the malleus. It is possible that in this case there was no fracture of the base of the skull, because the child recovered so rapidly from what appeared to be so severe an injury.

Dr. C. F. Welty, San Francisco: Shortly after the fire in San Francisco we had a great number of accidents and many of these cases. There were 29, 8 of which were mine. Diagnosis of fracture of the base of the skull was based on the tuning fork tests with greatly lessened bone conduction in the ear of the injured side in comparison with the other. Of this number there were 7 cases that went on to discharge of pus from the ear and there was one in which facial paralysis existed as long as the pus continued to discharge, and as soon as the ear was made thoroughly clean the paralysis cleared up. Six of the cases required operative interference on the mastoid. These patients with fracture of the base that have the slightest possible indication of mastoid involvement should be operated on. All these patients recovered.

Dr. E. A. Crockett, Boston: One type of traumatic injury to the ear which we should always have in mind and which is extremely difficult to differentiate from a fracture of the base is fracture of the bony portion of the external auditory canal, and associated with it rupture of the drum head. It is more common, in my experience, from blows on the point of the chin. The symptoms are very confusing on first glance, but on examining the ear one finds a distinct line of fracture of the outer canal beginning at the bony portion and running down to or through the drum. Such patients will have symptoms of surgical shock and hemorrhage from the ear. The tuning fork test will, of course, show whether the fracture extends into the petrous portion or not. When I was an interne I made systematic examinations of all the fractures and found seven patients admitted for fracture of the base of the skull in the course of a year in whom there was no fracture of the base whatever, but fracture of the canal. These are the patients who recover with few, symptoms and with perfect hearing. The condition is much more common than is supposed.

Dr. J. Holinger, Chicago: It is text-book knowledge that in these cases of injury with loss of blood through the external auditory canal we should be careful not to inject solutions of water into the ear. In this connection I can report one case for and one against this teaching. In the first case, a man fell into a vat and was taken up unconscious; he was taken to Alexian Brothers Hospital with a slow pulse and discharge of blood from the ear. After washing the ear very carefully I noticed a white mass in the depth of the canal. It was removed with the syringe and put under the microscope, where it proved to be the cholesteatoma. While syringing as a rule is contraindicated in fracture of the base of the skull and hemorrhage from the ear, it saved this patient's life by removing infectious matter from immediate contact with the fracture line. This patient recovered with complete loss of hearing. The other case is that of a patient who fell down a steep embankment together with his team and wagon. He regained consciousness after being home forty-eight hours. He called in the family physician, who advised dropping boracic acid solution in the ear. I saw him about a week later, when he was suffering from severe headaches, extreme restlessness, vomiting, and was very ill. My diagnosis was beginning meningitis. The ear was dried carefully, all instillations were discontinued and considerable doses of morphin were given in order to secure rest and quiet; and from that night he improved. I heartily endorse Dr. Borden's suggestion of giving morphin to patients in the first stages of traumatic meningitis.

Dr. J. J. Kyle, Indianapolis: What is Dr. Borden's experience with the decompression operation when the lesion is in the center of hearing? A few weeks ago I had an interesting case in which a young boy was struck on the left side of the head with a baseball bat. There was complete loss of hearing and loss of speech. A decompression operation was done and when he came out of the anesthetic he began to talk. He lived seventy-eight hours and then died very suddenly. I think that we shall be called in now more and more in these cases to differentiate between labyrinthine deafness following injury to the head and central deafness.

Dr. S. MacCuen Smith, Philadelphia: It is natural, when we have bleeding from the ear, to assume that it is due to fracture of the base, but I am inclined to believe that in many of those patients who recover, though they bleed freely, the bleeding is due to separation of the Glaserian fissure. This was first pointed out by Albert Buck, and I have collected some data which would seem to indicate that a fair percentage of these cases are due to separation of this fissure.

Dr. E. A. Crockett, Boston: In the case I spoke of the rupture could be clearly seen in the lower part of the canal. I have never seen a fracture of the upper part.

Dr. J. M. Foster, Denver: Our statistics in regard to the question of injury to the organ of hearing are not very extensive because most of the cases are treated by the general surgeon. I have a case to report in which the injury was so extensive that few surgeons have seen such a case recover. While a young woman was riding horseback her horse reared and fell back on her. Her head came in contact with the ground and the saddle or head of the horse struck her on the malar bone. The blow broke the skull through. The *x*-ray showed that the fracture started in one ear, went up through the orbit, through the bridge of the nose, through the orbit on the other side and through that ear. The fracture practically separated the upper from the lower part of the head. There was a distinct separation of the roof of the nose and slight movement between the upper and lower portions of the face. She had profuse hemorrhage from the nose, as well as from the right ear. The face was swollen and elongated. The treatment was absolute quiet, the ear being treated simply by packing with sterile gauze in the canal. After a few days the discharge turned into a distinctly serous fluid that I supposed was from the brain. The fracture finally healed without suppuration and hearing became practically normal. The eye symptoms were very marked; absolute immobility of the eyes from the start. The left eye never regained sight; atrophy of the optic nerve occurred. The eye muscles regained their function. The right eye regained perfect vision, but only the internal rectus muscle regained its strength. It was only after twelve months and by doing a tenotomy and advancement that the eye was gotten into the primary position. That the patient should have lived at all was marvelous.

Dr. George E. Shambaugh, Chicago: There is one phase of this subject discussed by Dr. Borden especially interesting to otologists. This is the question of the disturbance in hearing from such injuries: the character of the disturbance, and the degree of deafness. Persons injured in this way, especially in railroad accidents or the employés for corporations which may be held responsible, ofttimes wish to get damages for their injuries, and it is not uncommon for malingering to be detected in cases of this sort. If the patient claims to be totally deaf in both ears, it may be an exceedingly difficult problem for one to detect a malingerer of this kind. Usually, however, these patients claim to have had the hearing destroyed in but one ear, and in these cases if we go at the examination carefully, we seldom fail to detect them in falsehoods. For example, when they stop up the hearing ear they will usually assert positively that they can not hear at all any sounds, spoken voice or tuning forks. Of course we know that it is impossible to shut out sounds in this way from a normal hearing ear. In making the examination with tuning forks for bone conduction, these patients will usually make the mistake which has been made in the discussion here this morning, by stating that the bone conduction on the affected side is much reduced from what it is on the normal side. As a matter of fact, while the Weber test is usually lateralized in these cases in the normal ear, the actual duration of the bone conduction, in applying the Schwabach test from both mastoids in cases in which there is total deafness in one ear and normal hearing on the opposite side, will differ but little and often not any.

Dr. Otto Glogau, New York: I examined ten cases of fracture of the base of the skull going through the labyrinth in Mount Sinai Hospital Dispensary and found that most of the patients had less disturbance of the acoustic than of the static apparatus. One had a fracture going right through the acoustic apparatus and the high tuning fork could not be heard in the ear at all and bone conduction was lessened on the fractured side. In this case, the fracture went through the corda tympani and facialis. The patient had dizziness and nystagmus to the sound side. In another case the patient had been knocked down by an automobile and suffered a fracture of the base of the skull. He did not perceive tuning forks on his left ear. Weber test to the right (sound) side, no bone conduction on the side of the fracture, spontaneous nystagmus directed to the sound side, warm water nystagmus to the affected side, much dizziness, disturbance of equilibrium, and paralysis of the corresponding left facial nerve. In court one physician testified that the patient had only an old ear catarrh and that there was no connection between his ear trouble and the trauma he had suffered.

Dr. George E. Davis, New York: In regard to the question, elicited in the discussion, as to the differential diagnosis between simple nerve deafness and labyrinthine deafness, due to direct traumatism and infection, the functional tests for the reactions of the static labyrinth definitely decide, and of these probably the caloric test is the most reliable and is very convenient. In labyrinthine deafness, especially of traumatic origin, the static labyrinth is almost always, if not primarily, secondarily involved, and, therefore, we would expect the functional tests, whether caloric, turning, or galvanic, to prove negative; whereas in nerve deafness the static labyrinth usually remains intact and the same tests would prove positive. From a forensic point of view, this differentiation is of great importance in case of malingering. Moreover, in malingering. we can bring to our aid, in addition to the above tests for the reactions of the static labyrinth, the functional hearing tests by means of tuning forks. Malingering of one-sided deafness is readily detected by the Stinger test with the Bezold-a forks.

Dr. C. R. C. Borden, Boston: I know of nothing in the entire field of medicine or surgery that offers such spectacular cases as fractures of the base of the skull. We get them in all degrees of severity, and in many the injury does not seem at all in proportion to the symptoms that follow. Among the records I have studied was that of a boy struck by an express train traveling at a high rate of speed. He was thrown many feet, picked up and brought into the hospital in an unconscious condition, and one would naturally suppose that he would not recover, but in two or three days he was in fairly good condition.

In regard to the hemorrhage from the ear, in the average case it is usually fairly easy to find the bleeding point within the canal. It may be in any portion of the meatus, or in the drum membrane, appearing as a ragged tear. Some patients bleed so profusely that it is impossible to find the point of hemorrhage. In the majority of cases there is a fracture, and it is unwise to assume that there is not a fracture of the base, because the symptoms are not profound. In these 408 cases there are a number in which the first treatment was given by a family physician who failed to realize the importance of the injury and treated it lightly, allowing the patients to go about, and within a few days the patients were brought to the hospital with very grave symptoms, and in certain cases died later.

The blow on the chin that has been referred to, we have seen often, as a result of fist fights. Dr. Holinger spoke of thinking he had found brain mass in the bottom of the ear; it has been found several times in the hospital, and in one of the cases there was recovery following it.

As to decompression, these cases are in the hands of the general surgeon and we see them only as a matter of courtesy. Judging from what I have been able to gather, unless the symptoms are aggravated and urgent, it is a safer plan to depend on quiet and rest. The operation for decompression has resulted many times in hernia of the brain, which is often difficult to control. Nothing except tumor causes greater pressure than trauma of this kind. Of course, certain symptoms demand operation, but usually only as a last resort. The ear should always be kept clean, and I am inclined to think that more infection comes from the nose than from the ear.

TUBERCULOSIS OF THE LARYNX

THE TYPE WHICH IS CAPABLE OF RECOVERY OR ARREST AND THE PRINCIPLES OF TREATMENT *

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I. THE NON-RESISTANT TYPE

On the principle that an overpowering, though often erroneous, impression is produced by tragic events, our common conception of tuberculosis of the larynx is drawn from its harrowing course in about two-fifths of the cases which, collectively, for contrast, I designate the non-resistant type and which is characterized by a speedy development, persistent progress and rapidly fatal termination. Out of a total of 60 cases of private record, these qualities pertained to a group of 24, or 40 per cent., in all of which death ensued in less than an average of one year from first observation and in less than two years from the first remembered symptom of the laryngeal complication. A classical laryngeal image of the disease is presented in Figure 1, sketched from nature in the person of one of this group.

It will not, therefore, seem inappropriate as the argument proceeds that tuberculosis of the larynx which has proved capable of healing or arrest should be designated as a type, for, while Heryng, Krause and Lake have dwelt on its surgical curability in isolated instances, I seek to establish for laryngeal tuberculosis what is now well known with respect to the pulmonary affection, the fact that in certain patients Nature develops an adequate resistance, sufficient of itself to arrest the disease, and that in certain other patients Nature develops an almost but not quite adequate resistance which, when persistently reinforced by the best methods of our art, then suffices to arrest the disease.

II. THE HOPEFULLY RESISTANT TYPE

Twenty-two cases, or two-fifths of the total series, compose a second group in which the laryngeal tuberculosis ran a much slower course, the natural resistance of the patient having been sufficient to effect temporary amelioration and arrest, but usually in the end having fallen short of permanent arrest. Of this number, 8 are accurately known to have succumbed, but only after from three to seven years, and 12, when last observed, were obviously doomed, also having survived through their own inherent resistance, with but desultory aid, for from three to seven years. This brings the mortality of the entire series to 80 per cent., but the cloud is not without its silver lining, for, in addition to the third group, that of permanent arrests which will take up the other 20 per cent., there remain two cases of this second group which by aid of modern methods and suitable habits of life have now almost, if not quite, reached a state of permanent arrest.

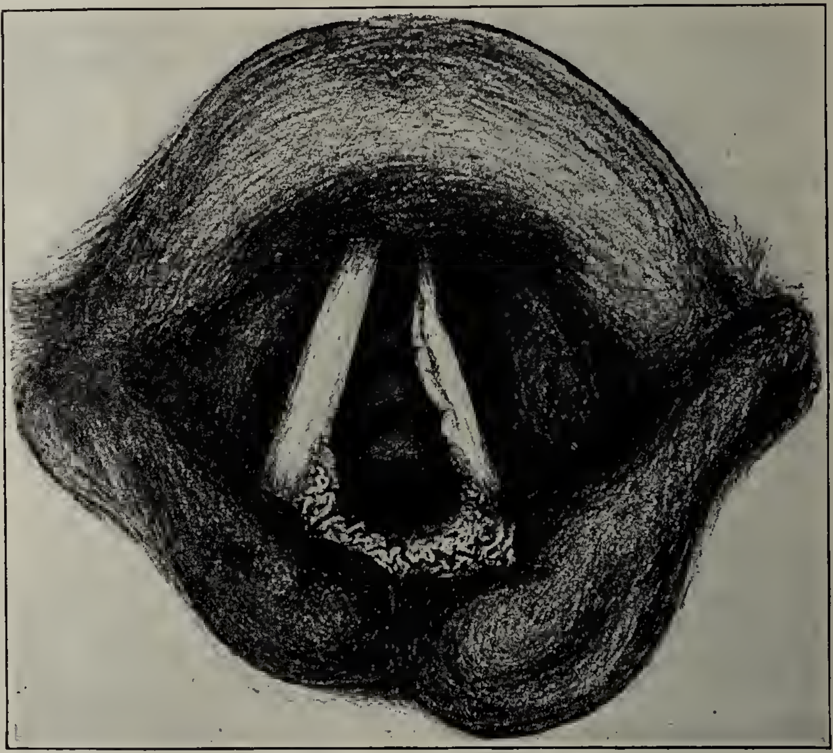

Fig. 1.—A classical image of tuberculosis of the larynx; case of Miss A. C., non-resistant type.

Case 1.—The condition of the larynx in one of these as sketched at its worst nearly three years ago, is shown in Figure 2, in which, bearing on the diagnosis, it should be observed by comparison that, aside from a unilateral predominance, the lesions are identical in kind with those in Figure 1, which in turn was selected from the nonresistant type to represent the classical aspect of tuberculosis of the larynx. The pyriform

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* Read before the Surgical Section of the International Congress on Tuberculosis, Washington, D. C., Sept. 28, 1908.

swelling of the arytenoid is the same in kind although greater in degree; it blends in like manner with another swelling of the interarytenoid fold and blends also with a diffused hyperplasia of the ventricular band. In the angle formed by the attachment of the posterior end of the left vocal cord there is the same sort of flexion fissure with eroded surface from which sprout equally characteristic granulomata. The patient, Mr. E. Z., then aged 44, had first noticed five and one-half years previously a persistent cough with expectoration, which was followed in four months by a hemorrhage and within two years by laryngeal pain on swallowing. His well-nourished appearance, to quote the patient's own phrase, "seemed to belie his disease," and this, together with the unilateral predominance of the lesions in the larynx, which, however, I have observed in the proportion of 1 to 15, suggested unusual care in the diagnosis. The apex of the right lung gave signs of a limited tuberculous deposit. Bacilli were "present, a few to a field"; histologic guinea-pig test was positive. Also the tuberculin test was positive. The patient's weight was 131, representing a loss of eight pounds; pulse 80 to 100; temperature 97 to 99 F. Under treatment at the end of a year (the sixth year of the disease) the laryngeal hyperplasia had diminished, the granulomatous fissure had become merely an irregular crease in a somewhat redundant tissue, the voice had resumed fair service, the pain on swallowing had faded to a vague sense of "something there," and with a gain of sixteen pounds the patient's ratio of weight to height was in excess. At present, in the eighth year of the disease, although the laryngeal hyperplasia is still evident, its inactivity as judged by the lapse of time, with absence of ulceration and freedom from pain or irritation, indicates a state of retrogression approaching but not yet to be classed as a permanent arrest.

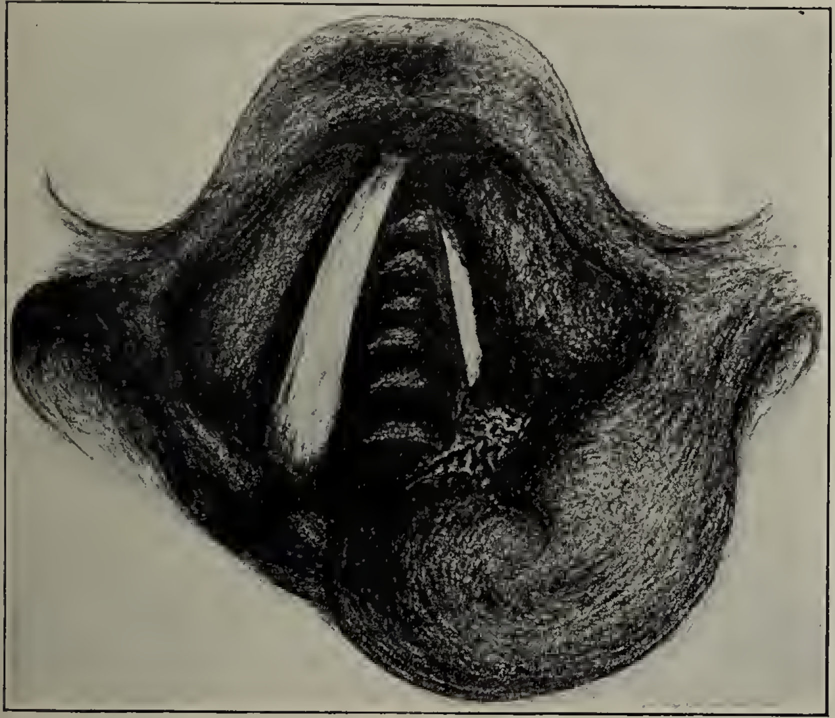
Fig. 2.—Chronic hyperplastic tuberculosis of the larynx of five years' duration; case of Mr. E. Z., hopefully resistant type, now in the eighth year and almost but not quite arrested.

III. THE SUCCESSFULLY RESISTANT TYPE OR THE TYPE CAPABLE OF ARREST

A third group is composed of eleven cases, or nearly 20 per cent. of the series, in which the laryngeal tuberculous lesions are or were in a state of arrest after the lapse of periods varying from four to fourteen years. It is not meant that all of the patients recovered permanently from every phase of tuberculosis, for the very fact that at length some of them have died of tuberculosis of the lungs or other organs will be cited in evidence that the laryngeal complication during its course was of the same nature; but it is meant by the term "arrest" that for a number of years all progression in the larynx has been interrupted and retrogression established as indicated by the cicatrization of the ulcers if any, the gradual lessening of hyperplasia and the cessation of subjective pain and irritation. In order to be fully credited, an allegation of recovery or even arrest from laryngeal tuberculosis must be supported in a manner to overcome both a natural contention of possibility of error in diagnosis and an innate doubt of the permanence of such an "arrest," for it is true that syphilis of the larynx or other tractable condition is liable, exceptionally, to be mistaken for or to coexist with tuberculosis and true also that no period of years is an absolute guarantee against recurrence. Therefore, the pertinent features of the cases of this group will be summarized in a manner designed to render competent the evidence when taken as a whole, even though the future should alter the logic of events with respect to certain of the details.

Four of these patients have been under my own inspection at various periods both before and after the arrest. Persons of this type are able to travel far and wide so that when information at first hand, based on the recorded results of competent examination of the larynx by one and the same observer both before and after arrest, is available and is reasonably conclusive in detail, it should go far toward satisfying any doubt of the disease of the larynx having been a veritable tuberculosis, and toward justifying the use of the term "arrest," as descriptive of the present state of that disease. It happens, however, that two of them, the two perhaps of most importance, have been examined also by Dr. Gildea of Colorado Springs, whose reports cover the intervening periods.

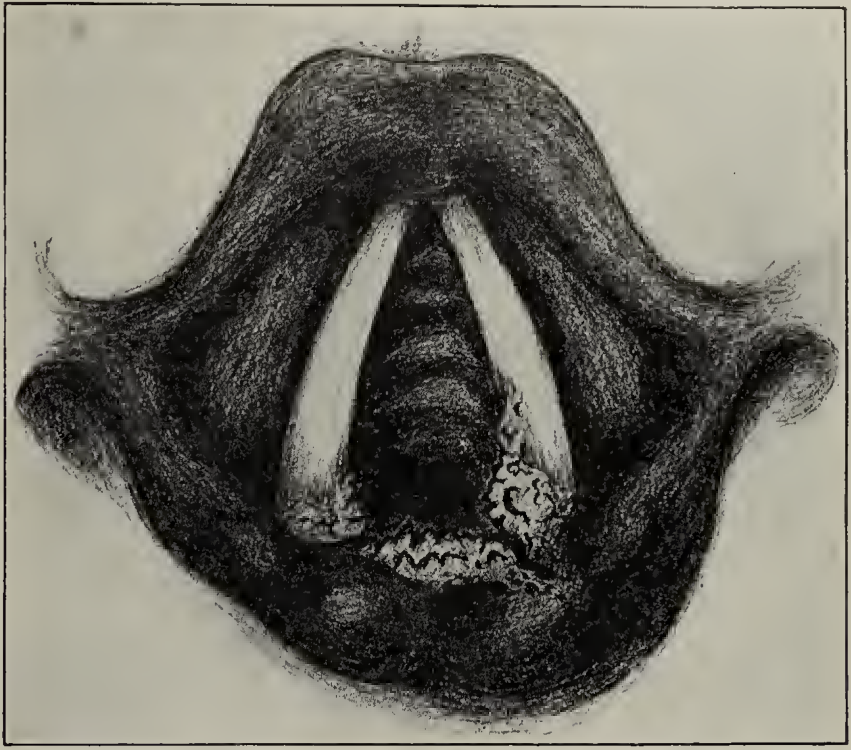
Fig. 3.—Case of the Rev. J. W. D. eight years ago; tuberculosis of the larynx in its second year; now and for five and one-half years in a state of arrest as shown in the next figure.

CASE 2.—One could scarcely doubt the tuberculous nature of the laryngeal lesions, illustrated in Figure 3, as sketched from a patient of this group in January, 1901. The mammillated hyperplasia of the interarytenoid fold, the granulomata on the cords around the vocal processes, the flexion fissure at the junction of the left cord and arytenoid, the "mouse-nibbled" ulceration about the fissure and the pyriform swelling of the arytenoids together form a picture which is absolutely characteristic. It concerned the Rev. J. W. D., who was then 27 years old, having had pulmonary tuberculosis previously for three years and the laryngeal complication for one year. He proved suitable for surgical treatment and received seven thorough excisions or curettements, one each month, supplemented by lactic acid frictions running up to 90 per cent. in strength. It is specifically recorded of the fourth curettement that it was directed to the remains of the fissure and adjoining ulceration, and again recorded at the completion of the local treatment, that the granulomatous hyperplasia has been mostly removed and that all broken and ulcerated surfaces were healed. Of course, some deeply seated infiltration remained, but even its retrogression dates from this treatment at the conclusion of which a change of climate to the Rocky Mountain region favored the steady progress toward recovery. A year later Dr. Gildea reported: "All activity in his throat has ceased. . . . Voice fairly clear." At the end of six years Mr. D. himself reported: "The larynx has been well for four years. Voice fairly strong." Now, at the end of eight years, Dr. Gildea again reports: "Although much fibrosis in the lungs and a few tubercle bacilli are found, the larynx is absolutely well, the voice being clear and good and the arytenoids normal," and Dr. Gildea has made a sketch of the larynx, reproduced in Figure 4, which exhibits the present smooth, pearly-white and healed appearance of the same site, shown in the previous illustration to have been so characteristically tuberculous eight years ago. A comparison of the two pictures demonstrates that not merely an arrest but an actual recovery as far as concerns his tuberculosis in the larynx, has taken place.

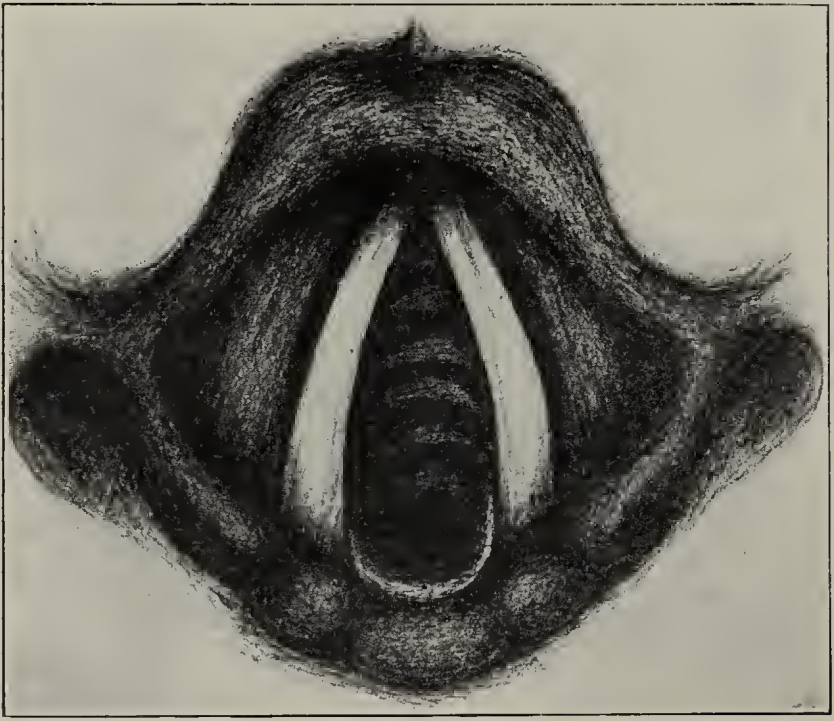

Fig. 4.—Case of the Rev. J. W. D.; now in a state of arrest and showing a smooth scar. Compare with Figure 3.

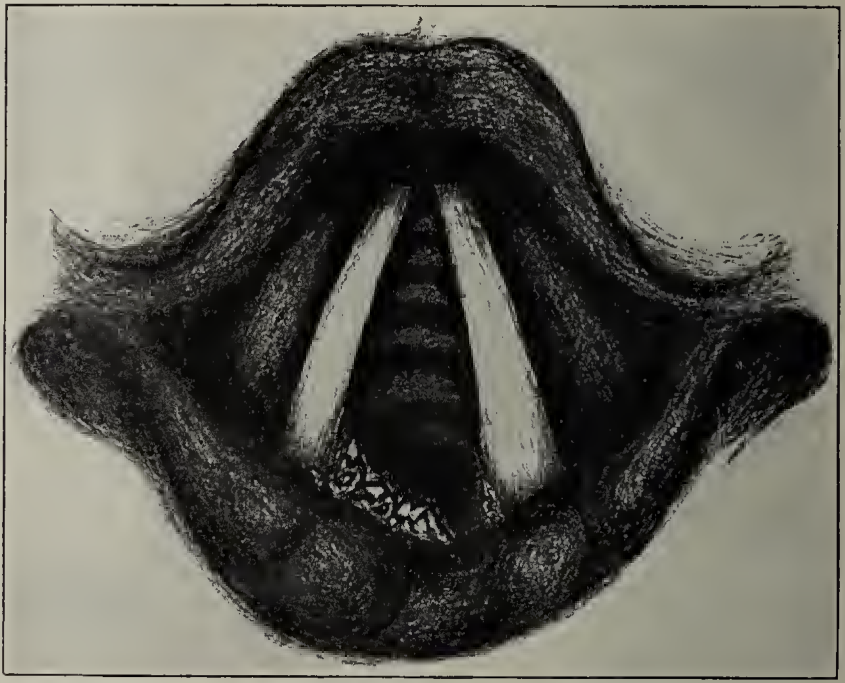

Fig. 5.—Tuberculosis of the larynx; case of Mr. R. A. L. nine years ago; now and for eight years past in a state of arrest.

Summary.—The time from the beginning of the pulmonary tuberculosis has been eleven years. The time from the beginning of the laryngeal tuberculosis has been nine years. The duration of arrest of the laryngeal tuberculosis, with the patient living at this date, has been five and one-half years.

Case 3.—Equally characteristic are the tuberculous lesions depicted in Figure 5, as sketched from nature in the person of Mr. R. A. L. in February, 1900. Again, the granulomatous infiltration centers about the vocal process or point of junction of the vocal cord with the arytenoid, which is a favorite site in the larynx for the initial infiltration. A similar flexion fissure is seen to be forming in the pyriform swelling of the arytenoid, but it is as yet without definite ulceration. The conspicuous infiltration of the right side of the epiglottis is shown as embracing also the pharyngo-epiglottic fold, and dotted just under the surface, more plainly visible in the image than in the illustration, were many minute individual tubercles. By reason of this condition of the epiglottis which already caused pain in swallowing, the prognosis at that time seemed especially unfavorable, although in other respects it was hopeful. The patient was 39 years old, having had slowly developing apical pulmonary tuberculosis for six years and the laryngeal complication for one year, the bacilli present being few in number. His weight was 155; pulse 120. His local treatment by curettement and lactic acid I directed especially to the granulatomatous focus around the vocal process, which improved under it. The change of climate, after some months, was first to the Rocky Mountain region. On his return in January, 1901, I was surprised to observe that the laryngeal infiltration had disappeared, a fact which I find recorded in these words: "Infiltration of epiglottis not now discernible and no pain whatever in swallowing. Weight 196, pulse still 120, lungs *in statu quo*." At my third and fourth observations in August, 1901 and 1902, the larynx remained equally well and the lungs had improved. He resided next in Southern California, whence Dr. Radebon, in 1907, reported that he was in good health. He now resides in Colorado again, and Dr. Gildea reports that his larynx remains well.

Summary.—The time, from the beginning of the pulmonary tuberculosis has been fourteen years. The time from the beginning of the laryngeal tuberculosis has been nine years. The duration of the arrest of the laryngeal tuberculosis has been eight years and the patient is living at this date.

Case 4.—Mr. P., aged 45 in 1901, had diffused infiltration of two years' duration at favorite sites in the larynx but without definite ulceration, copious expectoration with many tubercle bacilli, evident pulmonary signs and a positive tuberculin reaction. The absence of a corresponding degree of emaciation led to the particular care in diagnosis. He was made a test case for the *x*-ray treatment, which, although it failed in subsequent cases, seemed decidedly beneficial to him and he received, within six months, no less than forty-eight exposures, after which, on special examination for the purpose, I recorded, "Larynx undoubtedly better but not well. Infiltration much less, voice improved—his friends commenting on it." During the next eight months he received only fresh-air treatment, after which was noted, "continued reduction of the hyperplasia," and after two years, on examination, I recorded his laryngeal tuberculosis as "arrested . . . with only residual hyperplasia remaining." At the end of seven years he writes from Iowa, where he is working: "I have further improved, only slight hoarseness and occasional coughing remain."

Summary.—The time from the beginning of the laryngeal tuberculosis has been nine years. The duration of the arrest has been five years and the patient is living at this date.

Case 5.—Mr. W., aged 23 in 1893, had typically tuberculous laryngeal infiltration of the left vocal process and adjoining parts of the arytenoid angle and fold of six months' duration, dating from vocal impairment, and had also tuberculous cervical adenitis and evident pulmonary disease. Business requirements caused his treatment for several months to be limited to antiseptic and emollient local applications, but afterward he changed to an outside occupation in the far west. On his return five years later the larynx showed a mere residuum of the former tuberculous infiltration and up to the end of seven years he had remained well.

Summary.—The time from the beginning of the laryngeal tuberculosis up to the period of last information has been eight years. The known duration of the arrest has been five years, and the patient is probably living at this date.

In Cases 6 and 7 I knew the condition before the arrest through personal examination, but the opinion that an arrest of the tuberculous process in the larynx has since occurred is necessarily based on written reports by the patients, stating that they are now, after many years, living and subjectively well with respect to the larynx.

CASE 6.—Mr. P. P., was sent to Saranac Sanitarium in 1901, whence Dr. Fremley transmits a copy of the record, which not only confirms the diagnosis but indicates that the patient's tuberculosis of the larynx grew worse for some months, the epiglottis and arytenoid being described as considerably enlarged, the infiltration previously having been limited to the vocal processes and interarytenoid fold. He received tuberculin R in minute doses, but the arrest culminated only after subsequent prolonged open air living in the West.

Summary.—The time since the beginning of the laryngeal tuberculosis has been nine years. The duration of the arrest has been seven years and the patient is living at this date.

CASE 7.—Mrs. O. P. A. resorted at once to the open life by removal to the west, receiving no other treatment. The infiltration had been distinct but limited to the vocal cords. The patient reports annually.

Summary.—The duration of the arrest has been four years and the patient is living at this date.

In the next group of five cases, the evidence is complete with reference to the final "arrest," but not quite so respecting the first diagnosis, my observations having been limited to the periods after the arrest, but I was able to observe the residual hyperplasia and a few small scars and depressions in the tissue, left by the ulceration. None of the patients ever suffered any relapse in the larynx, but they died of the underlying pulmonary tuberculosis at the length of four, five, nine, ten and eleven years, respectively, after an arrest of the laryngeal complication had taken place, its date having been fixed by the cessation of symptoms and the statements of former physicians, some of whom were able to certify also to the original diagnosis. The only doubt in this group would concern the possible coexistence in the larynx of syphilis, a combination which would be unusual in so large a proportion of cases. An additional case is purposely excluded, although tuberculous in the larynx and lungs, for the reason that the breadth of scar tissue and its site at the borders of the epiglottis did suggest a possible coexisting syphilis, notwithstanding the history and physical signs were those of tuberculosis. It is obvious, therefore, that I have not been unmindful of the fact recently stated anew by Grunwald, that diagnostic "confusion with tertiary ulceration and still more with syphilitic infiltration and perichondritis are to be feared, even hemorrhage being not rarely an early symptom of the tertiary infiltration of the mucous membranes," but I believe this ancient error has not been permitted to vitiate the value of this group of arrests.

CASE 8.—Mr. B. was examined in 1895, the laryngeal disease being then of two years' duration and already in a state approaching arrest. There was residual interarytenoid hyperplasia and cicatricial indentation of one cord, representing a loss of substance from ulceration, which had healed. He had already regained his voice and was able thereafter for nine years to use it as a teacher in a school of acting.

The time from the begining of the pulmonary tuberculosis was eleven years. The duration of the arrest of the laryngeal tuberculosis was nine years.

CASE 9.—Mr. Fred. B. of Texas, when examined in 1893, had infiltration of the arytenoids and fold, the disease being then in a state approaching arrest. His son, answering my inquiry, states that the throat remained well until death ensued from tuberculosis of the bladder, seven years afterward.

The duration of the arrest was seven years to date of death.

CASE 10.—Mr. C., examined in 1894, had multiple small cicatricial indentations of one ventricular band, the ulcers having healed. There was no recurrence in the larynx during a period of five years up to the time of his demise from an acute relapse of an old-standing evident pulmonary tuberculosis. Verification was furnished by Dr. Staples of Dubuque, who had persistently treated the laryngeal ulcerations with menthol in olive oil during two years until they were healed.

The duration of the arrest was five years to date of death.

CASE 11.—In 1891, while on a visit in New Mexico, I examined Mr. S., an active business man, whose sallow complexion and sepulchral voice had attracted my notice and who was pointed out to me as a marvelous climatic recovery, then of eleven years' standing, from laryngopulmonary tuberculosis. The examination, which he courteously permitted, left no doubt that the still perceptible but healed distortion of the larynx represented a former tuberculosis in a state of arrest. He died some years later, but without having suffered any recurrence in the larynx.

The duration of the arrest was at least fifteen years to date of death.

CASE 12.—Miss W. exhibited at first only a pair of typical "singers' nodes," doubtless due to forcing the voice in kindergarten work, during that period of enfeeblement of the larynx which is common to initial tuberculosis, inasmuch as six months later there was present a characteristic tuberculous hyperplasia of the ventricular band, a pyriform swelling of one arytenoid and pain on swallowing. But at this stage, notwithstanding the disease in the lungs subsequently progressed to a fatal issue within five years, all further development in the larynx ceased under the influence of a year's life in the open air and retrogression took place to the degree that all subjective symptoms referable to the larynx subsided permanently.

The duration of the arrest was four years to the date of death.

PRINCIPLES OF TREATMENT

Local Treatment.—The treatment of tuberculosis of the larynx is a chapter of deep gloom in medicine and its surgical treatment after two decades of indiscriminate application stands to-day in little better repute; but the foregoing analysis shows that the prognosis is not absolutely bad and it indicates that if the malady be early recognized, in all its seriousness, and persistently but wisely managed with respect to the type, the results will be far better. To paraphrase a previous statement, so general is our misconception, based on the rapidly fatal course in the non-resistant type (two-fifths), that I was myself surprised and encouraged on counting up as many as 20 per cent. of recoveries or arrests (one-fifth), aside from the many others of an inherently hopeful type (two-fifths).

Intralaryngeal Surgical Treatments.—These were made in several, but particularly in the two indubitable cases depicted in Figures 3 to 5, in each of which an arrest with retrogression followed to a degree the most striking and complete. The treatments consisted of excision of circumscribed infiltrations by punch forceps and of sharp curettage of granulomatous and ulcerated areas, methods which require special skill and selection of cases, but which, in the resistant types, for lesions which are reasonably accessible and not too diffused nor too deeply seated, are capable in isolated instances of inaugurating recovery or prolonging life. Likewise the abscission of a tuberculous epiglottis is a beneficent measure, if only for the removal of an agonizing impediment to the swallowing of food. On the other hand, to attempt any of these methods in patients of the nonresistant type is but to court opprobrium and to invite disaster. Although the type be suitable, lest the way be opened to mixed infection and disintegration thereby hastened, one should hesitate to sever by operation a previously unbroken, moderately smooth surface which overlies a diffused tuberculous infiltration; such a condition, for instance, as is represented in Figure 2, in which I refrained for this reason from excising even a fragment for microscopic examination. I feel little hesitation, however, in primarily breaking through a granulomatous, vegetating or papillomatous surface which surmounts a moderately circumscribed infiltration.

The Method by Galvanocautery Deep Punctures.—This I have long employed, but usually only for exceptional reasons, but it is now being earnestly advocated by experienced operators[1] as the most generally applicable, far-reaching and efficient of minor surgical means. In two patients in whom I repeatedly applied it with thoroughness, in one for pronounced interarytenoid infiltration amounting almost to a tumor, in the other for diffused verrucous hyperplasia, the escharotic loss of substance after each slough had separated would appear itself to be of small extent, but it had the advantage of reaching deeply into the infected structures, and the inflammatory reactions, although not very severe, seemed to exert an absorbent effect on the tuberculous hyperplasia throughout an area extending considerably beyond that of the actual caustic destruction. Both of the cases made temporary arrests, but subsequently passed from my observation, and hence are not among those above enumerated in that class.

At the end of a course of surgical treatment, whether by galvanocautery or cutting instruments, it should be realized that minor areas of residual hyperplasia will still remain and some deeply-seated foci of infection survive, so that a relapse is to be expected unless increased resistance is cultivated, preferably by life in the open air with all thereby implied, which in the 20 per cent. of arrests described exerted a powerful curative influence.

Lactic Acid and Creosote.—Lactic acid in strength of 10 to 90 per cent., applied by cotton friction and creosote by submucous injection, being somewhat escharotic in their effects, may be classed with surgical methods as requiring an equal discrimination in use. Lactic acid tends to heal ulceration and it is an adjuvant to curettage, a practical individual test of its efficacy being a reasonable toleration of the painfulness of its application and a prompt amelioration of the painfulness of the disease. At present formalin, 0.25 to 1 per cent., preferably by a deeply-reaching spray, is coming to replace lactic acid, the same test being a useful guide in its use.

Radical External Operations.—Grunwald[1] collates cases of 73 operations by European surgeons, access for excision of the diseased parts being in most of them made by laryngofissure. Of the patients 75 per cent. had died within a year or so after the operation and only 8 per cent. had recovered and remained well for over two years. Nevertheless, in this small number of recoveries were several brilliant ones in which the patient's general condition having been still good he had been faced by death from suffocation or inanition in consequence of laryngeal tumefaction, perichondritis or ulceration. Tuberculous tumors, in conjunction with other lesions, predominate in this list of recoveries which followed external operations. Such, in brief, are the conditions which, in my opinion, may justify an external operation, while in the absence of urgent laryngeal symptoms or in the presence of advanced lung disease an external radical operation can be but rarely indicated. Impending suffocation in the presence of advanced lung disease is appropriately met by tracheotomy.

Local Medicinal Treatment.—Although this may seem to have exerted but a minor effect in those cases in which the tuberculous process in the larynx eventually became arrested, nevertheless it is always helpful and sometimes it is indispensable.

Formalin and Lactic Acid.—These have already been mentioned as adjuvants to surgical measures. Also, they tend to promote the cicatrization of ulcers, perhaps succeeding brilliantly or again failing utterly, but they have little or no effect on unbroken infiltrations; and as their primary irritation is not well tolerated in the nonresistant type, it is well, in using either medicament, to abide by the test of its efficacy previously given.

Mentholated Emollient Spray.—A spray containing menthol 0.25, the oils of eucalyptus and gaultheria each 1 in yellow vaselin oil 100, is within limits, a sedative to cough and pain and is suitable for home use. To it may be added, to exalt its sedative effect, the uncombined alkaloid cocain 0.1 to 0.2, previously made in solution with olive oil 5.00 to 10.00, the pure alkaloid being selected because its hydrochlorid is not soluble in fixed oils. For severe cough and pain, a mixture of powdered cocain hydrochlorid 0.5 and powdered orthoform 100, insufflated in the dose of 0.5 gm. twice daily, affords the greatest relief, provided care be taken that the insufflation reach the interior of the larynx. Cocain, even in this harmlessly minute dose, is unrivaled in momentary effectiveness, but given alone is too evanescent, while the sedation by orthoform alone is too mild in degree, but is of several hours' duration. To the mixture of the two may be added, further, codein sulphate 0.5 to 100. It is unfortunate that skilled service is usually required to insufflate the larynx effectively; when this is not available and self-insufflation fails, orthoform in egg-emulsion, applied by means of a coarse spray or a syringe, ranks next, but is troublesome in use, so I usually substitute for it the mentholated and cocainized oil spray, adding orthoform, placed in suspension each time by shaking.

Systemic Treatment.—Practical experience is still limited with the treatment of laryngeal cases by tuberculin in the minute dose of a thousandth of a milligram and by other vaccines and serums, the scientific purpose of which is to augment resistance as measured preferably by the opsonic index, but it presents an encouraging outlook, and in the few cases so treated under my observation the tuberculin seemed helpful, in one decidedly so, and in none did it seem in any way detrimental.

In the resistant types, the three cardinal principles, rest, open-air living and forced feeding, should be even more rigorously enforced than in lung disease alone, as the chance for life is a more desperate one. By "rest" should be understood, not only rest of body and mind, but rest to the voice and rest from the exactions of business. Rest is first named because it is of first importance, compliance with the other two cardinal principles being dependent on it. I have found business the major impediment to home treatment. It takes the courage of conviction to advise the sacrifice of a man's ambition, to say naught of his income, and yet it must be done or all other efforts, being deemed subservient to business stress, become but half-way measures; no hours are kept and no advice followed except as business permits. Mr. E. Z. was advised to this effect, made the sacrifice and reaped his reward in restoration to health and business capacity. Moreover, rest to the voice is so essential that business dictations must be strictly enjoined and even social conversations should be limited. In the treatment of tuberculosis of any other joint, as, for instance, the knee or hip, immobilization is quite the rule; why not so in the larynx?

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[1] Grunwald: Die Therapie der Kehlkopf Tuberculosis, Lehmann's Verlag, Munich, 1907.

It is good management at critical periods, and at some but not all other times, for laryngopulmonary patients to remain where skilful local treatment is available; hence, usually at or near their home city; and this plan becomes more feasible as the knowledge spreads that it is fresh air rather than any particular kind of fresh air which is required, and also more acceptable to patients since the inhospitable legend, "No case of tuberculosis received," is now so commonly found posted at resorts. Nevertheless, in the 20 per cent. of "arrests" which my series affords, it is evident that, following the completion, for a time, of the local treatment, a powerful curative influence was exerted by life in the open air, and, as this mode can be carried out with less friction amid sunshine and dryness, I have recommended at suitable periods, for the resistant types, a resort to favorable climates, giving preference to localities where, when needed, a continuation of local treatment is available, for by means of it the oft intensified distress of the patient can at least be greatly ameliorated. In fact, as it is impracticable in the long run for two physicians to be retained, it is proper to lay special stress in this connection on the recommendation that as soon as laryngeal tuberculosis is found to complicate a pulmonary case, the treatment not alone of the larynx, but of the disease as a whole, should be entrusted to one who is skilled in laryngeal technic, for the laryngeal involvement is the immediate life-threatening factor in the case and only in this way can the natural resistance of the patient be conserved and the general management of this especially desperate combination, laryngopulmonary tuberculosis, be placed in line with the present widespread determination, of which this congress is an exponent, to moderate the misery and mortality of the great white plague. Mr. E. Z. secured a house with grounds in a near-by suburb, where he fitted up a corner sleeping porch, equipped himself adequately for bodily warmth and, notwithstanding the severity of the winter season at Chicago, slept out of doors every night throughout the year, not excluding the wildest nights of wind and storm. Such an extreme limit of night exposure, however, is not usually commendable and may be positively detrimental. Laryngopulmonary patients, of the non-resistant type especially, can not endure inclement night exposure, as in them it tends, by aggravating the irritability of the larynx, to increase the pain in swallowing and to cut down the nourishment. At first on sleeping out, even the average cold at night and the early morning dampness generally excite coughing spells, but the resistant types soon harden to a reasonable degree of cold, beyond which point discretion is the better part of valor.

CONCLUSION

The following points have been shown:

1. Tuberculous hyperplasia in the larynx has not infrequently undergone resolution, in whole or in part.
2. Unmistakable tuberculous ulcers have occasionally healed and remained healed.
3. Favorable negative qualities have characterized in common the cases which have proven to be capable of arrest or recovery; for instance, the laryngeal hyperplasia has been less progressive, less diffused and less prone to ulceration; the underlying pulmonary infection has been less extended; there were fewer tubercle bacilli, a lower pulse rate and less emaciation.
4. These qualities persisting, the cases which are capable at least of a hopeful resistance, can be differentiated, thus justifying every effort at any sacrifice to invoke the methods likely to arrest the disease and lead to recovery, including intralaryngeal surgery when the lesions in degree and kind are suitable for it.
5. In like manner the non-resistant type should be recognized and those patients guarded from the privation and distress which surely follow in the wake of an indiscriminate exposure to the elements and to the hardships of travel in distant climes. In them surgery is contraindicated, excepting to prevent air hunger and suffocation or to prevent starvation by the removal of some particularly painful impediment in swallowing.

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ENLARGEMENT OF NASAL SINUSES IN YOUNG CHILDREN BY ORTHODONTIA

RESULTS IN A NUMBER OF CASES *

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My friend, Dr. G. V. I. Brown, of Milwaukee, in his excellent paper read before this section last year, refers to having used direct and rapid pressure to expand the maxillæ for some years prior to the report on this subject made by Dr. Nelson M. Black, also of Milwaukee, in 1901. Dr. Charles E. Quimby, of New York, reported one of his cases before the Academy of Medicine in 1903, in which report he described the straightening of the nasal septum by means of an apparatus constructed and attached by himself, which had opened the suture of the upper maxillæ.[1]

Dr. W. Pfaff, court dentist at Dresden, Germany, in 1904, read a paper at the Congress in St. Louis, entitled "Stenosis of the Nasal Cavity Caused by the Contraction of the Palate and Abnormal Position of the Teeth; Treatment by Expansion of the Maxillæ."

In 1905 I read a paper at the annual meeting of the British Medical Association, entitled "The Influence on Development of Arranging Irregularly Placed Teeth into Normal Positions."

The incentive to the preparation of this 1905 paper was the success that had seemed to follow certain opera-

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] In "Irregularities of the Teeth" by Dr. Eugene S. Talbot, 1901, page 74, attention is called to fourteen cases in which he opened the suture in children from twelve to sixteen years of age, previous to 1894.

tions on the temporary teeth of young children, which operations I began in 1899, and have been following up ever since.

These operations consisted in gradually spreading the arches of temporary teeth, when it became evident that Nature was not doing the work herself, thus carrying outward to the proper places the crypts of the permanent teeth, which then erupted more nearly where they belonged.

As a result of these operations I noticed in every case what seemed to me an increased development in the nasal passages, a straightening of the nasal septum, and a diminished tendency to take cold. I need not mention further the marked improvement in personal appearance, beauty, sonorousness of voice and ability to enunciate clearly and distinctly, as well as to masticate properly, and to have clean teeth not predisposed to decay.

Distrusting my own powers of observation, I began in 1906 to request assistance from several rhinologists, who were better able to make these observations than I, and who were at the same time unbiased.

These physicians have examined several children before anything was done to their dental arches; and later, when I had accomplished about all the spreading that I intended, they have in several cases examined again.

I shall have the honor to present at this time a report on two or three of these cases in which the arches could not have been subjected to rapid spreading, as the work was done on the temporary teeth. At the same time I shall report on some other cases that might have been subjected to rapid spreading with advantage, but for certain reasons it was thought best to work with the ordinary expansion arch. The results certainly are gratifying, although they seem to differ from the conclusions of Dr. Faught, even as Dr. Nelson Black in his paper before this section last year found his "clinical results entirely to disprove" Dr. Faught's assertion that expansion methods could not relieve stenosis due to adenoids or septal irregularities.

I have in perhaps twenty or thirty cases succeeded in relieving nasal stenosis by gradual expansion of the arches of temporary teeth, promoting thereby nasal breathing, which function, when it is performed, tends to produce a normally widened nasal passage. I shall allude to two apparent exceptions to this during my report.

My conclusion is that in those cases in which a rapid spreading of the upper maxillary is applicable—that is, in which permanent teeth are sufficiently developed and erupted for the operator to be able to attach his apparatus firmly and to apply the necessary force promptly—that method is distinctly preferable for the correction of the class of nasal stenoses that has been under discussion, and for the reasons given by Dr. Brown last year.

When, however, the difficulty is recognized early enough to have it corrected by means of apparatus attached to the *temporary* teeth, I have found that the latter method, being to a great extent preventive, becomes distinctly preferable.

When slight pressure is brought to bear in these regions to overcome the "restrictions in the region of the palate and alveolar structures," it is in the direction of normality that the pressure is applied, hence the resumption of the proper functions of the parts is soon brought about, and with the performance of function comes development, and it comes so easily in many cases that we hardly realize that the deformity has been overcome until we see before us a normal condition.

On Nov. 10, 1906, Dr. T. Passmore Berens examined a little girl, 9 years 9 months old, and made the following note:

L. G. protruding upper teeth; rather high arch to the palate; nose shows deflection of the cartilaginous septum, extending into the vomer and perpendicular plate of the ethmoid, the deflection occupying the whole of the middle meatus of the nose from just above the anterior end of the inferior turbinate and causing a strong contact between the septum and the middle turbinate; tonsils present, but not enlarged; but very slight adenoid tissue in the vault of the pharynx. Left side of the septum shows a concavity of the deflection to the right.

On March 14, 1908, came the following report in regard to the same patient:

I have just examined L. G.'s nose, and find a most marked difference in her nasal septum in that it is now almost straight, and whereas before it was deflected sufficiently to be in contact with the left middle turbinate there is now perfectly free breathing space between these two parts. The concavity that was present on the right side is practically lacking.

Dr. Berens, on April 4, 1908, examined the nose of a little girl, 14 years of age, and wrote:

Examination revealed a sigmoid deflection of the septum, the main portion of the deflection being high up on the right side, where the cartilaginous septum is in contact with the middle turbinate. The middle turbinate is not enlarged. The septum on the left side curls into the inferior meatus by a sharp edge occupies about one-third of the inferior meatus, and gradually diminishes to become lost in the vomer. There is a slight thickening of the septum on the right side near the floor.

April 21, 1909, the record of Dr. Berens' examination of this patient reads:

The effect on the nasal septum is very marked. In fact, the deflection that was present is now almost entirely absent, although the thickening on both sides persists.

The septum has almost entirely straightened, and this straightening necessarily has resulted in a complete opening of the nostril that was almost occluded by the previous deflection of the septum, so that I now consider the nasal passages to be in a normal condition.

The next is an experimental case: Miss J.J., aged 16; first examined by Dr. W. Sohier Bryant:

April 10, 1907: Nose and mouth-breather. Marked nasal insufficiency. Developmental nasal occlusions 3.9 mm. maximum nasal compressibility at edge of nasal bones; 2.3 cm. from apex of nasal arch to apex of spine of superior maxillary. Nasal orifices measured 4.7 mm. by 11.0 mm.

May 13, 1907: Nasal breathing easier.

June 13, 1907: Still further improvement in nasal capacity.

Oct. 21, 1907: Nasal air supply sufficient. Nasal fossæ and nares well open.

Nov. 1, 1907: Breathes well through nose most of the time. Nasal orifices, 5.5 mm. x 14.0 mm. Can get more than enough air through nose. Three cm. from apex of nasal arch to spine of superior maxillary bone. The dilator nasi motionless.

From the above observations, extending over six and one-half months, we see that the capacity of the nose increased greatly during the time the patient was under treatment for expansion of the dental arch.

The next case is that of a little boy, 7½ years old, for whom it was determined to spread the dental arches without removing the adenoids, his father recognizing no need for such procedure. Dr. Bryant's report is:

Feb. 18, 1907: Nasal insufficiency, but a nose-breather. Narrow, slightly vaulted palate. Nasal septum showed spur on the left side. Hypertrophied tonsils and adenoids.

May 3, 1907: Nasal breathing slightly improved. Adenoids and hypertrophied tonsils, and mucopurulent nasopharyngitis.

Feb. 11, 1909: Palate seems normally developed. Septum appears straight. No spur. Nasal fossæ large. Free nasal breathing.

From the appearance of the patient when I first examined him I expected that the nasal breathing would continue to deteriorate and that the nasal septum would become more irregular. Contrary to this expectation, when I saw the patient on February 11, the nasal breathing was much improved, and the nasal septum was normal. The patient still had hypertrophied tonsils and adenoids.

Dr. Charles E. Quimby writes:

> The possibility of straightening more or less the bony nasal septum through change in the relations of the superior maxillæ is no longer open for discussion so far as I am concerned. I have done it. In the case reported the deformity was purely developmental and the result has been perfect and permanent restoration of nasal respiration. Any "spreading of the upper dental arch" which changes the relations of the maxillæ must affect the nasal septum. In my case the maxillæ were separated by apparatus acting on the teeth, as shown not simply by separation of the central incisors but by opening of the suture the entire length of the hard palate. In another case under my observation change in the dental arch was followed by slight enlargement of the nasal meatus, but without change in the septum.
>
> It would seem obvious that this method of correcting nasal defects is applicable only to developmental deformities, and that the best results will be obtained before the maxillary suture is finally closed.

My two cases that seem to be exceptions were these: A little girl, whose arches I began to spread when she was 7½ years of age, improved in health and strength and ruddiness constantly for two years from the time the apparatus was first put on. Letters from her father and her mother allude to this because they both were apprehensive that the strain would be too great for the child, who had scarcely recovered from a severe and dangerous illness. They were kind enough to write me of her good condition, and that she had not suffered a day during the operation. I was correspondingly pleased. I have just learned (after three years) that her father, who is a physician, finds the inferior turbinates hypertrophied on both sides, "so much so as to nearly meet the septum. On the right side the middle turbinate is in contact with the septum," and he fears an operation may be necessary.

The other case was that of a boy, about 15 years of age, who was brought to me by Dr. Bryant to inquire why there was still a deviated septum after the boy had undergone in Boston the ordinary operations for regulating the teeth.

A careful examination with measurements very soon revealed the fact that, while the teeth had, indeed, been regulated the arches had not been spread at all; hence there could have been no enlargement of the nasal passages or straightening of the septum, and I recommended the application of direct pressure by means of a screw and the prompt separation of the maxillæ.

Epitomizing my experiences and those of all whom I have consulted, it would seem that the best results obtainable, both for nasal passages and the dental arches, are those which follow on orthopedic or orthodontic operations, commenced as early as the diagnosis can be clearly made; and these operations are accomplished by gradual pressure, stimulating normal growth; but when the child has reached 15 or 16 years of age or more the nasal septum is most promptly and easily straightened by the application of positive force, rapidly applied, and retained until the nasal troubles are remedied, after which the dental arches can have the ordinary orthodontic treatment, which they may then be found to need, involving the osteoclastic changes on the further side of the pressure, with corresponding building-up on the hither side.

Since writing the above, two letters have been received—one from Dr. John J. Cronin regarding a little patient of his, 6 years old, supposed to be a perfectly healthy baby until attention was called to the fact that his temporary teeth were a little crowded, and that the permanent teeth would have difficulty in erupting properly. An examination revealed ten or more cavities in these temporary teeth requiring fillings.

The one thing that marred the picture was that seemingly insufficient exposure would often result in attacks of croup. A spreading apparatus was applied to the temporary teeth. After about ninety days the doctor writes:

> The spreading of his dental arches is synchronous with a less irritable disposition. He has not had an attack of croup in the past three months, and, as far as one in good general practice can judge, there has been more croup than usually comes. The boy's general aspect has changed, and there can be no question that his nervous balance is greatly enhanced. The apparatus at no time has caused him the slightest inconvenience. From a thin peaked-faced child the boy has developed into a broad square-jawed individual. The nasal chambers have increased in size. I regret I could not follow out your request to measure the chambers before and after, as when I first visited the instrument shop they did not have the calipers.

The other letter to which I am permitted to refer is from Dr. W. K. Rogers, of Columbus, Ohio, to Dr. C. A. Hawley, now of Washington. Dr. Rogers writes:

> The W. children, whose adenoids and tonsils I removed a year ago, were brought in for observation to-day (April 23, 1909). It is worthy of note that in the older child whose upper alveolar arch you have been treating, and in whom, as well as the younger, there was a distinct element of nasal stenosis when I first saw them, improvement in nasal respiration has been much more marked than in the younger child, for whom you have only just instituted this procedure.

63 West Forty-eighth Street.

ABSTRACT OF DISCUSSION

DR. EUGENE TALBOT, Chicago: If the essayist had intended to take up the literature on the subject, it is strange he should not mention the 14 or 15 cases I recorded in the nineties in my work on "Osseous Deformities of the Head, Face, Jaws and Teeth" and "Irregularities of the Teeth." They were the first 14 cases ever placed on record. This operation is becoming one of the greatest for the relief of humanity.

DR. J. H. W. RHEIN, New York City: I want to echo the sentiments of Dr. Talbot on this matter, that the value of presenting this treatment, not only to the laryngologist and the general practitioner, but to the world at large, is of inestimable value in the correction of one of the most unfortunate deformities that we find in childhood. I do not know whether Dr. Bogue intended to present this as something novel, for not only is the work of Dr. Talbot in this respect well-known, but these results have certainly been understood in our specialty for the past twenty-five years and have been more or less generally practiced. My record books will show a number of cases of children started as early as these for the accomplishment of this result. I do not believe there is anything new in the past ten years in the handling of the jaws before the eruption of the permanent teeth. A number of the older men are constantly decrying the handling of the jaws of children before the permanent teeth are erupted, claiming that our interference in this respect is frequently called for before we see what nature will do for the child, but it is the history of such cases as portrayed by Dr. Bogue that should put an end to criticism of this kind, because nothing is going to be more beneficial in the physical improvement of the individual than to eliminate insufficient breathing as early as possible in life.

Dr. George V. I. Brown, Milwaukee: Dr. Bogue's measurements show that he does get results. Fine spun theories are all very nice, but exceedingly busy men have not time to go into the details of these matters. They want things done so that they can recognize them, and done promptly. I was glad to hear Dr. Bogue report some cases that were not so successful. He has given us much food for thought in this direction. The fact that in one of his cases there appeared to be a tendency to reversion to the original condition, when it was apparently cured, is exceedingly interesting. I hope Dr. Bogue will follow this case up, determine the final results, and report later.

Dr. Arthur Zentler, New York City: I happened a short time ago to speak to the former director of the Metropolitan Opera House School for voice production. This lady told me that whenever a young pupil applying for admission had defective sounds, she sent the applicants to the rhinologist for examination. After a time she found such improvements that she inquired what caused such good results. The rhinologist replied: "I send them to the orthodontist to spread the dental arch and get a larger opening into the nasal passages." I think this statement shows as much as possible the results Dr. Bogue has spoken of.

Dr. E. A. Bogue, New York City: My only object in writing the paper was to bring testimony. As Dr. Rhein has stated, there is nothing new in it, but so many were inclined to cast discredit on the statements made by some orthodontists that I thought it worth while to get the testimony of the rhinologist who is entirely impartial. The only other feature worth mentioning was the one that my friend Dr. Brown mentioned in his paper, that this work can be done when rapid spreading is not possible.

CONSERVATIVE SURGERY FOR THE TREATMENT OF DISEASES OF THE MANDIBLE *

THOMAS L. GILMER, M.D.
CHICAGO

Exsection and resection of the mandible are followed by greater mutilation and disfigurement than follow any other oral or facial surgery. When the continuity of the lower jaw is broken by the removal of considerable sections of the bone, facial deformity is at once and permanently made, and no means of restoration by prosthesis, or otherwise, has as yet been suggested or employed, which meets the demands either cosmetically or functionally in any degree satisfactorily, either to the surgeon or to the patient. This statement may be qualified in a slight degree by excluding a few cases in which only a small section of the mandible has been removed in the anterior part of the bone, and there are present in the two fragments of the jaw a number of good sound teeth firmly set to which a bridge may be secured; and even in such cases, owing to the heavy strain to which such teeth will be subjected, it is unreasonable to expect them to withstand permanently the necessary strain of mastication without finally becoming loosened and lost.

Those who have made staying appliances for this purpose realize the many difficulties in the way. Muscular force necessary for ordinary mastication exceeds the strength of any rigidly applied fixture. That such fixtures are frequently broken by the patient, even when they are most scientifically and carefully constructed, is well known. Muscular traction on the remaining portions of an exsected mandible, in ordinary mastication, causes an outward rotation at the base of the bone, through the action of the masseter muscle on closure of the mouth, and the mylohyoid muscle turns the base of the jaw inward when the mouth is opened. If a rigid appliance is used for the support of the two remaining portions of the jaw, the metal employed for this purpose, if used in size practicable in the mouth, will, by reason of long continuous strain, crystallize and break, no matter of what metal it may be constructed. To construct such an appliance sufficiently strong to withstand mastication and not to loosen the teeth, joint must be employed on each side so that the two parts of the bone may have some free movement, thereby putting less strain on the metal connection and teeth to which it is attached.

As you will note, reference has been made to prosthesis for the most favorable cases only, that is those in which a section has been removed from the anterior portion of the jaw. If the continuity has been broken by removal of a considerable section in the posterior portion of the jaw on one side or the other, the difficulties are greatly increased. If the remaining portion of a jaw in such a case is supported and held in its normal position until cicatrization has been completed, about all has been done that can be done in such cases. This may be done by wiring the teeth of the longer fragment to the corresponding teeth above, or by soldering a flange to bands cemented to the teeth of the remaining portions of the lower jaw in such a manner that when the mouth is opened the flange will rest against the buccal surfaces of the upper jaw, preventing cicatricial contraction from displacing the remaining part of the bone. Even though one of these methods be adopted, the function of the remaining part of the jaw is extremely poor. Following resection of the entire body of the jaw or even one-half of it, there is little hope for artificial restoration which can promise great value, either for mastication or for cosmetics.

When the surgeon realizes the truth of the foregoing statements he should be slow in deciding on an operation so radical as exsection or resection. He should be sure that the life of the patient can be saved only by such an operation; and I am of the opinion that it is good practice, even in some malignant types of disease, unless the bone throughout its entire thickness is involved, to do an operation which will save at least a small part of the body of the jaw in its continuity, taking some risk of recurrence rather than maiming the patient for life. Take, for instance, the most prevalent type of malignant tumor of the mandible, the giant-cell sarcoma. Since in this type of sarcoma metastases are not early formed, a conservative operation may first be done, then the case subjected to ray energy and watched closely. If the growth recurs, it is not yet too late for the more radical operation.

My experience has been such that I feel fully justified in this procedure. I have, in several instances, removed most of the jaw, leaving for support a sufficient part of the bone in which the diagnosis of giant-cell sarcoma had unmistakably been made, and there has been no recurrence after a period of fifteen years. I have done a much larger number of operations of this kind for similar cases, which after several years there is no indication of return. Unless the disease has progressed so far that an entire section of the bone is involved, I save that part which appears uninvolved, and feel justified, though there should occasionally be recurrence.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

Good surgery is thorough surgery, but it does not necessarily follow that surgery to be good must always be radical. Diagnosis in mandible cases is all-important. A case was shown at the Chicago Medical Society by Dr. Carl Beck in which an entire lower jaw had been removed by a surgeon for the cure of what was supposed to be a malignant affection. After the mandible, in its entirety, had been removed, it was discovered that the condition was simply one of necrosis. In this case had greater care been exercised in diagnosis and had Nature been assisted, the reformation of the jaw would have been so complete that there would have been but little deformity, and sufficient bone would have been rebuilt to support a prosthetic appliance.

In some instances in which diagnosis of necrosis of the mandible is correctly made, some surgeons feel that a radical operation is needed, and at once, before Nature has separated the dead from the living bone, proceed to perform that service for her with the result that an additional area of healthy bone is involved and in some instances destroyed. Had the case been closely watched, properly drained and irrigated, the dead bone would have been thrown off and in the meantime the osteogenetic influence of the periosteum would have been at work forming a new and serviceable jaw. If in cases of necrosis of the mandible the surgeon anticipates Nature's work and cuts away the dying bone, new bone is not formed to take its place, and permanent disfigurement and functional inactivity of the jaw is the unfortunate result.

The so-called epulis of the jaws, a benign tumor of connective tissue origin, may histologically simulate sarcoma. To remove large, or even small complete sections of the jaw in such cases, is to inflict unnecessary suffering on the patient. I have removed scores of such growths, taking with them only a part of the alveolar process, and they have not returned.

I am no advocate of temporizing with malignant neoplasms; but, to be sure of the diagnosis, then radically to remove all of the invaded tissue so far as we can judge, saving, if possible, a small part of the jaw in its continuity, is not temporizing.

For cosmetic reasons operations on the jaws, when they may be thoroughly and completely done from within the mouth, should be done that way, but if the disease is of a malignant nature a clear field with unobstructed light is necessary to enable one to judge of the extent to carry the operation, then an external incision should be made. Such incisions may usually be made in a manner to cause the minimum of disfigurement.

31 Washington Street.

ABSTRACT OF DISCUSSION

Dr. George V. I. Brown, Milwaukee: The thoroughly practical views that Dr. Gilmer has presented of the difficulties encountered in endeavoring to overcome the mutilation and disfigurement that follows resection of the mandible, based as they are on his long experience and successful results in oral surgical practice, commend themselves to our best consideration and adoption. Of course, we all know that the only hope at present for greatly benefiting growths of the more malignant types is early diagnosis and complete radical early operation at a time this may be done without total destruction of usefulness of the parts. It is no kindness to a man to resect his lower jaw, or a half or two-thirds of it for the sake of giving him the bare possibility of one or even two years additional life. I do not consider life worth living under conditions such as those in which I have seen patients endeavoring to exist after operations of that character had been performed. When the question of resection of the jaw for cancer arises in my practice and there is on the one hand perhaps the temptation to do a big operation with doubtful prognosis, the thought comes to me, "Would I desire to have that done to myself? Would I wish to live under such circumstances?" and most of the time I think that I would not.

One of my cancer patients was saved, I believe, by Dr. A. J. Ochsner, of Chicago. The growth was situated in the region of the maxillary sinus of a patient for whom I had previously done a radical operation for empyema of that sinus. At the time I was suspicious of a tiny spot not quite so large as one's little finger nail. In accordance with my custom, I had sections made and under the microscope it proved to be cancer. For several months the patient got on well. Then he had a recurrence. I knew if anything was to be done with the knife it must be a removal of the entire upper jaw. Instead of this I took the patient to Dr. Ochsner and he burned the growth out. The operation was done without an external incision. Twenty or thirty soldering irons were heated, the patient was anesthetized, and these irons thrust, one after the other, into the opening, which already existed in the sinus. This was repeated until the tissue in every direction was burned to the utmost limit that one would dare to force the iron. It was necessary to burn this patient on two different occasions and sequestra of bone came out for months afterward, but from last accounts the man was still living happily, and I feel sure that he would not have been living at this time had other methods been pursued.

I am convinced that there is no operation that can be done with the knife in the way of resecting the jaw, upper or lower, that will come so near taking out all the tissue that is malignant or has a tendency to malignancy, or will so nearly overcome the tendency to recurrence of the neoplasm, as will burning with soldering irons. This operation is disagreeable for those who operate and very much so for the patient afterward, but its great advantage lies in the fact that one could not so safely do so extensive an operation with the knife; hemorrhage in other kinds of operation would, in all probability, be very much more serious, and by this method of treatment tissue is destroyed in advance, so that it continues to slough out for a considerable period of time. Thus we have micro-organisms concerned in tissue destruction, warring against and destroying the tendency to proliferation of cancer as of other cells, and this seems to exert a beneficial influence.

With the great advancement that is being made in the study of both carcinoma and sarcoma, we all hope for better methods of treatment in the near future. In the meantime, in my opinion, there can be no question of the value of the suggestion that Dr. Gilmer has given us to-day. The same principles apply with even greater force to the treatment of necrotic conditions of the mandible, because with these the surgeon, by the skillful use of suitable instruments, proper drainage, and reasonable time to allow Nature's curative and reconstructive processes to assist, should in most instances be able to control the operative conditions sufficiently to avoid hideous external scars, and seriously deformed, more or less useless jaws that so frequently result from unnecessarily rapid improperly performed operations.

Dr. T. L. Gilmer, Chicago: I spoke of certain tumors of the mandible as so-called epulis. This tumor is not malignant. There is another tumor of the jaw, sarcoma, known by the same name which is malignant. Epulis is a compound Greek word meaning on the gum; therefore is not a suitable name for either growth. Neither of these growths spring from the gums, but are of connective tissue origin and usually originate in the bone or periosteum. Epulis to the pathologist means a malignant growth. It is a misleading name and should be abandoned. Microscopically some of these non-malignant growths show sarcomatous cell formation.

The stomatologist should ever be on the alert to detect disease of the mouth early. Since he is seeing the mouths of his patients frequently he may discover abnormal conditions before they have gone too far to remedy, without serious deformity or loss of life.

Desamidation.—This term, which is not to be found in the average dictionary, signifies the capacity to reduce amid nitrogen.

ANESTHETICS FOR DENTAL SURGERY [*]

L. G. NOEL, M.D., D.D.S.
NASHVILLE, TENN.

Dental surgery embraces so many different operations, varying so widely in the time required for their performance and in the amount of shock to the nervous system, that it necessarily calls for various agents of different degrees of potency to meet its requirements.

For prolonged narcosis we have chloroform, ether, ethyl bromid and ethyl chlorid. The record of deaths in the dental chair from chloroform is so appalling that one would think no intelligent dental surgeon would permit this agent to be used in his office, even though a physician should recommend it and assume the responsibility by his presence and performance as anesthetist.

The April number of the *Dental Cosmos* records a case of death from chloroform narcosis in the dental chair, and I have almost quoted the editor's comment above. The May number of the *Dental Brief* reports two deaths from anesthetics in the dental chair, one from chloroform; in the other case, we are left to guess what agent was used, as the reporter seems to think this a thing of minor importance. A death from chloroform in Oklahoma is recorded in the *Dental Summary* for May; thus it appears we are slow to profit by experience.

When serious surgery is to be done, and profound narcosis is required, the patient should be taken to a hospital where all proper precautions may be taken to meet the risk, and where the recumbent position may be maintained from start to finish.

In dental surgery too much recklessness has been displayed in hurrying patients through serious operations under profound anesthesia in the dental chair, and frequently without any preliminary examination of the patient to see what anesthetic should be chosen for the occasion.

If the dental surgeon feels his own incompetency to make this necessary examination of his patient, if he is not himself a physician, he should call in a medical man for the occasion; for under no circumstances should he administer profound narcotics alone and unassisted, or without the necessary preliminary examinations. I am led to indulge in this surgical platitude by seeing in a recent number of a dental journal a paper in which the author urges a more frequent and general use of anesthetics for such operations as extirpating pulps, lancing abscesses, and even excavating sensitive cavities. I can not condemn such recklessness in sufficiently strong language.

The oral surgeon will do well to content himself with such old and well-tried friends as nitrous oxid and sulphuric ether, on whose ancient and honorable record it will be good to fall back, if any trouble should arise; and of trouble he should always have a watchful fear.

In making these remarks, I hope no one will get the idea that I would discourage research in the field of anesthesia—that I would frown on all effort to discover new and better agents; by no means. I wish my remarks along this line to apply to the average oral surgeon in the pursuit of practice, not to research work.

For prolonged anesthesia, such as is required in the surgery of the face and jaws, nitrous oxid has been found a valuable agent to produce narcosis, being succeeded by sulphuric ether to maintain this condition. This has been called Clover's method, because Mr. Clover of England was probably the first to devise a suitable apparatus for these two agents.

Clover's apparatus has been subsequently altered; but it is questionable if these alterations have resulted in very decided improvement. The advantages of this method have been set forth by Dr. C. C. Norris,[1] of Philadelphia, in a report of 150 cases, compared with 150 cases of plain etherization.

He first mentions the safety of nitrous oxid, which no one will dispute; then its successful use preliminary to ether at Guy's Hospital, London, for twelve years. Favorable report on the method in a considerable number of cases by Carter, Prevost and Kelly.[2]

Dr. Norris, in enumerating the many advantages of this method over ether alone, lays particular stress on the speed with which narcosis is induced by nitrous oxid and the small amount of ether required to maintain it.

Narcosis being speedily and promptly induced by nitrous oxid, much time is saved, and the period of excitement, usually so hard to pass with ether alone, is avoided. There is an advantage of far greater magnitude than that of the mere saving of time and ether; it is in the lessening of the ether toxemia, for much less ether is required.

In a recent number of the *Therapeutic Gazette* we find an article on general anesthetics in which Dr. F. K. Bean[3] is quoted as extolling this nitrous oxid and ether method.

A. Otte, discussing the incidence of thrombosis and other complications after ether, insists on the importance of preliminary thorough disinfection of the mouth by inhalations of thymol and salicylic acid with alcohol and hot water; this is done on the preceding night and just before operation. Morphin, one-third of a grain, is given before the inhalation. The ether is then administered in small and measured doses; the patient is covered up in blankets and the antiseptic inhalations are resumed as soon as the operation is completed. This method, it is stated, materially lessens the after-dangers of etherization.

O. B. Wright has studied the postanesthetic pulmonary complications in the Johns Hopkins Hospital. He says that pneumonia induced by etherization is of a different type from the usual form, with lower and less regular temperature and without the appearance of a true "crisis." The pulmonary signs develop later, and there is less cough and sputum. The question of the pathogenesis of ether pneumonia is fully discussed under the heads of (1) irritant action of the anesthetic (and it is pointed out that ether is more commonly the exciting cause); (2) aspiration of mucus, blood vomitus and hypersecretion from the larger bronchi (it was stated that preanesthetic injections of atropin were found valueless as a means of checking the secretion); (3) emboli which Wright believes may prove to be a factor, but only one of many; (4) direct toxic effects of the anesthetic on the heart and blood vessels (these, it is believed, are more commonly met after chloroform inhalation); (5) the presence of pneumococci and other morbid bacilli in the air-passages; (6) extension of infection from the abdomen traveling through the diaphragmatic space; (7) the cooling of the surface of the body as a result of the anesthetic; (8) limitation of thoracic movement, leading to lessening of pulmonary ventilation due to bandaging, or to the voluntary efforts of the patient with the aim of avoiding pain caused by the thoracic excursion; (9) lessened resistance of the tissues arising from their depressed vitality. In discussing the prophylaxis, stress is laid on the strict limitation of the quantity of anesthetic inhaled and on attention to the posture of the patient.

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[*] Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909

[1] Univ. Penn. Med. Bull., July, 1902.

[2] Cosmos, xliv.

[3] Lancet, London, December, 1908.

The article cited above quotes A. E. Halstead as attributing postoperative paralysis to excessive dosage of ether. He uses morphin as a preliminary which diminishes the quantity of the anesthetic subsequently required.

For operations of short duration in oral surgery, such as extracting teeth, opening abscesses and removing pulps, nitrous oxid is the best and the safest anesthetic.

The S. S. White inhaler, devised for the administration of nitrous oxid alone or in combination with atmospheric air, is the inhaler I have used most; and I prefer it to any I have seen.

This instrument is so contrived that the operator may first accustom his patient to take deep inhalations of air; then, by a light pressure of the index-finger on a spring valve, a small amount of gas may be admitted, the amount of gas being gradually increased until the air is entirely cut off, and the patient is breathing gas alone. When duskiness of the skin under the eyes and about the lips begins to appear, or signs of distressed breathing, the pressure of the finger on this valve may be relaxed, the air is again admitted, and after relief is apparent the gas may be applied in full volume.

I used this admirable inhaler many times before I learned to control it. Although it is simple and easy to manipulate, I simply did not understand the best method of administering nitrous oxid—a method that must have been well known to the designer of this inhaler in order to produce so perfect an instrument.

This inhaler is provided with an inflatable rim that fits close over the nose and mouth.

It is also provided with a spring valve that gives exit to the expired air, and it may be connected by large tubing with a gas bag which is connected by tubing to a cylinder of condensed gas, or it may be connected with a gasometer suspended over water, which latter is to be filled either by direct decomposition of ammonium nitrate or from a bottle of condensed gas. A transparent face-piece is now made which enables the anesthetist to note the color changes in the lips, a very great improvement.

There is a distinct advantage in being able to have your patient breathe pure air for some time through the inhaler before admitting gas. It quiets the fears of nervous patients and affords opportunity to instruct in deep breathing.

No anesthetic should, in the beginning, be pressed on the patient to the entire exclusion of air.

This is eminently true of nitrous oxid, which, if turned on in full force, gives the patient a smothering sensation that is alarming to many timid people, is a real danger-signal, and, if persisted in, quickly brings on a duskiness of the skin that deepens into cyanosis with jactitation, all of which symptoms may and should be avoided. The prop being in place, the patient started breathing calmly and deeply, the operator by a slight pressure of the index-finger admits a small amount of gas, at first so little that the patient does not know when he begins to breathe the anesthetic; more and more is admitted until the spring is well down and the patient is breathing gas alone.

The operator must watch the skin under the eyes and about the mouth for the slightest sign of duskiness and when these are noted instantly lift the finger from the valve admitting a full inspiration of pure air to chase away the cloud of cyanosis, when the gas may again be admitted and soon be pressed to full volume.

With some patients these tactics must be repeated once or twice before the anesthetic may be pressed to deep narcosis.

This is the whole secret of safety in nitrous oxid anesthesia, and if this method is watchfully adhered to many patients whose physical condition would contraindicate gas may be successfully anesthetized.

In some patients of full habit, it is best not to wait for signs of cyanosis, but after a few deep inspirations of pure gas admit air and alternate until the gas may be pressed to full narcosis.

When the anesthetic is given in this way few patients will show signs of asphyxiation, and nitrous oxid is the safest of anesthetics. Combining nitrous oxid and air in this way, we get a more prolonged narcosis. There is no cyanosis, no jactitation, the patient is quiet, still, has no illusions, does not struggle, and thus the operator has a better opportunity; besides, the recovery is better. To my mind the advantages over nitrous oxid and oxygen are many.

Besides the increased safety, the apparatus is more simple, requiring no assistant to the anesthetist. The expense is far less and after-effects better.

I quote from a recent book on anesthesia[4] as follows:

> Paul Bert's experiments with nitrous oxid and air were failures, because he attempted to employ only fixed proportions.
>
> Mr. Tom Bird claims to have used air with gas as early as between 1870 and 1880.
>
> Mr. Rowell has spoken well of the plan of intermittent admissions of air.

Mr. Carter Braine devised a face-piece intended to supply a ready means of admitting a varying proportion of air. Speaking of this intermittent air supply method, Buxton concludes as follows:

> The time occupied in producing anesthesia may be a minute and a half, or two; or even three minutes, and the period of anesthesia is usually longer than when only nitrous oxid is employed.
>
> I have obtained a workable seventy seconds' [anesthesia] by this method.

No mention of any unpleasant after-effects following this method are made by Mr. Braine, but in regard to nitrous oxid and oxygen I quote the following:

> After-effects, such as languor, nausea, vomiting, headache, slight vertigo following the use of nitrous oxid diluted with oxygen are somewhat more frequent than when nitrous oxid is used alone.
>
> This is probably due in part to or entirely to the more prolonged period of induction of anesthesia. The patients are longer in recovering their wits and occasionally remain in a dazed state for some minutes. The after-effects following the use of nitrous oxid and air are practically those already described in speaking of nitrous oxid . . . conspicuous by their absence.

527½ Church Street.

Medical Missionary Work *in* India.—A dispensary was opened a few months ago by Dr. Lester H. Beals, a missionary of the American Board, in Wai, a city about a hundred miles south of Bombay. Ninety patients came the first day, and since then the daily attendance often exceeds 200. A considerable number of the patients need operations, especially for removal of cataracts, and more careful and prolonged treatment than is possible at a dispensary. Dr. Beals writes: "The medical destitution far exceeds anything that I supposed this part of India could furnish."

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[4] Buxton: Anesthetics, p. 102.

THIRTEEN THOUSAND ADMINISTRATIONS OF NITROUS OXID WITH OXYGEN AS AN ANESTHETIC *

CHARLES K. TETER, D.D.S.
CLEVELAND, OHIO

Thirteen thousand successful administrations of nitrous oxid and oxygen by one anesthetist covering a period of nine years for practically every kind of an operation to its completion, under varying degrees of hazard, and varying in time from a few minutes to three hours, furnishes sufficient data, it seems to me, to establish to some degree, at least, the efficiency of nitrous oxid with oxygen as an anesthetic.

I realize that this declaration makes it necessary for me to provide the proof, which I am prepared to do, although, for the lack of time, it will be out of the question to review very many of the interesting cases. It will be competent, however, to select for illustration a few cases, which seem to me to substantiate my statement. If any one cares for further proof than will be set forth in this paper, the thousands of cases of which I have a record are at his disposal.

Nitrous oxid with oxygen as an anesthetic has not a very substantial record at present, owing to the limited number of cases to report on, and this makes it apparent that it is not occupying the place it should among the recognized efficient general anesthetic agents. This being the case, I desire to take up briefly some of the more important features connected with this particular anesthetic before reporting the cases I have selected.

I shall pass over the chemical and physical properties of the gases, as most, no doubt, are familiar with them.

In taking up this line of work I first employed nitrous oxid with varying percentages of air, but I found, as others have, that the character of nitrous oxid anesthesia was entirely changed by the substitution of pure oxygen for the air. As a result of this change, nitrous oxid with oxygen has been given a prominent place in surgery to-day.

The profession in general has been extremely slow in taking up nitrous oxid with oxygen as an anesthetic in general surgery, owing mainly, I think, to three factors: (1) an imperfect apparatus; (2) lack of skill in its administration; (3) the expense. Happily there have been a few of us who have devoted not only a great deal of time, but also spent considerable money in developing this form of anesthesia because we recognized its well-known pleasantness and safety.

The first reports that we have of cases in which oxygen was used with nitrous oxid in producing anesthesia were made by Dr. E. Andrews of Chicago, in 1868, but he did not use it to any extent nor did he get any one interested in it at that time. It was ten years later that Paul Burt of France went into this subject thoroughly. He carried out some elaborate and expensive experiments, but he was laboring under a wrong theory, so his methods were never adopted. Dr. Burt proved, however, that nitrous oxid was a true anesthetic, and that asphyxiation was only concomitant, and not the cause that produced anesthesia. Dr. Frederick W. Hewitt of London has done more to bring this anesthetic before the profession than any one man. His book, "Anesthetics and Their Administration," is the best on the subject that has ever been published. He has had very extensive experience with all anesthetics, as he has devoted his energies exclusively to anesthetics for a long time. He, however, has not had the experience with this particular anesthetic that some men in America have. He has used it only in slight operations and of short duration. The longest time that he speaks of administering it continuously was fifty-two minutes for a minor case for the dressing of a wound and adjusting splints. The list of operations in which he employed nitrous oxid and oxygen are given by him as follows: "Syme's amputation, lithotrity, removal of breast, excision of varicose veins, varicocele, removal of ossicles of internal ear, resection of patella, removal of necrosed bone from a tuberculous hip, several intra-uterine operations and for a large number of minor operations." There are many men in this country who are using nitrous oxid and oxygen for practically every operation that is being done by the surgeons of to-day. The indication for nitrous oxid and oxygen as the anesthetic is not governed by the nature of the operation, but by the physical condition of the patient. When the operative risk is great, nitrous oxid with oxygen is indicated, and the mortality rate is greatly reduced.

Since the discovery of oxygen by Priestley in 1774 it has held a more or less prominent place in medicine and surgery. The effect of the inhalation of oxygen on the system is acknowledged by all to be beneficial. Brambridge says "that oxygen influences the quality of the blood, that this improvement is in the direction of an increase in the red corpuscles, that the white corpuscles are not influenced by it, and that clinically it effects a marked improvement in the patient." Oxygen is a slight respiratory and cardiac stimulant and is a specific in asphyxia. It has but little effect on blood pressure.

EFFECT OF NITROUS OXID AND OXYGEN ON THE ORGANISM

Let us now consider for a few minutes the effect of nitrous oxid and oxygen on the organism. The gas on entering the lungs is distributed throughout the alveoli and is taken up by the blood and passes to the lymph. As the nitrous oxid comes into contact with the delicate nerve cells an action is brought about that causes a temporary cessation of their functional integrity. The most highly organized centers are first and chiefly affected; but gradually all succumb until the respiratory and cardiac centers are paralyzed. The rate of absorption of nitrous oxid and oxygen will depend on numerous conditions; i. e., temperature of the gas, temperature of the blood, rate and depth of respiration, the rate of capillary flow through the walls of the alveoli. It is well known that the absorption of anesthetic vapors takes place much more readily if the temperature of the vapor when inhaled is about that of the blood. I have found that when nitrous oxid with oxygen is administered warm the patient passes into the anesthetic state more quickly, more quietly and with less disturbing effect to the respiration than when the gas is given at lower temperatures.. With warm gas the patient, as a rule, gradually and quietly passes into a peaceful sleep without the least resistance. The narcosis obtained is deeper, relaxation is more complete, cyanosis is almost entirely absent, intercurrent asphyxia is less likely to be brought about by reflex stimulation from the operative manipulation, which might interfere with respiration. There will be no postoperative bronchitis or pneumonia following inhalation of warm gases. Another feature is the smaller amount of nitrous oxid required. Nitrous oxid and oxygen

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

given at an ordinary temperature will require on an average 250 gallons of nitrous oxid and 40 gallons of oxygen for an hour's anesthesia. When the nitrous oxid with oxygen is administered warm or at about the temperature of the blood, 150 gallons of nitrous oxid and about 40 gallons of oxygen will suffice for an anesthesia lasting an hour. A smaller amount of nitrous oxid will be required for the second hour of anesthesia, but a larger amount of oxygen will be necessary.

The elimination of nitrous oxid and oxygen takes place principally through the pulmonary blood stream and respiratory tract. On the withdrawal of the anesthetic the alveolar tension falls below the blood tension, and the elimination commences. The rapidity of elimination will depend on the freedom of the air tract, the depth and efficiency of respiration, for on this good circulation depends. If a good respiration and circulation are present on the withdrawal of nitrous oxid and oxygen, recovery takes place in a very few minutes. The patient will show symptoms of recovery within sixty seconds after a profound anesthesia which may have lasted two hours, and will be conscious within three minutes. At times when poor circulation and respiration are present, recovery will be much slower, and if there has been much surgical shock recovery will be still slower. Recovery may be hastened greatly by administering pure oxygen every few inhalations.

I have used nitrous oxid with oxygen many times as the anesthetic throughout the following operations: laparotomies, consisting of hysterectomy, salpingectomy, oöphorectomy, appendicectomy, cholecystectomy, choledochotomy, gastrectomy, gastroduodenostomy, uretrosigmoidostomy. Other operations, such as abdominal Cesarean section, prostatectomy, removal of large tumors and inflammatory adhesions; radical operations for the cure of hernia, varicocele, hydrocele and orchidectomy; amputations of breasts, amputations of extremities, and a large number of thoracentesis. If this anesthetic is administered skilfully it is about ideal for the operation of thoracentesis, for a small amount of nitrous oxid will produce anesthesia and a large percentage of oxygen can be given to the starving lung. In brain surgery nitrous oxid has been especially advised against, owing largely to the asphyxiation that is concomitant with the administration of nitrous oxid and air. For while the addition of air will lessen to some extent the asphyxiation of nitrous oxid, it will not suffice to eliminate it entirely; if air is added to overcome all the asphyxiation the nitrous oxid loses its effect as an anesthetic. Nitrous oxid with varying proportions of oxygen, however, if skilfully given, is a different proposition. My experience in this line of work has been good, for I have not had a single case in which difficulties arose.

EFFECT OF NITROUS OXID ON THE BRAIN

It is interesting and very instructive to observe the effect of nitrous oxid on the brain and also the effect of the oxygen. I have noticed in the cases which I shall report later that when the patient inhales pure nitrous oxid the brain begins to lose its natural pinkish color in about fifteen seconds, and at times much sooner than this. If the inhalation is continued without air or oxygen the brain continues to become darker. If this is continued to the third stage of anesthesia, the brain will have the appearance of stagnant blood and will be greatly dilated. The dilatation is concomitant with the discoloration, and if there is much cyanosis present the brain will be greatly discolored and will protrude through the opening in the skull. What is the cause of this discoloration and dilatation? Is it the effect of the nitrous oxid, or is it simply the asphyxial element caused by anoxemia? The cause of this change was clearly shown in a case I have reported elsewhere,[1] but as it will illustrate my point here I will again refer to it.

CASE 1.—*Patient.*—A lad, aged 10, while playing on a fence in some manner fell off, landing on his head. The bruise was near the left side, causing an epidural hemorrhage. The pupil of the right eye was extensively dilated and the muscles of the same eye were paralyzd. There was not even a scalp wound. He was in a comatose condition when picked up, and continued in this condition for about twelve hours. An operation was decided on, but it was undertaken with grave fears on account of an exceedingly weak thready pulse and rapid jerky respiration.

Anesthesia.—I started the administration with about 8 parts of oxygen and 92 parts nitrous oxid, increasing the oxygen gradually until about 12 parts of oxygen and 88 parts of nitrous oxid were being given at the end of sixty seconds. The patient passed into complete surgical anesthesia within this time. Respiration became more rhythmical, the pulse became less rapid and the tension much improved; in fact, the patient was in far better condition than before the anesthetic was started. An opening the size of a half dollar was made in the skull and a large quantity of clotted blood was removed. As everything was going nicely I carried out the following experiment: On decreasing the oxygen to about 3 parts with 97 parts nitrous oxid in about ten seconds a change in color was noticed in the brain. At almost the same instant a swelling up of the brain occurred. As the anesthetic was continued the brain gradually became very dark and dilated to the extent that the entire cranial cavity was soon filled, and the brain commenced to protrude through the opening. The oxygen was increased at this point to about one-half of the mixture, and after only four inhalations it was noticed that the brain was receding and the natural color was restored rapidly. The brain had regained its normal color and position within fifteen seconds. This discoloration and dilatation were concomitant and could be brought about at will by increasing or decreasing the oxygen.

CASE 2.—*Patient.*—A man, weighing about 240 pounds, who was operated on for brain abscess. This patient was in bad condition; temperature 107; he also had degenerated vessels and heart. This anesthetic had been given him twice before; once for a frontal sinus operation and once for a mastoid operation, all within six weeks. He had taken the anesthetic nicely on the two former occasions, so it was given for this more extensive operation without much apprehension. I was able to produce a profound anesthesia with about 90 parts nitrous oxid to 10 parts oxygen from the start, gradually increasing the oxygen to 15 parts within the first two minutes. The patient passed into profound anesthesia within two minutes. When the skull was opened I had good anesthesia without any cyanosis or other asphyxial symptoms and the brain was of good color and not dilated. I kept an even anesthesia throughout and had no change of color or dilatation of the brain at any time.

All of my brain operations show the same phenomenon. If the anesthesia is accompanied by cyanosis, the brain will be not only dark in color, but dilated as well. Consequently I affirm that the dilatation and congestion were not due, *per se*, to the anesthetic action of nitrous oxid, but constitute an entirely asphyxial manifestation. The asphyxial factor may enter into any anesthesia, and if it does the afore-mentioned phenomenon will be present, whether the anesthetic agent be chloroform, ether, or nitrous oxid. It is more apt to accompany nitrous oxid than any of the other anesthetic agents, from the fact that nitrous oxid has to be administered almost in its pure state. The asphyxiation that we have with nitrous oxid anesthesia is not dangerous, however, as compared with that produced by ether or chloroform. In brain surgery nitrous oxid alone or administered with air is not a good anesthetic; but nitrous oxid with varying proportions of oxygen is without question a good anesthetic in brain surgery.

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[1] Read at the thirty-ninth annual meeting of the Pennsylvania State Dental Society, Pittsburg, July 9, 1907.

CASES SHOWING SPECIAL POINTS

I will mention a few cases in order to show some points of special interest, such as length of narcosis, extreme ages of patients, physical condition, primary shock and fatality.

Under length of narcosis, I have the following cases:

CASE 3.—*Patient.*—Mrs. S., aged 32; very nervous; somewhat emaciated; valvular insufficiency; compensation fairly good.

Operation.—Hysterectomy, appendicectomy. Hemorrhage profuse and troublesome. The uterus contained a fibroid tumor weighing 22 pounds.

Anesthesia.—Induced in two minutes; some reflex effect on respiration when incision was made, but no other movement of patient. Profound anesthesia was easily maintained with about 88 parts nitrous oxid and 12 parts oxygen. This amount varied somewhat but was about the average. Anesthesia was maintained without one breath of air or other anesthetic. Pulse at the beginning was 98, at the close just before the anesthetic was removed 112. General condition good under the circumstances.

Postoperative Condition and History.—Consciousness was regained within three minutes. Patient vomited during recovery only; no more sickness. Length of operation, three hours and four minutes.

CASE 4.—*Patient.*—Mrs. G., aged 45; nervous temperament; general condition fairly good, but the patient had suffered for years from pelvic trouble and chronic gastritis accompanied by severe vomiting. Nitrous oxid with oxygen indicated on account of the gastric disturbance.

Operation.—Patient was found to have a large intraligamentary cyst, complicated by dense and extensive adhesions, with an involvement of both tubes. A double salpingectomy was performed, together with removal of the cyst and adhesions. Bleeding from the denuded surfaces was very troublesome, making the operation a long one. The patient was given morphin 1/6 gr. and atropin 1/150 gr. one-half hour before the operation. The morphin and atropin was given on account of certain conditions that indicated that the patient was not susceptible to anesthetics and complete relaxation was imperative, which we wanted to obtain without the aid of ether.

Anesthesia.—The patient was anesthetized in about three minutes. There was a certain amount of cyanosis present and some rigidity during the first fifteen minutes. After this time a good color and complete relaxation was obtained throughout the operation, which lasted two hours and forty-eight minutes. The pulse remained good, being at the close only a little faster than at the beginning, and was full and strong.

Postoperative Condition.—Patient regained consciousness within five minutes. Nausea and other postanesthetic complications were entirely absent.

I have had many cases in which it has been necessary for me to continue the administration of nitrous oxid and oxygen for two or three hours. As to the length of time that nitrous oxid and oxygen could be continued with safety, I believe that this anesthetic can be given longer and with less danger than any of the general anesthetics, excepting none.

In looking over the cases to ascertain the age, I find one which I think will be of interest. It is that of the youngest person to whom I ever administered nitrous oxid and oxygen, and is as follows:

CASE 5.—*Patient.*—A baby boy, whose birth was induced at the eighth month, being at the time of operation three months old. Operation, circumcision and amputation of toe.

Anesthesia.—No inhaler was used for this case, but, instead, I forced the nitrous oxid and oxygen through the tube, holding it in front of the patients mouth. Narcosis was induced in about forty seconds with a mixture of about 5 parts oxygen and 95 parts nitrous oxid. There was a certain amount of adulteration caused by the nonexclusion of the air, but, notwithstanding this, it was soon necessary to increase the percentage of oxygen in order to prevent muscular jactitation and clonic spasms. Perfect anesthesia was maintained to the completion of the operation, about thirty minutes. On the removal of this attenuated vapor recovery took place within forty seconds. The child seemed as bright as ever, and the sympathetic mother, in her anxiety, put the child to her breast at once and it nursed without any ill effects.

I have administered nitrous oxid and oxygen to over 5,000 children, principally for tonsillectomy, tonsillotomy, adenectomy, circumcision and dental extractions. For these oral operations the nasal inhaler is employed, and profound anesthesia is maintained to the completion of the operation. Available anesthetic is at the operator's command until the operation is completed, be that in two minutes or two hours.

The aged, as a rule, are good subjects for nitrous oxid and oxygen, and take it nicely. As with children, it is necessary to keep a close watch of all symptoms, for the effect of the anesthetic is very rapid in such cases. I have administered it to a great many aged people, some presenting practically no abnormality except that which would be expected in the aged, but others in which a general active and chronic degeneration was extensively manifested. In such cases, as a rule, I have been able to obtain satisfactory anesthesia and have no cause for worry. There are exceptions to this, however, and I have had my resources taxed to their utmost.

In my experience gained from 13,000 nitrous oxid and oxygen anesthesias, I have learned that it is not always best to continue with nitrous oxid and oxygen under all circumstances, for it may be next to impossible to retain the desired depth of narcosis in certain cases. In some cases it may be better to resort to a more stimulating or tolerable anesthetic either in sequence or combination.

I have had a few cases in which respiratory, cardiac and composite (Hewitt) shock was manifested during the operation, and probably more than would be met with under 13,000 average ether anesthesias, owing to the fact that nitrous oxid with oxygen was resorted to in many of these cases for the reason that there was some abnormal condition present and the operative risk was great. Under these circumstances we would expect to encounter shock quite frequently.

I have had but one fatality on the operating table, and this was a primary circulatory failure, in no way due primarily to the anesthetic. I have barely missed several, however, by the patient dying a few hours before the time set for the operation.

CASE 6.—This was one in which composite shock was met, owing to the sudden release of tension of the abdominal cavity.

Patient.—Mr. I., aged 86, obese, plethoric; senile myocarditis, and very rapid pulse (130), hard to discern in the external carotid, facial or radial arteries.

Operation.—This was performed for stone of the bladder. The abdomen was greatly distended from the retention of urine for four days. Suprapubic lithotomy was performed.

Anesthesia.—This was induced slowly, for any effort to hasten obstructed the breathing. After about five minutes' satisfactory anesthesia had been induced and the incision was made and the bladder exposed. Respiration was somewhat labored but patient was in good condition and had a good color, indicating good oxygenation. The pulse was not easily obtained by palpation but was quite distinct by auscultation.

It was the intention to remove the contents of the bladder gradually, but the distention was so great that when the incision was made the bladder burst and the contents flew to the ceiling. Respiration ceased at once; no pulse or heart sound could be detected, eyes fixed and staring, pupils enormously dilated and all reflex abolished. Artificial respiration and lung inflation with pure oxygen were resorted to at once. Heart sounds commenced within thirty seconds with almost immediate inspiration, which was repeated after a few seconds and normal respiration and circulation reestablished. Pure oxygen was continued, alternating with air until the corneal reflex was established, after which the nitrous oxid with oxygen was used and the anesthesia continued without mishap to the completion of the operation. The patient recovered consciousness within eight minutes and did not seem greatly depressed.

The following case is reported for the reason that it is the only death that I have ever had. Nitrous oxid with oxygen was the anesthetic used. I will give a detailed report of this case in order to show that the anesthetic was not the primary cause.

CASE 7.—*Patient.*—Mrs. M., aged 60, had been vomiting for over a month and was in an exhausted condition from starvation. The cause of her trouble was very obscure and symptoms were lacking. Gallstones were finally diagnosed. Owing to her extremely exhausted condition an operation was considered hazardous but imperative. The persons interested were aware of the likelihood of a fatal termination so were prepared in a way for what followed. I found a very weak, thready, irregular pulse running at the rate of 150, and hardly perceptible in the radial artery.

Anesthesia.—The anesthetic was started with 95 parts nitrous oxid and 5 parts oxygen. The oxygen was increased rapidly up to 10 parts. The patient was found to be fully anesthetized after she had taken about eight inhalations. It was necessary to increase the oxygen to 20 parts or more to prevent too deep anesthesia. There was a peculiar livid appearance in the face but there was no cyanosis or any indication of anoxemia. The respirations being unhampered and regular, the pulse was about as rapid as at the beginning, but was of better tension and more regular.

Operation.—This was begun within two minutes. There was no noticeable alteration in either respiration or circulation when the incision was made. The corneal reflex was abolished from the time anesthesia was noticed to be present. It was necessary to increase the oxygen and diminish the nitrous oxid greatly to prevent an overdose of the anesthetic. By the continued application of the phonendoscope the heart was found to be acting fairly well. Everything was going along nicely until work was begun in the cystic duct and gall bladder; then respiration became uneven and forced and the heart sounds were barely discernible. The operation had been in progress for fifty-five minutes. There was no cyanosis present in the face and oxygenation seemed to be perfect, but it was noticed that the fingers of the patient were blue. This blueness gradually crept up the hands and arms, and as a large increase of oxygen and the discontinuance of the nitrous oxid did not remedy the condition we at once used pure oxygen, atropin, strychnin, but with no results, as the pulse and respiration ceased.

Artificial respiration and lung inflation with pure oxygen and other resuscitating measures were carried out for forty minutes without a sign of reanimation. This death was due to shock and primary cardiac failure. The anesthetic was blameable only in so far as it added its influence in bringing about a lower resistance of the organism.

CONTINUOUS AUSCULTATION

I wish to speak of the importance of continuous auscultation of the cardiac and respiratory rhythm during the entire course of general anesthesia. As far as I am aware I was the first person to bring into use this method of continuous auscultation during general anesthesia. My records will show that I have been using this method since May 2, 1906.

On the above date I used it for the first time, and have been using ever since a small stethoscope known as Dr. Kehler's. It was used in connection with a case for an extensive laparotomy performed by Dr. Hunter Robb at Lakeside Hospital, I used this because I felt the need of a more accurate method of ascertaining the condition of circulation during anesthesia. In the administration of nitrous oxid and oxygen, both hands of the administrator are kept busy most of the time, especially if things are not going well with the patient. From necessity I looked for some means of ascertaining the state of the heart and respiratory sounds, and purchased an improved Kehler's stethoscope. This little instrument is especially adapted for this purpose, as it consists of a flat disk to which a rubber tube is attached, extending to the ear of the anesthetist. The stethoscope, placed on the chest of the patient, will usually stay there without being held. If necessary, adhesive plaster can be used to hold it if there is any tendency for it to be displaced.

An anesthetist will find this method to be of great value to him in the administration of all anesthetics. Uninterrupted information will be given to any and all change in the heart beat and respiration. When anesthetizing a bad subject in whom the operative risk is great, there is nothing that gives me so great a feeling of confidence as that of continuous auscultation. Every variation of heart sound is at once discernible, and what might be serious complications can be averted by the premonitory symptoms thus made manifest.

METHOD OF OVERCOMING RIGIDITY

One of the main objections to nitrous oxid with oxygen as the anesthetic in major surgery is the rigidity sometimes encountered. In my practice about 10 per cent. of the patients can not be fully relaxed in cases in which complete relaxation is required. Not caring to resort to other general anesthetics for this 10 per cent. of cases, I have used numerous drugs before and during anesthesia. My best results were obtained when ¼ to ⅛ gr. morphin sulphate and 1/100 to 1/150 gr. atropin were given hypodermically one-half hour before the operation. At least 8 per cent. of the 10 per cent. can be satisfactorily handled under this treatment. By this method we get a more tranquil anesthesia, accompanied by almost complete relaxation even for rectal and like surgery. A much larger percentage of oxygen can be given and a smaller amount of nitrous oxid is necessary, so that a beautiful anesthetic state is produced. In these exceptional cases in which any anesthetic would be taken badly, I find it far safer to precede the nitrous oxid and oxygen with the morphin and atropin, because the patient would have to be almost asphyxiated in order to produce the desired depth of anesthesia without it.

I do not advise the use of morphin as a preliminary to nitrous oxid and oxygen in the hands of a novice or one of little experience with this anesthetic agent, however. The reason is that respiration is more apt to cease, which is the tendency under nitrous oxid. This being so, it is much harder to re-establish respiration than if morphin had not been used. In the hands of an expert, this combination is about ideal for prolonged anesthesia in extensive major surgery. One who is taking up the administration of nitrous oxid and oxygen should undertake only simple cases until he has fully mastered the more or less complicated apparatus and has gained experience with this evanescent agent. If the desired depth of anesthesia can not be obtained in his hands with the nitrous oxid and oxygen alone, he should resort to ether in combination with the nitrous oxid and oxygen. It would be much safer probably than the morphin.

APPARATUS REQUIREMENTS

In order to administer nitrous oxid and oxygen properly it is essential that a perfect working apparatus be used. The apparatus should embody the following requirements: There should be 4 cylinders attached, 2 containing nitrous oxid and 2 oxygen. When one cylinder is exhausted, there is no time lost in turning to the other one. The empty one can be taken off later and a full one replaced, so that the anesthetist need not worry lest his supply should fail him at an inopportune time.

There should be means of warming the gas, not theoretically but practically, so that the gas is warm when it is inhaled. All channels from the bag to the inhaler should be large and unobstructed, so that no strain will be thrown on the respiratory mechanism. In fact, the gases should be under a slight pressure in the inhaler if the best results are to be obtained. This is accomplished by a delicate spiral spring on the expiratory valve. The two gases should not be mixed in the bags, but just before entering the inhaler. A transparent face-piece is advisable, so that the features of the patient may be always visible. If there is retching it can be seen if vomit comes from the mouth without raising the inhaler. If a mouth-prop is being used it can be seen whether it is in place or not. Such an inhaler is more easily kept aseptic. There should be means for nasal inhalation for all work in the mouth or throat, so that nitrous oxid and oxygen can be continued for any length of time.

There is no reason why anesthesia should be short for operations in the mouth or throat if the operation requires time. There should be an attachment, so that varying percentages of ether can be administered in combination with the nitrous oxid and oxygen or in sequence. The apparatus should embody all the above requirements and should be of a portable nature, so that it can be easily carried from place to place.

TECHNIC FOR OPERATIONS ELSEWHERE THAN IN MOUTH AND THROAT

The technic for the proper administration of nitrous oxid and oxygen for an operation other than in the mouth or throat is as follows: A plentiful supply of the two gases is imperative. The two bags are filled with their respective gases. The valve from the nitrous oxid bag is opened just as the inhaler is adjusted on the face. The nitrous oxid is allowed to flow from the cylinder through the warmer to the bag and should be adjusted so the bag will be under a little tension all the time. After the patient has been breathing the pure nitrous oxid for a few seconds (the time will vary from five to fifteen seconds), about 2 or 3 per cent. of oxygen should be admitted and this increased more or less rapidly as symptoms indicating its need arise. As a rule, the patient should pass into profound anesthesia within two or three minutes, but complete relaxation does not take place until a little longer time has elapsed. When surgical anesthesia has been obtained it can be maintained as long as desired by the proper proportions of the nitrous oxid and oxygen. The symptoms of nitrous oxid and oxygen anesthesia are the same as those obtained with the other general anesthetic agents. I have no special guide to anesthesia under this anesthetic, but I watch the respiration, color of the face, heart sounds, and reflexes of eye.

It is important to keep a constant, even flow of nitrous oxid into the bag and to deepen or lighten the anesthesia by decreasing or increasing the amount of oxygen. I am able to obtain a more even anesthetic and more complete relaxation by this method than any other. The great trouble is to get the nitrous oxid to flow evenly.

If conditions are such that the desired depth of anesthesia and relaxation can not be obtained with the nitrous oxid and oxygen, a small percentage of ether, varying in amount, should be given without interfering with the amount of nitrous oxid and oxygen. By this means all patients can be successfully anesthetized. Just how often it will be necessary to resort to the addition of ether will depend largely on the skill of the anesthetist. In my hands about 10 per cent. of the patients will require the additional help, if morphin has not been given previously.

TECHNIC OF OPERATION ON MOUTH AND THROAT

If the operation is in the mouth or throat the nasal administration is indicated, and this is accomplished by means of a small nasal inhaler. This inhaler covers only the nose and does not hinder the operator in the least. The technic for the administration is the same as with the face inhaler, with this difference. If a rubber pad is held over the mouth of the patient he is compelled to breathe through the nose until complete anesthesia has been induced. When work is commenced in the mouth or throat the exhaling valve in the inhaler is closed and the nitrous oxid with oxygen is forced through the nose into the mouth under sufficient pressure to keep the patient fully anesthetized as long as desired.

I have had over 1,500 tonsillectomies, tonsillotomies and adenectomies in which anesthesia was required for a few seconds to thirty minutes, and have not had a patient who could not be kept under to the completion of the operation. The advantages of this anesthetic in surgery of the mouth, throat and nose are that it is not unpleasant to the patient; anesthesia soon induced; any position of the patient can be utilized; the cough reflex is maintained, preventing inhalation of blood and tissue, quick recovery from the anesthetic state without nausea and vomiting, unless blood and tissue have been swallowed, and, above all, the safest anesthesia known. The same preparatory requirements should be carried out for nitrous oxid and oxygen as for other general anesthetic agents, except for minor operations, when only light and short anesthesia is required. Under such conditions nitrous oxid and oxygen can be administered satisfactorily in most cases.

DANGERS

The dangers encountered in the administration of nitrous oxid and oxygen are not many, but the condition and state produced are not natural, so necessarily there are dangers of more or less extent. The principal danger of nitrous oxid and oxygen anesthesia is that of asphyxiation. The asphyxial element entering into the anesthesia is due to the necessity of administering nitrous oxid almost in its pure state, in order to bring about that degree of saturation necessary to produce anesthesia. The asphyxial element is influenced also by the following factors: the susceptibility of the patient to the influence of the anesthetic, temperament of patient, freedom of the respiratory tract from obstruction, reflex effects of the operative manipulations and the skill with which the nitrous oxid with oxygen is being administered. A certain amount of cyanosis is not objectionable with nitrous oxid and oxygen anesthesia, as it does not necessarily indicate an overdosage of the anesthetic, for it is not caused by cardiac or respiratory depression, but is simply a capillary stasis due to insufficient oxidation, and clears up readily when oxygen is admitted. Asphyxia, however, should not be allowed to enter into the procedure too much for any great length of time, for there is a damming back of the venous blood, throwing more or less strain on the right heart, and congestion and dilation of the brain are produced. All this can not fail to produce some deleterious effects if persisted in for a great length of time. The most noticeable effect from extreme cyanosis is a severe headache, which will not subside in some cases for two or three hours. It is hard to see how nitrous oxid could produce death except from asphyxiation, but I believe that this anesthetic can produce death without the asphyxial element entering into it at all. I have had cases in which I had an overdosage of the anesthetic (without asphyxial symptoms) to that extent that circulation was not discernible and respiration was all but imperceptible. This condition was quickly changed by a large increase of oxygen. I hope to bring out more along this line in the near future, as we are watching our hospital cases closely and hope to establish something authentic.

There is another condition which I have noticed about fifty times during my experience with this anesthetic, and that is the tetanic cramps in the hands, arms, feet and legs. The hands are so cramped that the thumb is drawn to the center of the palm and resists force to remove it. This condition has occurred in short cases mostly, but in one case it came on after the patient had been under the anesthetic about half an hour and continued through the anesthetic about half an hour longer. On recovery the patient experienced some pain in the hands, arms, feet and legs. A brisk rubbing was maintained for twenty minutes, when the condition subsided. Pure oxygen and strychnin were administered also. In every case in which this condition was manifested the patient's physical condition was either in bad shape or they were of a neurasthenic temperament or both. I speak of these things to show that there is a great deal yet to be learned about nitrous oxid and oxygen as an anesthetic.

Blood pressure is slightly raised during nitrous oxid and oxygen anesthesia, but this is influenced greatly by the asphyxiation that accompanies it. This point and other effects on the blood have been brought out by Drs. Hamburger and Ewing of Chicago in their experiments. These experiments were not conducted over a long series of cases, but enough was brought out, I think, to prove the correctness of the statement that "nitrous oxid anesthesia does not reduce hemoglobin and thereby cause anemia; that it does not cause increased hemolysis; that what apparent change it does produce on hemoglobin and red cells is transient and of no clinical significance . . . that nitrous oxid causes no permanent effect of any significance, from the standpoint of blood changes."

The increase of venous blood pressure during nitrous oxid and oxygen anesthesia was manifested very forcibly in a case we had lately. The patient had been burned badly some time before, and her right side from the hip to the shoulder, including the arm, was denuded of epidermis and was covered with unorganized granulated tissue through which frail vessels ramified. The patient was anesthetized in about two minutes with nitrous oxid and oxygen, passing into profound anesthesia without any cyanosis. In about five minutes it was noticed that the veins in this frail tissue were filling up and bulging out in places as large as a man's finger. Then they would rupture. The bleeding was not troublesome, as the vessels were not much more than capillaries. During this phenomenon oxygen was increased to such an extent that a good florid color was produced; then the swelling of the vessels would subside somewhat, but not entirely. This was a practical demonstration as to the increased blood pressure in the veins under nitrous oxid and oxygen anesthesia.

ADVANTAGES

Of all that has been said in favor of nitrous oxid with oxygen as an anesthetic, there is nothing more important or more in its favor than the freedom from nausea and vomiting. This freedom from nausea and vomiting will depend to a great extent on the evenness of narcosis produced, preparation of the patient for the anesthetic, and purity of the gases. With a patient properly prepared and anesthesia evenly maintained with pure nitrous oxid and oxygen, nausea and vomiting will be a rare occurrence, indeed. In all my work I have had only five cases in which persistent vomiting was encountered, and in none of these did it last over six hours.

As a rule patients who have been operated on under nitrous oxid and oxygen anesthesia get along better than when other general anesthetics are used. They are less sick, can take nourishment quicker, have fewer complications, and in every way have a better chance for a speedy and complete recovery.

My object in presenting this subject before a section of the American Medical Association is to encourage the professional anesthetist to take up nitrous oxid and oxygen as a general anesthetic and develop it to a science. It is essential that great advancement must be made along the line of anesthesia to keep pace and to the forefront with other branches of medicine and surgery, and this can be accomplished only by the efforts of the medical man as a professional anesthetist.

ABSTRACT OF DISCUSSION

Dr. E. S. Talbot, Chicago: Has Dr. Teter paid any attention to the urine in these cases? Did he notice the urinary acidity and indicanuria?

Dr. Teter: The patients have been watched by the surgeon afterward, and they have not reported any case in which there was irritation of the kidneys.

Dr. Talbot: My practice is such that I use anesthetics very little along that line, and I have only noticed in three or four cases excessive urinary acidity and considerable indicanuria. Now, whether the administration of the nitrous oxid has anything to do with that I do not know. It would seem to me a desirable thing to take up along the line of Dr. Teter's work, for he has opportunity to observe such a large number of cases.

Dr. S. McCurdy, Pittsburg, Pa.: The subject of anesthetics has been discussed and various anesthetics introduced as a substitute for ether from time to time, but the general surgeons throughout the entire world and in America especially depend on ether. In certain sections of this country and in Europe they use chloroform. From time to time we have introduced anesthetics which are more prompt in their action; but to get the best results from any anesthetic it is necessary to have a man skilled in the administration. Does Dr. Teter know to what extent this combined anesthetic has been introduced in the various parts of the country, and to what extent has it it been substituted for chloroform and ether. I tried somnoform for a while, but had a scare or two and went back to ether or chloroform. I use ether in almost all my operations.

Dr. John E. Nyman, Chicago: It so happens that I can speak of a case of nitrous-oxid and oxygen anesthesia for prolonged surgical operation. The patient, a woman, had mitral insufficiency and marked albuminuria. Both the diagnosing physician and the operating surgeon said that the administration of the ordinary anesthetic would probably result in uremic poisoning within ten days, provided the patient did not die from cardiac insufficiency during the operation. Nitrous oxid and oxygen anesthesia was finally suggested. The operation was for ventral hernia, in which there were many adhesions and many evidences of adhesions of the intestines. The anesthetic was begun about 9 a. m., and in twenty seconds the patient was completely anesthetized. At 9:45 the patient was in bed and had so far come out of the anesthetic that she was able to talk. About an hour after emerging from the anesthetic she had a period of severe hysterical reaction, which, however, passed away very quickly. There were no sequelæ of any importance following the operation. At 1 o'clock she said she was very hungry, and liquid nourishment was given her. At 6 o'clock that night solid food was given her. I might say that it was found that the adhesions were producing symptoms of obstruction simply from pressure. No resection of the intestine was performed. There is no question but what, in operations on the intestines, continued muscular retching after the operation must have a deleterious effect on the result of the operation. In this case it was absent. A little irregularity of the heart developed during the anesthesia, but that passed away on increasing the oxygen. There was absolutely no effect, either immediately after the operation or subsequently on the character of the urine, and seemingly the kidneys had not been affected as a result of the anesthetic. I have since been instrumental in having the anesthetic used in three other similar cases. It seems to me that it is an ideal anesthetic.

Dr. W. W. Babcock, Philadelphia: I think the subject of anesthesia has not been developed along any of its lines so fully as it should be. I have tried this method of nitrous oxid with oxygen to a limited degree and in some cases have been very much pleased with it. The only serious result was in the case of a child with an affection of the pharynx; the child suddenly became pale, respiration ceased, and it required artificial respiration for a considerable time to resuscitate the patient.

The problem in regard to anesthesia is not alone the anesthesia produced, but the ease with which the surgeon can do his work. In certain parts of the body there must be good relaxation or the surgeon will be hampered. Especially is this true of the abdominal cases; the patient may be entirely unconscious, but the muscles may remain so rigid that the operation will take twice as long, and may require much more violent manipulation of the tissues. Although the mortality from the anestesia may be low, the operator's mortality may be increased from the extra time and manipulation required. Thus it is that at times nitrous oxid may indirectly increase the operative mortality. I think that it is usually difficult in abdominal operations to secure as complete relaxation with nitrous oxide and oxygen as can be obtained with ether. I confess I am not able to depend upon skilled anesthetists; I have to depend on the resident physicians as a rule. As very few residents develop sufficient skill to maintain nitrous oxid-oxygen anesthesia an hour or more, I have restricted this anesthesia for operations on the head, arms, legs, etc., parts which might be immobilized should the patient move. I have feared to undertake abdominal operations, owing to the fact that the patient might be over anesthetized and in spasm, or that he might be permitted to come out. There are other anesthetics which have not been developed, such as hyoscin, morphin, etc. Combinations of these drugs I think form an ideal anesthetic for selected cases from the point of comfort of the patient, although they are not always the most desirable for the operator. After a single hypodermic injection the patient may imperceptibly lose consciousness, and then after a period of time which may last three hours, five, ten or twelve hours, the patient gradually regains consciousness, entirely oblivious of the fact that anesthesia has been produced or that anything has been done. If one will select patients requiring serious operation, from the debilitated, who are over 35 years of age, and will carefully use this method of narcosis, excellent results may be obtained.

The subject of local anesthesia has not been fully developed. The control of tic douloureux by injecting alcohol into the nerves as they emerge from the base of the skull, demonstrates a method by which we may anesthetize the entire distribution of a nerve trunk, for example, of the inferior maxillary distribution of the fifth nerve. The foramen ovale may be reached by running a syringe directly above or below the middle of the zygoma, the needle being directed upward, backward and inward until one reaches the pterygoid plate. Then the needle is deviated so it goes by the edge of the pterygoid plate into the nerve. In this way the entire distribution of the third division of the trifacial can be anesthetized. Introducing the needle backward, inward and upward from the posterior edge of the malar bone, one can pass to the foramen rotundum and block another division, anesthetizing the upper jaw. Anything that develops these methods of anesthesia will be of inestimable value. Most of us are only trained in one anesthetic. It would be a splendid thing if we could be broadly trained, not only in ether anesthesia, but in local and spinal anesthesia, in nitrous oxid and the narcotics. We seem to have lost or neglected some of the ancient anesthetic skill of the Greeks, Romans and Chinese.

Dr. Charles K. Teter, Cleveland, O.: I have never had a patient yet whom I could not get under the effect of nitrous oxid and oxygen. I have had cases in which it was impossible to get perfect relaxation, but never had a patient whom I could not get thoroughly unconscious if I had an assistant to hold him during the excitable stage. If you can not apply the anesthetic and exclude atmospheric air you may have patients who will become excited and unmanageable. With sufficient assistance there is no reason why one can not anesthetize every patient.

I do not advocate one anesthetic for every condition. Certain people are more or less susceptible to certain drugs. If I find a patient taking one anesthetic badly I change to another I do not think an anesthetist is fully capable unless he can give any anesthetic and recognize when a change would be beneficial.

For the last three years nitrous oxid and oxygen has been taken up wonderfully by the medical profession. In Chicago last year I was surprised to find how much nitrous oxid was used in general surgery. At Cook County Hospital they have been trying to get results with nitrous oxid. Practically all the leading hospitals of Chicago, I found, were using this anesthetic more or less. In Cleveland we have been using it for six years or more. I was the first to popularize nitrous oxid and oxygen for general surgery in Cleveland. There are now four others specializing with it. So many men think all they have to do is to get the apparatus and that then they can use nitrous oxid. No one should attempt to give any anesthetic without the proper instruction.

It is invariably my method to have a hypodermic of morphin and atropin given before any anesthesia. In this way I can use less of the anesthetic and more of the oxygen. Once in a while I have a patient whom I can not even get relaxed in this way. Then I pass a stream of oxygen and nitrous oxid over the ether, taking up a smaller or greater portion of ether as may be necessary to get relaxation. After that I discontinue the ether and do the operation with straight nitrous oxid and oxygen; but I keep away from the ether as much as I can on account of the after effects.

The oldest patient I had was 92. The operation lasted about one hour and fifteen minutes. She took the anesthetic as nicely any any patient I ever had. I do not think age has any bearing; only I would be more watchful in a patient of advanced years on account of the condition of the blood vessels and the extra stress laid on them if there is much cyanosis accompanying the narcosis.

Another point I wish to bring up, and that is the question of taking up anesthetics as a specialty and sticking to it. The trouble is that the medical man has thought it beneath him to confine himself to anesthetics. Anesthetics are at the same place, one might say, that they were thirty years ago. This is not as it should be. The surgeons are all looking for the skilled anesthetist, and I find that the patients, when they understand it, as a rule, are willing to pay a skilled anesthetist his fee. I hope medical men will take up anesthetics and develop it as a science, so that the mortality from this cause may be greatly reduced.

THE INCIDENCE AND CAUSES OF TUBERCULOUS HEMOPTYSIS

A STATISTICAL STUDY*

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Hemoptysis is regarded as an important and much-dreaded symptom of pulmonary tuberculosis. Any new light shed on its etiology, therefore, must be welcomed. At the outset I desire to present a few facts bearing on the direct or pathologic etiology of hemoptysis, and, considered from this point of view, the cases fall naturally under two heads: (a) those caused by congestion of the bronchial mucosa and lung texture, and (b) those due to ulceration or erosion of blood vessels or rupture of miliary aneurisms.

A. BLOOD-SPITTING CAUSED BY PULMONARY CONGESTION

It may be pertinently questioned, as pointed out by Garland, whether the degree of hyperemia in other acute or chronic affections of the lungs does not exceed that of the early stage of pulmonary tuberculosis, in which, however, there is a more marked tendency toward hemorrhages. It is undoubted that the walls of the blood vessels early manifest defective nutrition in this disease, as the result of endarteritis. On the other hand, the local, direct action of the tubercle bacilli is most probably a factor in bringing about pulmonary bleedings.

Cornet states that bleedings are apt to occur in the incipient stage: "While there are as yet few proteins and the living bacillus plays the chief rôle, the healthy wall of the smaller bronchial vessels is apt to become invaded and eroded, giving rise to a hemorrhage." The earlier hemorrhages in the course of pulmonary tuberculosis, however, are only rarely dependent on congestion or erosion of the bronchial mucous membrane, the usual source being the pulmonary vessels. The second pathologic stage, or that of commencing destruction of the capillary blood vessels, is probably the one at which hemoptysis is most rife.

B. HEMOPTYSIS DUE TO ULCERATION OR EROSION OF VESSELS OR RUPTURE OF MILIARY ANEURISMS

As regards hemorrhages in advanced pulmonary tuberculosis, my studies of the institutional records lend decided support to the view that fatal bleedings usually proceed either from a ruptured aneurism in a lung vessel or erosion of a pulmonary vessel, as first shown by Rasmussen.[1]

R. E. Thompson,[2] Brown,[3] and others have emphasized the fact that profuse or fatal hemorrhages never proceed solely from rupture of the pulmonary vein or bronchial artery. As pointed out in my previous article, this form of hemorrhage tends to develop in cases in which the processes of softening and liquefaction progress acutely and do not present endarteritis, owing to the short duration of the tuberculous process. In the majority of cases, however, pathologic changes in the walls of the pulmonary vessels with aneurismal dilatations precede the serious accident.

INCIDENCE

The present study embraces a totality of 5,891 cases of tuberculosis, of which 5,302 have been collected, since the publication of the results of my preliminary investigation into the subject,[4] from the records of a number of public institutions of Philadelphia. The names of these, and the number of case records derived from each respectively, are as follows: The Henry Phipps Institute, 3,010; Philadelphia Hospital, 1,539; Rush Hospital, 315; Jewish Hospital, 261; Philadelphia Clinic for Throat and Lung Affections, 93; Medico-Chirurgical Hospital, 43, and Protestant Episcopal Hospital, 41.

There is a consensus of professional opinion that hemoptysis is a frequent symptom of tuberculosis. In my former statistical inquiry it was shown to be present in 169 out of 589 cases, or 28.7 per cent. The larger statistics herein reported indicate a higher incidence—e. g., in a totality of 5,302 cases, hemoptysis was found in 1,950, or 36.6 per cent. In this connection it should be emphasized that not all cases were followed until the death or recovery of the patients, but many were discharged during the course of the affection. As stated in my former preliminary study, "the cases from private practice (kept under observation for a longer period, as a rule), numbering 289, the percentage in which hemoptysis is present, rises immediately from 28.7 to 41.8 per cent., but it is to be recollected that even these patients were under observation during less than half of their duration."

Again, if we consider only the data gleaned from the complete records of the Phipps Institute, the following result is obtained: Of a totality of 2,867 cases, 1,251, or 43 per cent., manifested this symptom. While the incidence of hemoptysis in the course of pulmonary tuberculosis can not be accurately stated for want of reliable statistics at present, I feel strongly that the above percentages would be further increased rather than decreased by an exact knowledge of the subject.

AGE AND SEX

Table 1 indicates the incidence of pulmonary tuberculosis by decades for both sexes. It will be observed that more cases occurred in males than females, there being 3,420 among the former and 2,453 among the latter. Prior to the twentieth year of age, however, the figures indicate a slight relative preponderance in favor of the female sex.

TABLE 1.—AGES BY DECADES AT WHICH TUBERCULOSIS OCCURRED

	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Males	55	452	1,126	990	500	199	88	10
Females	38	367	662	825	327	191	50	8

TABLE 2.—AGES BY DECADES AT WHICH HEMOPTYSIS OCCURRED

	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Males	11	203	364	382	192	108	23	4
Females	7	161	261	244	121	49	15	2

These larger statistics corroborate the findings of my preliminary study, namely, that hemoptysis is manifested earlier in life in the female sex than in the male (Table 2), the ratio being 5:4 in favor of the former sex. This view is also, in a measure, supported by the collective investigations of Thompson, who found that in 1,084 cases of tuberculosis, women showed greater liability to hemoptysis than men "in the relation of 65:62 per cent." In my own studies, however, this increased incidence in the female sex is, as shown above, confined principally to the first two decades of life.

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* Read before the American Climatological Association, at Fortress Monroe, Virginia, June 4, 1909.

[1] Anders, J. M.: Am. Jour. Med. Sc., January, 1902.

[2] Thompson, R. E.: Causes and Results of Pulmonary Hemorrhage, Smith, Elder & Co., 1879.

[3] Brown: Am. Jour. Med. Sc., August, 1906.

[4] Anders, J. M.: Hemoptysis due to Tuberculosis, THE JOURNAL A. M. A., 1907, xlix, 1067.

On the other hand, after the thirtieth year the numerical results show a preponderance of cases in the male sex.

My previous statistical inquiries indicated that profuse and fatal hemorrhages are less common in females than in males. The result is abundantly corroborated by the present more extensive collective investigations. For example, no instances of fatal bleeding were noted among the records of the cases occurring in females, whereas not less than 10 cases of hemoptysis proved immediately fatal among the tuberculous males.

The sexual difference in respect to the prognostic significance of this symptom is a point of considerable interest and importance. To attempt to advance an explanation of the fact, however, would lead directly into the realm of hypothesis at present.

SEASONAL INFLUENCE

My collective investigations into the seasonal relations of hemoptysis may be summarized in Table 3, which shows the number of cases of blood-spitting for the different months of the year, respectively, as well as the number of admissions for the same periods.

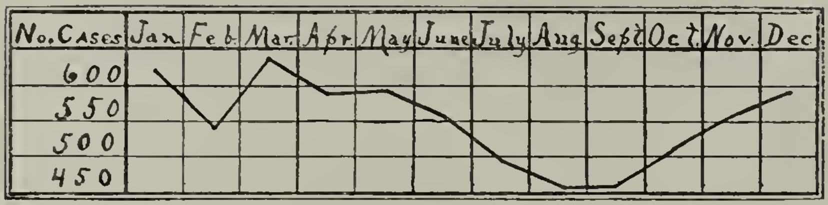

Chart 1.—Numerical range of cases of tuberculosis by months.

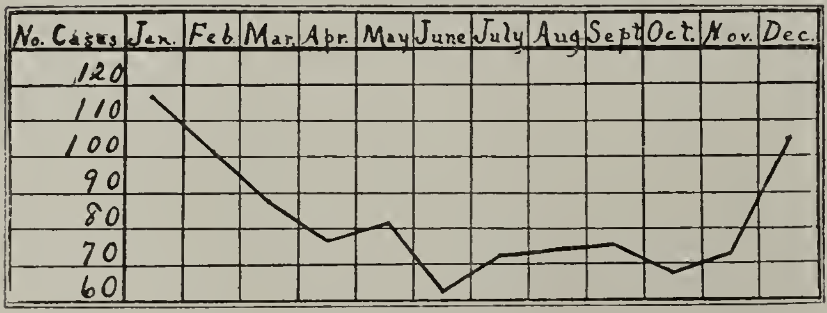

Chart 2.—Range of influence of seasons on the incidence of hemoptysis.

TABLE 3.—SEASONAL RELATIONS OF HEMOPTYSIS

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Admis.	627	545	638	590	595	551	495	455	454	510	551	582
Hemop.	116	102	86	76	81	65	73	74	76	68	85	107

A glance at Table 3 will show that hemoptysis in the course of tuberculosis is most prevalent during the months of December, January and February, while August, September, November, May and March, in the order named, seem to rank next. The figures in Table 3 are decidedly at variance with the numerical results of my former studies, from which the following summary of 157 cases for each month of the year is taken:

TABLE 4.—SEASONAL RELATIONS OF HEMOPTYSIS

Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
11	9	14	19	13	16	14	16	16	8	11	10

As will be observed, I have taken the precaution in my second more extended, statistical inquiries, which cover 5,302 cases (Table 3), to estimate the monthly prevalence on the basis of a comparison of the cases of blood-spitting with the total number of admissions to the various institutions whose records have been consulted, for each month of the year; and have also attempted below to express the same graphically. Chart I indicates the numerical range of cases by months based on the grand totality of 5,302 cases. Chart 2 will show the influence of the seasons on the incidence of hemoptysis; and the chances of error in this computation are believed to be inconsiderable.

These results are directly opposed to the preconceived notions of most writers, who contend that the spring and summer months give the highest incidence. In fact, the results of my previous investigations into the subject, which were far less extensive, however, were also in consonance with this widely accepted opinion. It has been held that the enervating effects of heat as well as the influence of marked oscillations of temperature and humidity during the spring months, as well as the "spring winds," are causative factors; also that sudden, extreme changes of weather bring about intercurrent acute bronchitis and an aggravation of the cough, which tends to excite bleeding. On the other hand, it is generally believed, contrary to what is shown herein, that a steady stimulating cold, such as prevails usually during the months of December, January and February, has a preventive influence.

The present studies having given a result precisely contrary to those of previous statistical inquiries by myself and various other observers, which were on a smaller scale, I further examined carefully the figures obtained from Phipps Institute alone, giving consideration to the associated conditions of special cases. The following Tables 5 and 6 will show the number of cases of tuberculosis admitted to that institution for each month, from Feb. 1, 1904, to Feb. 1, 1907, and the number of cases of hemoptysis for similar periods of the year:

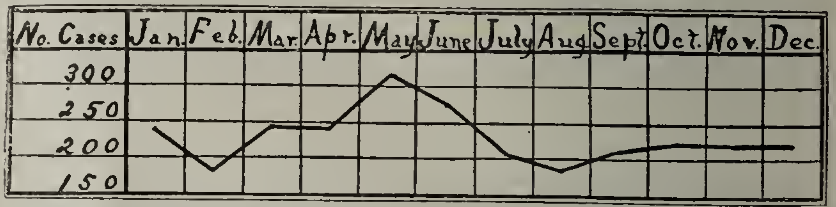

Chart 3.—Numerical range of cases of tuberculosis admitted monthly to Phipps Institute.

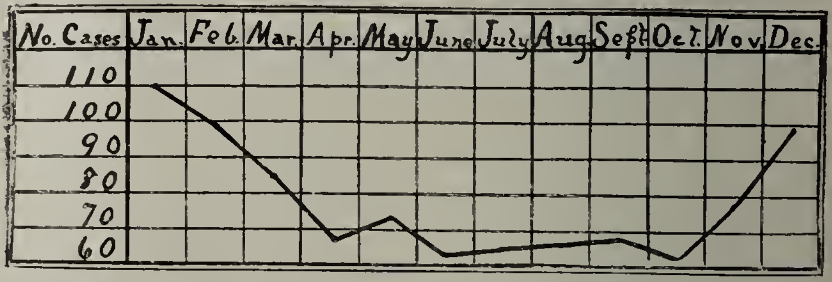

Chart 4.—Numerical range of cases of hemoptysis in tuberculosis by monthly occurrence.

TABLE 5.—NUMBER OF CASES OF TUBERCULOSIS FOR THE VARIOUS MONTHS OF THE YEAR

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1904	..	99	105	86	111	116	80	54	61	85	88	94
1905	81	24	54	82	119	91	68	63	45	60	55	50
1906	56	47	87	75	85	68	56	68	104	80	83	82
1907	98	..	..	..	..	..	..	..	..	..	..	..
Total	235	170	246	243	315	275	204	185	210	225	226	226

TABLE 6.—NUMBER OF CASES OF HEMOPTYSIS FOR THE VARIOUS MONTHS OF THE YEAR

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1904	..	56	42	23	23	26	25	21	23	21	32	36
1905	39	12	11	22	30	20	21	22	15	18	19	29
1906	27	28	32	21	21	18	19	23	31	23	26	32
1907	44	..	..	..	..	..	..	..	..	..	..	..
Total	110	96	85	66	74	64	65	66	69	62	77	97

Charts 3 and 4 are here given, with a view to showing both the seasonal relations of tuberculosis and the incidence of hemoptysis relative to the total number of cases admitted to the Phipps Institute during the various months of the year. It will be observed that they bear striking resemblance to those (Charts 1 and 2) based on the total number of cases from all sources.

It is well known that multiple hemorrhages occur in the majority of the cases of pulmonary tuberculosis, in which hemoptysis is among the clinical features. A strong tendency to recurrence is shown by my collective inquiries. Thus, in a totality of 3,142 cases of tuberculosis, recurring outbursts took place in 1,928, or 51.5 per cent. In 314, out of a totality of 3,092 cases of pulmonary tuberculosis, a single hemorrhage occurred. Mere bloody or blood-streaked expectoration was recorded in 879, or 16.5 per cent., in the total number (3,092). In 1,192 cases, or 24.4 per cent., out of the totality of 3,092 cases, the case records mentioned the fact that no blood-spitting took place. With regard to the stage of the tuberculous process, at which bleedings are most prone to arise, my figures indicate that in 1,439 out of 2,084 (in which the period of disease was given), or 69 per cent. of the instances, hemoptysis appeared in the first and early part of the second stage, or that of softening (ulceration). These results are in accord with those of my previous investigations, and they likewise support the views expressed above concerning the pathogenesis of the condition.

In my opinion, the questions raised by the present studies must find practical solution in similar collective investigations at the hands of physicians of the present and the future. It is quite possible, at all events, to amass data in this manner to permit of a reliable statistical demonstration of the facts. Obviously, the great importance of hemoptysis as a diagnostic feature of tuberculosis renders further observations along the line pursued in this paper extremely desirable.

Clinical Notes

A NEW FOOD SCALE

AN AID IN THE ADMINISTRATION OF QUANTITATIVE DIETS

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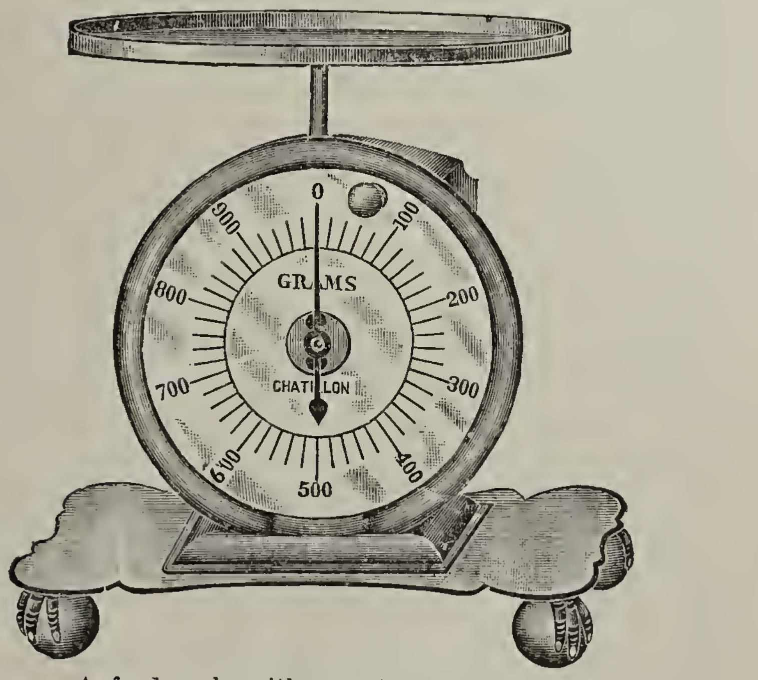
The importance of the exact measurement of the quantity of drugs administered to our patients has been recognized for many years. It is comparatively recently, however, that the value of the exact measurement of food has become generally accepted. Practically all careful physicians now realize the value of the food prescription, which indicates not only the quality, but also the quantity of food. This is particularly the case in those diseases in which metabolic disorders are prominent.

The great difficulty in practice has not been the giving of directions to the patient but the difficulty of having those directions properly executed. For drugs the teaspoonful, the tumblerful, the pill, the powder, the tablet, and the capsule, with the cooperation of the apothecary are simple and convenient means of furnishing fairly exact dosage. Every one, however, who has tried to prescribe food in definite quantities by weight realizes how difficult it is to obtain from the patient an intelligent cooperation, and I know of a number of physicians who, after some effort in this direction, have simply thrown up the undertaking and announce frankly that it is useless to attempt to prescribe a quantitative diet.

The obstacles from the patient's standpoint are not inconsiderable. In the first place they have been accustomed to eat in accordance with their fancy an amount large or small, and it takes no small amount of persuasion and education by the physician to convince them of the importance of uprooting the habits of a lifetime to conform to the new conditions. Secondly, the weighing of foods is not a small annoyance. A majority of our patients for whom it is desirable to prescribe a weighed diet are not ill enough to be housed in a sanitarium for any considerable period, neither can they afford, nor will they submit to the prolonged supervision of their food by an attendant at their homes. Rarely in my experience does one meet with a nurse, however efficient in other respects, who has had the particular training necessary to carry out the physician's instructions in regard to the administration of definite quantities of solid foods.

There are few households in which the presiding genius of the kitchen is sufficiently intelligent or eager to add to her duties to accurately weigh the food for one member of the family. As a rule the patient must do this for himself, and do it at the table; the difficulties of this procedure have been enhanced by the cumbersome apparatus and more or less complicated calculations which it has been necessary for him to employ. If we are to expect our patients to weigh their food we must make weighing as simple and easy for them as possible.



A food scale with an adjustable dial.

In order to obviate some of the difficulties I have devised a food scale, with the cooperation of Mr. George E. Chatillon, for the use of physicians and patients which I believe presents a number of features of distinct advantages. This is an accurate spring scale of modest dimensions, 6 inches high and with a 5-inch base, finished in nickel and, therefore, not too conspicuous to be used at the table. It is fitted with a broad circular plate which easily supports the dish on which the food is weighed and it has a base sufficiently wide to keep the scale from being easily upset. The scale is made to indicate grams, having a total capacity of 1,000 grams, the dial being figured for every 100 grams, with subdivisions indicating 20 grams each. By a special contrivance the dial can be quickly rotated to any desired point, by means of a small knob. The result is that the zero point can be easily brought to any position desired.

The method of using the scale is as follows: Suppose the food prescription for a given meal consists of

Meat	100 grams
Potatoes	80 grams
String beans	120 grams
Wheat bread	60 grams

An empty plate is placed on the scale and by means of the knob the dial is rotated until the zero point is opposite the end of the pointer; meat is placed on the plate until the pointer indicates 100 grams; the dial is again rotated until zero is opposite the pointer; potato is added until 80 grams are indicated, and so on, the zero point on the dial being each time brought opposite the pointer until at the completion of the operation we have on the plate all the food for the meal, each kind of food accurately weighed.

In order to get our patients to measure their diet the various articles of food must be weighed; no mere guess work will answer the purpose. The direction to take food in "portions," etc., is most unsatisfactory unless the patient has first learned by means of the scale just how large a "portion" the physician intends him to take. For example, a "portion" of roast beef as served in one of our best public restaurants is equal to two or three servings at the average family table, and by actually weighing "slices" of bread, which I have asked my patient to bring me, in order that I might determine their notion of a "slice," I have found values varying from 30 to 150 grams.

I make it a rule to have each patient whom I am treating for diabetes, obesity, etc., weigh all his food for a period of two weeks. It is surprising and gratifying to see how soon one gets to know just how large is a piece of meat, or fish, or bread which weighs 100 grams. After such practice for two or three weeks the patient can hit pretty close to the mark without actually weighing the food and after this needs to utilize the scale only as an occasional check to his newly acquired art or to determine the weights of new kinds of food.

I can not too strongly urge on every physician who uses the quantitative food prescription to familiarize himself with the weights of the various foods which he is prescribing. Theoretically one might, for example, wish to fill out the caloric value of the diet with 250 grams of cheese, but practically one will find considerable difficulty in making his patient take such an amount; the reason becomes very evident when one weighs out the quantity specified and sees for himself the actual bulk of this item. Familiarity with food weights will make it much easier to prescribe a diet well balanced not only as to its quality and caloric value but also with regard to the habits and customs of the average individual.

The new scale is offered as a simple and accurate means of weighing several foods of different kinds on one plate without mathematical calculations; its design makes it as little conspicuous as possible, and I believe it will be a material aid in inducing patients to undertake a carefully measured diet. It is manufactured by Messrs. John Chatillon & Sons, 85 Cliff Street, New York City.

Dental Prophylaxis.—No doubt much dyspepsia is due to decayed and defective teeth, which preclude complete mastication of the food (even if anybody in America had the time to eat properly). Dentists, like doctors, are now beginning to realize that their true mission is not "a general rebuilding system," but a systematic and well-considered effort to prevent and overcome the decay and loosening of human teeth.—*Scientific American.*

ACUTE ANAPHYLACTIC DEATH IN GUINEA-PIGS

ITS CAUSE AND POSSIBLE PREVENTION; A PRELIMINARY NOTE [*]

J. AUER, M.D., and PAUL A. LEWIS, M.D.
NEW YORK CITY

The animals employed for this study were exclusively guinea-pigs which had been sensitized by a peritoneal injection of horse serum or by a subcutaneous injection of edestin (a proteid obtained from hemp seed). After a number of weeks the animals were tested. This was done by stretching them out on a suitable holder and injecting the horse serum (0.5 to 1 c.c.) or edestin (10 mg.) into a cannula inserted into the external jugular vein, recording at the same time the respiration or blood pressure or both. From the results which we have obtained we would like to call attention to the following:

1. *The animals die of asphyxia.* A few minutes after the intravenous injection of 0.5 to 1 c.c. of horse serum into a sensitized guinea-pig, it will be noticed that the respiration is remarkably modified: the chest no longer expands with each inspiration, but, instead, the front and sides of the thorax sink in. The respirations, which are much more powerful than normal and are accompanied by tonic and clonic convulsions, gradually become less and less and finally cease. The heart continues to beat regularly for minutes after all respiration has ceased. If an animal is allowed to breathe from a large air-bottle which is connected with a tambour, it will be seen that the tambour lever hardly moves while the animal is making these tremendous respiratory efforts; in other words, little or no air enters the lungs. If the blood pressure is recorded it will be seen that the blood in the cannula is black and the blood pressure first rises and then slowly falls.

2. *This asphyxia is due to peripheral causes,* for it occurs after section of both vagi and after the cord and medulla have been destroyed. If the cord and medulla are destroyed, artificial respiration, of course, must be given. Now, again, the blood turns black, and the chest no longer, as a rule, is expanded by the same strength of artificial respiration which before the injection of the killing dose of horse serum gave a good expansion of the chest. At autopsy the lungs present the typical picture of an acute anaphylactic death in guinea-pigs (described infra).

3. *This asphyxia is due to an inspiratory immobilization of the lungs.* If the chest of a guinea-pig killed by anaphylaxis be opened, it will be seen that the lungs hardly collapse, and apparently fill out largely the entire chest cavity. There is no marked collapse in typical cases when the entire lung is excised; they seem to be in a permanent state of inspiration. These lungs look pale pink and float lightly on water. Pieces of lung cut off do not collapse, but maintain their distention; the cut surface is moderately dry; pressure shows that this piece of lung is full of air. Usually the cut surface is fairly dry, but pressure at times shows small foci of fine white foam, as if there were some pulmonary edema. This immobility of the lungs in a more or less inspiratory condition is probably due to a tetanic contraction of the musculature of the fine bronchioli and alveolar ducts, imprisoning air in the alveolar sacs. A slight degree of pulmonary edema possibly also aids in the production of this pulmonary inspiratory immobility.

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[*] From the Department of Physiology and Pharmacology of the Rockefeller Institute for Medical Research.

4. *Atropin prevents or reduces these pulmonary symptoms.* If a guinea-pig sensitized with horse serum receives subcutaneously 0.5—1 mg. of atropin sulphate, some time previous to the killing dose of horse serum, it is usually found that the pulmonary symptoms described briefly above are absent or strongly reduced. We have had so far about twelve pigs which were prophylactically treated with atropin, and of these only two showed practically no effect. The others showed only slight or no pulmonary immobilization after the injection of a dose of horse serum which killed the control in a few minutes in the fashion described previously, or which produced this marked dyspnea with powerful diaphragmatic contractions and sinking in of the chest for a short time, after which respiration became gradually easier and the animal slowly recovered. The animals which recovered aided by atropin gained their normal state much more swiftly than the controls which escaped death. To illustrate we may state that an atropin pig began fighting with a neighbor less than one hour after the injection of horse serum, while its control was still weak and sick two hours after injection of a little less than the same dose of horse serum.

We fully realize that these few atropin experiments do not warrant a final statement, but it seems to us that their outcome was sufficiently clear to permit their publication with the other facts we have brought forward.

EXPENSIVE MOLDS FOR SOLIDIFIED CARBON DIOXID

W. A. PUSEY, M.D.
CHICAGO

The use of solidified carbon dioxid has apparently risen to the dignity where many devices for molding it are being suggested. In particular my attention has been called lately to a very elaborate mold which is being exploited commercially. Physicians are being solicited to purchase the outfit; at least in one instance within my knowledge it has been installed by its sellers in the office of a non-medical woman who does shampooing and facial massages; and instruction in the therapeutic use of the method is incidentally given by the agent, who is, I believe, not a physician and who, to judge from my interviews with him, is not entitled to give instructions on the subject. I am sufficiently interested in the good repute of the method and its common adoption to feel called on to protest against this commercial exploitation and to say that I see no reason whatever for a physician expending any such sum as $25 for a mold for carbon dioxid.

With this mold, which compresses the solidified carbon dioxid so firmly that it forms a mass like ice, there is an objection, aside from the expense, and that is that you get so hard a mass that its face can not be pared or otherwise quickly shaped. The mass also is so firm that it does not adapt itself to any variation from a flat surface. For applications of solidified carbon dioxid to minute points not larger than an eighth of an inch in diameter this hard stick is an advantage, but for all other applications the compression of the solidified carbon dioxid into so hard a mass is, in my opinion, a disadvantage.

All that is necessary for using solidified carbon dioxid is a cloth, preferably a chamois skin, in which to collect the snow from the tank. This snow can be compressed into a solid mass with the hands (protected by the cloth) and then pared with a knife into any desired shape. It is more convenient for making the solid masses to have a few tubular molds from ¼ to an inch in diameter. These can readily be made by taking sections a couple of inches long of hard rubber or metal tubing. If one desires to get very firm blocks of snow they can be made in these tubules by compressing with a hammer and a small rod. For example, you can fill such a tube and pack it as firmly as possible with the blunt end of a lead pencil. Then you can take a small hammer and an old metallic thermometer case, and with this you can pound it down to any density desired. Of course, less crude methods than this of molding the snow can be used, but I refer to this method to illustrate how simple is the necessary equipment for handling solidified carbon dioxid for therapeutic purposes.

72 Madison Street.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

THYRESOL.—Thyresol consists chiefly of the methyl ether of santalol, $C_{15}H_{23}OCH_3$. It is prepared by the action of sodium methylate on "santal oil chloride."

Thyresol is a colorless liquid of aromatic odor, almost insoluble in water; easily soluble in alcohol and ether; soluble in concentrated sulphuric acid with a reddish-brown color. Boils at 149-156° C. (300.2-312.8° F.) under pressure of about 16 mm. On heating with hydriodic acid, santalyl iodide and methyl iodide are formed.

Actions and Uses.—Similar to sandal wood oil, but said to be practically free from irritant effects on the stomach and kidneys.

It is said to be useful in acute and chronic gonorrhea, anterior and posterior, and other conditions in which the sandal wood oil preparations are indicated.

Dosage.—0.5 Gm. (8 grains) 3 to 4 times daily, best given in milk or in gelatin capsules.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Farbenfabriken of Elberfeld Co., New York. U. S. patent No. 909,541.

ZINC PEROXIDE—Zinci Peroxidum.—Zinc Peroxide is the zinc salt, ZnO_2, of hydrogen peroxide, containing an admixture of not more than 55 per cent. of zinc oxide.

Zinc peroxide occurs as a yellowish white voluminous powder; tasteless, odorless, non-hygroscopic, antiseptic, neither caustic nor irritant, and not more toxic than ordinary zinc oxide. It is insoluble in water, but gives to it a slight alkaline reaction; it is soluble in cold dilute sulphuric acid with evolution of oxygen and in dilute hydrochloric acid with liberation of chlorine. It gives all the reactions of peroxides, caramelizes sugar, disengages oxygen by the action of acids and in contact with living tissue. It is stable in the autoclave to 130° C. and at a dry heat to 150° C. and thus may be readily sterilized. Heated to higher temperature, it loses oxygen and forms zinc oxide. It should not respond to tests for calcium, magnesium, barium, sulphates, chlorides or carbonates.

0.2-0.3 Gm. zinc peroxide accurately weighed and added to 50 c.c. water and acidulated with 20 Cc. dilute sulphuric acid, should require for each 0.1 Gm. material used not less than 9.25 Cc. dilute tenth normal permanganate solution to produce a permanent pink color.

Action and Uses.—Zinc peroxide is used in the extemporaneous preparation of hydrogen peroxide for wounds, chronic ulcers, etc. It may be applied as a dressing directly on wounds, etc., where it produces hydrogen peroxide in situ.

For eczema and other skin diseases it is sometimes prescribed with half its weight of potassium iodide and one-tenth its weight of tartaric acid, the mixture liberating iodine on contact with moist surfaces.

Dosage.—It may be used as a dusting powder either alone or mixed with tannin, or in the form of gauze, or a 10 per cent. ointment.

PURIFIED EXTRACT OF ERGOT—Extractum Ergotæ Purificatum.—Ergotin Bonjean. Extractum secalis cornuti (Pharm. Helvetica, edit. 4); Extractum ergoti (Pharm. Française, 1908). An aqueous extract of ergot purified by alcohol.

Powdered ergot is extracted by percolation with water and the percolate concentrated, diluted with alcohol, allowed to stand, then filtered and the filtrate evaporated to a soft extract.

It is reddish brown, of characteristic odor and taste, soluble in water and in a mixture of equal parts of water and alcohol. The aqueous solution is yellowish brown and acid in reaction. (Pharm. Helvetica, edit. 4).

If 2 Cc. of an aqueous solution (1:20) is mixed with 7 Cc. of water and 1 Cc. Mayer's reagent there should appear at most but slight turbidity; the turbidity is increased by the addition of a trace of hydrochloric acid; the further addition of 5 drops of dilute acid produces within a few minutes a flocculent precipitate.

10 Cc. of a 1:20 solution of purified extract of ergot should become turbid upon the addition of 1 Cc. picric acid solution and precipitation should occur within five minutes.

If a solution of 0.2 Gm. purified extract of ergot in 5 Cc. water is made alkaline with 1 to 2 drops of ammonia water and then shaken out with ether, the ether extract evaporated and the residue dissolved in 2 Cc. acetic acid to which a trace of ferric chloride has been added and the mixture carefully poured upon concentrated sulphuric acid, a bluish violet color appears at the zone of contact (Pharm, Helvetica, edit. 4).

Action and Uses.—Purified extract of ergot has the action and uses of ergot.

Dosage.—0.2 to 0.5 Gm. (3 to 8 grains).

This preparation should not be confused with the following:

Ergotin Wernich (Pure Dried) is a purified and dialyzed dried aqueous extract of ergot.

Ergotin Wernich (Liquid) is a dialyzed extract of ergot, in the form of a reddish brown liquid.

Ergotin Wernich (Soft) is a purified and dialyzed soft extract of ergot; a reddish brown syrupy liquid.

Ergotin Wiggers (Pure Dried) is a dried, alcohol purified extract of ergot.

Ergotin Yvon is a fluidextract of ergot prepared by extracting with dilute solution of tartaric acid.

SODIUM PEROXIDE—Sodii Peroxidum.—Bioxydum natri (Pharm. Hispanola, edit. vii).

Sodium Peroxide is the sodium salt of hydrogen peroxide containing at least 75 per cent. Na_2O_2.

Sodium peroxide occurs in the form of a white, or yellowish, amorphous powder. It is soluble in water, with evolution of heat, and forms a solution of hydrogen peroxide, from which latter, oxygen is liberated by the heat of the reaction. It dissolves in cold dilute acids forming a solution of hydrogen peroxide. When heated sodium peroxide becomes darker, but on cooling resumes its original color. It does not react with alcohol, but it ignites ether on contact. A mixture with red phosphorus explodes under pressure or on being struck. It is an extremely powerful oxidizing agent.

Sodium peroxide should not respond to tests for sulphates, chlorides, phosphates, nitrogen and heavy metals.

Action and Uses.—Sodium peroxide is not used internally but has been used in acne, applied in the form of a paste prepared with liquid paraffin, or as a soap to remove comedones.

It has been suggested as an air purifier, based on the theory that the moisture of the air would liberate oxygen and the alkali simultaneously formed would absorb carbon dioxide.

Proprietary Preparation:

OXONE.—A name applied to fused sodium peroxide containing a fractional percentage of a catalytic agent. It is said to yield its entire content of available oxygen in gaseous form, upon contact with water.

Manufactured by The Roessler & Hasslacher Chemical Co., New York. U. S. Patent No. 788,256. U. S. patent application filed March 13, 1906. Serial No. 305,800. U. S. trademark No. 46673.

APINOL—Apinolum.—Apinol is a product obtained in the destructive distillation of the wood of Pinus palustris and Pinus australis; that portion boiling at 182.2° C. to 193.3° C. (360° to 380° F.) is collected and purified. It is claimed to consist mainly of leavomenthone, $C_{10}H_{18}O$.

Apinol is obtained from the products of destructive distillation of pine wood. After the removal of turpentine and other low boiling constituents by distillation, the portion boiling between 182.2°-193.3° C. (360°-380° F.) is collected and purified.

It is a clear amber-colored oil with an odor resembling that of the pine, having a specific gravity of 0.946 and an approximate boiling point of 182.2° C. (360° F.). It is neutral in reaction.

Actions and Uses.—Apinol is said to be an antiseptic, local anesthetic and expectorant.

It is said to be useful when applied externally to wounds, burns, ulcers, and denuded surfaces for the relief of pain and promotion of healing.

It is claimed to be of service in gastric and duodenal ulcer, chronic gastritis and enteritis, and in all forms of inflammation of the respiratory tract, used by inhalation, it is said to assist in freeing the respiratory passages from accumulated mucus.

Dosage.—In gastric and duodenal ulcer, typhoid fever and catarrhal gastritis in doses of from five to fifteen minims with cane sugar as a menstruum. As much as a half ounce is said to have been taken at one time with no sign of irritation or toxicity.

Manufactured by the Apinol Chemical Co., Wilmington, N. C., U. S. trademark No. 29,848.

ARTICLES ACCEPTED FOR N. N. R. APPENDIX.

Sharp & Dohme, Baltimore, Md.:

Compressed Tablets Anesthesin, 2 1/2 grains.—Each tablet contains: anesthesin 0.15 Gm. (2½ grains).

Soluble Hypodermic Tablets Atoxyl, 1/3 grain.—Each tablet contains: atoxyl 0.02 Gm. (⅓ grain).

Ampules Solution Atoxyl, 10 per cent., (Sterilized).—Each 100 Cc. contain: atoxyl 10 Gm. (each fluidounce contains 48 grains) dissolved in distilled water.

Ampules Solution Atoxyl, 10 per cent., with Novocaine, 1 per cent. (Sterilized).—Each 100 Cc. contains: atoxyl 10 Gm. and novocaine 1 Gm. (each fluidounce contains atoxyl 48 grains and novocaine 4 8/10 grains) dissolved in distilled water.

Soluble Hypodermic Tablets Novocaine, 1/3 grain.—Each Tablet contains: novocaine 0.02 Gm. (1/3 grain).

Soluble Tablets Novocaine, 1 1/7 grains.—Each tablet contains novocaine 0.074 Gm. (1 1/7 grains).

PHARMACEUTICAL PREPARATIONS ACCEPTED FOR N. N. R.

The following dosage forms of accepted articles have also been accepted for N. N. R.:

Alypin Tablets, 3⅓ grains.
Alypin Tablets, 1⅓ grains.
Alypin Tablets, ¾ grain.
Alypin Tablets, ⅓ grain.
Helmitol Tablets, 5 grains.
Sabromin Tablets, 8 grains.
Veronal-Sodium Tablets, 5 grains.

Therapeutics

SHOCK

In spite of all investigations and of the vast clinical experience, the treatment of shock is still unsatisfactory. The etiology and pathology of the condition is not perfectly understood. Consequently, any scientific investigations that would tend to clarify the cause of shock and the exact condition of the circulation in shock must be welcomed by both physician and surgeon.

It has, of course, long been recognized that acute pain, whether caused by injury, the passage of a calculus through a duct, neuritis, or even acute neuralgia, can cause such a depressed condition of the circulation as to produce shock. Shock caused by severe pain has been supposed to be due to either slowing of the heart and imperfect cardiac contractions by reflexes through the pneumogastric nerve, or by such acute pain interfering with the vasomotor center as to cause greatly diminished arterial tension, and from these actions circulatory depression resulted. It has long been known that abdominal operations particularly predispose to subsequent shock. This has been thought to be due to possible sympathetic nerve disturbance or to a disturbance of the normal activity of the suprarenal glands, or to secondary overwhelming depressant action from the anesthetic.

There can be no question that acute pain from injury or other cause, or that acute pain suffered from the cutting or injury of nerves in incomplete anesthesia, or that acute pain suffered from such an injury, after an operation is over and the patient out of the anesthesia, is a direct cause of shock, and consequently such pain should always be stopped by the amount of anodyne that is necessary to stop it.

Recent investigations by Yandell Henderson, assistant professor of physiology at the Yale Medical School, seem to show that the reason that acute pain causes shock is not because the pneumogastric is unduly stimulated, is not because the arterial tension is greatly lowered, but is because the inhibition of metabolism from the pain and the increased respiration caused by the pain makes a greatly diminished amount of carbon dioxid in the blood, as well as a hyperoxygenation of the blood. This lack of carbon dioxid in the blood causes a lack of venous tone, and this lack of venous tone diminishes the amount of blood that reaches the auricles and therefore ventricles of the heart during diastole. This means that the output of the heart from each beat becomes less, and in profound shock insufficient. Henderson has found that, besides the inhibition of pain by morphin, ether and chloroform inhalations, in sufficient amount to prevent the appreciation of pain, will prevent shock. He seems to have demonstrated that even when the anesthetic seems sufficient that the sensitive nerves still note injuries and pain and shock may be caused, unless the anesthesia is profound. This means clinically that anesthesia should always be sufficient before operation and during operation. Henderson has also shown that when shock is present it is more satisfactorily treated, and generally successfully combated, by any means that increases the carbon dioxid content of the blood, and such treatment is far ahead in its success of cardiac stimulants and vasoconstrictors. A lowered arterial tension improves rapidly when physiologic saline impregnated with carbon dioxid is administered intravenously. Such improvement is far ahead of transfusion of physiologic saline that does not contain the carbon dioxid.

Henderson attributes the lowered carbon dioxid content of the blood largely to the nervous excitement before operations causing rapid breathing; also the increased breathing caused by the first part of the anesthesia, ether being particularly a respiratory stimulant, giving a condition of hyperoxygenation and lessened carbon dioxid content of the blood, and shock is therefore easily caused.

Henderson terms this condition of diminished carbon dioxid content of the blood acapnia (from the Greek kapnos, meaning smoke), literally a smokelessness.

Henderson further finds by other experimentation that intestinal paresis or paralysis, with consequent abdominal distention, is largely due in abdominal operations to exposure of the intestines to the air. The harm done by such exposure he finds is due to the loss of carbon dioxid from the intestinal vessels. Although this amount is small compared with that lost by the lungs in rapid or deepened respiration, this loss added to that from the lungs in abdominal operations predisposes to shock. He also finds that warm moist applications, the method adopted by most surgeons to keep the intestines at the normal temperature, predisposes to a loss of this carbon dioxid gas, and therefore predisposes to intestinal paralysis. He has shown by experiments on dogs that if the exposed intestines are covered so that the atmosphere does not get to them, he can increase normal peristalsis of the stomach, small intestine, and colon by directing under the covering warm air containing carbon dioxid gas. Such gas also prevents the congestion of the exposed intestines.

Articles on these investigations by Henderson will be found in the *American Journal of Physiology*, February, 1909, and April, 1909, and his views were also presented in a practical manner at the meeting of the American Therapeutic Society, held at New Haven, in May, 1909, a brief abstract of which appeared in THE JOURNAL, June 5, p. 1868.

The practical utility of the above experiments shows:

1. Severe pain should never be allowed; it should be prevented by enough of the narcotic which seems indicated in the individual case.

2. Anesthesia should be complete both before beginning operation and during it.

3. In abdominal operations moist warm cloths should not be applied to the intestines, and except in the exact region of operation the intestines should be protected with some covering that will prevent the exchange of gas from the intestines with the external air.

4. A tank of carbon dioxid gas should be at hand to perfuse through warm water to be directed into the abdominal cavity, if shock occurs during abdominal operations.

5. If shock occurs after operations or after other injuries, transfusion into the veins of physiologic saline saturated with carbon dioxid should be done. Also, at any time during shock, air, or oxygen, with moderate amounts of carbon dioxid should be inhaled.

6. Whenever there is likelihood of pain following the recovery of the patient from anesthesia, morphin should be injected to prevent it.

7. However valuable strychnin injections may be as a stimulant to the nerve centers and as a stimulant to general metabolism to perhaps promote normal cellular activity and perhaps therefore the production of a normal amount of carbon dioxid, excessive amounts of strychnin as a cardiac and respiratory stimulant in shock should not be used. Large doses of strychnin, or strychnin repeated too frequently, seem to interfere with the normal diastole of the heart and prevent the normal filling of the heart cavities and therefore the normal output of the heart into the arteries. Henderson seems to have shown that such cardiac stimulants can not increase the output from the heart cavities.

8. Digitalis would rarely be indicated, if ever, in acute shock. The greatest advantage of digitalis is in cardiac dilatation, and its best activity is in cardiac hypertrophy with dilatation.

If Henderson's investigations are of clinical value, atropin as a respiratory stimulant and a vasoconstrictor would seem contraindicated in shock. The same would be true of suprarenal preparations. Nitroglycerin would also probably not be indicated. Alcohol in doses sufficient to cause cerebral depression and therefore inhibition of metabolism would seem to do harm. Camphor as a cerebral stimulant, perhaps thus increasing metabolism, would seem to be indicated, and hypodermic injections of saturated solutions of camphor in olive oil have many times seemed one of the most valuable stimulants in shock. When the exact physiologic action of ergot on the circulation is better understood, probably the reason will be found for the marked benefit in shock and circulatory depression from its subcutaneous injection.

Whatever the outcome may be of clinical experience, with the apparent logical deduction from Henderson's experiments, anything that will prevent the senseless administration of enormous doses of the so-called cardiac and arterial stimulants and tonics to patients who are in shock will redound to the advantage of the sick.

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[*For other information see second page following reading matter*]

SATURDAY, AUGUST 7, 1909

EPIDEMIC MENINGITIS

In March, 1905, the Health Department of New York City appointed a commission for the investigation of cerebrospinal meningitis, and the work of the bacteriologists, Drs. Elser and Huntoon, of Cornell University Medical College, has been continued until this time, now being reported in a lengthy monograph.[1] This exhaustive, careful piece of research will unquestionably find a place among the most important studies on meningitis yet recorded. The authors have studied bacteriologically 210 cases of epidemic meningitis, and have made extensive investigations of the biology of the causal organism, its differentiation from allied cocci, the serum reactions of man and laboratory animals, the pathogenicity of the meningococcus for lower animals, its viability, and the mode of transmission and invasion of man in epidemics.

Perhaps one of the most striking conclusions reached by the authors is the essential importance of meningococcus carriers in the transmission of epidemic meningitis. As shown by Flügge and others, the number of persons who become meningococcus carriers during epidemics of meningitis is far greater than the number of cases of actual meningitis. A large proportion of the individuals living in the immediate neighborhood of meningitis cases act as meningococcus carriers, without suffering any symptoms or inconvenience whatever. Perhaps 70 per cent. of such exposed persons may harbor meningococci in the respiratory passages, although other individuals equally exposed but not inhabiting the same dwellings seldom become infected. Apart from epidemics, the meningococcus can be found but rarely in healthy individuals, but apparently there are occasional persons who, once harboring this organism in the nasopharynx, carry it permanently and thus perpetuate the disease. It would seem that the meningococcus can readily secure a foothold on the mucous membranes of the majority of persons, but with only a relatively small proportion of these persons can it invade the tissues and exercise its pathogenic effects.

The disease is undoubtedly transmitted directly from person to person, for the meningococcus is of such low vitality that it succumbs quickly to drying, sunlight, and other injurious influences. As persons suffering from the disease are, because of its severity, decidedly limited in their sphere of influence, and as only a very small proportion of those who receive the organism are susceptible to it, the perpetuation and spread of meningitis must depend on the healthy carriers, who pass the meningococcus on from one to another until a susceptible individual is infected and develops meningitis.

Although the meningococcus undoubtedly gains access to the system by way of the respiratory passages, yet Elser and Huntoon do not look with favor on the prevalent opinion that the meninges are reached by direct extension through the base of the skull. They consider that the evidence is more directly in favor of assuming that the meningococci first invade the blood stream, and then localize in the meninges because they have a specific affinity or adaptation for this particular soil. This specific affinity for meningeal tissue, however, would seem to be limited to human tissues, for all attempts to produce meningitis in animals by inoculation of the meningococcus into parts more or less removed from the central nervous system were without results.

As more and more experience with the bacteriology of meningitis is accumulated, the evidence points with increasing weight to the conclusion that a primary meningitis is almost always a meningococcus meningitis. Up to the time of Jaeger's study of epidemic meningitis in 1895, the pneumococcus or some related organism had been generally believed to be the chief cause of primary meningitis, although the meningococcus was described by Weichselbaum in 1887. Subsequent observations, however, have relegated the pneumococcus to a subordinate position until it now seems that it very rarely selects the meninges as a primary point of attack, however often it may invade them after having secured a foothold in some other tissue. As to epidemics of meningitis the pneumococcus may be left entirely out of consideration, there being but one epidemic yet studied bacteriologically which was certainly not due to the meningococcus, and in this the organism responsible seems to have been the *Streptococcus mucosus* or a close relative. The positive diagnosis of primary meningococcus meningitis rests on the demonstration of the specific organism in the cerebrospinal fluid, which seems not to be a difficult matter if proper precautions are taken. Cultivation of the meningococcus is not particularly easy, especially if the cultures can not be placed immediately under suitable conditions for growth, on account of the low vitality of this coccus.

Fortunately, however, it is not necessary to secure pure cultures of meningococci to establish a diagnosis, for, according to the large experience of Elser and Huntoon, the presence in freshly drawn cerebrospinal fluid of Gram-negative cocci is, for all practical purposes, sufficient proof of the presence of meningococci, and if the cocci are intracellular there is no question of their identity. Other Gram-negative cocci do not seem to occur in the spinal fluid, although they may occasionally appear in cultures as contaminations. The gonococcus can not be readily distinguished from the meningococcus, but there is no evidence that it is ever a cause of meningitis, and hence it is not a source of confusion. A negative finding is not conclusive, however, especially in early cases, for frequently the meningococcus can not then be demonstrated unless several specimens of meningeal fluid are obtained at intervals and carefully examined.

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[1] Jour. Med. Research, 1909, xx, 377-536.

A GRAND OLD MAN OF SCIENCE

The life-work of Francis Galton should especially interest physicians because his early education was directed toward medicine. His parents wished him to follow in the footsteps of his uncle, Dr. Robert Darwin, the son of Erasmus and the father of Charles, the formulator of the modern doctrine of evolution. And, indeed, at 16 the oculist Bowman took him in hand. Unfortunately for our profession, however, his father bequeathing him an ample fortune, young Galton abandoned the plan of practicing medicine, "though most grateful for the enlarged insight into nature" that he had acquired during his brief medical experience. He then entered on a career in science most multifarious and conspicuous. Throughout his long life he has been a tireless classifier, a founder of laboratories, a framer of subtle systems of classification and of "statistical units"; he has been concerned in meteorology, geography, exploration, pedagogics, mathematical inventions, anthropology, "finger-prints," psychology, heredity. He is the author of one hundred and eighty-three books and memoirs, and now, at 86, he gives us his autobiography.[1] Such is an incomplete enumeration of Galton's activities; who among us would not find any one of these subjects sufficient occupation for a lifetime? In the broad field of his researches we of the twentieth century can not hope to emulate him; for he represents the versatile activities of the nineteenth century giants. To-day the cosmic realm of science has become too vast for one finite mind to grasp; whether we will or no, we have to specialize.

We here emphasize, as of interest especially to our colleagues who have recently taken their degrees, some traits in the character of this remarkable man. His mental development was influenced by the fortunate circumstances in which he has been placed throughout his life, but especially in his youth. In laboratory work, in scientific research, in social intercourse, he has always enjoyed companionship with men of ability, with the best minds of his time. In Cambridge and afterward he knew Maine, Kay, Hallam, Tom Taylor, the Darwins, Spencer, Huxley, Faraday, Tyndall, Gladstone, Burton, Pollock, Tom Hughes, and scores of others of most beneficent intellectual influence. His associations were the best, and he derived enormous profit from them, and in turn he has bestowed benefits tenfold.

Galton has ever paid tribute to the study of medicine as being a most valuable foundation for the well-rounded life; and so it is, in our day at least, even for one who does not contemplate practice. Medical science now lays all knowledge under tribute toward the end of the relief of suffering. It should, therefore, give a solid and comprehensive understanding of the facts of existence and should develop profound humane sympathies.

Another consideration noteworthy for physicians is the mathematical trend of Galton's mind; he has been able, by imparting his valuable ideas, to inspire skilled mathematicians to most fruitful work. He founded a whole school of biometric inquirers, chief among whom is Prof. Karl Pearson; these men, devoting themselves to the quantitative and exact treatment of the problems of heredity, are now developing the science of "eugenics." Here Galton is in agreement with the great Brehmer, who declared that "only the physician who has studied nature and has trained his mind to mathematical science knows how to cure men."

Again, Galton is intensely practical. Every idea in his fertile mind seeks some useful outlet. He has invented a dozen instruments or methods which are now generally employed. (Not one of these, by the way, has been patented.) When, for example, he took up the study of finger-prints he thought that they might prove to be of high anthropologic significance, but he was very soon applying them as a means—the best now in existence—of identifying criminals.

This venerable man maintains unimpaired the true scientist's ravenous and omnivorous curiosity; facts he wants, facts on which to base hypotheses, theories, doctrines, systems. How inspiring is Galton's prodigious energy! Especially is this a cause of wonder, since his means have ever precluded the absolute necessity of hard work. Herein he exemplifies one of the many definitions of genius (and for the physician the best) —that it is an infinite capacity for taking pains. With equal intentness he prepares a memoir on "cutting a round cake on scientific principles;" or he arranges a plan for calling into existence "races of highly gifted artists, saints, mathematicians, administrators, mechanicians, etc." No detail ever escapes him; none is too insignificant to merit his attention. To him we may well apply the motto which still decorates the wall of the little room in Zaardam in which Peter the Great lived and broke his bread while learning how to build ships: "Den grooten man is niets te klein," which, being translated, reads: "For the great man there is nothing too small."

CHANGES IN STREET NUMBERS IN CHICAGO

Commencing September 1, all mail for the American Medical Association should be addressed to 535 Dearborn Avenue. This is in conformity to a new system of street numbering adopted by the city of Chicago. The use of the new numbers is compulsory, and physicians throughout the United States who have occasion to write to Chicago physicians are hereby notified so that they may secure the new addresses. Until the new numbers are ascertained, however, it will be well to prefix the words, "Old No."

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[1] Galton, F.: Memories of My Life. New York: E. P. Dutton & Co.

All Chicago physicians are asked to send us their new addresses at once in order that The Journal may be correctly delivered and also that the new addresses may be used in the American Medical Directory. For convenience a blank is given on advertising page 40 of this issue. It will be a favor if Chicago readers will fill this out and send it in immediately. If we could do so, we would save our Chicago friends this trouble and would secure the new addresses from the city authorities, but the latter state that they are entirely unable to handle such an enormous task as would be necessitated if they tried to do this for all the Chicago firms who might desire it.

It is an opportune time for a caution that we have frequently had in mind, namely, that the American Medical Association's building is on Dearborn *Avenue*. Not infrequently a visitor to the city seeks us on Dearborn *Street*. The Association's building at 535 Dearborn Avenue is on the North Side, four blocks north of the river; the building is open for inspection every day, except Saturday, from 8 to 5, and on Saturday from 8 to 1. Members and others are made cordially welcome and are invited to inspect the establishment.

CAN A TUBE BE PASSED INTO THE COLON?

A valuable contribution to the question of the practicability of the high enema will be found in the present issue in the paper of Dr. Soper. It seems to be the belief of the majority of physicians in this country that the soft rubber tube can be passed beyond the sigmoid flexure, though this has been disputed by high authorities abroad. Dr. Soper's experiments and the skiagrams show that in many cases, perhaps in nearly all, the tube does not pass beyond the dome of the rectum and that it is only in exceptional conditions of dilatation and hypertrophy of the colon that it can be successfully introduced beyond the sigmoid flexure. If it could go further, there is still difficulty to be overcome before the injection could be carried anywhere near the cecum, as some have claimed. The splenic flexure especially would seem to be a difficult place to pass. It is often a very acute turn and has been credited with causing decided intestinal obstruction under certain conditions. The need of introducing the injection tube beyond the rectum is probably in most cases an imaginary one. Soper himself says that he has frequently demonstrated the possibility of flushing the entire colon by using a large caliber (one-half inch) short tube. It is certainly much easier to depend on an enema finding its own way beyond the flexures than to endeavor to carry it beyond them. The fluid will probably, in almost every instance, find its own way through the large intestine if sufficient pressure is employed and we thus avoid the danger of causing irritation and premature expulsion of the liquid. Of course, with a slightly bent sigmoid or with its total absence, the higher injection is possible, but such conditions are exceptional and not to be reckoned on. A tube of sufficient rigidity to force its way would hardly be advisable for general use.

THE SEPTUAGENARIAN PEDESTRIAN

Edward Payson Weston's performance of walking 3,975 miles in 105 days is a sufficiently noteworthy fact to deserve mention in a medical journal, even though he did not fully carry out his program of completing his walk in the time specified. It should be recollected that he comes before the public in this spectacular way after about a quarter of a century of comparative obscurity in which there are no records of any such unusual performances. He had been simply taking care of himself in the interval, and now comes out to show what a man can do after passing the psalmist's limit of human life. Probably many other men with like training and temperate habits could somewhat approximate his record.

Medical News

IDAHO

Personal.—Dr. William A. Wright, Pocatello, has been appointed surgeon general of the Idaho National Guard with the rank of colonel.——J. H. Wallace, clerk of the last House of Representatives, has been appointed pure food commissioner by the State Board of Health.

Epidemic Diseases.—The epidemic of scarlet fever and diphtheria of Wallace is abating. On July 5, no new cases had been reported for ten days.——Scarlet fever is reported to be epidemic at Kellogg, and diphtheria at Bonner's Ferry, where Dr. E. Esher Fry is said to be ill with the disease.

New State Officers.—The Idaho State Medical Association, at its seventeenth annual meeting, held in Seattle, Wash., July 20-22, elected the following officers: President, Dr. James L. Stewart, Boise; vice-president, Dr. George H. Coulthard, Idaho Falls; and secretary-treasurer, Dr. Edward E. Maxey, Boise.

ILLINOIS

Pleads Guilty.—Dr. Edwin A. Weimer, Pekin, charged with sending an improper letter through the United States mails, who pleaded guilty, is said to have been fined $100 and costs in the United States District Court, July 21.

Found Not Guilty.—Dr. Charles F. Barstow, Freeport, who has been on trial charged with the murder of a young woman of Council Hill by the performance of an illegal operation, is said to have been found not guilty on the first ballot of the jury, July 6.

Medical Staff Appointed.—At a meeting of the Galesburg Hospital board July 9, the following medical staff was appointed: Drs. James F. Percy, William O'R. Bradley, William H. Maley, Ralph C. Matheny, Edwin N. Nash, Delia M. Rice, Carl G. Johnson, George S. Bower, John H. Bryant and Clarence B. Ripley.

The Afflicted.—Dr. J. Bradley Crandall, Sterling, is reported to be steadily improving in health in Montpelier, Vt.——Dr. Nathaniel S. Parsons, Kewanee, who has been ill with cerebral hemorrhage, is reported to be convalescent.——Dr. Lewis W. Kreiger, Peoria, who has been ill with septicemia, is reported convalescent.——Dr. Alexander C. Smith, Sterling, is reported to be convalescent.——Dr. William A. Hinckle, Peoria, was painfully injured in a street car accident, July 14.

Personal.—Dr. James L. Greene, superintendent of the Kankakee Hospital for the Insane, has been appointed the alienist member of the board of administration for the state institutions.——Dr. James A. Nowlen has succeeded Dr. Frank Fitzgerald, resigned, as local surgeon of the Chicago and Northwestern Railway Company at Morrison.——Dr. Harry C. Blankmeyer has been appointed pathologist and Dr. Morris Altman, obstetrician on the staff of the Springfield Hospital.——Dr. W. E. Shallenberger, Canton, has been appointed local surgeon for the Chicago, Burlington and Quincy and the

Toledo, Peoria and Western railroads.——Dr. J. Rex Sholl has been appointed health commissioner of Peoria, vice Dr. Albert Weil, resigned.——Dr. Stephen C. Glidden, Danville, chief surgeon of the Illinois Traction System Hospital Association, has resigned.——Dr. R. T. Hinton has succeeded Elmer L. Crouch, resigned, on the staff of the Jacksonville Hospital for the Insane.——Dr. Penn W. Ransom, Rockford, who was sued by the *Journal of Nervous and Mental Diseases* to recover $125 alleged to be due on an advertising contract, is said to have won his suit, as the testimony showed that he had ordered the advertisement taken out of the journal.

Chicago

Off for Europe.—Dr. and Mrs. Lewis L. McArthur, Dr. and Mrs. Cassius C. Rogers and Drs. Harriet C. B. Alexander, E. Fletcher Ingals and George E. Shambaugh have sailed for Europe.

National Medical Not in Good Standing.—At a meeting of the Illinois State Board of Health, April 14, the National Medical University is said again to have been voted a college not in good standing.

Change Your Address.—Commencing September 1, the number of the American Medical Association Building will be 535 Dearborn avenue. This is in conformity with the new system of street numbers of the city. All Chicago physicians are asked to fill in the blank on advertising page 40 of this issue so that their addresses may appear correctly in the American Medical Directory and so that their copies of The Journal may reach them promptly.

To Aid Babies.—The health department has appointed the following 10 physicians to cooperate with the United Charities and Infants' Welfare Committee in their endeavor to reduce the infant mortality list of the summer: Drs. Caroline Hedger, Anna Dwyer, Katherine B. Rich, Johanna Tow, T. Grant Allen, Harold Diefendiefer, M. A. Bernstein, Samuel Perlstein, Samuel Kalaginski and Henry Stieble. Five large tents where ailing babies may be cared for have been placed in various parts of the city in crowded districts.

MARYLAND

School of Instructions for Military Surgeons.—At the school of instructions established by the Army for the benefit of members of the medical department of the national guard at Antietam, 82 militia medical officers have been in attendance. The term of instruction began July 16 and will continue until August 11.

New Psychiatric Ward.—Plans have been completed for the new psychiatric ward given to Johns Hopkins Hospital by Mr. Henry Phipps of New York City. The building will be of dark brick and stone and in conformity with the other buildings of the institution. The idea of non-restraint will be carried out as far as possible. Windows will be guarded by flower-boxes and trellises instead of bars, and suitable arrangements for recreation and exercise will be supplied.

Personal.—Dr. J. Mark Baldwin, professor of physiology and psychology in Johns Hopkins University, has resigned.——Dr. Charles W. Mitchell has been elected professor of medicine in the University of Maryland, vice Dr. Samuel C. Chew, resigned, and in addition will continue to lecture on diseases of children; Dr. Arthur M. Shipley will succeed Dr. Mitchell as professor of therapeutics, and will continue to lecture on surgical pathology; Dr. Harry Adler has been appointed clinical professor of medicine and director of the clinical laboratory, and Dr. Irving J. Spear, clinical professor of neurology and psychiatry.——Dr. W. F. Clayton has succeeded Dr. Joseph B. Webster as sanitary officer of the fourteenth district, Baltimore.

MASSACHUSETTS

Illegal Practitioner Fined.—William M. Lindsey, "clairvoyant" and "magnetic healer" of Worcester, charged with the unlawful practice of medicine, is said to have been found guilty and fined $100 July 8. The defendant appealed.

Ophthalmia of the New-Born.—The committee appointed by the Massachusetts Medical Society to consider what measures should be taken by the society to prevent the occurrence and secure the prompt and effective treatment of ophthalmia neonatorum, has issued a pamphlet dealing with the preventive treatment, suggestions to physicians and nurses, and the treatment of the disease, concisely and plainly written and easy to be understood. Two sections of the revised Massachusetts laws bearing on the subject are quoted in the appendix to the leaflet.

Bequests.—By the will of the late Carrie F. Abbott, Cambridge, $5,000 is bequeathed to the Cambridge Hospital.——After the payment of the many legacies, the balance of the property of the late Miss Mariam S. Shattuck, which will amount to at least $10,000, is bequeathed to the Massachusetts General Hospital. The fund is to be known as the Shattuck Memorial fund, in memory of her mother, Clarissa Baxter Shattuck.

Boards of Health Meet.—At a quarterly meeting of the Massachusetts Association of Boards of Health held at Gallup's Island, Boston Harbor, July 22, Dr. Leslie H. Spooner, Boston, read a paper on "Typhoid Fever; Incidence of the Disease as Contracted Within the Massachusetts General Hospital from 1899 to 1908 Inclusive." Dr. Mark W. Richardson, Boston, secretary of the State Board of Health, opened the discussion, making special reference to the use of specific inoculation in the prevention of typhoid fever, in which he advocated the compulsory inoculation against typhoid fever of nurses, hospital attendants, physicians, soldiers and sailors.

MISSOURI

Postgraduate Club.—The physicians of Carthage have organized a postgraduate club and elected the following officers: Vice-president, Dr. Wallace E. Steele; secretary, Dr. Everett E. Powers; and treasurer, Dr. Calvin B. Taylor.

Students' Infirmary.—Parker Memorial Hospital, which was established at the University of Missouri, Columbia, by James L. Parker as a means of clinical instruction for the school of medicine, has been converted into a students' infirmary. Dr. Guy L. Noyes has been continued as superintendent.

Personal.—Dr. Frederick A. Patterson, St. Joseph, has temporarily succeeded Dr. W. F. Kuhn, removed, as superintendent of State Hospital No. 2, St. Joseph.——The following appointments and promotions are announced in the St. Louis University School of Medicine; Dr. Martin F. Engman, professor of dermatology, vice Dr. John H. Duncan, resigned, and Drs. John W. Marchildon, J. J. Honwink and Russell D. Carman, promoted from instructors to assistant professors of bacteriology, dermatology and roentgenology respectively.

St. Louis

School Incorporates.—The St. Louis School of Physicians and Surgeons Real Estate and Holding Company has been incorporated with a capital stock of $50,000 by Dr. Waldo Briggs and others.

University Plans Hospital.—The advisory board of the St. Louis University has had prepared plans for a new modern hospital to cost $500,000. The university will acquire the site and the Sisters of the Incarnate Word will build and maintain the institution.

Personal.—Dr. John C. Murphy, professor of obstetrics in the St. Louis College of Physicians and Surgeons, has resigned.——Dr. M. E. Toland will soon leave for China as a medical missionary.——Drs. William H. Freudenstein, Albert Beisbarth, Joseph H. Humphrey and Jacob J. Singer, assistant physicians at the city hospital, have resigned.——Dr. Frank Boucher, intern in St. Mary's Hospital, is said to be seriously ill with meningitis.

NEW YORK

Increase in Cancer.—The State Department of Health reports that the deaths from cancer in this state show a marked increase. In 1885 the total number of deaths from cancer was 1,887, and last year the total was 6,551, the highest on record. Statistics filed thus far indicate that the fatal cases for 1909 will surpass those of 1908.

New Hospital.—The Little Sisters of the Poor of St. Francis, Brooklyn, are about to erect a brick building for hospital purposes in Woodhaven. The new hospital will be called St. Anthony's. The only return that will be asked from a patient will be that, when convalescent, he will help in the care of those too ill to help themselves.

New York City

Personal.—Drs. Francis T. Kinnicut and Walter B. James returned from Europe July 29.——Drs. Frank H. McLaury and James F. Markoe have gone abroad.

To Succeed Mayer.—Dr. August Hoch, physician to the Bloomingdale Asylum and assistant professor of psychiatry in Cornell Medical College, will succeed Dr. Adolph Mayer as director of the Pathological Institute of the New York State Hospitals for the Insane.

To Teach the Public.—Extensive preparations under the directions of the Board of Health have been made for the purpose of instructing the public as regards pulmonary tuberculosis. Stereopticon exhibitions will be given during August in the public parks and recreation piers in the boroughs of Manhattan and the Bronx.

Faculty Changes.—The following appointments have been made in the medical department of Cornell University: Dr. Frank Sherman Meara, professor of therapeutics and clinical medicine; Dr. Charles N. Bancker Camac, professor of clinical medicine; Dr. William J. Elser, professor of bacteriology; Drs. John A. Hartwell and William B. Coley, professors of clinical surgery; Dr. Silas P. Beebe, assistant professor of experimental therapeutics, and Dr. J. Merlin, assistant professor of physiology.

Health Insurance Plan.—An old line insurance society has perfected plans for the establishment of a policy holders' health bureau. The object is to help members to discover disease in time to check and cure it. Diseases of the heart, brain, kidneys and other degenerations are increasing, and in order to prevent this class of diseases members will receive free medical examinations every two years. The society will issue health bulletins from time to time giving policy holders the benefit of the discoveries of science and the experience and advice of medical authorities.

Conference of Pharmacists.—The Retail Druggists' Protective Association has planned a conference to be held late in August or early in September to push the agitation for an altered system of pharmaceutical supervision. A special attempt will be made to bring the question of the status of the present Board of Pharmacy into the courts for settlement. The association would have the board appointed by the governor and not elected by the incorporated pharmaceutical associations, as at present. It would also restrict the board to the examination and licensing of candidates and would not allow it the police power which it has at present. The association purposes to form a compact organization to oppose the Brown bill and to fight the State Pharmaceutical Association, which has committed itself irrevocably to that measure.

Insurance Company Wants Sanatorium.—The plan of a large life insurance company to build a huge sanatorium for the treatment of tuberculosis among its policy holders has been laid before State Superintendent Hotchkiss. It is said that Mr. Hotchkiss is in favor of the plan but is in doubt as to whether the law will permit it. The law allows an insurance company to buy land for company business, but it is a question whether the proposed plan can be considered as company business. An option has already been secured on a site and the plans for the institution have been made which would accommodate 200 patients. The plan is designed primarily for the 3,000 employés of the home office and the 11,000 agents in the field, but occasional policy holders would be admitted. The entire expense of the undertaking will be borne at first by the company. As a part of the general scheme of education the company will send broadcast from its presses in the near future 3,500,000 copies of a pamphlet entitled "A War Upon Consumption." This pamphlet will be printed in ten languages.

NORTH CAROLINA

Free Dispensary Opened.—The Salvation Army has opened a free dispensary in Greenville, for treatment of diseases of the eye, ear, nose and throat.

In Favor of Defendants.—In the suit for alleged malpractice brought against Drs. Romulus Armfield, Marshville, and H. Moses Brooks, Olive Branch, by Mr. and Mrs. J. B. Kirker of Anson county, the jury returned a verdict in favor of the defendants.

Antituberculosis Association Organized.—The Guilford County Antituberculosis Association was organized at Greensboro, July 22, and the following medical men were elected officers: Secretary, Dr. John R. Williams, and directors, Drs. William P. Beall and John R. Williams, and E. W. Gudger.

Faculty Changes.—The following changes in the faculty of the Medical School of the University of North Carolina, Raleigh, are announced: Dr. John Sasser McKee, demonstrator of obstetrics; James Madison Harper, assistant demonstrator of clinical pathology; Dr. Claude O. Abernethy, professor of diseases of the skin and genitourinary system, vice Dr. Andrew W. Goodwin, resigned.——Dr. John B. Powers has been elected dean of the medical department of Wake Forest University, vice Dr. Watson S. Pankin, who resigned to become secretary of the State Board of Health.

Personal.—Dr. Lawrie J. Arnold, Lillington, has been elected superintendent of health of Harnett county, vice Dr. Joseph W. Halford, Chalybeate.——After serving nearly 17 years as secretary and treasurer of the North Carolina Board of Health and editor of its *Bulletin*, Dr. Richard H. Lewis, Raleigh, has relinquished these duties to Dr. Watson S. Rankin, Wake Forest.——Drs. Edward J. Wood, Wilmington, William L. Dunn, Asheville, and William DeB. MacNider, Raleigh, have been appointed by the Medical Society of the State of North Carolina the committee from the state on the revision of the United States Pharmacopeia.——Dr. John M. Manning has been elected president, and Dr. Thomas A. Mann, health officer and clerk of the Board of Health of Durham.

OREGON

Board of Examiners Elects.—At a business meeting of the State Board of Medical Examiners held in Portland, July 7, the following officers were elected: President, Dr. Edward Bruce McDaniel, Baker City; secretary, Dr. Robert C. Coffey, Portland; and treasurer, Dr. A. P. Watson.

Graduation Exercises.—The forty-third annual commencement exercises of Willamette University Medical Department, Salem, were held June 2, when a class of 8 was graduated. The president of the university conferred the degrees, Judge Webster of Portland delivered the doctorate address, and Dr. John N. Smith, Salem, the charge to the class.

State Association Election.—The following officers were elected by the Oregon State Medical Association at its thirty-fifth annual meeting held in Seattle, Wash., July 20-22: Dr. Edward A. Pierce, Portland, president; Drs. Roy C. McDaniel, Baker City, and George R. Farra, Corvallis, vice-presidents; Dr. William House, Portland, secretary; Dr. Edna D. Timms, Portland, treasurer, and Dr. Charles J. Smith, Pendleton, delegate to the American Medical Association. The association will meet in Pendleton in 1910.

PENNSYLVANIA

Philadelphia

Gone Abroad.—Drs. Norman S. Betts, George E. de Schweinitz, Francis X. Dercum, George W. Norris and Paul J. Sartain have sailed for Europe.

Sanitary Drinking Cups.—The Pennsylvania Railroad has installed at the drinking fountains in Broad Street Station and on some of the trains running between Philadelphia and Buffalo, individual drinking cups for the accommodation of the public. At Broad Street Station the cups are placed in glass tubes attached to the drinking fountains. They are made of paraffin paper and are obtained by dropping a cent in a slot machine of which the glass tube forms a part.

Anti-Expectoration Crusade.—A vigorous crusade against expectoration in public places is to be conducted by the Pennsylvania Society for the Prevention of Tuberculosis. Under the terms of the Sproul bill, which passed the legislature a year ago, expectoration in street cars and all public places is subject to a fine of $1. It is the intention of the society to enforce this law. Constables have been sworn in for the detection and arrest of offenders. The work of the prosecution is in the hands of Edward Abrams. Signs directing the attention of the public to the law are to be placed in all public institutions and conveyances.

SOUTH CAROLINA

Journal Changes Location.—Beginning with its June issue, the *Journal of the South Carolina Medical Association* is issued from Florence. Dr. Frank H. McLeod is editor, and Dr. J. Gregg McMaster, Florence, business manager of the journal.

State Laboratory Opened.—The Laboratory of the State Board of Health, Columbia, was opened for work, July 1. The scope of the institution at present is bacteriologic examinations looking to the prevention of contagious and infectious diseases, and the administration of the Pasteur treatment for rabies. The bacteriologic work includes the examination of water, milk, sputum, the Widal test, cultures for diphtheria, etc. No charges made for examination or treatment. Dr. Francis A. Coward is director in charge of the laboratory.

WASHINGTON

Personal.—Dr. Guy S. Peterkin, Seattle, was thrown from his horse recently and sustained a fracture of the pelvis.——Dr. Matthew B. Grieve, Spokane, has resigned as city health officer.——Dr. N. Fred Essig, Spokane, has been seriously ill with erysipelas.

Hospital Notes.—James J. Hill has given $2,000 to the building fund of the Children's Orthopedic Hospital, Seattle.——Seattle and King counties have agreed to install and maintain a sanatorium for tuberculosis at Riverton. The site contains 7 acres, and the initial expense will be about $5,300.

Resent Report of Exorbitant Charges.—The medical men of Seattle resent the report that they are making exorbitant charges for certificates of good health before marriage certificates can be issued, and state that the fees for medical examinations have ranged from nothing to $2.50, including the certificate and notarial fees.

New Officers of State Association.—At the annual meeting of the Washington State Medical Association, held in Seattle July 20-22, the following officers were elected: President, Dr. William D. Kirkpatrick, Bellingham; vice-presidents, Drs. John M. Semple, Medical Lake, and William M. Beach, Shelton; secretary, Dr. Curtis H. Thomson, Seattle; treasurer, Dr. Leon L. Love, Tacoma, and delegate to the American Medical Association, Dr. James R. Yocum, Tacoma.

WISCONSIN

Sanitarium Burns.—Fox Lake Sanitarium, formerly Downer College, has been destroyed by fire with a loss of $200,000. No casualties resulted. Insurance on the building amounted only to $25,000.

New Tuberculosis Sanatorium.—Dr. Gerhard A. Bading, health commissioner of Milwaukee, has received plans for a tuberculosis sanatorium to be erected in Wauwatosa. The building will be erected on the top of a hill, will be two stories in height, and will have large porches on three sides to enable the patients to get the advantage of the sunshine and air.

Personal.—Dr. Raymond H. Stetson of Beloit College has been appointed professor of psychology at Oberlin (Ohio) College.——Dr. Charles M. Schoen, city bacteriologist of Milwaukee, is ill with diphtheria.——Four new appointments to the state board of examiners have been made by the governor: Dr. Milton A. Barndt, Milwaukee (reappointed); Dr. John M. Beffel, Milwaukee, succeeds Dr. Patrick H. McGovern of the same city; Dr. Charles W. Rodecker, Wonewoc, succeeds Dr. John V. Stevens, Jefferson.

GENERAL NEWS AND COMMENT

Formation of the Public Health Education Committee.—In accordance with the resolution unanimously passed by the House of Delegates of the American Medical Association at Atlantic City, June 10 (minutes in THE JOURNAL, June 19, page 2083, and editorial in THE JOURNAL, July 3, page 34), authorizing the women members of the A. M. A. to elect a committee to commence a campaign of public education in the cause of preventive medicine, the women members were invited to meet July 20, at 6 East Fifty-eighth street, New York City. Representative women from many parts of the United States were present, and more than two hundred letters and telegrams were received from both women and men members of the association, expressing warm sympathy with the movement and a desire to cooperate. Dr. Sarah R. Adamson Dolley, the first American woman to receive a diploma in medicine, was called to the chair, and expressed appreciation of this opportunity to cooperate in a cause destined to have far-reaching results of incalculable benefit. She vacated the chair in behalf of Dr. Rosalie Slaughter Morton, whose opening address included a plan of work afterward incorporated in the form of resolutions. A secretary for each state will subdivide the work of her state according to counties, and will keep in touch with the central committee. The following members were elected to form the central committee:

Honorary Chairman, Sarah R. Adamson Dolley	Rochester, N. Y.
Chairman, Rosalie Slaughter Morton	New York City
Secretary, Evelyn Garrigue	New York City
Treasurer, Emma C. Hackett	New York City
Rose Talbott Bullard	Los Angeles
Laura L. Liebhardt	Denver
Sara Craig Buckley	Chicago
Lilian H. South	Bowling Green, Ky.
Annie Lee Hamilton	Boston
Margaret Halliday	Austin, Texas

The most important points in the plan outlined by Dr. Morton were embodied in resolutions, which may be briefly summarized as follows:

1. To influence the local women's medical associations throughout the country to hold one or more open meetings to which the public shall be invited and at which will be discussed the prevention of diseases and the general hygienic welfare of the people.

2. To collect data for future use, such as copies of the programs at the meetings above mentioned, lists of women's clubs, girls' schools, mothers' clubs, social settlements, etc., lists of lecturers who can be obtained and topics which are recommended, etc.

3. To endeavor to have women's organizations appoint active committees on hygiene to see that club programs include addresses on preventive medicine, etc.

4. Since there is no appropriation for the expenses, to request each woman member of the American Medical Association to pay $2 to her state secretary of the Public Health Education Committee of the American Medical Association, the state or city secretary retaining one-half for state expenses, and sending the other half to the secretary of the national committee, Dr. Emma C. Hackett, 1700 Broadway, New York City.

A full report of moneys received and expended and of all meetings held and all plans for the future is to be made to the House of Delegates of the American Medical Association at the St. Louis session, and an appropriation for the continuance of the work is expected to be made by the Board of Trustees. The committee is perfecting a mailing list of all women members of the Association that it may inform them of the work and secure their cooperation. The next meeting of the committee is to be held in St. Louis the evening before the annual session of the American Medical Association. The chairman, secretary and treasurer were empowered to take in charge and carry on all work which was unfinished at this meeting.

Change of Date.—The date of the annual meeting of the American Electro-Therapeutic Association, in New York City, has been changed from September 14-16 to September 28-30.

Surgeons Receive Charter.—The American Surgical Association was given a charter in the State of Pennsylvania, July 9. The petition for its incorporation was signed by Drs. William W. Keen, J. Ewing Mears, Robert G. Le Conte and Richard H. Harte.

International District Medical Association Formed.—As announced in THE JOURNAL, July 3, the medical associations of British Columbia, Idaho, Oregon and Washington, met in Seattle, July 20-22, and in addition to their annual meetings, combined to form The Pacific Northwest District Medical Association. Each state association will act in turn as host to the district association. The papers presented will appear in *Northwest Medicine*, the official organ. Two associate editors are to be chosen from each component society. The officers elected in the various societies are given in this issue.

District Societies Meet.—The sixth annual meeting of the N. S. Davis District Medical Association was held in Keokuk, Iowa, July 13, and the following officers were elected: President, Dr. James R. Bridges, Kahoka, Mo.; vice-presidents, Drs. William W. Milligan, Burlington, Iowa, and Frank B. Dorsey, Keokuk, Iowa; secretary-treasurer, Dr. Edward N. Hanson, Keokuk; and censors, Drs. Frank M. Fuller, Keokuk, Josiah C. Taylor, Hamilton, Ill., and Hauphrey H. Sherwood, Bowen, Ill.——The annual meeting of the Iowa and Illinois District Medical Society was held in Davenport, July 8. Dr. George M. Middleton, Davenport, was elected president; Dr. Shelley B. Hall, Rock Island, vice-president; Dr. J. H. Kulp, Davenport, secretary, and Dr. Theodore W. Kemmerer, Davenport, treasurer.

CANADA

Provincial Association Formed.—The Alberta Medical Association was organized at Lethbridge, July 23, with the following officers: President, Dr. L. George De Veber, Lethbridge; vice-presidents, Drs. Keillor Sterling and Charles E. Smyth, Medicine Hat, and secretary, Dr. Campbell, Lethbridge.

British Columbians Meet in Washington.—The British Columbia Medical Association held its tenth annual meeting in Seattle, Wash., July 20-22, and elected the following officers: President, Dr. Robert W. Irving, Tranquille; vice-president, Dr. J. S. Burris, Kamloops; secretary, Dr. R. Eden Walker, New Westminster, and treasurer, Dr. James D. Helmcken, Victoria.

French Medical Association.—The members of the Montreal section of the French Medical Association of America met at Laval University, Montreal, July 6. Dr. J. J. Guerin acted as chairman and Dr. Louis Verner as secretary. Dr. Elzear Pelletier was elected president; Drs. Michel D. Brochu, Alfred Simard and C. Dagneault were elected delegates from Quebec, and Drs. J. J. Guerin, Emmanuel P. Benoit, Rheaume, Charles N. Valin, Latreille, F. X. de Martigny, Louis Verner, Henri Hervieux, Amedée Marien, J. A. Le Sage, Eugene Saint-Jacques, Brisset, Bourguoin, Raoul Masson, Benjamin G. Bourgeois, Joseph Asselin, Recarie and Boucher, delegates from Montreal. The next meeting will be held in Sherbrooks in August, 1910.

Ontario Medical Council Meeting.—The Ontario Medical Council at its meeting held during the week ended July 10, decided after discussion to take prompt action in all criminal cases and to have the names of all practitioners found guilty of unprofessional conduct removed promptly from the register. The question of reciprocity with Manitoba and other provinces was discussed at length, and two delegates were appointed to meet the representatives from these provinces at the session of the Canadian Medical Association in Winnipeg, August 23 to 25, where the entire question of Dominion registration will be taken up. Dr. E. A. Patrick Hardy, Toronto, was elected president, and Dr. James L. Bray, Toronto, was reelected registrar of the council.

FOREIGN

Third International Congress for School Hygiene.—The organizing committee of this congress, which is to meet at Paris, March 29, 1910, has just issued a pamphlet in which fifty pages are devoted to the lists of committees of propaganda in the various countries interested, the rest of the pamphlet containing the statutes, sections, etc. The congress is open to all taking an interest in school hygiene. The proposed American committee is headed by Dr. John H. Musser as president, Dr. A. T. Cabot, vice-president, and Dr. T. A. Storey, 611 W. 137th street, New York City, as secretary and treasurer, with eleven pages of names of the members of the American committee, including noted physicians, teachers, physical instructors, and others.

Roumanian Physicians Can Not Attend International Congress.—The physicians of Roumania have sent out a circular signed by Professor Jonnesco stating that it will be impossible for them to participate in the festivities connected with the approaching International Medical Congress at Budapest as the Hungarian authorities have recently imprisoned a Roumanian woman, the wife of a Hungarian deputy, whose sole crime was that she told the Roumanian children in a certain Roumanian school that it was their right and their duty to cultivate their mother tongue. The circular states that if Hungarian "justice" denies to Roumanians the right to a mother tongue, Roumanian physicians as citizens and patriots are obliged to refrain from participating in the congress on Hungarian soil. The language of the little kingdom is in some respects nearer to Latin than any other of the Romance languages—the very name, Roumania, is from *Romanus*, Roman. About a third of the 9,000,000 people speaking Roumanian are under Austria-Hungarian rule, as the population of Roumania proper is only 6,000,000.

LONDON LETTER

(From Our Regular Correspondent)

London, July 24, 1909.

International Congress on Alcoholism

The twelfth International Congress on Alcoholism has been held in London. It was attended by about 1,400 members which included 400 delegates from abroad. The latter came from all parts of the world. The largest foreign contingent, over 120 strong, came from Germany. Though the tone of the congress was largely that of total abstainers, it was by no means confined to these, as no test of opinion was imposed on the members. The British dominions were largely represented and an official character was given to the congress by the representatives of the various government departments—Home Office, Colonial Office, Local Government Board and Board of Education, and the various representatives of foreign and colonial governments. These included representatives of most of the European countries, the United States, the Australasian commonwealth, the East African Protectorate, the Gold Coast, India, Hong Kong and Jamaica. Lord Weardale, the president, in opening the congress, said that they were assembled to discuss one of the most sacred causes to which humanity could give attention, the great cause of international temperance. Among the many important questions to be dealt with were the influence of alcoholism on children and on the native races. A discussion on temperance teaching in schools was opened by Miss Cora Stoddard of Boston, U. S. A., who insisted that temperance teaching should be commenced early. In the discussion great importance was attributed to this teaching and also to instruction of the school teachers so that they could impart temperance hygiene. Dr. A. Holitscher of Karlsbad read a paper on "Alcohol in Lobar Pneumonia and Enteric Fever." He had collected statistics from 47 hospitals in 18 of which a plan of alterating treatment, proposed by him had been adopted in order to secure the most reliable proof of the effect of alcoholic and non-alcoholic treatment. In 238 cases of pneumonia treated with alcohol the death rate was 24.3 per cent.; in 248 cases treated without alcohol the death rate was 21.3 per cent. Of 47 cases complicated with delirium tremens alcohol was prescribed in 21, of which 15 were fatal, while in 26 treated without alcohol only 9 were fatal. This showed that there was no foundation for the prevalent idea that alcohol was necessary in inebriate cases. No one would wish to make alcohol responsible for the small difference between the percentages of 24.3 and 21.3, but it showed the failure of alcohol as a curative agent. Of 161 typhoid patients treated in 8 institutions 80 were treated with alcohol, of whom 15 died and 81 were treated without alcohol, of whom 12 died. Professor Laitinen, director of the hygienic institution in the University of Helsingfors, delivered the Norman Kerr Memorial Lecture on "The Influence of Alcohol on Immunity." It was, he said, well-established that alcohol weakened the normal resisting power of the body against the germs of disease. He had made experiments on the blood of 223 persons, abstainers and non-abstainers, whose conditions of life and in other respects were similar. He concluded from his experiments that alcohol in comparatively small doses had a prejudicial effect on the protective mechanism of the body. A great sensation was produced by the paper read by Dr. Doczi, official reporter to the alcohol commission in Budapest. He declared that total abstinence was almost unknown in that city among children and that they indulged freely on the occasion of festivities, such as holidays, baptisms and weddings and frequently arrived at school in an intoxicated condition.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 22, 1909.

The Concours d'Agrégation in Medicine

A few months ago, in consequence of certain occurrences at the *concours d'agrégation* at the College of Medicine last December (The Journal, Jan. 16, 1909, lii, 223), the representatives of the organized medical profession requested the government to appoint a commission to study the various modes of recruiting the auxiliary professors of the schools of medicine; and another session of the commission on the *agrégation* and the privat-docentship has just been requested on behalf of the various medical societies.

Moreover, an order temporarily modifying certain provisions of the statute regulating the *concours d'agrégation* has just been submitted to the Superior Council of Public Instruction pending the results of a new investigation, to be as extensive and exhaustive as possible. The first important reform granted by the temporary order is that of the juries. The members of the juries will not be, as hitherto, chosen by the ministry. They will be selected by lot, from among the professors of the colleges of medicine and of the mixed colleges of medicine and pharmacy. Another reform no less important consists in the increase in the number of sections. The *agrégation* of medicine hitherto has consisted of only four sections: anatomy and physiology; physics and natural science; medicine and legal medicine; surgery and obstetrics. The number of these sections will be increased to fifteen, so as to permit the candidates to specialize more freely and to do more scientific work.

Monument to Professor Brouardel

The dedication of the monument in the court of honor of the College of Medicine of Paris to Professor Brouardel, the lamented dean of the college, took place on July 20. The monument, by the sculptor Denys Puech, consists of a stela on which is the marble bust of Brouardel, wearing the insignia of his office. At the foot are two allegorical figures representing Hygiene and Legal Medicine. The funds were raised by public subscription under the auspices of M. Emile Loubet; the Anti-Tuberculosis Association of Berlin in particular subscribed 1,000 marks ($240). A large crowd, among which were Professor Brouardel's widow and son, as well as a great number of distinguished scientific and medical men, were present at the ceremony.

Medical Charlatanism and Illegal Practice of Medicine

A former zouave named Jacob was recently prosecuted for illegal practice in medicine, and was acquitted. Clothed in a white robe, Jacob was accustomed to present himself to those who came to see him and to gaze at them fixedly while invoking the spirits. He asked no question, prescribed no rule, and ordered no remedy. He passed among the benches on which the spectators were seated, touched them lightly with the hand, received from them their voluntary offerings and terminated the session by counseling them in a general way to drink no wine, no alcohol, to eat only vegetables, and to use no medicine. The court decided that in giving uniform counsels without any regard to the specific diseases of his auditors, Jacob did not treat maladies within the meaning of the law.

Another case of illegal practice of medicine now arousing public opinion in Paris, is that of a certain Vallanet, who called himself a physician and practiced medicine for more than ten years in Paris, until accused of fraud. In the course of the prosecution it was established that the pretended physician had no diploma and had studied medicine only a year.

According to the law of 1892, doctors of medicine, surgeon-dentists and midwives must, in the month following their establishment in the locality, have their diplomas officially registered in their respective wards (*arrondissement*). The lists of practitioners so recorded, according to law, are to be posted during the month of January in each commune so that it is easy to ascertain if a given person is practicing medicine legally. Unfortunately, in Paris, the physicians, dentists and midwives being extremely numerous, the notices are not posted up. The prefecture of the police merely publishes, at the beginning of each year, a pamphlet, which is placed in all the mayors' offices in which are the names of the physicians who have registered their diplomas and who are, consequently complying with the law.

To avoid a repetition of such an occurrence as this scandalous Vallanet affair, a modification of the law of 1892 on the practice of medicine has been proposed in the senate to the following effect: Doctors of medicine, surgeon-dentists and midwives are to be obliged before beginning the practice of their profession, to have their certificates officially registered in their respective wards, and to have their diplomas examined at the mayors' offices of the places at which they respectively reside.

Market Milk in Paris

In the session of the Academy of Medicine of July 13, M. Martel, head of the Sanitary Veterinary Service of the Department of the Seine, made an interesting report on the conditions under which milk for children is produced. Milk really fit for children's use is almost impossible to find in Paris. There are two serious defects almost universally found in the dairies, namely, the lack of desirable cleanliness and defective feeding of the cows. Out of 911 dairies, keeping 13,565 cows, which furnish milk in Paris and in the commune of the Department of the Seine, 518 dairies, or 56.85 per cent. feed distillery refuse because of its cheapness. M. Martel recently suggested at the dairy congress held at Budapest to forbid the application of the terms "pure milk," "hygienic milk," "milk for children" and other similar terms, to milk from animals fed on distillery waste.

Death of Professor Bondet

Dr. Bondet, former professor of clinical medicine at the College of Lyons, national associate of the Academy of Medicine of Paris, has just died.

Fiftieth Anniversary of the Society of Anthropology

The Society of Anthropology has just celebrated in the great amphitheater of the College of Medicine, the fiftieth anniversary of its foundation. M. Bayet, director of higher education at the Ministry of Public Instruction, presided and a great number of delegates from France and foreign societies were present.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 21, 1909.

The Meningitis Epidemic in Austria

The recent outbreak of epidemic cerebrospinal meningitis in Europe is merely a belated sequel of the epidemic which since 1906 has been observed in Central Europe. According to the report of the board of health, in 1906, there were reported in Austria, among 27,000,000 inhabitants, 1,506 cases of this disease, all in the northeast; 853 persons died of it; in 1907 there were 813 cases, with 461 deaths, and next year only 504 cases, with 263 fatalities; altogether, 2,823 cases, with 1,577 deaths (56 per cent.). It is remarkable that while the board of health was successful in almost suppressing the outbreak, the rate of mortality remained practically unchanged. All prophylactic measures adopted in other countries, besides the use of pyocyanase, were employed here. For about three months the board of health has recommended mainly intraspinal injections of the meningococcus serum. Since its use the mortality has been reduced to 30 per cent. Special care has been taken to discover and isolate the apparently healthy "germ-carriers," the actual propagators of the disease. The teachers of public schools have been especially warned of the nature of the disease and the prophylactic measures required. As the Weichselbaum diplococcus is not capable of living a long time outside of the human body, the conclusions of the report with regard to disinfection are that disinfective measures should be concentrated on the personal linen and bedclothes of the patient, the rooms and furniture being incapable of transmitting the disease.

Insuring Pure Food for the People

The adulteration of bread, of sausages and flour has been nearly put down in Vienna by the strict supervision and heavy penalties imposed lately for each offense. In order to insure the sale of pure food, a special class for the inspectors of markets and shops and their assistants has been opened in the imperial laboratory in this city. The class will last two months, will be repeated in the winter, and will comprise theoretical and practical instruction; it will be open also to medical men. Milk, with its natural and artificial changes, adulteration and conservation, is one of the most important subjects. Natural butter and its substitutes margarin, cocoanut fat, lard and cheese will be obtained from the cattle market and examined under the supervision of the professor. The other articles coming within this class are eggs, preserved and canned vegetables, meat and fruit, wine, beer and all spirits. These articles, obtained in the open market, will be compared with standard articles of the same kind, prepared in the imperial laboratory itself, where abundant facilities for all products are present, including a farm, a vineyard and a brewery on a very small scale. The results thus obtained, together with the name of the selling firm, will be published, if, on two occasions after warning, any adulteration be found still present.

Pharmacology

Oxyburserazin

Oxyburserazin is the name given by its discoverer, W. v. Bolton (*Ztschr. f. Elektrochemie*, xiv, p. 211) to a substance to which remarkable properties are attributed. While the observations have been made by a reputable—though non-medical—scientific worker, it will be interesting to learn whether the properties assigned to this substance are confirmed by others. There is room for the suspicion, at least, that the foundations are being laid, unconsciously it may be, for the development of a nostrum. The danger of preparing the alleged substance will necessarily confine its manufacture to a few, while the assumed pharmacologic virtues open a field for therapeutic claims that can be bounded only by the imagination of the promoter and the credulity of the physician.

Burserazin is said to be that part of the resin of myrrh in which its antiseptic virtues reside and it constitutes from 1.5 to 2 per cent. of the resin. When burserazin is oxidized with hydrogen peroxid, oxyburserazin, a volatile body of a peculiar odor and a pure white color becoming yellow in a few weeks, is said to be produced which is claimed to possess the special properties of the original substance in an increased degree. According to v. Bolton, much care must be taken in preparing oxyburserazin for fear of explosion. Both substances are said to be radioactive, emitting β and γ rays, which have not the power of penetrating metallic foil. After nine months oxyburserazin is converted into a different substance which is not radioactive. It is claimed that if a watery solution of oxyburserazin is mixed with diluted fresh hog's blood and the mixture warmed to body temperature, brown flocculi separate from the blood. These when collected, washed and dried in the air are said to form an elastic transparent membrane soluble in water, which is probably a peculiar form of coagulated albumin. If a piece of this membrane is placed over a small skin wound it is said to combine with the skin forming a protective covering which will not wash off. Oxyburserazin mixed with blood in the absence of air forms no membrane, and it is claimed to be non-toxic when injected subcutaneously.

It is suggested that it may be useful in case of internal wounded surfaces, such as tuberculous lesions, as the blood charged with this substance, by continually bathing a surface exposed to the air would form a protective coating of value in the healing of such wounds. Herpetic eruptions, it is claimed, have been benefited and completely removed by washing with a solution of oxyburserazin. It is suggested that the medicinal properties of oxyburserazin may depend on its radioactive properties.

At the risk of appearing ultra-conservative, the medical profession can afford to wait for confirmation by reliable authority before committing itself too enthusiastically to the idea of applying an automatic plaster to internal wounds by way of the blood.

Correspondence

A Postmortem After a Malpractice Suit

To the Editor:—In the proceedings of the American Academy of Medicine, as published in The Journal, July 17, Dr. James A. Spalding, of Portland, Me., reported the case of a malpractice suit in which subsequently a postmortem examination was made, and he asks for information if other such postmortems have been held.

Some thirty years ago a suit for malpractice was brought in Belmont county, O., the charge being that the attending physician had failed to recognize and reduce a dislocation of the hip. The plaintiff, some months after the accident, came to Columbus and was examined by two of the most prominent surgeons of this city who made a diagnosis of dislocation and attempted to reduce it by pulleys (this being the only time I have ever seen pulleys used). I was the "cub" and gave the anesthetic, but made no examination of the case. Their efforts being futile, they reached the conclusion that the acetabulum had become filled in the interval and that reduction was impossible. If I remember correctly a verdict of $800 was rendered against the attending physician.

Some years later a postmortem examination showed that there had been a fracture of the neck of the femur, and the head of the femur had never left the acetabulum. The unfortunate attending physician had contended all the while that it was a case of fracture, but the verdict had gone against him, and his only satisfaction was in local vindication. The Columbus surgeons had passed to their reward before the postmortem.

J. F. Baldwin, M.D., Columbus, O.

A Boosting Club

To the Editor:—Why not a "Booster Club" or "Praise Your Brother Club" in the American Medical Association, with no dues or other requirements except that each member pledge himself never to speak unkindly or in criticism of a brother physician to the laity except that physician be also present. Let us renew our vows and wear buttons to show that we mean to keep them.

If such a condition could be brought about we would be held in much greater esteem by our patients and neighbors. Whenever a physician is condemned, maligned or criticized by another physician, the ill-will engendered in the minds of the laity is not against the one physician but the class—individuals are forgotten and the profession is remembered as a whole. If I tell everyone I meet that Doctor Pill is a rank physician; knows nothing of medicine and will stoop to any mean practice, the laity soon forget that Doctor Pill is a "poor doctor" and retain the impression that we are all "poor doctors" ready to stoop to anything.

Let's stop it; raise the standard. Can we get together at St. Louis and organize a club?

Yours for "no knocking."

W. T. Wootton, M.D., Hot Springs, Ark.

An Island Without Flies

To the Editor:—The handbook prepared for the U. S. Army of Invasion of Porto Rico, stated that the house fly did not exist on the island, but that a fly called *vomitorum* (*Musca vomitorum*) did exist there, and if one fly was accidentally swallowed, it caused immediate vomiting. After two years spent on the island, the writer states this experience: The house fly accompanied the American Army to the island, and was as numerous in the camps there as in the camps in the United States in the summer of 1898. When the Army left the island the flies disappeared. There were almost no flies to be seen on the island in the summers of 1899 and 1900. I never saw the *Musca vomitorum,* nor heard any one on the island mention them. It is also of interest that the flies which so much annoy horses and cattle by biting them, do not exist in Porto Rico. I never saw one on either horse or cow, but whether they were present with the American horses I do not know.

Now, why do flies not exist in Porto Rico? There is some condition there not conducive to their health. It is true that other insects are scarce on the island. This seems true of all except certain species commonly domesticated and living in homes of people. Bird life and wild mammals are very rare. Reptiles do not exist on the island. Would it not be well for the Rockefeller Institute or some similar organization to investigate the cause of this sparseness of insect life in Porto Rico?

George G. Groff,
Late Major and Brigade Surgeon, U. S. V.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BOOKS ON PARASITOLOGY AND BACTERIOLOGY

To the Editor:—Kindly give a list of authoritative works in English on general parasitology and bacteriology (both pathogenic and non-pathogenic bacteria) and give the names of publishers. Also tell me what are the best works on immunity and serum therapy.

R. F. L., North Carolina.

Answer.—There is no work in English covering the subjects mentioned that can be considered complete. Probably the work in English which considers both pathogenic and non-pathogenic forms from the broadest standpoint is the "Text-book of General Bacteriology," by E. O. Jordan (W. B. Saunders Co.). Other reliable books which treat of the pathogenic forms are Muir and Ritchie, "Manual of Bacteriology," (Macmillan Co.), and Park's "Pathogenic Bacteria and Protozoa," (Lea & Febiger).

Several books in English on immunity and serum therapy give the general principles well. Among them are "Infection, Immunity and Serum Therapy," by H. T. Ricketts, (American Medical Association Press); also Ehrlich's collected studies in "Immunity," translated by Bolduan, (John Wiley & Sons), and Binnie's translation of Metchnikoff's "Immunity in Infective Diseases," (Macmillan Co.).

UNTOWARD EFFECTS OF CHRYSAROBIN

To the Editor:—Please inform me if the local use of chrysarobin is usually followed by coloring of the skin in other parts of the body. I recently prescribed an ointment containing chrysarobin and salicylic acid for psoriasis of the arms and legs of a robust adult; the ointment to be applied with a brush. After three applications the patient returned showing a deep discoloration of the finger nails and the skin about the eyes. The coloring of the nails seemed to be throughout the nail substance, as scraping them deeply would not remove it, and the patient is sure that at no time did he get any of the ointment on the nails. I have used chrysarobin very frequently, but have never seen its use followed by such pigmentation, nor do I find any mention made of the discoloration occurring at so great distances from its application.

W. C. G., Michigan.

Answer.—The absorption of chrysarobin from the skin has been rarely observed, but there are a number of observations which show that it may be absorbed and produce constitutional effects sometimes of a severe nature. The effects are of three kinds: (1) Chrysarobin dermatitis, in which the skin is colored brown, and chrysarobin may be found in the pigment; (2) chrysarobin keratitis, in which the deposit begins in the deeper layers of the cornea and produces an inflammation in the cornea and sclera which may extend to the conjunctiva; (3) chrysarobin nephritis, caused by the excretion of the drug through the kidney. Chrysarobin is changed to a large extent on absorption to chrysophanic acid, which does not appear to be irritating. Chrysarobin itself may, however, be found in the urine along with albumin and casts.

M. Winkler, *Cor.-Bl. f. schweiz. Aerzte,* 1907, xxxvii, p. 561-567) investigated the absorption and excretion of chrysarobin when applied to the skin as is usual in psoriasis and came to the conclusion that as it is ordinarily used the danger from absorption of chrysarobin is very slight. He did, however, find one case of chrysarobin conjunctivitis in which there was a slight excretion of chrysophanic acid in the urine with slight albuminuria. Linde (*Deutsch. med. Wchnschr.,* 1898) reports a case of severe nephritis accompanied by keratitis following the application of chrysarobin. R. Volk (*Wien. klin. Wchnschr.,* 1906, xix, p. 1194) reports a case of chrysarobin dermatitis and severe nephritis following the application of chrysarobin for an undetermined skin disease. Chrysophanic acid was found in the urine. Krause (*Ztschr. f. Augenhl.,* 1906, xv, pp. 233-238) reports three cases of corneal affection due to chrysarobin. The affection of the cornea appeared to be primary and due to the absorption of the drug. C. J. Kipp (The Journal A. M. A., May 18, 1907, xlviii, p. 1678) reports a case of kerato-conjunctivitis from application to the nose.

It is advised by many to be cautious about applying chrysarobin to the scalp for fear of producing conjunctivitis. H. C. Baum (The Journal A. M. A., June 23, 1906, xlvi, p. 1811) refers to a case in which blindness resulted from application to the nose. J. C. Fox (The Journal A. M. A., June 23, 1906, xlvi, p. 1911) states that the remedy discolors the nails and hair.

The Public Service

Medical Department of the Army

Memorandum of changes for the week ended July 31, 1909:

McDiarmid, Norman L., 1st lieut., ordered to Jefferson Barracks, Mo., for temporary duty.

Bruns, Earl H., capt., granted sick leave of absence for six months.

Brown, Orville G., capt., ordered to return from Fort Mackenzie, Wyo., to his proper station, Fort Robinson, Nebraska.

Ashburn, Percy M., major, relieved from duty with the commission to Liberia, and ordered to San Francisco for duty at the Army General Hospital.

Huber, Edward G., 1st lieut., granted leave of absence for one month, about Sept. 1.

Reynolds, Frederick P., major, granted leave of absence for ten days.

Davis, William R., capt., relieved from duty at Fort Mason, Cal., and as attending surgeon, San Francisco; will proceed to Fort Porter, N. Y., for duty.

Bingham, Ernest G., capt., when relieved at Fort Porter, N. Y., will proceed to Fort Mason, Cal., for duty as surgeon, and as attending surgeon, San Francisco.

Reed, Howard A., 1st lieut., retired from active service as a captain, to date from June 30, 1909, for physical disability.

Morris, Samuel J., capt., ordered to Fort Jay, N. Y., for temporary duty.

Crosby, William D., lieut.-col., granted leave of absence for one month, seven days.

Owen, Leartus J., capt., ordered to inspect Company A, Hospital Corps, Michigan National Guard, at Ludington, Mich., Aug. 9 to 18; after duty at that camp to return to Camp Perry, Ohio.

Reno, William W., capt., relieved from duty on the transport "Kilpatrick;" will proceed to Fort McKinley, Maine, for duty.

Yost, John D., capt., retired from active service as a major, to date from March 13, 1909, for physical disability.

Ashford, Mahlen, 1st lieut., granted leave of absence for fourteen days.

Miller, Reuben B., capt., granted leave of absence for three months.

Myers, William H., 1st lieut., M.R.C., granted leave of absence for three months, when relieved from duty in the Philippines Division, with permission to return to the United States via Europe.

Clayton, George R., 1st lieut., M.R.C., relieved from further duty in the Philippines Division, will proceed from San Francisco to Fort D. A. Russell, Wyo., for duty.

Bowman, Madison H., 1st lieut., M.R.C., relieved from duty at Fort McDowell, Cal., will proceed to Point Bonita, Cal., for temporary duty, and then to the Presidio of Monterey, Cal., for duty.

Hughes, Leonard S., 1st lieut., M.R.C., relieved from duty at Fort McDowell, Cal., and temporary duty at Point Bonita, Cal.; will proceed to Fort Lawton, Wash., for duty.

Tyler, George T., 1st lieut., M.R.C., honorably discharged from the service, his services being no longer required.

Jackson, T. W., 1st lieut., M.R.C., ordered to Washington Barracks, D. C., for temporary duty.

Hasseltine, H. E., 1st lieut., M.R.C., honorably discharged from the service, his services being no longer required.

Medical Corps of the Navy

Changes for the week ended July 31, 1909:

White, E. C., P. A. surgeon, detached from the Naval Torpedo Station, Newport, R. I., and ordered to the Naval Hospital, Newport, R. I.

Clark, G. F., asst.-surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to duty with the *Solace*.

Dixon, W. S., medical director, retired, detached from the Naval Dispensary, Washington, D. C., and ordered home.

Mullin, J. J. A., Johnson, J. T., acting asst.-surgeons, appointed acting assistant surgeons from July 24.

Bodman, S. S., surgeon, detached from the Naval Rendezvous, Indianapolis, and ordered to the Naval Rendezvous, Boston.

Diehl, O., medical inspector, ordered to duty as fleet surgeon of the third squadron of the Pacific fleet.

Public Health and Marine-Hospital Service

List of changes for the fourteen days ended July 28, 1909:

Glennan, A. H., asst. surgeon-general, granted 28 days' leave of absence from July 20, 1909.

Cofer, L. E., asst. surgeon-general, directed to proceed to Reedy Island Quarantine Station on special temporary duty.

Austin, H. W., surgeon, on being relieved by Surgeon James M. Gassaway, directed to proceed to Stapleton, N. Y., and assume command.

Gassaway, James M., surgeon, on being relieved by Surgeon H. R. Carter, directed to proceed to San Francisco and assume command.

Carter, H. R., surgeon, on being relieved from duty with the Isthmian Canal Commission, about Aug. 1, 1909, directed to proceed to Philadelphia and assume charge.

McClintic, T. B., P. A. surgeon, directed to proceed to Norfolk, Va., on special temporary duty.

Trotter, P. E., P. A. surgeon, granted 15 days' leave of absence from July 21, 1909.

Sweet, Ernest A., P. A. surgeon, granted 7 days' leave of absence from July 15, 1909, under paragraph 191, Service Regulations.

Porter, Joseph Y., quarantine inspector, directed to inspect Florida Quarantine Station from time to time during present season.

Foster, J. P. C., acting asst. surgeon, granted 26 days' leave of absence from July 17, 1909.

O'Reilly, W. J., acting asst. surgeon, granted 10 days' leave of absence from July 27, 1909.

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from July 22, 1909, on account of sickness.

Williams, L. L., surgeon, granted 1 month's leave of absence from Aug. 1, 1909.

Wertenbaker, C. P., surgeon, directed to proceed to Cape Charles Quarantine Station on special temporary duty.

Young, G. B., surgeon, directed to proceed to Dubuque, Iowa, and La Crosse, Wis., special temporary duty.

Oakley, J. H., surgeon, directed to proceed to Seattle, Wash., on special temporary duty.

Lavinder, C. H., P. A. surgeon, granted 7 days' leave of absence from July 25, 1909.

Robinson, D. E., P. A. surgeon, granted 1 month's leave of absence from Aug. 8, 1909.

Ramus, Carl, P. A. surgeon, granted 3 days' leave of absence from July 19, 1909, on account of sickness.

Holt, J. M., P. A. surgeon, leave of absence granted July 2, 1909, for 1 month from July 26, 1909, amended to read 3 days from July 26, 1909.

Herring, R. A., asst.-surgeon, on the arrival of Assistant Surgeon Richard H. Lyon, directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty.

Wood, Charles E., asst.-surgeon, on the arrival of Assistant Surgeon J. R. Ridlon, relieved from duty on the Revenue Cutter *Seneca*, and directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty.

Ridlon, J. R., asst.-surgeon, relieved from duty at New Orleans and directed to report to the commanding officer of the Revenue Cutter *Seneca*.

Leake, James P., asst.-surgeon, directed to proceed to Chicago and report to the medical officer in command for duty and assignment to quarters.

Lyon, Richard H., asst.-surgeon, directed to proceed to Reedy Island Quarantine Station and report to the medical officer in command for duty and assignment to quarters.

Kolb, Lawrence, asst.-surgeon, directed to report to the medical officer in command at Baltimore for duty and assignment to quarters.

Blanchard, J. F., acting asst.-surgeon, granted 8 days' leave of absence from July 17, 1909.

Frary, T. C., acting asst.-surgeon, granted 7 days' leave of absence from Aug. 6, 1909.

Reimer, H. B. C., acting asst.-surgeon, granted 7 days' leave of absence from July 20, 1909, under paragraph 210, Service Regulations.

Tappan, J. W., acting asst.-surgeon, granted 30 days' leave of absence from August 2, 1909.

APPOINTMENTS

Dr. Bruno L. Schuster appointed an acting assistant surgeon for duty at Port Huron, Mich.

Dr. Hermon E. Hasseltine commissioned an assistant surgeon in the Public Health and Marine-Hospital Service.

Dr. James P. Leake commissioned an assistant surgeon in the Public Health and Marine-Hospital Service.

Dr. Richard H. Lyon commissioned an assistant surgeon in the Public Health and Marine-Hospital Service.

Dr. Lawrence Kolb commissioned an assistant surgeon in the Public Health and Marine-Hospital Service.

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended July 30, 1909.

SMALLPOX—UNITED STATES

Indiana: Muncie, July 3-10, 3 cases.
Minnesota: Duluth, July 9-16, 4 cases.
Missouri: St. Louis, July 10-17, 1 case.
Montana: Butte, July 8-15, 4 cases.
Tennessee: Knoxville, July 10-17, 2 cases.
Texas: San Antonio, July 10-17, 1 case.
Wisconsin: Appleton, July 10-17, 4 cases.

SMALLPOX—INSULAR

Philippine Islands: Manila, May 28-June 5, 1 case, 1 death.

SMALLPOX—FOREIGN

Algeria: Bona, June 1-30, 7 deaths.
Argentina: Buenos Aires, April 1-30, 7 deaths.
Brazil: Bahia, June 4-11, 6 cases, 2 deaths; Sao Paulo, June 6-13, 3 deaths.
China: Hankow, June 5-26, present: Shanghai, 2 deaths.
France: Marseille, June 1-30, 5 deaths.
India: Bombay, June 15-22, 7 deaths; Calcutta, June 5-12, 18 deaths: Rangoon, 4 deaths.
Java: Batavia, May 29-June 5, 2 cases.
Italy: General, June 27 July 4, 16 cases; Naples, 32 cases, 4 deaths.
Russia: Odessa, June 19-July 3, 5 cases; St. Petersburg, June 12-19, 27 cases, 8 deaths; Warsaw, May 22-29, 2 deaths.
Spain: Barcelona, June 28-July 5, 5 deaths; Madrid, June 1-30, 84 deaths; Valencia, June 19-26, 6 cases.
Turkey: Bagdad, May 8-29, present; Bassorah, June 19-26, present.

YELLOW FEVER

Brazil: Bahia, June 4-11, 5 cases, 3 deaths; Para, June 19-26, 4 cases, 4 deaths.

CHOLERA—INSULAR

Philippine Islands: Provinces, May 29-June 5, 18 cases, 13 deaths.

CHOLERA—FOREIGN

Germany: Konigsberg, July 21, 1 death.
India: Bombay, June 15-22, 21 deaths; Calcutta, June 5-12, 40 deaths.
Russia: General, July 1-8, 710 cases, 272 deaths: Riga, July 21, 13 deaths; St. Petersburg, 589 cases, 238 deaths.
Straits Settlements: Singapore, May 29-June 5, 3 deaths.

PLAGUE

Brazil: Bahia, June 4-11, 1 case, 1 death.
Chile: Antofagasta, June 14, 4 cases, in lazaretto; Iquique, June 16, 7 cases, in lazaretto.
China: Amoy, June 5-12, 73 deaths; Swatow vicinity, to July 1, 2,400 cases.
Egypt: General, July 1, 14 cases, 8 deaths; Port Said, July 2-7, 3 cases, 1 death.

India: General, June 5-12, 1,045 cases, 907 deaths; Bombay, June 15-22, 26 deaths; Calcutta, June 5-12, 81 deaths; Rangoon, 24 deaths.
Japan: Kobe, June 12-26, 2 cases, 2 deaths; Yokahama, June 19-26, 2 cases; Tokyo, 1 case.
Turkey: Bagdad, May 8-29, 6 cases.
Venezuela: Caracas, to July 11, 17 cases, 6 deaths.
Zanzibar: Zanzibar, July 26, 1 case.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

A Movement for State and National Unity

The July number of the *National Civic Federation Review* contains a leading article under the above head which should be read by all interested in uniform legislation for the regulation of public health. The National Civic Federation has issued a call for a national conference to consider the entire subject of uniform legislation by the states, to be held in Washington, Jan. 5-7, 1910. President Taft has accepted the invitation to deliver the opening address. After presenting the opinions of a large number of eminent men, among them Senator Elihu Root, Samuel Gompers, President Amasa M. Eaton, of the Commissioners of Uniform State Laws, President George W. Kirchwey, of the Association of American Law Schools, and others, the *Review* discusses the need of uniform laws and the particular lines in which such laws are desirable, considering in particular the desirability of uniform laws on forestry, water power, irrigation, railroad management, life insurance, administration, regulation of interstate commerce, employers' liability and labor activities. The writer then continues:

> The medical as well as the legal world appreciates the importance of uniform state laws for the immediate registration and preservation of vital statistics. The American Medical Association has prepared a draft of a model law to provide for the immediate registration of all births and deaths. This bill is being urged in all of the state legislatures. It was examined and approved by the Division of Vital Statistics of the United States Bureau of the Census, by the Section on Hygiene and Sanitary Science and the House of Delegates of the American Medical Association, the American Public Health Association and the conference of Commissioners on Uniform State Laws. The Census Bureau has issued a pamphlet on the legal importance of the registration of births and deaths. It is published in a bulletin of the department and is also issued by the American Medical Association. During the present year, legislation for this purpose has been enacted in Delaware, Missouri, North Carolina, Arizona and Tennessee.
>
> Dr. Cressy L. Wilbur, chief statistician of the Census Bureau, in a recent letter says: "The interest of labor organizations is especially desirable to secure registration of births, because birth certificates are a necessary part of the enforcement of child labor laws." The Hon. Vespasian Warner, United States commissioner of pensions in 1907, wrote to the Census Bureau urging the importance to the government of the registration of vital statistics. As in the administration of the pension laws, it is necessary to have absolute proof of the date of the birth of minor children entitled to a pension, of the marriage of the widows of soldiers who apply for pension, as well as of the death of the soldier. The Pension Commissioner urged that the proper registration of vital statistics would not only be a saving to the government in time and money, but would tend to insure to the rightful claimant the receiving of the bounty to which he or she is entitled under the law and prevent impostors from obtaining that to which they have no title.

The *Review* also considers the importance of uniform health regulations for the prevention of disease, uniform pure food and drug laws, etc. No reference is made to the desirability of uniform laws for the regulation of the practice of medicine which really lies at the foundation of the proper regulation of health, the importance of this subject evidently not having been brought to the attention of the writer.

Of particular interest are the suggestions regarding the best methods of procedure, corresponding closely to the suggestions made along this line in this department of THE JOURNAL as well as in the *Bulletin* for May 15, 1907. Discussing the haphazard manner in which state legislation has been enacted, the writer says: "General impressions instead of exact and systematic statistics will, for a long time to come, be the basis on which the policy of our civil legislation will be built, and there is no promise of any radical advance of jurisprudence in this respect. With regard to revenue and police legislation, however, the outlook is much more hopeful. A considerable amount of information is even now available in the official reports of the authorities charged with the administrations of the various acts which naturally deal to a considerable extent with the administrative and judicial aspects of legislation. With the multiplication of controlling and regulating boards, more and more light will be thrown on the operation of principles of constitutional and administrative law. All this material ought to be collected and digested in the same manner as is now done in judicial decisions and the result should be the construction of a body of principles of legislation to supplement the existing body of principles of law. . . . We look on the collection and classification of this data as merely a common sense business operation. . . . It seems merely common sense that we should get all possible knowledge relating to that statute for the use of our legislators. In this way, legislation cannot help being bettered; in this way, the dearly bought experience of one state is used for the betterment of conditions in another state; in this way, the best there is can be culled out from the statutes throughout the country and used for the benefit of the people."

The importance and value of such a conference as that contemplated by the National Civic Federation can not be overestimated. The Committee on Legislation of the American Medical Association has been invited to attend the conference and to take part in its deliberations. Certainly such an important work should not be undertaken without representatives of the organized medical profession being heard on the most important subject of uniform laws for the regulation of the public health. This movement on the part of the National Civic Federation is exactly similar to the work which has been advocated by the American Medical Association in a limited field. The careful study which is being given to these problems by a large number of competent and unselfish workers gives a gratifying promise of better conditions in the future.

Medical Education and State Boards of Registration

Stolen Diploma

State examining boards are requested to be on the lookout for a diploma said to have been stolen from the office of Dr. James F. York of Kenova, West Virginia. The diploma was issued to Dr. York by the Eclectic Medical Institute of Cincinnati, Ohio, June 4, 1895.

Utah July Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, July 6-7, 1909. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 12, all of whom passed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED

College.	Year Grad.
Denver and Gross College of Medicine	(1908)
Northwestern University Medical School	(6, 1909)
University of Michigan	(1909)
St. Louis College of Physicians and Surgeons	(1909)
Medical College of Ohio	(1909)
Jefferson Medical College	(1908) (1909)

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1906)	Wisconsin

Book Notices

A SYSTEM OF SYPHILIS. In Six Volumes. Vol. II. Edited by D'Arcy Power, M.B., F.R.C.S., and J. Keogh Murphy, M.D., M.C., F.R.C.S., with an introduction by Jonathan Hutchinson, F.R.S. Cloth. Pp. 387, with illustrations. Price, $13.50. New York: Oxford University Press, 1908.

We reviewed recently in these pages Volume I of this system and praised it highly. Volume II, now under consideration, contains "The Surgery of Syphilis," by D'Arcy Power, of St. Bartholomew's Hospital; "The Treatment of Syphilis," and an article on syphilis in the Uganda Protectorate, both by F. J. Lambkin, of the Army Medical College, and "Syphilis in Obstetrics," by William J. Gow, of St. Mary's Hospital. In this very collection of articles the work shows some lack of the system promised in the name of the series. In the prospectus inserted in the first volume, the authors for Volume II were given as D'Arcy Power and W. J. Gow; in Volume II the article on syphilis in Uganda is inserted as a separate monograph, but is given in the table of contents as a chapter under the treatment of syphilis. Reference is made to these departures from definite system here, because they are evidences of the lack of editorial supervision to which attention must be repeatedly called in reviewing this volume.

Power in "The Surgery of Syphilis" first gives a chapter of thirteen pages to a historical account of syphilis, going over the same ground which Bloch had covered satisfactorily in Volume I. He then takes up in successive chapters the manifestations of syphilis in the various structures where its presence may properly be considered to constitute surgical syphilis: the bones, joints, muscles, tendons and bursæ, teeth, mouth and tongue, rectum, urethra and prostate, testicles, breast (why plural for testicles and singular for breast, we do not know), and the thyroid gland. To these chapters are given 155 pages, and the subjects are well treated. He then gives four chapters—82 pages—to the treatment of syphilis, with nothing in it that is not a part of the treatment of syphilis in general and that is not properly a part of the next monograph by Lambkin. Thus we have in the first 250 pages, 95 precious pages that are a repetition of what is given or is properly to be expected elsewhere. Emphasis is laid on this because it indicates hopeless carelessness in editing. An essential condition of collaboration in a medical publication is careful editorial supervision in order that the same ground shall not be traversed again and again. Unless there be superlative merit in the contributions, this defect will damage a "system" beyond remedy, and these contributions are not superlative.

Lambkin's monograph, while it has the caption "The Treatment of Syphilis," and presumably is to serve as covering the subject for the system, is virtually an article on the treatment of syphilis by means of intramuscular injections of metallic mercury and (occasionally) of calomel. Short shrift is made of everything else; the substance of the contribution is an advocacy of the use of two insoluble preparations of mercury in the treatment of syphilis. These are the "treatment of syphilis." It goes without saying that he describes his treatment in detail, and, in so far, his article is useful, but as a contribution on the treatment of syphilis it is made unsafe by its narrowness. It is unscientific, too, because it accepts personal impressions as facts and is unrestrained in statement: ". . . it (the intramuscular method) is undoubtedly the most popular method in Europe and America" (!!) (p. 281;) ". . . it is certain that by the intramuscular method the amount of mercury introduced can be made mathematically correct. Absorption of mercury in a definite manner is ensured by this method" (p. 282); "with regard to the seventh advantage, i. e., less chance of being followed by stomatitis and salivation than when given otherwise, I came to this conclusion many years ago, and time has only confirmed me in my opinion" (p. 283). (This reminds one of Hashimura Togo's dictum, "I know, because I am aware"). These examples selected from three successive pages could be continued to the limit of our space. All these statements of course are unestablished assumptions. An extreme illustration of the use of assumption as an established fact—when almost all the world thinks differently—is Lambkin's reason for preferring the insoluble injection method, namely, its convenience and the ease with which the patient can be controlled: "This [uncertainty about the patient's taking his medicine], to my mind, is the chief objection to the ingestion method."

The magnificent space of five pages is given to the use of potassium iodid in syphilis. Other iodids beside the iodid of potassium are not referred to; the organic preparations of iodin are not even mentioned to be condemned. Twenty-six lines (separated in two places) are given to the eruptions produced by the ingestion of the iodids; and five pages to the chapter on local treatment! Such chapters under the general subject of treatment in a work that pretends to be an encyclopedia of syphilis, are of course entitled to no serious consideration. They are less by far than standard text-books give to the subjects. Nowhere is there any systematic consideration of the general treatment of syphilis in connection with the specific treatment. Aside from a few brief references under "conclusions," there is nothing to indicate that there is any reason to consider the syphilitic as an individual patient.

Lambkin is singularly careless at time in his use of words. "Iodid of potash" is a favorite term. On page 315 it is said that the patient should be told to drink freely of "potash water"—whatever that is. Our old English friend, "syphilitic psoriasis"—which belongs to the "laudable pus" era of medicine—bobs up occasionally, and on page 319 "a form of psoriasis of ulcerating, and still more rarely of a sloughing, variety sometimes occurs." A more hopeless confusion in the use of the word psoriasis, to say nothing of a "form" of a "variety," could hardly be imagined. On page 315 he speaks of "hereditary . . . neurasthenia," which we suppose is the latinized equivalent of our vernacular expression, "born tired." These things are mentioned only because they indicate an unpardonable carelessness both on the part of the author and of the editor. One serious mistake occurs on page 285; the following prescription is given: "Hydrarg. perchloridi grs. 32. Ammon. chloridi grs. 12. Aquam. (*sic*) oz. 1. Dose, minims 10 for an injection." Ten minims of that solution contains two-thirds of a grain of corrosive sublimate, about four times the maximum hypodermic dose.

Colonel Lambkin is, we doubt not, an able clinician, but his article does not measure up to the standard that is to be expected of him. It does not at all represent the present state of our knowledge of the treatment of syphilis. It is purely a personal article, and utterly fails to emphasize, or even to mention, important facts that must be made a part of any satisfactory consideration of the treatment of syphilis.

The contribution by Lambkin on syphilis in the Uganda Protectorate is a brief and interesting narrative, but furnishes no new or enlightening facts on syphilis to warrant its insertion in an encyclopedia of syphilis. Its place would be properly the *British Medical Journal* or the *Lancet*.

Dr. Gow gives, or has been allotted, eighteen pages for "Syphilis in Obstetrics." In this he briefly considers the effects of syphilis on pregnancy, of pregnancy on syphilis, of syphilis on the embryo, in a few pages gives the morbid anatomy of syphilis of the placenta and fetus, and ends with a page and a half on treatment of syphilis during pregnancy. The article is satisfactory within its limits, but is, of course, merely a sketch. It has not space to consider any topic comprehensively, brings forward nothing original, and is such a contribution as any competent man could write on short notice, or as could be compiled on consultation with a few text-books.

Taken altogether, this volume is a disappointment. Except Lambkin's contributions, which have at least the quality of individuality, the articles are simply hack work, and they have the great defect, in a work that professes to be encyclopedic, of being incomplete. One who would consult any of them, expecting, as he justly should, to find the last word on the subject, would find nothing not in his text-books. One gets the impression that carelessness and a lack of feeling of responsibility in the preparation of this volume have resulted in the waste of a great opportunity.

WRITING THE SHORT STORY. By J. Berg Esenwein, A.M., Lit.D., Editor of Lippincott's Monthly Magazine. Cloth. Pp. 441. Price, $1.25. New York: Hinds, Noble & Eldredge.

This book should be popular among physicians so many of whom devote their leisure hours to story-writing. The book begins with a historical review of the rise of the short story, calling attention to the fact that the story-writer is the lineal descendant of the story-teller, and briefly tracing the evolution of the written story down through the ages. In Part 1 the nature of the modern short story is discussed at length. In Part 2 the structure is considered. Part 3 deals with preparation for authorship. Part 4 discusses the manuscript and its market. Part 5 is composed of seven appendices. As editor of a popular magazine the writer has handled thousands of manuscripts and his advice is correspondingly valuable.

An Introduction to the Science of Radio-Activity. By Charles W. Rafferty. Cloth. Pp. 208, with illustrations. Price, $1.25. New York: Longmans, Green & Co., 1909.

This is an elementary treatise on the physics of radioactivity. It begins with an introductory chapter on the discovery and development of our knowledge of radioactivity. The work proper is divided into three parts. Part I presents in several chapters a description of the radioactive elements and of the phenomena of radioactivity; Part II is an exposition of the theories which explain the phenomena of radioactivity; and Part III considers the practical application of radioactive energy in physical experiments. This plan lends itself to a clear and very interesting development of the subject. The work is frankly offered as an elementary treatise, but it will be found by the student to be a full and satisfactory work. It is hard to imagine a more fascinating chapter in science than that dealing with the physics of radioactivity. It has not overthrown our previous theories of matter and energy—rather it has confirmed them—but it has enormously enlarged our knowledge of atomic structure and it has given rise to some of the most brilliant conceptions in physics. The subject therefore appeals strongly to any one who wishes to follow the development of scientific knowledge and it has the additional claim of marvelous interest. The book before us is an excellent popular statement of the subject. It is lucidly written; it is not overtechnical; and it fully preserves the inherent interest of the subject.

Athletic Games in the Education of Women. By Gertrude Dudley, Director of Women's Department of Physical Education, University of Chicago, and Frances A. Kellor, Author of "Experimental Sociology." Cloth. Pp. 268. Price, $1.25. New York: Henry Holt & Co., 1909.

The authors state in the preface that they have attempted no study or discussion of gymnastics or sports, for there are already many volumes dealing with these subjects. Furthermore, sports are individual; their purpose is primarily recreative and they do not depend on cooperation. On the other hand, athletic games are social in their nature and may be used for both recreation and entertainment. The authors also state that while they have emphasized athletics as a training for citizens and as a part of general education, they have not underestimated their physical value.

The book is divided into three parts: Part 1 takes up the value of athletic games under the heads of "Citizenship and Social Education," "Educational Value of Athletics," "Instructors—Their Responsibility and Training." Under the heading of "Present Conditions," Part 2 takes up "Athletics in Secondary Schools," "Athletics in Universities and Colleges," "Athletics in Political and Social Organizations," and "Competitive and Public Games." Part 3, under the heading of "Methods of Instruction," takes up "General Training and Contests," "Basket-Ball," "Indoor Baseball" and "Field Hockey." The authors emphasize the educational value of athletics, especially in teaching the players fair play and loyalty to each other, self-control and obedience to orders.

Taken altogether, the book is an interesting and valuable one; especially, it should be of much use to teachers of athletics not only in schools for girls, but in coeducational institutions and schools for boys.

Primary Studies for Nurses. By Charlotte A. Aikens, Late Director of Sibley Memorial Hospital, Washington, D. C. Cloth. Pp. 435, with illustrations. Price, $1.75. Philadelphia: W. B. Saunders Co., 1909.

This book is intended for first-year nurses. It takes up the usual subjects of anatomy, physiology, hygiene, bacteriology, therapeutics, materia medica, dietetics, and invalid cookery. The recipes are good and the importance of properly cooked and daintily served food is emphasized. An appendix contains among other things a list of household antidotes.

Marriages

William L. Burke, M.D., Baltimore, to Miss Margaret Tighe, in Baltimore, recently.

Julius Lewis Amster, M.D., to Miss Bertha R. Kopf, both of New York City, June 23.

Frederick S. Robertson, M.D., Herndon, W. Va., to Miss Mabelle Williams at Baltimore, July 19.

Benjamin Ernest Eversmeyer, M.D., Muscatine, Iowa, to Miss Cora Wende of Keokuk, Iowa, July 22.

Frank Taliaferro, M.D., Mazon, Ill., to Miss Dora Orinda Bennett of Carlisle, Ohio, at Chicago, July 21.

Deaths

Joseph Martin Emmert, M.D. Jefferson Medical College, Philadelphia, 1872; a member of the American Medical Association; formerly professor of medicine in the Iowa College of Physicians and Surgeons, Des Moines; local surgeon to the Rock Island System; formerly president of the Iowa State Board of Health, Iowa State Medical Society and Medical Society of the Missouri Valley, and first president of the Botna Valley Medical Society; a member of the State Board of Parole and Pardons since April, 1907, and since July 1 of that year, chairman of the board; a member of the state legislature for three terms and state senator in 1898; died suddenly at his home in Atlantic, July 15, from cerebral hemorrhage, aged 63. At a special meeting of the Iowa State Board of Health July 16, resolutions of regret and sympathy were adopted.

William H. H. Cobb, M.D. University of Pennsylvania, Philadelphia, 1861; once president of the Medical Society of the State of North Carolina; ex-president and honorary fellow of the Tri-State Medical Association of the Carolinas and Virginia; a member of the Southern Surgical and Gynecological Association; assistant surgeon of the Second North Carolina Infantry, C. S. A., throughout the Civil War; formerly a member of the State Board of Medical Examiners; local surgeon to the Atlantic Coast Line Railway; died at his home in Goldsboro, July 21, aged 68.

Edgar Holden, M.D. College of Physicians and Surgeons, New York City, 1861; surgeon in the United States Navy, and United States Volunteers during the Civil War; a member of the American Laryngological Association and president of the Association of Medical Directors of Life Insurance Companies; chief medical director of the Mutual Benefit Life Insurance Company, Newark, N. J.; consulting surgeon to St. Michael's and St. Barnabas hospitals; died suddenly at his summer home in Chatham, N. Y., July 18, from angina pectoris, aged 70.

James Evans, M.D. University of Pennsylvania, Philadelphia, 1861; of Florence, S. C.; a member and formerly president of the South Carolina Medical Association; a member of the Tri-State Medical Association of the Carolinas and Virginia, Southern Surgical and Gynecological Association and American Social Science Association; for 15 years secretary of the State Board of Health; a surgeon in the Confederate service during the Civil War; died in a sanitarium in Clifton Springs, N. Y., July 15, aged 82.

John B. Bolton, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; president of the Board of Health of Eureka Springs, Ark.; a member of the Arkansas Medical Society, Tri-State Medical Society, Medical Society of the Missouri Valley, and the Western Association of Obstetricians and Gynecologists, chairman and councilor of the Ninth District Medical Society; died at his home July 12, from septicemia, following an operation for the removal of gallstones, aged 56.

Willis Percival King, M.D. Washington University, St. Louis, 1866; Bellevue Hospital Medical College, New York City, 1871; assistant chief surgeon of the Missouri Pacific Railway from 1885 to 1899; at one time a lecturer in the universities of Missouri and Kansas; secretary of the Missouri State Board of Health from 1894 to 1898; for several years a member of the staff of All Saints' Hospital, Kansas City, Mo.; died at his home in Kansas City, July 12, from uremia, aged 69.

David Clair Stearns Parkhill, M.D. Albany (N. Y.) Medical College, 1866; a member of the medical staff of St. James, and Mercy hospitals, Hornellsville, N. Y.; a member of the American Medical Association and president of the Erie Railway Surgeons' Association; local surgeon for the Erie Railroad; a member of the staff of Steuben Sanitarium; died at his home in Hornell, July 20, from cerebral hemorrhage, aged 64.

Charles O. Hunt, M.D. University of Pennsylvania, Philadelphia, 1868; a member of the Maine Medical Association; professor of materia medica and therapeutics in the Medical School of Maine, Brunswick; for 28 years superintendent of the Maine General Hospital, Portland; a veteran of the Civil War; died suddenly in the railway station at Scarboro Beach, July 24, from heart disease, aged 70.

James B. Cowan, M.D. New York University, New York City, 1855; formerly medical director of cavalry in the Confederate service during the Civil War; ex-president of the Tri-State Medical Society of Alabama, Georgia and Tennessee and Middle Tennessee Medical Association; died suddenly from heart disease in a drug store near his home in Tullahoma, Tenn., July 24, aged 77.

Homer Lycurgus Law, M.D. Jefferson Medical College, Philadelphia, 1869; a member of the American Medical Association; surgeon U. S. Navy, retired after 16 years service; examiner of recruits for the Navy during the Spanish-American War; died at his home in Hartford, Conn., July 17, from nephritis, aged 61.

Robert Lumley, M.D. Rush Medical College, Chicago, 1895; a member of the Illinois State Medical Society; secretary of the Iroquois-Ford Medical Society;; secretary of the board of health of Watseka and state examiner for the blind; died suddenly from heart disease, in Watseka, July 13, aged 47.

John Edward Redman, M.D. Northwestern University Medical School, Chicago, 1908; a member of the Utah State Medical Association; assistant pathologist and bacteriologist of Holy Cross Hospital, Salt Lake City; died in that institution, July 19, from tuberculosis of the kidneys, aged 24.

Wesley G. Matchan, M.D. College of Homeopathic Medicine and Surgery, University of Minnesota, Minneapolis, 1899; formerly surgeon of the Northern Pacific Railway, and the Soo Line, and physician to the North Dakota State Penitentiary; died at his home in Bismarck, July 21, aged 33.

Linnaeus D. Witherill, M.D. Geneva (N. Y.) Medical College, 1866; for 24 years supreme medical examiner of the Knights and Ladies of Honor; a member of the Binghamton Academy of Medicine; died at his home in Union, N. Y., July 22, aged 64.

Aaron Condit Ward, M.D. College of Physicians and Surgeons, New York City, 1886;; of Newark, N. J.; a medical director of the Prudential Life Insurance Company; died in Bad-Nauheim, Germany, July 19, from heart disease, aged 48.

John Dudley Usher (license, La., years of practice); lieutenant in the Confederate Service during the Civil War; a member of the board of health of Florence, La.; died at his home on Sicily Island, La., July 11, from cancer, aged 70.

Orson D. Reed, M.D. Missouri Medical College, St. Louis, 1894; a member of the American Medical Association; formerly of Rowena, Mo.; died at his home in Frederick, Okla., May 3, from rheumatic endocarditis, aged 39.

James Soren Sorenson, M.D. Rush Medical College, Chicago, 1890; of Shiocton, Wis.; a member of the Wisconsin State Medical Society; died in Neenah, Wis., Oct. 12, 1908, from chronic interstitial nephritis, aged 51.

Howard S. Oliphant, M.D. Tulane University, New Orleans, 1885; a member of the Louisiana State Medical Society; formerly of Batchelor; died at his home in Lettsworth, La., March 2, from heart disease, aged 48.

John S. Walston, M.D. Vanderbilt University, Nashville, Tenn., 1891; of Montesano, Wash.; a member of the American Medical Association; was found dead in a hotel in Seattle, July 21, from heart disease, aged 55.

Joseph Anderson, M.D. Kentucky School of Medicine, Louisville, 1853; of Denver, Colo.; a surgeon in the Confederate service during the Civil War; died July 17, aged 77.

William J. Inman, M.D. University of Oregon, Portland, 1906; postmaster of Rainier, Wash., for 8 years; died in the Fannie Paddock Hospital, Tacoma, February 13, from chronic nephritis, aged 43.

William Hail Arnold, M.D. Memphis (Tenn.) Hospital Medical College, 1893; a member of the American Medical Association; died at his home in Eupora, Miss., May 28, from nephritis, aged 36.

John P. Bell, M.D. University of Louisville (Ky.), 1885; one of the largest landowners of Southern Kentucky; died suddenly at his home near Bell, Ky., July 23, from heart disease, aged 51.

Philo Chesebrough, M.D. University of Vermont, Burlington, 1895; Medico-Chirurgical College of Philadelphia, 1893; died at his home in Scranton, Pa., June 30, from tubercular meningitis, aged 32.

Fountain Lorenzo Allen, M.D. Vanderbilt University, Nashville, Tenn., 1885; of Lamasco, Ky.; died at the City Hospital, Nashville, July 13, from septicemia, the result of carbuncles, aged 54.

George T. Carpenter, M.D. Rush Medical College, Chicago, 1880; of Chicago; at one time professor of dental surgery in the affiliated dental college; died at Buchanan, Mich., July 20, aged 61.

William J. Craigen, M.D. University of Pennsylvania, Philadelphia, 1859; formerly of Cumberland, Md.; died suddenly at his home near Baltimore, July 17, from cerebral hemorrhage.

William H. Fish, M.D. Medical College of Ohio, Cincinnati, 1875; a member of the Kentucky State Medical Association; died at his home in Nicholasville, Ky., July 19, from uremia, aged 57.

Marion A. Atkinson, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1872; died at his home in Eureka Springs, Ark., July 14, from cerebral hemorrhage, aged 62.

John Henry Crockett, M.D. College of Physicians and Surgeons, Baltimore, 1879; a member of the Medical Society of Virginia; died at his home in Tazewell, July 12, aged 56.

Nathaniel Bowditch Morton, M.D. Harvard Medical School, Boston, 1881; formerly of New York City; died suddenly in Long Beach, Cal., July 19, from heart disease, aged 50.

Thomas Brown, M.D. University of Nashville, Tenn., 1905; a member of the American Medical Association; died at his home in Memphis, July 14, from peritonitis, aged 26.

Jonathan Kay Wrigley, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1877; died at his home in Altoona, Pa., July 18, from cancer of the liver, aged 54.

Philip Z. Fretwell, M.D. Southern Botanical-Medical College, Forsyth-Macon, Ga.; died at his home in Conyers, Ga., June 3, 1908, from cancer of the stomach, aged 81.

Charles James Beise, M.D. Rush Medical College, Chicago, 1894; of Mankota, Minn.; died in Mapleton, Minn., in December, 1908, from tuberculosis, aged about 40.

Roy A. Miles Collins, M.D. Drake University, Des Moines, Iowa, 1904; of Portland, Ore.; was shot and killed by his wife in that city, July 24, aged 33.

James A. Shackelford, M.D. University of Maryland, Baltimore, 1876; of Greenville, Miss.; died at the home of his nephew in Carrollton, Miss., July 19.

Benjamin Franklin Garrison, M.D. Vanderbilt University, Nashville, Tenn., 1891; died at his home in Keota, Okla., July 14, from heat exhaustion, aged 43.

Robert W. Muhleman, M.D. Pulte Medical College, Cincinnati, 1877; died at his home in Bellaire, Ohio, July 18, from pulmonary hemorrhage, aged 55.

John R. Wright, M.D. Vanderbilt University, Nashville, Tenn., 1899; died at his home in Honea Path, S. C., July 20, from tuberculosis, aged 33.

Harrison W. Winstead, M.D. University of Nashville, Tenn., 1856; died at his home in Franklin, Tenn., Oct. 17, 1908, from chronic bronchitis, aged 77.

John Sutherland (license, Ky., 39 years of practice, 1895); of Willisburg, Ky., died at the home of his son in Harrodsburg, Ky., July 2, aged 83.

John M. Blackerby, M.D. Medical College of Ohio, Cincinnati, 1866; died at his home in Germantown, Ky., June 17, from senile debility, aged 88.

Ira D. A. Diller, M.D. Baltimore Medical College, 1898 died suddenly at his home in York Springs, Pa., July 12, from heart disease, aged 36.

Sara L. Valentine, M.D. Hahnemann Medical College, Chicago, 1887; died at her home in Chicago, July 25, from chronic nephritis, aged 66.

Ernst Jacob, M.D. Miami Medical College, Cincinnati, 1889; of Cincinnati; died in the Deaconess' Hospital in that city, July 19, aged 45.

George P. Phillips, M.D. College of Physicians and Surgeons, Baltimore, 1890; died at his home in Early Grove, Miss., July 14.

Alfred B. House, M.D. University of Michigan, Ann Arbor, 1866; died at his home in Memphis, Mich., July 9, aged 74

James M. Edwards, M.D. Tulane University, New Orleans, 1871; died at his home in Sturgis, Miss., July 16, aged 61.

Joseph Strawn, M.D. Jefferson Medical College, Philadelphia, 1869; died at his home in Philadelphia, July 16, aged 66.

Frank Hodge, M.D. University of Buffalo (N. Y.), 1860; died at his home in Hudson, N. Y., July 14, aged 75.

Society Proceedings

ASSOCIATION OF AMERICAN TEACHERS OF THE DISEASES OF CHILDREN

Third Annual Meeting, held at Atlantic City, June 7, 1909

The President, Dr. Charles Douglas, Detroit, in the Chair

Election of Officers

The following officers were elected: President, Dr. A. C. Cotton, Chicago; vice-president,, Dr. R. B. Gilbert, Louisville, Ky.; secretary, Dr. Samuel W. Kelley, Cleveland.

Should the Principles of Nutrition be Taught in our Schools?

Dr. Charles Douglas, Detroit: The subject of nutrition is of paramount importance to pediatrists. Its relationship to prophylaxis is obvious, inasmuch as it determines the size of the child, tends toward the preservation of health and to the prevention of disease in later life. The nursing mother should be taught what articles of food should compose her diet so as not to embarrass her child. School children are indolent and unwell because of deficient dietetic training in infancy. Bad nutrition causes dwarfism, dull and idiotic children. The evil can only be corrected by education. Children are compelled to study subjects that have no bearing on the preservation of health while many important subjects are entirely omitted in our schools. The result is that physicians are called to treat diseases that spring from ignorance of this important subject of nutrition. Instruction ought to be given on the function of all the organs of the body. If this plan be carried out, young girls when graduated from school will be versed on the subject of nutrition, and many grave errors will be thus avoided.

The Modern Physician and his Literature

Dr. LeGrand Kerr, Brooklyn: The days of the old time preceptor have passed due to the rapid strides made in medical literature. The preceptor, however, has no substitute. With the preceptor the young medical student had an opportunity of acquiring much practical experience; to-day, the young medical graduate knows nothing of the personal side of the practice of medicine. Clinical experience is probably the best. The text-book is the book most used because it is a record of everyday practice. The disadvantage is that it soon becomes out of date, is bulky and expensive. Medical periodicals accomplish much good, but unfortunately when wanted, they are usually found filed away. Less dependence should be placed on text-books. The senior medical student should be taught how to look up the references and how to use the same when found.

Neurasthenia in Infancy and Childhood

Dr. E. H. Bartley, Brooklyn: Neurasthenia in childhood is now commonly seen. In the etiology, heredity plays an important part, next to which stands gastrointestinal disturbances, unsuitable home surroundings, excessive school work, insufficient sleep, bad nutrition and adenoids. These children usually suffer from night terrors, headaches, anorexia, insomnia, enuresis, and melancholia. In considering the treatment the cause of the affliction must be searched for and removed. In many cases regulation of the diet, attention to personal and general hygiene, an abundance of fresh air and sunshine, long hours for sleep, and cheerful home surroundings will produce beneficial results.

DISCUSSION

Dr. J. W. Van Derslice, Chicago: These cases come to us daily and represent the beginning of later organic brain disease. In the treatment the hearty cooperation of the parents must be secured and the treatment be carried out. For the past several years I have put these cases on a restricted diet with very gratifying results.

Mentally Deficient Child in School, a Victim of Educational Methods and Incompetent Boards

Dr. H. Brooker Mills, Philadelphia: The various physical conditions of childhood such as enlarged tonsils, adenoids, etc., have a tendency to disturb the mentality and to arrest mental development. Many instances could be cited of the hardships imposed on such children by the present school methods of many of our large cities, particularly in keeping them too long in one grade, pressing them too hard with many unimportant subjects, and burdening them with home work for which they are mentally and physically incompetent. To remedy this evil, the following recommendations are offered: 1. Reduction of the school year from ten months to nine. 2. A reduction of the hours of the school day from five to four, with two hours' intermission. 3. Discontinuance of all home work. 4. The physical examination of every child at the opening of the school term in the autumn, and regularly every three months thereafter for the detection of adenoids, enlarged tonsils, impaired vision and hearing. 5. The instructing of the teachers to make careful note of the mentally backward child and report the same to the principal weekly for one month, at the end of which time, if there be no improvement, the referring of the child for medical examination as to its physical and mental condition. 6. The establishment of special schools or special classes in different parts of existing schools for the mentally backward children, each child to be graded according to its mental capacity, regardless of size and age. 7. Separate class-rooms for the boys and girls. 8. Separate schools, or at least separate class-rooms in different parts of existing schools for members of the colored race. 9. Careful inspection of the home life and surroundings of the mentally deficient child, especially as to heredity and the character and caliber of the parents. 10. The report of the school physician or of the family physician to be individually and collectively taken as final, so that the child's mentality may not be passed on by incompetent laymen. 11. Male teachers for the boys and female for the girls, with preferably a male supervising principal in all mixed schools. 12. All differences of opinion occurring between the family physician and the school physician as to the child's mentality and grading should be settled by reference to a third physician to be mutually agreed on by these two.

DISCUSSION

Dr. J. W. Van Derslice, Chicago: I agree with many of the points brought out by Dr. Mills, but am not in favor of a shorter school year. I am a firm believer in vacation schools, and think that most of the trouble with our present school systems is due to mismanagement. There should be more intermission during the hours in school.

Dr. W. C. Hollopeter, Philadelphia: I agree with Dr. Van Derslice that there should be more frequent intermissions for recreation during the school hours. I heartily approve of the recommendations laid down by Dr. Mills.

Dr. Henry I. Bowditch, Boston: I would like to add a thirteenth recommendation to those given by Dr. Mills, viz., the establishment of a vacation school in the open air during the hot summer months.

Dr. E. H. Bartley, Brooklyn: I am heartily in favor of establishing special classes for the mentally backward children, but I do not approve of the excessive pressure now brought to bear on the little ones during school hours. In my opinion the teachers have no choice in the matter inasmuch as they are compelled to follow a schedule laid down by a board of laymen which many of the little ones are unable to handle. I would urge a return to the old method of years ago when the teacher was the sole judge of what a child should be called on to do.

What Should Be Taught Concerning the Calorimetric Method for Practical Use?

Dr. J. W. Van Derslice, Chicago: By this method the potential energy of foods can be measured. Only by the estimation of food values can we prevent under-feeding and overfeeding. Infant-food values should be taught in all colleges. The estimation of food values can best be done by the metric system. Too many factors enter into the personal equation of the individual infant to lay down one hard and fast rule.

DISCUSSION

Dr. Henry I. Bowditch, Boston: Whatever method we employ in the feeding of infants we should understand that method thoroughly. Each child is a law unto itself, and what is suitable for one may be unsuitable for another. The calorimetric method should be taught as simply as possible so as not to confuse the student. We should not give the idea that it is all important, but that it is a valuable asset.

Dr. A. C. Cotton, Chicago: From observations in the middle west I think that the great majority of the profession is being led into error in looking on this method as a method of infant feeding. I hardly think that the older and more experienced men consider it a good method of feeding. The good physician will not stop to figure the weight of a sick child when ordering a formula. Who knows the caloric value of milk? The experiments performed in this connection have been highly unsatisfactory.

(*To be continued*)

NEW JERSEY STATE MEDICAL SOCIETY

Annual Meeting held at Cape May, June 23-25, 1909

(Continued from page 402)

Intramuscular Mercurial Ingestions in Syphilis

Dr. Henry A. Pulsford, Orange, said that these have the advantage over mercury administered by mouth or through the skin that one could tell exactly how much reached the circulation. If given by mouth, it was apt to produce diarrhea and to upset the digestion. In the case of inunctions, this was avoided; but there was an unpleasant local effect on the skin. Patients were apt to be irregular about taking their medicine, and to increase or diminish the dose according to their own ideas, and other people were likely to learn about the treatment. In the injection method, these disadvantages did not arise. The only objection to mercurial injections was the pain, first that of the needle thrust, and afterward that caused by the irritating effect of the mercury. It varied in degree with the different preparations used. In spite of the utmost care nodes were sometimes formed, containing a portion of the unabsorbed injection fluid; but this was exceptional. Embolism, though an alarming accident, had never proved fatal. The injection material should be as concentrated as possible. The points for successive punctures should be selected according to a definite plan, so that two or three months may elapse before a second puncture has to be made in the same spot. Trouble in the mouth was the danger signal showing that the treatment should be intermittent.

DISCUSSION

Dr. Henry J. P. Walhauser, Newark, called attention to the fact that the shifting of the needle was responsible for the production of emboli. A certain method of knowing whether the needle is in a blood vessel or not consisted in applying an empty barrel to the needle, and then exhausting. If the needle was in a blood vessel, blood would be drawn into the barrel of the syringe. He said that the injection plan of treatment would succeed when all other plans had failed, and made a plea for its more general use by the profession.

Dr. John M. Bradshaw, Orange, said that one should be careful to wipe the needle clean and dry with sterile gauze before the injection was given, thus avoiding pain and an inflammatory reaction.

Dr. H. A. Pulsford referred particularly to the use of gray oil, a difficult preparation to make, as it could not be sterilized, because sterilization broke up the emulsion. It must be prepared with sterile ingredients, in sterile utensils, and under aseptic conditions. He said that its use would repay the trouble of making it, as it caused surprisingly little pain.

Dyspepsia a Misnomer

Dr. W. Blair Stewart, Atlantic City, said that charlatans, vendors and fakirs had made "dyspepsia" a permanent factor in the minds of laity and profession. He considered the term unfortunate, and said that its use was decried by Dr. George B. Wood of Philadelphia. While the mistakes of earlier practitioners could be overlooked, he did not think at the present day that there was any excuse for snap judgments. One should find the real disease, and not call it dyspepsia. The earlier and more thorough the diagnostic methods used, the more lives would be saved and the more comfort obtained for the patients.

DISCUSSION

Dr. J. Finley Bell, Englewood, did not think that any physician had a right to take under his care for treatment a patient with indigestion or any one presenting symptoms referable to the stomach, without making a careful examination, physical, chemical and bacteriologic. He contended that the inconvenience and discomfort of the patient in being submitted to these tests constituted a very slight objection. Every physician should have in his laboratory the necessary apparatus. Even without the use of the stomach tube, much information, he thought, could often be obtained by examining carefully the vomitus and the feces.

Dr. Linn Emerson, Orange, thought that while it was ridiculous to say that everybody with gastric trouble was suffering from eyestrain, he considered it nevertheless true that this condition was often overlooked. Eyestrain, he said, could cause all sorts of nervous diseases and gastric disturbances. Another thing that would cause stomach disorder was oncoming presbyopia.

Dr. J. Watson Martindale, Camden, mentioned the absence of teeth as another cause of stomach trouble; also pyorrhea alveolaris, in patients with teeth.

Dr. Henry Chavanne, Salem, referred to indigestion produced by mental strain. He thought that before annoying patients by submitting them to the ordeal of various stomach examinations, it would be well for the general practitioner to try the effect of the administration of a little nux vomica or other simple remedy.

Dr. Philip Marvel, Atlantic City, did not think that a physician had any right, when he did not know the subject fully himself, to refuse to send his patient to some one who did. He feared that too many physicians were not sufficiently interested in the welfare of their patients to recommend another physician to assist in the determination of the condition present or in its relief. He said that it was within the power of the physician, at the time of passing the stomach tube, to determine the size of the stomach, whether it was distended or displaced, and whether the distribution of its contents was normal; also whether the digestive forces were slow, moderately slow, or extremely slow.

Dr. William F. Ridgway, Atlantic City, said that the symptoms improperly classed under the term dyspepsia were not always due to organic changes, but were functional disturbances that could be obviated by the use of very simple remedies. He did not believe it wise for the general practitioner to use the various tubes employed in investigating through long distances the alimentary canal at either end, as he had seen great injury result from their use by unskilled persons.

Dr. W. B. Stewart said that the tenor of his paper had been to emphasize the point that it makes no difference what a disease is called, if a cure is promptly obtained; but that if one's simple remedies fail, the scientific methods of the present day will enable one to discover the exact cause of the disease.

Problems that Confront the Component Medical Societies

Dr. Daniel Strock, Camden, said that a great loss in goodwill and good-fellowship, and an opportunity to learn from others and instruct others, was caused by not belonging to a county medical society. The distinction of regular and irregular physicians should be abolished, because all had to pass the state board examination before commencing practice, and all colleges had to teach certain things. All physicians who have passed the state board should be eligible to membership in the county society. He also stated that the medical profession had begun to realize the advantage of having medical men in the legislature. If a physician was elected to a political office, the profession should rejoice; because, no matter what his politics, he was still a physician. He said that very few of the public realized that the profession did not approve of lodge practice; and he thought that more publicity should be given the matter.

(*To be continued*)

AMERICAN ORTHOPEDIC ASSOCIATION

Twenty-second Annual Meeting, held at Hartford, Conn., June 14-16, 1909

The officers elected were noted in The Journal, June 26, 1909, page 2112.

The Place of Arthrotomy in Tuberculous Joint Diseases

Dr. V. P. Gibney, New York: No material advance has been made in the treatment of these joints during the past three or four decades. Orthopedic surgeons should be able to do just as good work as abdominal surgeons; exploratory operations in the joint are no more harmful than similar operations in the abdomen. Statistics show that no one has been able to demonstrate that tuberculous meningitis is a sequel of operative treatment, and modern aseptic surgery should make an arthrotomy perfectly safe. There is no better way of disposing of the tuberculous lesion in the joint capsule than is afforded by this procedure.

DISCUSSION

Dr. J. D. Griffith, Kansas City, Mo.: Has any improvement been made in the treatment or in the length of time required for the cure of these cases during the last few years?

Dr. V. P. Gibney: I remove all the tissue possible by two incisions. I believe that if any real progress is to be made it will have to be started on entirely new lines. The joints should be cleaned out.

Further Observations on Bismuth-Paste Treatment of Tuberculous Sinuses

Drs. John Ridlon and Wallace Blanchard, Chicago: From another year's observation of the results of this method of treatment, added to the six months' experience with it already reported, we have drawn the following conclusions: It invariably fails in cases of marked amyloid degeneration. It fails much more frequently in new sinuses than in those that have existed several months or years. It should never be used when the *x*-ray shows a sequestrum. Its continued use is dangerous when large pus sacs become filled with residuary bismuth. It cures a majority of the cases of old tuberculous sinus.

DISCUSSION

Dr. V. P. Gibney, New York: I wish to report a case of sinus of twenty years' standing that I am sure was cured by the bismuth paste.

Dr. H. A. Wilson, Philadelphia: I used the bismuth paste for a while, but I was so afraid of bismuth poisoning that I substituted for it a paste made of the identical ingredients minus the bismuth, and obtained as good results with this as with the bismuth paste.

Dr. Albert Freiberg, Cincinnati: I believe that a great many of the tuberculous sinuses in joint disease exist because the tuberculosis is still active.

Dr. E. Ryerson, Chicago: I consider it dangerous to cut into any uncontaminated tuberculous abscess that is not evidently going to burst. I think it would be better to treat it conservatively.

Dr. W. S. Baer, Baltimore: It seems scarcely possible that a sinus can be cured by simply blocking it up. I think it more probable that the nitric acid thrown off from the bismuth paste does the work. It is possible that some way may be discovered of getting free nitric acid without the bismuth.

Dr. Prescott Le Breton: I prefer a plain oily mixture of spermaceti, iodin and vaselin.

Dr. Davis: I consider iodoform suitable. I have used 10 per cent. of it to the mass of wax.

Dr. A. G. Gillette, St. Paul, Minn.: The danger of the use of early injections has not been sufficiently emphasized. I once opened a tumor and found it filled with bismuth, which had been accumulating from the repeated injections. I think that the physician should wait a little and see whether the bismuth comes out, instead of following up the injections.

Dr. David Silver: When there are no sequestra I always close the sinuses with bismuth paste. I find it more satisfactory in old sinuses with hard walls.

Dr. M. Hoke, Atlanta, Ga.: In cases in which the bismuth treatment had failed I have healed a number of sinuses with pure tincture of iodin injections.

Dr. H. A. Wilson: While I do not understand how those sinuses close up solely from mechanical injection, I have reported the cases from actual facts. They do close.

Dr. J. J. Nutt, New York: Having been very unsuccessful with iodin, I principally use bismuth paste. The sinuses in my cases took about six months to close.

Dr. Bernard Bartow, Buffalo, N. Y.: I consider that the mechanical action of bismuth is irritating, just as iodin is, by bringing the blood in greater quantities to the parts and destroying the tissues.

Dr. S. L. McCurdy, Pittsburg: If there is a sterile abscess cavity that is quiescent I can get good results with any variety of paste. In the early ones I always use tincture of iodin.

Dr. B. Bartow: I have not found bismuth paste effectual in many cases of mixed infection.

Dr. Emil G. Beck, Chicago: Cases with no basis of bone in the cavity will clear up at once under the influence of the paste. Usually on the third or fourth day the secretion becomes serous; the sinus opening is covered with a scale-like membrane, resembling that which is found on the tonsil in diphtheria. I think, if my colleagues have failed to get good results from this treatment, they must seek for the cause in their technic.

Dr. W. Blanchard: I never open old abscesses that are stationary, but if I can open and inject abscesses that are going to open spontaneously the majority will heal without any trouble or any infection. I think that the reason for some of the bad results is that cases with retained sequestra are injected and the fistula closed, the result being simply a corking up of broken-down tissue.

Chronic Inflammation of the Lower Epiphysis of the Tibia

Dr. C. H. Jaeger, New York, reported five cases in which limp was the only symptom for which the patients sought advice. Roentgenograms showed a flattening of the head, with thickening, and in some cases necrotic areas of the neck of the femur. The clinical course of these cases was that of a chronic limp with increasing limitation of motion.

Operative Remodeling of the Tarsus for the Immediate Correction of Severe and Relapsed Forms of Club Foot

Dr. Bernard Bartow, Buffalo: This plan of treatment was based on the idea of the gradual remodeling of the deformity of the astragalus, cuboid and calcaneum, by which the deformed foot is replaced and maintained in an over-corrected position pending adaptive changes in those bones.

DISCUSSION

Dr. H. L. Taylor, New York: I remember that Dr. Myers of New York a number of years ago suggested along these lines, advocating the excavation of the astragalus. I do not know if he has followed this up or not.

A Preliminary Report of the Use of Animal Membrane in Producing Mobility in Ankylosed Joints

Dr. W. S. Baer reported eight such cases.

DISCUSSION

Dr. Osgood: After using some of this membrane for two weeks there was an increase of motion. Now there is about 80 degrees of motion in the knee, which is painless. Even if no better result can be obtained the patient is better off than before.

Dr. Galloway, Winnipeg, Manitoba, Can.: I think that the facility with which a flap of fat and fascia can be transplanted makes the introduction of any other foreign material unnecessary. I rarely advise operative interference. Is the chromicised pig's bladder ready for use or does it require special preparation to make it aseptic?

Dr. Davis: A discovery of this kind has been very badly needed, as the Cargyle membrane acted as a foreign body. I am more than glad that this membrane does not do so.

Dr. Jaeger: I have found that the pathologic changes that take place in a muscle that has been contracted for a number of years form a serious obstacle to treatment. Sometimes the muscles are of an almost board-like consistency.

Dr. Young: A few days ago Dr. Murphy told me that he thought that he had been able to perfect the treatment for ankylosis of the hip as well as of the knee.

Dr. A. H. Freiberg, Cincinnati: The knee joint is one that depends on its ligamentous support. Now when an operation involves practically the obliteration of the whole ligamentous structure I do not see how we could expect to have the movements of the joint under control, and if not under control, I think a stiff joint preferable.

Dr. Bradford: Is only one piece of membrane used in the knee joint?

Dr. Baer: The membrane comes ready for use. It can be softened by being put into normal salt solution. Dr. Jaeger is quite right; the bound-down and atrophic condition of the muscles is of great importance. I think that massage should be started immediately after the insertion of the membrane. I insert membrane in one or two pieces. One piece is carried back underneath the condyle as far as possible. A second piece is then laid between the patella and the top of the superior portion of the condyles, sewed well down at the sides of the folds of the synovial membrane to the lower surface, and then cut off.

Tendon Transplantation in Flat Foot

Dr. E. Ryerson, Chicago, advocates division of the peroneus longus and brevis in operations for correcting the mal-position of the foot, and said that there was a possibility of transplanting one or both of these tendons to the inner border of the foot, thus relieving the distorting tendency and supplying a partially corrective force.

DISCUSSION

Dr. Young: I have transplanted into the tibialis anticus and have always found this method satisfactory.

Dr. Meyers: I should recommend the transplantation of the entire tendo Achilles to the posterior surface of the os calcis.

Dr. M. Hoke, Atlanta, Ga.: The incorrectness of posture depends not only on muscular, but on skeletal changes. When there is a long-continued posture of abduction the head of the astragalus changes its shape. I have never done muscle or tendon transplantation, but have done a plastic operation on the head of the astragalus.

Dr. Wilson: One difficulty that I have encountered at an operation was in detaching the long stretch of tendon at the toe after it had been divided subcutaneously. I feel that Dr. Ryerson has added another procedure of distinct value in the correction of flatfoot.

Dr. Blodgett, Detroit: Three years ago I reported a series of cases in which, after linear tenotomy of both peronei, function was restored. I think that to turn all the force of the peronei into abduction and take away the opposition of abduction would insure weakness of that system.

Dr. McKenzie: I think that transplantation of the peronei would be more likely to be harmful than helpful. A tendon or any structure must necessarily pull from the point of its origin, its action reaching forward to its insertion. It pulls toward a pully, which is at the fibula, and must pull the foot outward instead of inward.

Dr. Rugh: In cases of paralytic valgus I have been in the habit of bringing the peronei posterior to the ankle joint or inserting them in either the scaphoid or the cuneiform.

Dr. Davis: In making a transplantation of the extensor longus hallucis the functions of these muscles should be borne in mind. The main function of the big toe is to give the thrust forward. Therefore, its strength is in its flexor.

Dr. Young: I would like to know whether or not there were any symptoms of palsy in Dr. Ryerson's cases? The case had been mistaken for palsy.

Dr. Ryerson: I think that Dr. Myers' suggestion of transplanting the tendo Achilles to the posterior surface of the os calcis most ingenious, and one that ought to be of great benefit in equino varus. I scarcely think, however, that it would help to correct a valgus foot, because the deformity is in front of the os calcis, and not in the rear.

Treatment of Talipes Valgus

Dr. R. T. Taylor, Baltimore, said that it was his aim to discard plates entirely in this condition, as their use is often abused. He also demonstrated single brace straps for talipes equino varus.

DISCUSSION

Dr. Cook: While agreeing with Dr. Taylor, I think that there are a few things not clearly brought out in his paper. In the first place, anything that holds up the inner posterior arch must divert the outer posterior, and when a foot is inverted the outer edge is depressed and the inner edge raised. Secondly, Dr. Taylor said that he had given up the use of plates, yet he certainly has adopted one of a different sort, as the piece of leather used is nothing more or less than a plate. I do not consider that Dr. Taylor has done away with plates at all; he merely builds them in his shoes. I think that Dr. Taylor's shoe might have a little better heel.

Dr. Le Breton: Could the average shoemaker make these?

Dr. Taylor: I do not see why not. I have one man who does all this work for me.

Dr. Twinch: What is the cost of the whole thing from the time the patient comes to the orthopedist until he has been satisfactorily fitted with shoes? People, as a rule, do not care to pay fifty dollars for shoes.

Dr. Davis: Perhaps the best solution of the question would be to have the patient buy a pair of store shoes and have the instrument maker split the shank and insert a piece of steel.

Dr. V. P. Gibney, New York: I wish to enter a protest against leaving cases of weak foot-flatfoot, etc., to the shoemaker, after the first examination and prescription.

Dr. Galloway: I agree with Dr. Cook that plates can not be entirely discarded. I think that some such method as the use of simple plates, combined with muscle training and the education of the patient in the correct method of using the foot would be the most beneficial method of treatment.

Dr. Bradford: I think that if Dr. Taylor were to claim this as an invention he would find that some of the Boston shoemakers would issue an injunction against him.

Dr. V. P. Gibney: I hate to deprive any one of being the original plate man, but as far back as 1871 I was using plates very much like these employed at the present time.

Dr. Taylor: In regard to Dr. Davis' suggestion of using a ready-made shoe, the main difficulty is that the ordinary shoe is not sufficiently adducted. A special pair of shoes would cost eight or ten dollars.

Etiology of Hallux Valgus

Dr. J. K. Young, Philadelphia, ascribed the deformity to the presence of a supernumerary bone between the internal cuneiform bone and the base of the first metatarsal. He gave the clinical histories of some cases and exhibited *x*-ray plates and specimens to verify his hypothesis.

DISCUSSION

Dr. A. H. Freiberg, Cincinnati: I think Dr. Young's theory an interesting one, but believe that it has been presented in such an incomplete manner that one would not be justified in drawing conclusions from it.

Dr. John Dane, Boston: I have hunted for supernumerary bones in this locality, and have found a large number. In many of these cases, however, there was no hallux valgus; so in these cases the supernumerary bone had failed to produce this deformity.

Dr. C. Riely: When I saw Dr. Young's *x*-ray picture I realized that I had a patient with the same condition. I had an *x*-ray taken of my case and found that a supernumerary bone was present.

Dr. E. Ryerson, Chicago: Why may not this supernumerary bone be the result of the hallux valgus, and not the cause of it? I think that these outgrowths may be to a certain extent due to the application of Wolfe's law.

Dr. Wilson: I made a radiographic study of one hundred and fifty feet, but failed to find anything except a higher or lower degree of hallux valgus.

Dr. C. Riely: My patient's hallux valgus was congenital.

Dr. Young: Probably not more than one or two kinds of supernumerary bones produce hallux valgus, but I think my variety is the one that produces this deformity. I have not had time to demonstrate whether the supernumerary bone is the result or the cause.

(*To be continued*)

STATE MEDICAL SOCIETY OF WISCONSIN

Sixty-third Annual Meeting, held at Madison, June 30-July 2, 1909

(Continued from page 316)

Case of Pseudocoxalgia of Psychopathic Origin: Recovery Under Suggestive Treatment

Dr. Richard Dewey, Wauwatosa: The patient was a girl of 13 of neurotic temperament and heredity who had an intimate friend who suffered from hip-joint disease. The patient believed herself affected with the same disease and for over four months stayed in bed a good deal, though she went about occasionally on a crutch. She was treated with plaster cast and pulley and weight. She had daily attacks of pain attended by violent screaming regularly at a certain hour. Her left knee became hysterically contracted. Relief was obtained the first day of admission to the sanitarium by psychotherapeutic measures. The patient gained 10 pounds in two weeks and has now been well for a year.

DISCUSSION

Dr. Harold N. Moyer, Chicago: There has been a recasting of our opinions regarding hysteria, as well as neurasthenia and the various forms of psychasthenia and allied disorders. These conditions are often pure mental or even "soul" diseases, but they must be recognized and treated as real, although the disease has no physical basis whatever. The anesthesias in these cases are the result of suggestion, as are the narrowing of the visual field and all the typical so-called cardinal signs of hysteria. The condition is a pure suggestion neurosis, but organic troubles are frequently if not usually found associated with hysteria. The problem is to unravel these two conditions. These conditions must be treated earnestly and honestly with correct technic and not dismissed uncared for because there is no physical lesion. When the medical profession treats these diseases properly with correct technic, and as it is now beginning to do, all these Christian Science, Emmanuel and other movements will disappear.

Dr. W. B. Hill, Milwaukee: Inasmuch as these hysterical conditions are usually associated with organic lesions, the question arises as to whether or not the "soul" disease is not a result of the organic condition.

Dr. G. T. Adams, Kenosha: I think it likely that organic disease through lowering the patient's powers of resistance might lead to psychical phenomena. The use of the term "hysteria" should be condemned. The condition is real, but the term has come to mean something foolish, silly and controllable. Suggestion is the proper means of cure. Distract the patient's attention from his sufferings.

Dr. C. H. Searle, Palmyra, Wis.: These patients need rest, more or less as a rule, and to be kept from sympathetic friends and relatives.

Dr. A. W. Rogers, Oconomowoc: The term hysteria should never be used. To lack of sympathy with hysterical patients and inherent dislike to treat them, the medical profession is really responsible for the existence of cults.

Dr. Richard Dewey: Patients often receive unfavorable suggestions from the physician's examination. This class of patients is rarely conscious of deceit. There is nothing so good for these patients as a plain straightforward explanation, disregarding all clap-trap and attempts at hypnotism.

Anomalies of the Mastoid from a Surgical Standpoint

Dr. H. B. Hitz, Milwaukee: These anomalies, including some of the most difficult conditions met by the otologist, were illustrated by stereopticon slides of photographs and drawings of a large number of cases. An early diagnosis should be made and when it is positive as little time as possible should elapse before an operation is undertaken. When an operation is done, let it be thorough and complete. The day of halfway measures, of Wilde's incisions, timid scratchings of bone and the like, belong to a past age and generation. Use your best judgment and all other faculties to finish your work at one sitting, and thus avoid the manifold dangers of a secondary operation. Do not stop short of completion or pass by suspicious areas without careful investigation and, finally, in the light of some recent experiences of mine of having to patch up the faulty work of others, let me advise that unless you feel competent to cope rationally with the emergencies or unusual conditions you do not undertake a mastoid operation.

DISCUSSION

Dr. N. M. Black, Milwaukee: If more mastoids were opened, even when objective and subjective symptoms are hardly positive, fewer intracranial complications of otitic origin would ensue, and much suffering would be avoided. It is important that the operation should be thorough.

Dr. C. D. Conkey, Superior: The cellular condition of the mastoid is a great deal more extensive than we usually imagine. Bear this in mind in operating and be sure to break down all the diseased bone. A great many of the headaches in childhood may be ascribed to subdural abscesses, which are generally absorbed and heal themselves.

Conservative Surgery of the Ovaries

Dr. J. M. Dodd, Ashland: The tendency toward conservatism in surgery is growing. We now aim to leave a portion of the ovarian tissue in order to avoid precipitating a stormy menopause, which is often a more serious condition than the one for which the operation was done. Ovarian disease is not easily diagnosed; many cases are overlooked. Pregnancy is no contraindication to removal of the ovaries. Anesthesia, asepsis and skilled operative technic have robbed the operation of its terrors.

DISCUSSION

Dr. Edward Evans, La Crosse: Ovariotomy has been overdone. The conservation of the ovaries should begin at birth. Plenty of exercise, good hygienic surroundings, and relief from overwork during school life, prevent diseases of the sexual organs. In removal of ovaries diseased through gonorrhea or tuberculosis, leave no portion of the ovary behind, but do not always operate in gonorrhea. In many of these cases the patient makes a good recovery. Do not be too radical.

Dr. C. W. Oviatt, Oshkosh: Never remove any ovary without some definite and good pathologic reason. Every time a woman is deprived of her ovaries for some nervous condition she becomes a nervous wreck. Do not remove the ovary because of the existence of small cysts in that organ.

Diagnosis and Treatment of Renal Calculi

Dr. J. F. Smith, Wausau: During the last decade marked progress has been made in the diagnosis and treatment of renal calculi because of the introduction and more general employment of newer and more accurate means of diagnosis, such as the Roentgen ray, cryoscopy, ureteral catheterization and the determination of renal functional capacity. The following points may be emphasized: 1. Clinical symptoms are inadequate in the diagnosis of renal calculi. The Roentgen ray must be relied on to give accurate information as to the size, number and location of the stones. 2. Renal stone becomes a surgical condition as soon a definite diagnosis is made. Expectant treatment is to be recommended only in the presence of distinct and definite contraindications to a major surgical operation. 3. In the simple cases with a single stone, pyelotomy is the operation of choice; in the affected cases, cases with multiple or parenchymatous stones, nephrotomy with drainage is to be carried out; in the cases with extensive infection and destruction of renal tissue primary nephrectomy should be done in the absence of distinct contraindications.

DISCUSSION

Dr. F. G. Connell, Oshkosh: The history of the past few years shows conclusively that there are more cases of stone in the kidney and ureter than has previously been suspected. It is difficult to make differential diagnosis sometimes from appendicitis unless the cystoscope and *x*-ray are used.

Dr. E. A. Fletcher, Milwaukee: Great progress has been made in the treatment of these surgical conditions, but there is room for great improvement in diagnosis; mistakes in diagnosis have been very common. The *x*-ray, the cystoscope and ureteral catheterization are important means of diagnosis. The cryoscopic test is useful.

Dr. Dennis J. Hayes, Milwaukee: The main cause of these stones is obstruction. Kidney conditions involve the most difficult points of diagnosis in the whole range of surgery.

(To be continued)

AMERICAN ACADEMY OF MEDICINE

Thirty-fourth Annual Meeting, Hotel Dennis, Atlantic City, N. J., June 5-7, 1909

(Concluded from page 403)

What Is Being Done for Backward and Mentally Deficient Children in the Public Schools of Philadelphia

Miss Lydia A. Kirby, Director of Schools for Truants, Incorrigible and Mentally Defective Children: A systematic attempt to help backward and mentally deficient children was the result of efforts of Miss Margaret Bancroft of the Training School of Haddonfield, N. J., member of the Civic Club of Philadelphia, and Miss Dora Keen, of the Public Education Association. In 1901 the Board of Education took hold of the movement. At present there are twenty-one classes. The sessions last from 9 a. m. until 2 p. m. Nature study is given prominence. Each school is provided with a shop containing twelve work benches with tools, and some pupils who can not remember their spelling do good work with their tools. Other pupils have raffia, cardboard. Sloyd chair caning, basket making and hammock making. The training of the muscles at the dictation of the mind is one of the most valuable ways of helping these children. Sense-training exercises are used for those who are most defective, and special exercises are employed to correct defective speech. Music is a daily exercise, and physical training is given in the school yard. The school physician visits the class daily. The chief value of the teachers lies in their character and disposition. They must possess unlimited sympathy and patience. A record of the work shows conclusively that apparently hopeless cases of physical inability, moral and mental deficiency may be partly or wholly overcome, under adverse school conditions, with the aid of devoted teachers. The study of defective children should form a part of the work of every normal school.

What May Be Done for Exceptional Children by the Training of Speech and the Development of Language

Dr. G. Hudson-Makuen, Philadelphia: Speech bears somewhat the same relation to the mind that the hammer and saw bear to the carpenter. It is the mind's most effective and most important tool, being not only the vehicle in which the products of the mind are transferred and delivered, but being essential also to the creation of these products, to their crystallization, collection and classification. If a person's speech be trained and perfected his mentality must be greatly improved. Defective speech is both a physical and mental sign of feeble-mindedness, but it is by no means a pathognomonic sign, and it may be a cause and not a result of the feeble-mindedness. Of 5,000 examinations of exceptional persons observation and treatment ranged from several weeks to as many years. The examinations included individual and ancestral histories, and mental and physical investigations. In a series of five cases reported the children were all suffering from arrested speech development with a resulting corresponding arrest of mental development, or an abnormal mental development. In the first four the patients were under treatment for more than a year and the results have been most satisfactory. Only one of the children made any attempt to talk and his speech was a mere jargon. These four are now all talking freely and intelligently and have, moreover, freed themselves entirely from the charge of feeble-mindedness. In the fifth case there has developed some evidence of faulty cerebration. Aside from the direct mechanical means employed that were employed for the restoration of hearing treatment consisted entirely in the training of the faculties of speech. Four other cases reported illustrate what may be done for children who are exceptional on account of certain psychophysical peculiarities, one of the chief symptoms of which is defective speech, and they also illustrate the fact that speech training is probably the most direct and effective method of developing the human mind.

Discussion on Exceptional Children

Dr. Ruth Webster Lathrop, Philadelphia: In considering the physiologic aspect of the problem it is important to recognize that functional activities rest on the sure foundation of physics and chemistry. Physiologic potentials, the logical basis of Dr. Groszmann's comprehensive classification, depend on the storing of energy as cohesion, chemical affinity, etc. Life consists in the balance between the stored and liberated energies, the maintenance of identity of the organism and adjustment to the environment by responsiveness. The neuron doctrine holds an important place in cell physiology (the physiology of to-day). The neuron is the nerve-cell-body with all its processes, and it is the physiologic unit of the nervous system. A series of neurons make the paths by which most acts are accomplished. The diagrams presented by Dr. Groszmann illustrated only the neuronic paths for vision and its reflex response, but these are typical for all neuronic activity. Cerebral afferent, efferent and association paths constitute the mechanism as shown on these charts. Physiologic continuity must be distinguished from anatomic continuity. Normally, the brain may receive impulses from the cord and special sense organs, store them, distribute them within itself and reflect them; in other words, there must be normal sense organs, conduction paths and central cells. These cerebral acts are the basis of sensation, association, volition, the psychical acts, whose sum total is the mental life. Exceptional children vary in potentials, in the power to perform these normal acts, outside the limits of the average considered as normal. Many may be brought within the average variation by the same processes that are operative in the normal. Secure proper hygienic conditions; develop structures by use; shorten reaction time by practice; cultivate associative memory by experience, and by training inhibit all but the best responses to stimuli. Finally, since there is "nothing in the intellect not first in the senses" the normal must be secured and maintained by exciting sensation, thereby stimulating associative memory and thereby in its turn volition, the highest inhibition. Popularly this normal demands a sound mind in a sound body. In science this is conceived of as the physiologic balance.

Dr. Philip Zenner, Cincinnati: In the results of physical examinations of school children in Cincinnati, there were found an enormous number of defectives with the indications that the defects of eyes, nose, throat or of other organs were not the prominent cause of the backwardness but that the backwardness was due rather to the mental type of the child and to the fact that the school work did not accord with its needs. This seems to be proved by the fact that an adaptation of the school work to the requirements of the child was followed by great improvement, though the physical defects were largely unheeded. The large number of defects found in these children shows plainly indeed the need of a school physician devoted to that work and especially prepared for it. His preparation should include ordinary school hygiene, special skill in the diagnosis of disease and defects of childhood, and an understanding when these defects should be treated, because I believe conservatism on the part of the physician is often of inestimable value to the child. His preparation should also include the psychology of childhood. He should be prepared to assist the teacher in the discovery of the cause for, and the proper treatment of a dull child, an incorrigible, or an ailing one. He should be thoroughly prepared further to explain to school children the problems of tobacco, alcohol and sexual hygiene. His influence also should be such that his advice would be followed.

Dr. M. P. E. Groszmann, Plainfield, N. J.: I should like to emphasize the point brought out that the school physician ought to be well trained for the important position he is expected to hold. The most inexperienced tyros are appointed who gain their experience at the expense of the children.

Dr. A. R. Baker, Cleveland: A point to be emphasized and one on which this Academy could speak authoritatively is that since so small a proportion of children are to become professional men their education should be conducted with a view to the practical rather than otherwise.

Dr. Farrington: I should like to emphasize that which I think Miss Bancroft would consider of extreme importance, the value and necessity of enthusiastic individual effort on the part of every physician to educate his patients. I believe that bodies of physicians can do a very great deal of good by bringing their influence to bear on this problem.

Dr. J. P. Murphy, Philadelphia: As Dr. Baker has said a large number of children are not meant for scholars and never can be such, so our work with these exceptional children should be to make good laborers, good mechanics out of them.

Symposium on Contract Practice: Its Present and Future

Congregational Practice

Dr. A. L. Benedict, Buffalo: The ethical and economic evils involved in contract practice are not intrinsic but circumstantial. The trouble with contract practice in the ordinary sense is largely that the premium is not calculated at an adequate rate to provide satisfactory attendance for an average incidence of cases. From the standpoint of the medical practitioner the contract physician is regarded in precisely the same light as any other worker who lowers the wage scale. From the standpoint of the laity his service is usually unsatisfactory because, with few exceptions, the man who accepts any form of contract at a loss will not discharge his obligations in good faith, and acceptance usually implies incompetence or the disposition to advertise himself. While certain fallacies of the Chinese method of paying the physician to keep his patient well are obvious, the fact is recognized that the value of the physician as an educator and conserver of health would be much greater than according to the occidental method of summoning him in sickness. From the standpoint of economics it is obvious that the interests of the average physician require some change from the present narrow method of rendering service to the laity and attempting the broader function of adviser to the community. It is none too early for the medical profession to consider seriously how it may actually fulfil this higher and more utilitarian function.

Contract Practice

Dr. Charles S. Sheldon, Madison, Wis.: For convenience we may class contract practice under two general heads: (1) Contracts stipulating a certain sum per year for an indefinite amount of work; as for example, the attending members and their families, belonging to a certain lodge or benevolent society, or the paupers of a city or county, or the operatives working at a certain factory, for a small sum yearly; (2) contracts stipulating a specified fair remuneration for a specified amount or kind of work; as for example, examinations for life insurance, for civil service, surgical work for railroad companies or factories, etc. In either class, if the compensation be commensurate with good service and compares favorably with that paid in private practice the most serious objection would be removed, but the tendency of the whole system is to obtain medical service at the lowest rates regardless of all else. In condemning the practice, there are certain exceptions suggested, provided contracts are made the basis of a legitimate price for the work stipulated; for example, with large corporations in remote and isolated mining or lumber camps. Under proper contracts, we may also accept railroad, city or county work, also hospitals and institutions employing a physician on a salary, also on vessels at sea, etc. But even these are not exceptions if the contract is awarded to the lowest bidder, and but little account is taken of skill and efficiency. The spectacle of reputable physicians underbidding each other to secure a contract is neither dignified nor professional and should be wholly discountenanced. If contract practice is bad for the parties most immediately involved it is equally injurious to the medical profession as a whole. At a time when we are endeavoring to effect an organization of the medical profession to secure better laws, better medical education and higher professional standards, this system stands as one of the most actively disturbing forces in preventing unity of action. If the profession really thinks that this thing is an evil and is threatening the future peace and prosperity of physicians, it can best be controlled by the expression, within the profession, of a public statement which shall be effective because founded on good sense and justice.

Contract Practice: Its Ethical Bearings and Relations to the Lodge and Industrial Insurance

Dr. H. T. Partree, Eatontown, N. J.: In my opinion, the only form of expressed contract to which a physician should become a party is that in which substantially his whole time is taken up in a special work concededly for the public interest, or at least, one which imposes no conditions out of harmony with the general aims and high calling of our profession. The bane of contract practice is the desire to get the best of a bargain. There are many phases of the lodge problem in its relation to the physician. Merit and the public weal certainly are not given prior consideration in connection with this contract practice feature of the lodge. Regarding the relation of the physician to industrial insurance, I contend, it is not to the dignity of the profession that its members should be expected to hustle around from pillar to post for 25 and 50 cent fees to see applicants in their own homes because they can not be counted on to walk ten rods to get the insurance. Besides it is usually necessary to see these individuals on Sunday—a most objectionable feature. My remedy is that all applicants go to the office of the examiner or local superintendent. Once the public learns that insurance would not be so expensive if they did a little seeking instead of letting the agent do it all, it would not take them long to find the examiner's office.

Contract Practice in Rhode Island

Dr. George S. Mathews, Providence: For convenience lodge practice may be classified according to (1) private clubs; (2) lodges and fraternal organizations; (3) works, or shop organizations. In discussing the subject of lodge or contract practice with a large number of medical men who engage in it, it was found that in but a few instances was there an ardent advocate of the system. In canvassing the members of the Rhode Island Medical Society it was found that nearly every one is opposed to the system. While the strongest advocate admits that there are some evils connected with the system, the severest critic must concede that under certain conditions there may be some good in the method. The remedy I would suggest is that proposed tentatively by a Committee of the British Medical Association several years ago:

1. Let there be lodges or fraternal insurance companies, but have the doctor paid a fee, even in bulk, more in proportion with the work done.
2. Let the membership in these organizations be limited to those whose wage is incommensurate with the needs of the family.
3. Have the medical management of the lodges in the hands of the local medical society or a committee of the society.
4. Have those physicians who are willing to do this work form a directory from which the individual lodge member may make his selection of his physician.

The Physician in Contract Practice with the Mutual Benevolent Societies

Dr. A. Ravogli, Cincinnati: Contract practice for the physician offers different aspects and is not to be summarily discarded. The mutual benevolent societies usually employ young physicians, but well-trained and of reputed skill. It is in their interest to have their members well attended and soon recovered that the sick benefits may cease. If the contract calls for merely a nominal remuneration with heavy duties, this is debasing of the profession. If the conditions are such to leave freedom to the physician to treat only the members of the benevolent society, and exacting payment from the other members of the family the contract practice can not be considered injurious to the profession. If another physician entered the society offering to do the same work for less remuneration, then the fault lies with the member of the profession and not with the benevolent society.

A Defence of Contract Practice

Mr. John C. McManemin, Past Worthy President Atlantic City Aerie, No. 64, Fraternal Order of Eagles: Although the "contract physician" is ostracised by medical societies, the members of these same societies, ofttimes enter the field of "contract practice" as assistants to other physicians, as family physicians for insurance companies and various like forms. Commercialism seems to be the basic principle of opposition to contract practice. The deprivation of fees is hidden under the shallow mask of lowering of professional ethics and cheapening of medical knowledge. The "contract physician" has a fixed income, obtains a large and varied experience from the heterogeneous practice and enjoys a confidential relation to a large portion of the community in which he resides; a foundation on which many a successful practice rests and to which many a physician of prominence to-day can attribute his success. He is a boon to the laboring man; to the man of wage and small salary, more especially if he be blessed with a large family, the thought of the expense incurred oft deters him from sending for a physician until the ailment has ravished the health of the patient, while had the ailment been treated in its incipiency, recovery might have ensued promptly. Then in prolonged illness the physician's fees often mean many years of struggling against debt.

Why Not Make Contract Practice Universal?

Dr. Woods Hutchinson, New York: Our present system of medical attendance is a makeshift and an anomaly. Born in an emergency and tinkered up at odd times. It has never been properly planned out or thought through. It combines the maximum of expense to the patient, and of loss by all sorts of accident, to the physician, with the minimum of health production and of prevention. Why not take advantage of the law of averages, both of mortality and morbidity, arrange a definite scale of fees for yearly attendance per patient and per family, and devote the best of our energies to keeping our patients well, instead of patching them up after they have fallen sick? The yearly fee, which could be carefully worked out by a conference of all parties concerned, and adjusted to the locality, income and social position of the patient, should include a thorough physical examination of every member of the family at least twice a year, whether they felt out of health or not; and sanitary inspection at regular intervals of the house, water supply, drainage and sewage, and conditions of places of work or study of each individual.

Discussion on Contract Practice

Dr. F. T. Rogers, Providence: It is not complimentary to us as physicians that the most logical presentation of this subject has to-day been made by a layman. Academic discussions of contract practice, though interesting are not always practical. The profession is looking for a remedy. That which prompts the young doctor to take up lodge and contract practice is the need of the dollar. Only when we have been through the adversity of early practice and have done our share of this belittling work can we afford to say how our brethren shall conduct their business. When Mr. Carnegie had made his millions by grace of the tariff he discovered that the tariff was unnecessary. It is the need of the man that governs this practice and it is the man himself who can remedy it. When a man makes himself so valuable to the world that his services are worth something he will not be bothered with contract practice. The remedy lies with us as men, not as members of a profession, and any action of this Academy which does not recognize this fact will be futile.

Dr. William L. Estes, Philadelphia: I can not give in a better way the effect of this method of practice than to cite actual instances. One was that of a former assistant who went into contract practice in the coal regions, who was given a monthly salary of $600. Apparently, for a man just beginning, that was an excellent thing. The facts, however, were that he had to care for about 3,000 people, which would mean about 56,000 visits a year. This necessitated engaging two assistants, which materially reduced his income and still left him under the necessity of making thirty to forty visits a day. Taking an average of fifteen hours for a working day, and devoting half an hour to each patient, he would be reduced to simply a distributing agent of ready-made tablets. When later after giving up this field and attempting to engage in private practice nearby he found that the idea of the lodge practice had permeated the whole community and that it was impossible to secure anything like adequate fees. In another case, that of a young man taking a lodge practice, the figures carried out would mean 7½ cents per patient per visit. I think the remedy for the evil lies in an organized profession elevating the standard of education and of morals which will bring with it the proper self-respect until people will see and understand that medical men can not be had but for a just and equitable distribution of the things which come to all people of the community.

Dr. Henry B. Hemenway: For over twenty-five years I have been a contract practitioner. I have been the surgeon for railroads, for industrial plants, for the health department of a municipality, all of which positions are phases of contract practice. I have had a little experience in lodge practice, entered into as a matter of accommodation to some of my regular patrons, and my experience in that regard has not been unsatisfactory. Yet I gave up my position as a lodge physician and have refused further work of that kind. I feel that it is detrimental. The idea that we shall eventually have a universal contract practice somewhat as suggested by Dr. Hutchinson, keeping our people well, is not to my mind utopian.

Dr. F. Lawrence, Columbus: If there is anything that has placed ignominy on the medical profession it was the medical service in the Spanish-American War, which was based on contract practice. When a man is paid practically nothing for what he does and there is no necessity for him to put forth personal energy he is done great harm and the day competition is removed from between two men one or the other is at a standstill. Thirty or forty visits a day as required often under contract practice means absolute inability to study the case properly.

Dr. Tomlinson: I feel that in the end the man who gets the best return for his services is the man who by his conduct, skill, interest and enthusiasm in his work deserves it. To my mind, the greatest disadvantage in contract practice, particularly for young men, is the development of slovenly, indifferent and utterly unscientific methods by which they become merely purveyors of the wholesale drug house.

Dr. Tuckermann: American physicians have been digging their own graves by doing, from a humanitarian idea, charity work for communities well able to pay. The whole question of whether or not the contract is equitable rests on whether the amount to be paid will allow a man to return proper service to the community, keep up his education and educate his family. If it does not it is not a proper contract. Public contracts are not charity transactions, and when we expect men to conduct clinics, carry out school inspection, etc., for inadequate pay we are making a sad mistake.

Dr. Thomas D. Davis: Regarding the definition of contract practice, it does not seem to me that it is fair to say that when a man agrees to charge a fee for a certain amount of work that that is contract practice. That we all must do in our professional work. What I believe to be contract practice is agreeing for a certain sum to do a whole lote of indefinite work.

Dr. Joseph K. Weaver: My impression is that the time is not far distant when contract practice, at least, in Pennsylvania, will be discontinued entirely, as it is now in the Montgomery County Medical Society of the state.

Dr. C. S. Sheldon, Madison, Wis.: I was painfully conscious that in this symposium we could arrive at no set of conclusions, that the effort was more a groping about to get out of a bad situation. As Dr. Hutchinson has suggested, there are perhaps some good points in contract practice, notably in the fact that some persons who are unable to pay regular prices have the opportunity of paying small prices with the preservation of their self-respect.

Dr. H. T. Partree, Eatontown, N. J.: It has been well brought out that the indefiniteness of lodge practice is the absolutely objectionable feature, and, as Dr. Weaver has said, medical societies throughout the country are frowning upon this aspect of contract practice.

Dr. G. S. Mathews, Providence: The matter is one of education, not only of the younger members of the profession, but of those older. I believe all could be brought to the point of seeing the wrong in the present system.

Medicolegal

Competency of Physicians to Testify as Experts

The Court of Appeals of Maryland says, in United Railways and Electric Co. vs. Corbin, that while great latitude has been allowed in the examination of medical experts, they should not be permitted to express their opinions because they are physicians, but experts must be confined to subjects about which they are, or are presumed to be, acquainted. If a physician does not know more about the effect of a given cause than jurors or other people do, his opinion can be of no service in enabling the jury to reach a proper conclusion. A physician may be a very intelligent man, and may be very well versed in his profession, but that does not make him competent to speak as an expert of things he is not specially acquainted with.

A physician who had been practicing since 1895, being a graduate of a medical college and for six years connected with a hospital, was competent to express his opinion as to the mental condition of a woman whom he attended for four or five days after she received certain injuries and saw her a couple of times later when her condition was such that he called another physician in consultation and advised her to go to the country so as to avoid excitement, but did not see her again until a few days before the trial of the action she brought to recover damages for her injuries.

It can not be doubted that there may be cases in which the opinions of physicians on such subjects may have undue weight. The opinion of a family physician of a juror will naturally have more influence on him than that of some other physician whom he does not know, or does not have the same confidence in, and hence trial courts ought to be careful to see that a physician so called on to testify has either had the opportunity to form a correct opinion from his own knowledge of the person whose mental condition is being inquired into, or that it is based on all the facts in the case reflecting on the subject, which facts the courts should be satisfied are sufficient to enable him to form an intelligent opinion from. The weight of the testimony is for the jury, but its admissibility is for the court to determine.

But the law of Maryland does not require the physician to be an alienist—in the sense that he is a specialist in that line. If such were the law, it would often deprive the jury of such aid as an honest and intelligent physician could give them in reaching a proper conclusion. It would greatly add to the expense of such trials, and would often deprive those of limited means of mental testimony, if no one but a specialist should be permitted to testify.

Again, where a physician had testified that he had had two electric shocks himself, and had had three patients suffering from electric shocks, though the latter were shocks from lightning, and not from electric wires, the court thinks that such experience as he had had, taken in connection with his medical knowledge, was sufficient to justify the court in permitting him to answer the question whether the condition of the plaintiff "was such that might naturally and probably have been produced by an electric shock."

Commissioner of Health Authorized to Correct Name in Record of Births

The First Appellate Division of the Supreme Court of New York says, in the case of People, on the relation of Baker vs. Department of Health of the City of New York, that on the 15th of the month, when a male child was born to the Bakers, the mother stated to the attending physician that she intended to name the baby Edward Young Baker, Jr., and on the 23d day of the same month she reiterated that intention to him; the statement on each occasion having been made in answer to a question put by him. On the latter date the physician made a record of the birth of the child on his registry, and forwarded a certificate thereof to the department of health, and in it stated the name of the child as thus given to him by the mother. The father was not present on either occasion, and he was not consulted by the attending physician with respect to the name of the child. It did not even appear that the mother knew the purpose of the inquiry, or that the physician intended to state the name of the child in the certificate of birth, but it did appear that the mother had not sufficiently recovered from her illness to discuss with her husband the name of her child until some three weeks after his birth, when they decided to name him William Henry Baker, by which name he was baptized and christened. Some two years later another son was born to the same parents, and was named Edward Young Baker, Jr. The court is of the opinion that when the above facts were duly presented to him the commissioner of health was authorized to make correction on the public records of the name of the first child, and that it was his duty to make such correction. Authority is conferred on the commissioner of health to correct the records by Section 1241 of the Greater New York Charter, which provides that no change or alteration shall at any time be made in any of the records in the bureau of records of the said city without proof satisfactory to and on the approval of the commissioner of health.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

July 22

1 *Bearing of the Experimental Investigation of Tumors on the Tumor Problem in General. E. E. Tyzzer, Boston.
2 Primary Carcinoma of the Jejunum and Ileum. H. W. Soper, St. Louis.
3 The Occurrence of Infantile Paralysis in Massachusetts in 1908. (Second Paper.) R. W. Lovett, Boston.
4 An Epidemic of Infantile Paralysis in Western Massachusetts in 1908. H. C. Emerson, Springfield, Mass.

1. Experimental Investigation of Tumors.—Tyzzer studied a series of 62 primary tumors in mice, and of these, 37, or about 60 per cent., originated in the lung. The next most frequent type of tumor in his series is the lymphosarcoma, of which there were 10. Only 8 of the 62 tumors were situated externally, and of these 6 were epithelial tumors. There were 4 tumors of the kidney, 2 of which are undoubted hypernephroma. There were ovarian tumors in 2, and a sarcoma in 1 case. Different types of tumors frequently occur in a single animal. Of the 49 animals of this series, 11 presented primary tumors of two types, and 1 primary tumors of four types. In the latter there was a hypernephroma, a lymphosarcoma, a papillary cystadenoma of the lung and an adenocarcinoma of the ovary. About 25 per cent. of these cases, therefore, presented multiple tumors of different types. Multiple primary tumors were probably present in a far greater proportion, for in many cases the lung tumors were multiple and occurred not only in a single lobe but in several lobes.

From this study it is obvious that production of tumors by the experimental inoculation of tumor tissue is brought about by the transplantation of cells rather than by the introduction of a virus. The tumors, therefore, do not develop from the tissues of the inoculated animal, but from the transplanted tumor cells. Peculiar conditions are not essential for the continuation of this growth. Certain tumors grow in normal individuals. Other tumors, however, require a special soil; they grow if transplanted into other parts of the same individual, but not if transplanted to other individuals. Growth is found to depend on the biologic character of the cells and not on their dislocation. The experimental investigations have made untenable the interpretation of cancer as an infectious disease. The development of sarcoma in animals inoculated with epithelial tumors is interpreted by most investigators with whom it has occurred to be the result of the irritating influence of the tumor epithelium.

Medical Record, New York

July 24

5 Scleroma of the Upper Respiratory Tract. J. H. Güntzer, New York.
6 *Brain Arches. W. Wood, New York.
7 *Rare Forms of Cyanosis: Polycythemia, Methemoglobinemia, and Sulphhemoglobinemia. T. W. Clarke, New York.
8 *Secondary Carcinoma of the Lung. L. M. Warfield, Savannah, Ga.
9 Percussion of the Lungs. H. Dayton, New York.

6. Brain Arches.—Wood has been working for fourteen years comparing the brains of man and animals to establish the relations of the different parts of the cortex. He believes that he is able to demonstrate that the human cerebrum is composed of four grand rings, or arches, surrounding the limbus or rhinencephalon. All brains are reducible to a single form, but the relations can only be established by comparison of several kinds of animal brains. At the posterior lobe the four rings from below upward are taste, hearing, sight and contact, or centers for tongue, jaws, arms and legs. The marginal gyrus forms arch number one. Number two comprises the second frontal convolution, medicentral lobe, angular gyrus and occiput. Arch number three is the third frontal, infracentral and first and second temporal. The fourth arch comprises the gyrus rectus, insula and third temporal. Diagrams are given to illustrate the subject.

7. Rare Forms of Cyanosis: Polycythemia, Methemoglobinemia and Sulphhemoglobinemia.—Clarke states that the immediate cause of cyanosis, not due to cardiac or pulmonary disease, may be in the blood condition, hence the first thing to do in making the diagnosis is to make a blood examination. There may be an abnormally high red cell content, or polycythemia, generally associated with an enlarged spleen and chronic constipation. Cyanosis may be due to a change in blood pigment; if this is the presence of methemoglobin, the condition may be due to drug poisoning, or autointoxication by the absorption of nitrites from the intestines in chronic diarrhea. If the pigment is sulphhemoglobin, it is probably associated with chronic constipation, and is the result of the absorption of sulphuretted hydrogen from the intestine, or of the presence in the blood of an abnormal reducing agent acting on small traces of sulphuretted hydrogen. These cases improve as enteritis gets better, or as the bowel is kept open.

8. **Secondary Carcinoma of Lung.**—Warfield describes a case of secondary carcinoma of the lung, following a removed cancer of the breast. There was no recurrence in the scar or in the skin of the breast. The metastases in both lungs were widespread, but there was no enlargement of the superficial or mediastinal glands. The most characteristic symptoms were dyspnea, in paroxysms out of proportion to the physical signs, and the scanty sputum. There was little loss of flesh. The physical signs in the lungs pointed to emphysema and chronic bronchitis. Nodules were found throughout both lungs and the liver.

Lancet-Clinic, Cincinnati, O.

July 24

10 Pathology and Treatment of Arteriosclerosis. L. G. Heyn, Cincinnati.
11 Arthritis Deformans. S. E. Earp, Indianapolis.
12 Gallstones. R. J. Jones, Greenfield, Ohio.
13 Uterine Disease—Chronic Endometritis, Endocervicitis. C. S. Ashfield, Cincinnati.

New York Medical Journal

July 24

14 Conditions in the Growth of Tumors. L. Loeb, Philadelphia.
15 *Colles' Fracture: Special Reference to the Lateral Deformity. P. P. Swett, Hartford, Conn.
16 Loose Body vs. Sesamoid Bone in the Outer Head of the Gastrocnemius. E. H. Skinner. Kansas City, Mo.
17 *Teaching of Tropical Medicine Outside of the Tropics. E. R. Stitt, Washington, D. C.
18 Treatment of Diseases of the Intestine in the Greco-Roman Period. C. G. Cumston, Boston.
19 The Human Body Viewed as a Machine. A. B. Judson, New York.
20 Diagnosis of Congenital Syphilis in First Weeks of Life. LeG. Kerr, Brooklyn.
21 *X*-Ray for the General Practitioner. S. McClary, Philadelphia.
22 Cicatricial Stenosis of the Pylorus. H. Weinstein and R. Cronson, New York.

15. **Colles' Fracture.**—Swett emphasizes the fact that typical Colles' fracture presents an anteroposterior and lateral deformity of the lower end of the radius with impaction of the upper into the lower fragment. In severe cases this is complicated by fracture of the ulnar styloid and injury of the ligaments and cartilage. Treatment demands efficient reduction of the bony fragments in the beginning. For this an anesthetic is desirable, because impaction must be broken up to avoid lateral deformity and widening of the wrist. Restoration of the functional and anatomic integrity of the wrist demands immobilization till the bone is united. This period varies from three to five weeks. Protection of the joint must be continued till healing is completed and all of the original traumatic inflammation has subsided. This period is from six to eight weeks when the ligaments are injured and from eight to ten weeks when the cartilage is injured. Gradual return to use favors a perfect result and avoids unnecessary complications and sequelæ.

17. Abstracted in THE JOURNAL, May 8, 1909, p. 1537.

Denver Medical Times and Utah Medical Journal

July

23 Value of Roentgenographic Examination. G. H. Stover. Denver.
24 Modes and Source of Infection in Typhoid. M. A. Robison, Reno, Nev.
25 *Specific Treatment for Typhoid. L. T. Durbin, Denver.
26 A Sequela of Scarlatina. W. C. K. Berlin, Denver.
27 Guaiacol in its Relation to Therapeutics. E. I. Thorn, Salt Lake City.
28 Anatomical and Physical Points Bearing on Hernia. A. J. Hosmer, Salt Lake City.
29 Treatment of Suppurative Peritonitis Following Appendicitis. E. C. Rich, Ogden, Utah.

25. **Treatment of Typhoid.**—Durbin cleanses the gastrointestinal tract by means of calomel and distilled water by mouth and soapsuds enemata and colonic lavage with sterilized water. In severe cases he uses a 1 to 7,000 bichlorid of mercury solution followed at once by plain sterilized water. The irrigations are continued till the temperature falls to normal and remains there. Enemata are continued beyond this period.

Texas State Journal of Medicine, Fort Worth

July

30 Goiter with the Surgical Treatment of Hyperthyroidism. C. H. Mayo, Rochester, Minn.
31 Chorea. M. A. Kelso, Enid, Okla.
32 Proficiency vs. Commercialism. F. L. Barnes, Trinity.
33 History of the Early Meetings of the State Medical Association of Texas. S. O. Young, Galveston.
34 Sterilization of Male Insane. F. E. Daniel, Austin.
35 Ten Cases of Epidemic Meningitis Treated with Flexner's Antimeningitis Serum. J. C. Erwin, McKinney, Tex.

Montreal Medical Journal

July

36 *Empyema and Delayed Resolution in Lobar Pneumonia. T. McCrae, Baltimore.
37 Metastatic Gonorrheal Conjunctivitis: Demonstration of the Gonococcus in Smear and Culture. H. McKee, Montreal.
38 Pathologic Anatomy of Congenital Hip Dislocation. W. G. Turuer, Montreal.

36. **Delayed Resolution in Lobar Pneumonia.**—The points specially brought out by McCrae's study of a series of cases of empyema are the following: In the majority of instances empyema may be regarded as a complication of pneumonia rather than a sequel. It occurs relatively much more often in the colored than in the white race. Fever was the only manifestation always present. The physical signs are variable, and it is well to remember that vocal fremitus may be retained, even with a considerable amount of exudate. Of the physical signs, changes in the breath and voice sounds were the most useful single manifestations in diagnosis. The importance of the repeated use of the needle in all doubtful cases is emphasized. The study of this series of cases of delayed resolution suggests that the factors usually considered to be of importance as affecting its occurrence, such as apical involvement, advanced age, debility and cachexia, did not seem to have any influence. As regards age, three-fourths of the patients were between the ages of 17 and 40. The conditions which did seem to affect the incidence especially were (a) color, and (b) involvement of the lower right side. The colored showed a relatively high incidence as compared with the white race. The lower lobe of the right lung was concerned much more frequently than any other, both in the total number of cases and relatively in proportion to the number of cases in which it was involved in the pneumococcic process. The cause of this is obscure, unless it be diminished movement on account of the relationship to the liver. The physical signs show great variation and no general description can be given of them. This applies both to the signs during the continuance of the delayed resolution and during clearing. The diagnosis must frequently offer difficulty, and can often only be made by exclusion of other possibilities. Empyema and tuberculous pneumonia are the conditions which give the greatest trouble. As regards prognosis, while the danger to life is not great, it is never safe to predict absolute restoration in the lung. Permanent change may appear in a short time. The use of the *x*-rays is the most hopeful therapeutic measure, but these must always be used with caution and only after the diagnosis is positive.

Virginia Medical Semi-Monthly, Richmond

July 9

39 Treatment of Consumption. W. H. Coffman, Richmond.
40 Paranoia. J. T. Graham, Wytheville.
41 Scarlet Fever. J. D. Morgan, Washington, D. C.
42 Diagnostic Use of Tuberculin. M. Newton, Richmond.
43 Etiology and Pathology of the Summer Diarrheas of Children. E. P. Tompkins, Roanoke.
44 Placenta Prævia. W. F. Driver, New Market, Pa.

Journal of Ophthalmology and Oto-Laryngology, Chicago

July

45 Smith Operation for Cataract. D. W. Greene, Dayton, Ohio.
46 *Cannula in Lachrymonasal Duct for Twenty-eight Years. H. Worthington, Chicago.
47 Labyrinthine Nystagmus and Labyrinthine Disease. D. McKenzic, London.

46. **Cannula in Lachrymonasal Duct.**—Previous to 1881 the patient had suffered from chronic dacryocystitis, epiphora being the most troublesome symptom. During that year, 1881, he had a cannula inserted into the right lachrymal duct, which re-

mained in place without any attention until removed by Worthington in April, 1909, a period of over twenty-eight years. The patient states that until one year ago he had not the slightest discomfort from the cannula or the epiphora; the latter was practically entirely relieved. But during the past year he has been troubled with the epiphora, which has been getting worse until the past two months, when he has been greatly annoyed by it and wanted the cannula removed. The cannula was removed with little difficulty, and was found to be 1 3/16 inches long and markedly corroded. Material, gold. The openings along the sides were plugged up.

Journal Biological Chemistry, Baltimore

June

48 Mode of Oxidation in the Animal Organism of Phenyl Derivatives of Fatty Acids. Parts IV, V and VI. H. D. Dakin, New York.
49 Nuclein Ferments of Yeast. M. N. Straughn and W. Jones, Baltimore.
50 *Use of the Fermentation Tube in Intestinal Bacteriology. A. I. Kendall, New York.
51 *Metabolism of Man during the Work of Typewriting. T. M. Carpenter and F. G. Benedict, Boston.

50. **Fermentation Tube in Intestinal Bacteriology.**—Kendall supplements his previous article by considering the explanation of some apparent discrepancies met with in the routine use of fermentation tubes in the study of fecal bacteria. He finds that while the amount of gas produced respectively in dextrose, lactose and saccharose by inoculation with mixed fecal bacteria is about the same under normal conditions, the amount produced in lactose is usually slightly less and sometimes very much less. Lactose, generally speaking, is less readily attacked by the facultative intestinal organisms, introduced from without, than by the normal intestinal bacteria. The amount of gas produced in lactose, is, on the whole, more constant than is the case with either dextrose or saccharose so that broadly speaking the gas volume and the character of the Gram-stained sediments in this carbohydrate are better indices of the relative viability of the obligated intestinal flora than are those of the other two carbohydrates.

A diet rich in protein tends to increase the extent of the intestinal tract occupied by the bacteria of the subtiloid type —(organisms which liquefy gelatin, peptonize casein and do not form gas in carbohydrates, but may produce small quantities of acid in dextrose and saccharose, the action being usually alkalin in lactose) and also causes an increase of aerogenic bacilli, *B. coli*, etc., while the growth of acidophilic bacteria is restricted. In such instances, there is usually a decided augmentation of the gas volume above that characteristic of a mixed diet. A carbohydrate rich diet, on the other hand, results in a limitation of the liquefying bacteria, a more or less marked restriction of the development of the aerogenic forms, accompanied by decided increase in the acidophiles. The gas volume is decreased; the fermentation tube thus enables one to form a conclusion as to the distribution of bacteria in the intestinal tract.

51. **Metabolism During Typewriting.**—Carpenter and Benedict show that the energy required for the work of writing 1,500 to 1,600 words per hour on the typewriter is very much less than that required for walking along a level road at a rate of 2.7 miles per hour.

University of Pennsylvania Medical Bulletin, Philadelphia

July

52 *Relations of the Stomach to the Total Work of Digestion. A. E. Taylor, San Francisco.
53 Periportal Fibrosis of the Liver in Tuberculosis. R. S. Lavenson and H. T. Karsner, Philadelphia.
54 Intestinal Obstruction Due to Volvulus Through a Traumatic Mesentery Rent. J. B. Carnett, Philadelphia.
55 Variations in the Muscles and Nerves of the Human Body. G. Fetterolf, Philadelphia.
56 Is Arsenic Given off in Gaseous Combinations when Putrefactive Changes Occur in Tissues Derived from Animals Poisoned with Arsenic? J. Marshall and L. A. Ryan, Philadelphia.

52. **Relations of Stomach to Digestion.**—Taylor believes that the important functions of the stomach, physiologically and pathologically, are the motor functions; the lesser functions of the stomach, physiologically and pathologically, are the chemical or digestive functions. There is a striking zoölogic analogy in this. Despite the other differences in the acts of digestion in the carnivora, the omnivora and the ruminants, it is clear that in all, zoölogically and biologically the chief function of the stomach is to provide a repository for food, whereby the needs of the animal may be satisfied through infrequent feedings; to prepare the food for the work of intestinal digestion; and to deliver the food to the intestine in such a manner as to conform to its best utilization by the intestine. It would, of course, be going entirely too far to say, as has been said by several ultramodern surgeons, that the stomach is so dispensable an organ that it may be disregarded. Neverthless, it is true that a balanced review of the total functions of the viscus leads us to a proper appreciation of its motor functions and to a proper limitation of the scope assigned to its chemical or digestive functions.

Colorado Medicine, Denver

July

57 Cancer of the Pancreas: Report of a Case. C. B. Van Zandt, Denver.
58 Latent Pelvic Infections. C. B. Dyde, Greeley.
59 Appendicitis. C. H. Graves, Canon City.
60 Differential Diagnosis Between Appendicitis and Pelvic Disease. W. F. Church, Greeley.

New Orleans Medical and Surgical Journal

July

61 *Serum Diagnosis of Typhoid. H. P. Brown, Brierfield, Va., and J. H. Kinter, Philadelphia.
62 Treatment of Tuberculous Laryngitis. R. B. Homan, El Paso, Tex.
63 Physiologic Action of High Frequency Currents. A. Henriques, New Orleans.
64 Case of Sialolithiasis. A. Jacoby, New Orleans.
65 Ureterovaginal Fistula, a Sequel of Panhysterectomy; Wertheim's Operation for Carcinoma of Uterus; Cured by Ureterocystotomy. W. Kohlmann, New Orleans.
66 Acute Diverticulitis of the Large Intestine. C. J. Miller, New Orleans.
67 Typhoid, Running an Intermittent Temperature. E. Kiblinger and A. Kiblinger, Alexandria, La.
68 *Two Cases of Ludwig's Angina with Bacteriologic Findings in One. E. M. Williams, Patterson, La.
69 Musculospiral Paralysis Resulting from a Syphilitic Periostitis of the Humerus. R. M. Van Wart, New Orleans.
70 Two Cases of Pellagra. J. N. Thomas, Pineville, La.

61. **Serum Diagnosis of Typhoid.**—Brown and Kinter examined 252 consecutive cases of every description admitted to the Policlinic Hospital during a period of three months for the purpose of determining the value of the serum test for typhoid. The results of this examination are as follows: Cases of acute infection of typhoid type in which the reaction was positive, sixteen. Cases of acute infection of typhoid type in which the reaction was negative or questionable, seven. Cases in which there was no suspicion of typhoid in which the reaction was negative, two hundred and fifteen. Cases in which there was no clinical evidence of typhoid in which the reaction was positive, fourteen.

From this study the authors conclude, first, that a positive agglutination test with *Bacillus typhosus* indicates that the patient from whom the blood serum was taken has typhoid or has had typhoid within a comparatively recent period. Second, in the absence of a positive agglutination test the symptoms are due to some other infection which should be diligently sought for. In some cases it is possible that the agglutinins have not yet developed in sufficient quantity in the patient's blood to give a reaction in a dilution of one in forty. Subsequent tests would clear up this point. Third, the persistent absence of the reaction even in the presence of clinical symptoms of typhoid would justify a positive opinion that the disease was not typhoid. The most common infections which give a clinical picture of typhoid are miliary tuberculosis and paratyphoid fever. No case of the latter infection was encountered in the two hundred and fifty-two cases.

68. **Bacteriology of Ludwig's Angina.**—Microscopic examination of a smear of the pus taken from Williams' case showed streptococci in large number, associated with bacteria closely resembling the colon bacillus, the latter probably accounting for the distinctly fecal odor of the pus.

Yale Medical Journal, New Haven, Conn.

June

71 Cardiac Arrhythmia. W. R. Steiner, Hartford, Conn.
72 Foreign Bodies in the Vitreous and Interior of Eye in General. E. T. Smith, Hartford, Conn.
73 Fibroid Tumors of Uterus. P. H. Ingalls, Hartford, Conn.

American Journal of Surgery, New York

July

74 *Contribution to Intestinal Surgery. Aseptic Intestinal Anastomosis (Enteroenterostomy and Gastroenterostomy). V. Pleth and V. W. Pleth, Guadalajara, Mexico.

75 Ochsner Treatment of Appendicitis. J. U. Barnhill, Columbus, Ohio.
76 Orbital Route to Accessory Sinuses. P. Fridenberg, New York.
77 Trophic Joint Diseases. M. A. Austin, Indianapolis.
78 Esophageal Carcinoma. W. P. Lang, New Haven, Conn.
79 *Colles' Fracture. J. W. Andrews, Mankato, Minn.
80 *Indications for Obliterative in Contradistinction to Reconstructive Endoaneurismorrhaphy. W. J. Frick, Kansas City, Mo.

74. **Aseptic Intestinal Anastomosis.**—The gut-arms (or parts) to be united are laid side by side and approximated near their mesenteric borders by a continuous linen thread suture, passing through only the serosa, for a distance of 6 to 7 cm. This the authors term the "first posterior suture" and black thread may be employed for this. A second continuous suture is applied parallel with the first one and very close to it; large grasps of the intestinal wall are taken up so as to effectually compress the vessels; this they term the "second posterior suture" and it may be of white thread.

An ordinary long steel knitting needle is passed into the lumen of one limb of the gut and out again at the desired distance, the knitting needle being parallel with the "posterior sutures" and about 1 cm. from them; the distance between the points of entrance and exit of the needle being less than the length of the "posterior sutures." The same procedure is repeated on the other limb of gut to be anastomosed. The needles are now brought close together and held securely. A long narrow-bladed forceps is placed beneath the needles and, compressing the opposed portions of the intestines, is securely locked. A Paquelin cautery burns away that portion of the intestine, which "bridges" over the needles. Burn until the needles are released.

The "second posterior suture" (white thread) is now continued around in front until it reaches the starting point; this is the "first anterior suture." The handle of the compressing forceps should always be placed at the starting point of the intestinal suture. The compressing forceps are now gently removed and the free ends of the "second suture" are tied together. The "first posterior suture" is now continued around in front until it reaches its starting point, when the free ends are tied together; this is the "second anterior suture."

79. Abstracted in THE JOURNAL, Jan. 30, 1909, p. 415.

80. Abstracted in THE JOURNAL, Jan. 9, 1909, p. 159.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

July

81 Goiter in the Mother and its Manifestations in the Offspring. G. Schmauch, Chicago.
82 Involuntary Muscle Fibers of the Pelvic Floor. W. E. Studdiford, New York.
83 *Dry Heat as a Therapeutic Factor in Gynecology. G. Gellhorn, St. Louis.
84 *Large Polycystic Kidney. J. W. Bovée, Washington, D. C.
85 Etiology and Pathology of Bilateral Polycystic Degeneration of the Kidneys. J. S. Neate, Washington, D. C.
86 Sudden Death Following Spinal Anesthesia. C. B. Reynolds, Philadelphia.
87 *Adhesion of the Placenta. W. R. Wilson, Philadelphia.
88 The Uterine Tampon in Postpartum Hemorrhage. T. J. Crowe, Dallas, Tex.
89 How Far is So-Called Conservative Pelvic Surgery Conservative? J. T. Kelly, Washington, D. C.
90 *Pubiotomy. C. B. Reed, Chicago.
91 Facts Regarding Brooklyn's Summer Infant Mortality. L. C. Ager, Brooklyn.
92 Predisposing Causes and Prevention of Summer Diarrhea. J. W. Parrish, Brooklyn.
93 Hygienic and Dietetic Treatment of Summer Diarrhea. LeG. Kerr, Brooklyn.
94 Medicinal and Mechanical Treatment of Summer Diarrhea. A. D. Smith, Brooklyn.

83. **Dry Heat in Gynecology.**—Gellhorn says that the employment of hot-air boxes or chambers is invaluable in the treatment of chronic exudates, irrespective of their location in the parametric tissues or in the pelvic peritoneum. The results obtained with hot-air in this affection can not be approached by any other method. The prompt objective improvement is intensified by an almost instantaneous relief from pain. The hot-air therapy has also been very promising in the treatment of certain menstrual disorders, notably amenorrhea. Furthermore, hot-air treatments have been found exceedingly useful in a number of conditions arising after operations, such as infiltration of the incision, postoperative fistulæ, paralysis of the intestines, etc. With growing experience, the sphere of usefulness for this new mode of treatment is likely to extend still further. As its application is quite simple, it is equally suited to hospital or private practice.

84. **Large Polycystic Kidney.**—According to Bovée the treatment of this condition is non-surgical, except in two conditions: 1. When the disease is unilateral or reasonably concluded to be so, and 2, when the cysts are so large as to be burdensome in any way. In the former, incision or possibly nephrectomy is advisable. If the ureter or other part of the purely waste-bearing portion of the corresponding half of the urinary tract is hopelessly obstructed beyond a period of six weeks, the function of the corresponding kidney will be permanently suspended and nephrectomy is preferable to incision or multiple incisions. But if urine is found to be pouring from both ureters, then nephrectomy should not be done, save in the very exceptional unilateral polycystic kidney. When it is at all apparent that the presence of the disease in one kidney had a tendency to stimulation of its development in the other kidney, Bovée would feel less positive in this matter. In the second condition puncture or incision seems applicable whether the disease be unilateral or bilateral. If cystoscopy reveals both ureters to be functionating, then, even though but one kidney is involved, nephrectomy should not be performed, except in the rarest circumstances—such as hemorrhage limited to the affected side.

87. **Adhesion of Placenta.**—It is Wilson's belief, first, that adhesion of the placenta occurs through overgrowth of the fetal portion from the necessity in some instances of securing the proper source of nutriment; second, in a practical sense, that the presence of complete adhesion should be suspected in cases in which in the third stages of labor efforts at expression fail, especially in the absence of bleeding.

90. **Pubiotomy.**—Reed believes that pubiotomy commends itself to the general practitioner because: 1. It is a desirable method of securing the delivery of 75 per cent. of his contracted pelvis cases, with best results for mother and child. 2. The cases of difficult version and extraction and difficult forceps will be reduced to a minimum, or if done will be done under the most favorable conditions. 3. The technic of the operation is simple and easily acquired. 4. The dangers are few and mostly to be avoided by any one with moderate surgical training and conscience. 5. The operation can be done in a very few minutes. 6. The labor is made easier and the chances for a living child are greatly improved. 7. It can be done in the home of the patient. 8. Only a very small armamentarium is required. 9. In many cases the pelvis is permanently enlarged, so that a subsequent labor may be normal.

Iowa Medical Journal

July 15

95 *Local Anesthesia in Hernia. A. C. Stokes, Omaha, Neb.
96 Infections Complicating Labor from a Clinical Viewpoint—Treatment. H. G. Welpton, Des Moines.
97 Unusual Skin Infections. W. F. Waugh, Chicago.

95. **Local Anesthesia in Hernia.**—Stokes uses the novocain and adrenin solution of Braun. The patient is given 1-4 gr. of morphin and 1-100 of hyoscin one hour before the operation is to begin. After arriving at the operating room the field of operation is prepared, as usual, and the local anesthetic is injected along the proposed line of incision and endodermically catching as many nerve endings as possible. Incision is then made through the skin and deep fascia to the aponeurosis of the external oblique. The external ring is laid bare and the area about it is anesthetized. Search is made for the hypogastric branch of the ilio-hypogastric, which makes its exit about three-quarters of an inch inward and one inch upward from the inner and upper angle of the external ring. Having found this nerve, it is blocked at its exit from the aponeurosis of the external oblique. It may be necessary to use a slight amount of the anesthetic in the aponeurosis of the external oblique, after which the aponeurosis is cut according to an approved method and separated from the internal oblique, and the ilio-inguinal nerve is seen to make its exit from the internal oblique a short distance above the border of the internal abdominal ring. This nerve is now loosened, and one may either dissect it out in its passage

down the inguinal canal to the external ring in front of the cord, or if time is an element, the nerve may be blocked at its exit and the operation continued. If it is dissected out it may be laid aside and the operation continued without blocking. This method is the most scientific but also the most tedious. The ilio-inguinal traverses the inguinal canal and makes its exit at the external ring where it supplies the integument over this area and a part of the scrotum.

The third and last nerve to be dealt with is the genital branch of the genitocrural. This nerve is often difficult to find, but the discovery of the same and the blocking of it is the most necessary part of the operation for the hernia. When this is done the dissection of the sac and the removal of the same is accomplished without much pain, and without disturbing the patient in any way. Occasionally it has been necessary to infiltrate the neck of the sac before removing same.

Stokes recommends that Braun's original solution be somewhat changed, i. e., that a larger per cent. of novocain be used, i. e., up to about 2 per cent. The anesthesia is more perfect and lasting. His experience with these cases has so far been very gratifying, and he is now recommending local anesthesia in nearly every hernia case.

Medical Fortnightly, St. Louis

July 10

98 Infant Morbidity and Infants' Milk Depots. I. S. Wile, New York City.
99 Some Reasons for Believing in and Encouraging Brain Surgery. C. D. Center, Quincy, Ill.
100 Surgical Treatment of Tubal Inflammation and Pelvic Abscess. C. R. Dudley, Hannibal, Mo.

American Journal of Physiology, Boston

July

101 *Can Functional Union be Re-established between the Mammalian Auricles and Ventricles after Destruction of a Segment of the Auriculoventricular Bundle? J. Erlanger, Madison, Wis.
102 Pseudofatigue of the Spinal Cord. F. S. Lee and S. Everingham, New York.
103 Innervation of the Coronary Vessels. C. J. Wiggers. Ann Arbor, Mich.
104 *Coagulation of Blood. L. J. Rettger, Baltimore.

101. **Re-establishment of Functional Union Between Auricle and Ventricle.**—Erlanger concludes: 1. That functional union can not be re-established between two parts of the heart whose functional continuity has been completely severed by thorough destruction of the connecting heart tissue. There is not the slightest hope of relieving heart block thus caused either by surgical interference or by the operation of natural regenerative processes. 2. That the cardiac excitation wave is not conducted through the auricle by the nerve trunk located in its tissue. 3. That the cardiac impulse is conducted through muscle fibers rather than through nerve fibers.

104. **Coagulation of the Blood.**—Current theories of the coagulation of the blood generally assume that it is a process of fermentation. Rettger concludes from his investigation that the coagulation of blood is probably not a fermentative process. It is usually understood that ferments act in the manner of a catalytic, and that they are thermolabile. The coagulation of blood, on the contrary, is, in the first place, clearly a quantitative reaction, and is probably, as stated by Nolf, a mutual precipitation of two colloids, fibrinogen and thrombin. The partial clots which never proceed farther, the successive clots which may be formed by successive additions of definite amounts of thrombin, and the approximate equality in amount between the sum of these successive clots and a maximum initial clot, indicate a definite quantitative proportionality. Careful quantitative weighings of the fibrin formed showed such a direct proportionality between fibrinogen and thrombin as would be required in a definite chemical combination of two substances. The further resistance of the thrombin in aqueous solution relatively free from dissolved proteins to boiling temperatures is a property not usual with the ordinary catalytic ferments. The recovery of thrombin from protein solutions, such as serum, which have become inactive on standing, or by being heated to 60 C., points toward the same conclusion. Such a recovery, whether by activation with alkali or acid or by putrefactive changes, is believed to depend on the dissociation of the combination of thrombin with some protein other than fibrinogen. In a similar way, the partial recovery of thrombin from fibrin, according to Gamgee's method, is more than the solution of mechanically absorbed amounts. The three main reasons given by Schmidt originally as proofs of the truly fermentative nature of his ferment are as follows: (a) Minimal amounts of "fibrin-ferment" will produce a complete coagulation. (b) The artificial serum contains after coagulation unused ferment with which several successive clots may be produced. (c) The ferment is destroyed at 100 C.

The first point has been shown to be incorrect. Minimal amounts produce correspondingly small clots. The quantitative relationship holds with all submaximal amounts of thrombin added to a fibrinogen solution if a submaximal amount has been added. If the clots are removed after four to twenty-four hours, the remaining fibrinogen solution remains fluid, but clots promptly form again on addition of further amounts of thrombin. The probabilities are therefore that the action of the thrombin is in no way that of an ordinary catalytic agent, but that the formation of the fibrinogen is essentially the mutual precipitation of two colloids from the plasma. The existence of a proferment or thrombogen or of kinase or coagulins is improbable.

The active coagulating agent is thrombin, whose properties and reactions were the chief questions of inquiry in this work. It is derived from the formed elements, in all probability, at the moment of their rapid disintegration when placed under abnormal conditions. In this pro-stage it is inactive in the blood. To become an active precipitating agent it is believed that minimal amounts of calcium salts enter chemically into the molecular complex.

The action of oxalates and fluorids in preventing coagulation is primarily the same. Both salts act by removing the calcium. In the oxalated plasma the free calcium is definitely precipitated; in the fluorid plasma the free calcium remains bound in solution. Dialysis or extreme dilution breaks the loose connection and thrombin results. Excess of calcium salts clots oxalated solutions at once. Excess of calcium salts of sufficient concentration clots fluorid plasmas, after the fluorid-calcium-protein combination is precipitated by this method. In both plasmas great excess of calcium salts inhibits and finally prevents coagulation, although it would seem that fluorid plasma is in this respect more readily inhibited than the oxalate plasma—a difference which may result from the formation of the heavy precipitate in the fluorid blood.

Quarterly Bulletin Northwestern Medical School, Chicago

June

105 *"Trachoma Bodies" Possibly the Etiologic Factor of Trachoma. B. Pusey, Chicago.
106 *Communicability of Vincent's Angina. W. H. Buhlig, Chicago.
107 Anomalous Insertion of the Pectoralis Major. H. M. Richter, Chicago.
108 *Fracture of Acetabulum with Displacement of Femoral Head into the Pelvic Cavity. W. E. Schroeder, Chicago.
109 Comparative Histology of Tonsillar Tissues. F. Menge, Chicago.
110 Clinical and Physiologic Aspects of Rupture of Chyle Duct. W. S. Hall and W. E. Morgan, Chicago.
111 Treatment of Nasal Hemorrhage. C. B. Younger, Chicago.
112 Paget's Disease of the Nipple and Areola Treated with *X*-Rays. F. E. Simpson, Chicago.
113 Food Disorders in Infancy. F. X. Walls, Chicago.
114 Indications for Operation on the Thyroid Gland. H. M. Richter, Chicago.
115 The Cammidge Reaction in the Urine. W. H. Buhlig, Chicago.

105. **Trachoma.**—Pusey reports the finding, in a case of his own, of Halberstædter and Prowazek's "trachoma bodies" in smears stained with Giemsa's stain, taken on the third day of invasion. Many attempts at cultivation failed. These bodies are found in acute trachoma at the beginning of the disease, and are not found in conjunctivæ other than in cases of trachoma.

106. **Vincent's Angina.**—Buhlig reviews a number of cases of Vincent's angina, and concludes that it is necessary to believe that the condition is communicable within narrow limits. He calls attention to the purse-string tobacco bag frequently passed from one to another, the string being drawn tight by the teeth, as a possible medium of infection.

108. **Fracture of Acetabulum.**—Schroeder discusses this question on the basis of 49 collected cases, the last three being

his own. He suggests that in cases where there is any question as to the seriousness and extent of the injury, an exploratory operation should be made through Poupart's ligament. This will allow ample space for the repair of the injured structures and viscera commonly associated with this serious accident.

St. Paul Medical Journal

July

116 Vaccine Therapy in Genitourinary Diseases. H. L. Ulrich, Minneapolis.
117 Acute Diffuse Edema of the Lungs. G. Cross, Minneapolis.
118 Fused (Horseshoe) Kidney. B. Robinson, Chicago.
119 Expert Testimony as Seen and Rendered in South Dakota, with Suggestions of what is Needed. E. Klaveness, Sioux Falls, S. D.
120 Puerperal Eclampsia. F. Leavitt, St. Paul.
121 Forceps, Their Use and Abuse. H. T. Nippert, St. Paul.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

July 10

1 Unilateral Optic Neuritis from Intracranial Tumor. Sir W. R. Gowers.
2 Ionic Medication in Treatment of Obstinate Cases of Pelvic Diseases in Women. S. Sloan.
3. *Spontaneous Cure of Thoracic Aneurism. H. S. French.
4 *Treatment of Gonococcus Infections by Vaccines. J. W. H. Eyre and B. H. Stewart.
5 Delayed Chloroform Poisoning. T. C. Somerville.
6 Splenectomy for Injury. J. C. Renton.
7 Goiter. H. N. Crowe.
8 Modified Plan for Preparation of Chromic Catgut. C. H. Christal
9 A Medicolegal Case. W. H. Haw.

3. **Spontaneous Cure of Thoracic Aneurism.**—French performed a necropsy on a woman, aged 74, who came under observation nine hours before her death suffering from acute dyspnea associated with râles and rhonci all over both lungs, and yet with so little available history that a precise diagnosis could not be made. She died apparently from acute edema of the lungs, and at the postmortem examination it was found that she had typical granular kidneys, adherent pericardium, and a healed thoracic aneurism. It is difficult to say for certain whether the aneurism itself accelerated death, but had there been no aneurism at all one would have been content, from the postmortem appearances, to diagnose acute edema of the lungs the result of atrophic red granular kidneys. The distance between the aortic valves and the orifice of the innominate artery was stretched and lengthened so as to measure six inches, and in the middle of this, on the right side three inches above the aortic valves, was a brown opening less in diameter than a sixpenny piece (10-cent piece), with calcareous edges, through which the finger-tip could just be inserted, to come into immediate contact with a hard material which was found to be firm, laminated and extensively organized contents of a saccular aneurism, which looked nearly the size of a tennis ball and was spherical and approximately three inches in diameter. This aneurism, except quite close to its aortic orifice was entirely filled with hard, laminated, fibrosed clot, which was everywhere adherent to the wall of the sac and so hard that it could not be broken down by the fingers; nor could the fingers be pushed between it and the wall of the aneurism. The contents of the sac came right up to the level of the wall of the aorta, so that the aneurism could truly be said to have been spontaneously healed.

4. **Gonococcus Infections and Vaccines.**—Eyre and Stewart made an unusually careful clinical study of the value of the vaccine treatment in 53 cases of gonorrhea of varying grades of severity. They found that in acute gonorrhea the gonococcus vaccine is markedly toxic and exerts a profound influence over the disease. For routine work (hospital outpatients, etc.), vaccine treatment is not devoid of danger and requires the exercise of considerable caution. A stock vaccine, comprising a dozen different strains, gives results only slightly inferior to those observed when using a vaccine prepared from the patient's own organism. This is not the rule in most other diseases. Small doses, repeated at short intervals, are more effective than large doses at lengthened intervals. Small doses of vaccine (from 1,000,000 to 10,000,000) are safer and more satisfactory than the large doses (from 50,000,000 to 100,000,000) which are often prescribed. After an injection of from 500,000 to 2,000,000 the negative phase is either absent or extremely transient. An inoculation of from 5,000,000 to 10,000,000 causes a negative phase of usually not longer than 48 hours' duration, followed by a positive phase of from three to five days. Vaccines in small doses serve the double purpose of raising and steadying the opsonic index. A steady index just above the normal is found to be the most favorable condition for rapid recovery. In simple chronic gonorrhea in which the gonococcus has ceased to be the infecting organism these cases are on a par with other chronic inflammatory states, but are frequently more difficult to cure owing to environment and local conditions. Chronic cases in which the gonococcus is the sole infecting organism have a better prognosis from the point of view of treatment by vaccine than a mixed infection or one of staphylococcus only. In chronic gonorrhea with complications, the estimation of the opsonic index is helpful to diagnosis and is a useful means of determining approximately the opsonic state of the blood. Chronic gonococcus infections, however, present clinical features which themselves afford valuable indications during the course of vaccine treatment. When the gonococcus alone is the infecting organism, if the opsonic index can not be obtained so frequently as is desirable, routine injections of from 1,000,000 to 2,000,000 doses every three to five days are safe and satisfactory; a lapse of five to seven days after doses of 5,000,000; an interval of eight to ten days after inoculation of 10,000,000. Larger doses than these are seldom desirable. Treatment by small and gradually increasing doses at frequent intervals should at all times be observed; the use of large doses is even more dangerous than in acute cases, and may be followed by disastrous consequences. In orchitis, small doses of vaccine quickly relieve pain and cause a more rapid abatement of symptoms than obtains by the usual routine treatment alone. In iritis the severe pain, which is a marked and obstinate feature, is relieved in 48 hours after an injection, and disappears in from three to four days; cure is much hastened. In arthritis the treatment is of considerable value.

British Medical Journal, London

July 10

10 *Treatment of Chronic Degenerative Lesions of the Heart and Aorta. Sir J. Barr.
11 Blood Pressure in Man. Sir L. Brunton.
12 Diagnosis and Operative Treatment of Chronic Gastric and Duodenal Ulcer. D. Drummond and R. Morison.
13 Pain in Mucous Colitis and in Irritable States of the Colon in General. T. S. Wilson.
14 Intussusception Accompanied by Polypus and Stricture. R. V. de A. Redwood.
15 Impaction of Gallstone in Small Intestine: Laparotomy: Recovery. H. Ross.
16 Empyemata Associated with the Bacillus Coli Communis: Treatment by Antitoxin. J. S. Pearson.
17 Quinin in Syphilis. H. C. French.

10. **Chronic Gastric and Duodenal Ulcer.**—Drummond and Morison emphasize the necessity and value of cooperation between physicians and surgeons in the effectual handling of these cases. During three and a half years they saw 123 cases, in which a diagnosis of chronic gastric and duodenal ulcer was made which were treated by gastroenterostomy. Of these cases, 72 were gastric, 28 were duodenal, and 23 were not classified. Of the total number of patients on whom gastroenterostomy was performed, 118 recovered, and 5 died. In several of these other operations in addition to gastroenterostomy were done at the same time.

Gastric Ulcers.—The cases numbered 14, all in women; 8 of these report themselves as perfectly cured at periods of from 4 years to 18 months since the operation. Two are very much improved, but still have some symptoms. One of these, operated on twenty months ago, has no vomiting now, and only occasional gastric discomfort, but has had two attacks of melena. She had an ulcer on the lesser curvature of the stomach. The other, operated on two years and ten months ago, has to be careful of what she eats. Three can not be traced. One patient died.

Ulcers of the Pylorus.—These presented symptoms of active ulcer but without stenosis. There were 16 cases, 10 men and 6 women; 12 have been traced, and of these 10 are completely cured, 2 still have some symptoms but are greatly improved; 4 can not be traced.

Cicatricial Stricture of the Pylorus (the result of ulceration.)—There were 36 cases, 20 men and 16 women: of these 3 can not be traced, 29 report themselves quite cured, 2 report that they are no better.

Hour-Glass Contraction of the Stomach.—There were 6 cases, 5 women and 1 man. Five report themselves cured; 1 states that she is greatly improved, but still has occasional pain after food. In 4 of these cases on account of the amount of contraction present, gastroplasty was performed in addition to gastroenterostomy; 1 had cholecystotomy (for gallstones), gastroplasty, and gastroenterostomy. Of these 4, 3 are cured. The fourth is the patient who reports improvement.

Duodenal Ulcers.—There were 28 cases, 25 men, 3 women. Five of these had stenosis of the duodenum, in addition to active ulceration; 20 report themselves perfectly cured, able to take any kind of solid or liquid food without trouble, and in good health. One patient, a man, aged 36, had gastroenterostomy performed in 1904 for duodenal ulcer. He remained well until 1906 when his symptoms recurred, and an operation was done for occlusion of his pylorus. He remained well, so far as his digestive system was concerned, but died in July, 1908, of phthisis pulmonalis. Two report themselves improved, but still have stomach symptoms; 1 of these was operated on only a year ago, and still continues to improve, his old symptoms though present, being less marked. In the other, on looking up the notes, the only evidence of organic mischief was adhesions round the first part of the duodenum, but no ulcer could be felt from the inside. One is not improved; 2 died.

Various.—There were 23 patients under this heading; 3 had both gastric and duodenal ulcers. Posterior gastroenterostomy was performed in all. They are all now quite well. Three patients were operated on, but no certain evidence of ulcer was obtainable. Seven had a tumor at the pylorus which was thought to be an inflammatory mass round an ulcerated area. Of the 7, 4 can not be traced (suggestive of malignant disease and death). In 2 cases stricture of the jejunum, one tuberculous, one malignant, less than a foot from its origin, led to stomach dilatation, and caused pain and vomiting. They were mistaken for gastric ulcers and operated on by posterior gastroenterostomy, the junction being effected beyond the stricture. Both recovered. In 6 cases other conditions—cirrhosis of the liver in 1, pancreatic disease in 1, neurasthenia in 4—existed as complications, and the remote results following operation on the stomach have been unsatisfactory, for none of them is materially benefited.

Medical Press and Circular, London

June 30

18 Clinical Examination of Spinal Cases. J. J. Clarke.
19 Dilatations of the Female Urethra. R. D. Purefoy.
20 Roentgen Rays in Diseases of the Stomach. V. Schmieden.
21 Prevention and Treatment of Dysentery. W. J. Buchanan.

Clinical Journal, London

June 30

22 Interpretation of a Temperature Chart. N. Moore.
23 Natural History of Cancer of the Uterus. J. Bland-Sutton.
24 *Treatment and Prognosis of Cases of High Arterial Blood Pressure. O. K. Williamson.

24. **High Arterial Blood Pressure.**—Of 17 patients showing a blood-pressure upward of 200 mm. which first came under Williamson's observation in 1906 and 1907 he has been able to follow up 13, of whom 8 have died and 5 are still living (February, 1909). Two of the patients died from cerebral hemorrhage, 3 as the result of chronic interstitial nephritis, one from "heart trouble" (this patient had aortic incompetence), and 2 from unknown causes. Moreover, the longest interval between the date of first observation and that of the death of any of these 8 patients was a year and a quarter.

Practitioner, London

July

25 The Dietary for Goutily-Disposed Persons. Sir D. Duckworth.
26 *Treatment of Uric Acid. J. F. Goodhart.
27 Treatment of Gout in Its Various Forms. A. P. Luff.
28 Relation of Gout to Granular Kidney and to Lead Poisoning. S. West.
29 Cardiovascular Manifestations of Gout. P. Kidd.
30 *Gout in Relation to Disease of the Nervous System. J. Taylor.
31 Cutaneous Manifestations of Gout and their Treatment. J. Galloway.
32 Balneologic Treatment of Gout with Special Reference to Bath. G. A. Bannatyne.
33 Balneologic Treatment of Gout. W. R. Gore.
34 Balneologic Treatment of Gout at the Continental Spas. S. Rendall.
35 Changes in the Joints in Gout. C. G. Watson.
36 Metabolism of Nucleins in Gout. I. W. Hall.
37 Gouty Throat. J. E. McCracken.
38 Recent Literature of Gout. A. W. Sikes.

26. **Treatment of Uric Acid.**—Goodhart claims that all the uric acid solvents, so much vaunted, appear to be equally useless for that special purpose, but salines have their value, if given with discrimination, for facilitating the excreting power of the several abdominal glands. And in this way water is probably one of the best remedies, but even water drinking, if excessive, is not to be indulged in with impunity, for Goodhart says he is by no means prepared to assent to what appears to be the popular belief that water being harmless, it matters not what amount is imbibed in the 24 hours. In his opinion, the late Sir William Robert's simple prescription of half a dram of bicarbonate of potash in a tumbler of water at bedtime, to stem the nightly acid tide, is on the whole, one of the most useful recommendations, apart from tonics, cures at watering-places, and change of scene and air.

30. **Gout in Relation to Disease of Nervous System.**—Taylor believes that the relations of gout to diseases of the nervous system are, for the most part, indirect. An acute attack of gout may be ushered in or accompanied or succeeded by grave nervous disturbances—even acute maniacal disorder—but this is not common. Severe neuralgic pains, in parts other than that acutely inflamed, and considerable irritability or depression, may be present during an attack of gout, but no grave structural alteration in the nervous system is to be apprehended as an immediate concomitant or effect of the seizure. Yet it can not be denied that manifestations of nervous disorder, frequently of considerable importance, tend to occur in gouty persons, and many such diseases are directly or indirectly the result of the gouty state.

Glasgow Medical Journal

July

39 Shakespere Doctors. W. Findlay.
40 Pathology and Treatment of Atrophic Rhinitis. J. Adam.
41 Study of Some Schools and School Children in Glasgow. D. McKail.

Journal of Laryngology, Rhinology and Otology, London

July

42 *Fourteen Cases of Intracranial Disease Complicating Middle-Ear Suppuration. A. L. Turner.
43 Modifications Introduced into Bronchoesophagoscopic Instrumentation as the Results of Experience. Dr. Guisez.

42. **Intracranial Disease Complicating Middle-Ear Suppuration.**—Turner reports fourteen cases in all of which an operation was done. The diagnosis of leptomeningitis was not regarded as a contraindication to operative intervention, as it was considered right to remove the primary focus of infection in the middle ear cleft, and by the repeated lumbar puncture to remove so far as possible the infected cerebrospinal fluid. Of the fourteen patients, four recovered and ten died. The four successful results were obtained in uncomplicated cases of sigmoid sinus thrombosis, two patients complaining of acute and two of chronic middle ear suppuration. A patient with uncomplicated cerebellar abscess survived for two and one-half months after operation, but at the end of that time died from meningitis. If the eight patients with leptomeningitis be deducted from the total, we have 6 without meningitis, of whom 4 recovered and two died, the two fatalities being the case of cerebellar abscess just referred to, and a second case of cerebellar abscess with sinus thrombosis. In the latter case death resulted from septic encephalitis in connection with the cerebellar wound; obliteration of the sinus followed the operation, and no further trouble was experienced with it. The cases of sinus thrombosis were the most satisfactory to deal with. In all of them the internal jugular vein was divided between the two ligatures as a routine practice, and the upper part of the vein and jugular bulb syringed out; thorough removal of the clot from the upper part of the sinus was recognized by the free bleeding which occurred

Annales de Gynécologie et d'Obstétrique, Paris

June, XXXVI, No. 6, pp. 321-384

44 Electricity in Gynecology. Indications and Technic. A. Zimmern.
45 Primary Cancers of Greater Omentum. (Tumeurs malignes primitives du grand épiploon.) L. Litchkous.

Annales de Médecine et Chirurgie Infantiles, Paris

June 15, XIII. No. 12, pp. 397-432

46 Pulmonary Tuberculosis with Cavities in Children. (Tuberculose pulmonaire caverneuse chez l'enfant.) E. Gaujoux and Brunel.

Grèce Médicale, Syra, Greece

XI, Nos. 1-2. pp. 1-4. Last indexed July 17, p. 241

47 Hemoglobinuric Fever of Chemical not of Direct Parasitic Origin. (La fièvre hémosphérinurique est-elle palustre?) J. Foustanos.

Presse Médicale, Paris

June 30, XVII, No. 52, pp. 465-472

48 Infantile Paralysis of the Muscles of the Foot. Treatment by Partial Arthrodesis. C. Ducroquet and P. Launay.

July 3, No. 53, pp. 473-480

49 Infection of the Blood by Bacteria from the Intestines. (Infection du sang par les bactéries de l'intestin.) Garnier and L.-G. Simon.
50 *Disinfection of Books. (Désinfection de livres.) P. Desfosses.

July 7, No. 54, pp. 481-488

51 *Vomiting from Chloroform. (Vomissements chloroformiques.) P. Blanluet.

50. **Disinfection of Books.**—The introduction of the Marsoulan system seems to have solved the problem of a simple, effectual method of disinfecting books without injury. According to the description given by Desfosses, the books are automatically beaten and the dust and air are constantly aspirated by a vacuum tube. After this the books are suspended by a clip holding the covers of each book, opened backward, and the frame containing the horizontal tiers of books is run into an oven where they are subjected to heat and the fumes of formaldehyd. This method is said not to harm the paper or bindings, while it is inexpensive, practical and sufficiently effectual to answer the desired purpose for circulating libraries and for school books. [An illustrated description of the same process is given in the *Scientific American*, July 24, 1909.]

51. **Vomiting from Chloroform.**—Blanluet remarks that the vomiting from chloroform is not only annoying but impairs the solidity of the suture and weakens the patient while postoperative pneumonia and bronchitis, he is convinced, are due more frequently than generally supposed to inhalation of solid or fluid particles during the vomiting. Flemming has recently reported a remarkable instance of this: A healthy young man vomited during a herniotomy, and auscultation at once revealed large subcrepitant râles at a point where twenty-four hours later bronchopneumonia developed. Blanluet even asserts that many early fatalities as chloroform is given are in reality due to the nausea and retching; the closure of the glottis accompanying the latter imprisons in the body an excessive amount of the chloroform and carbon dioxid while preventing intake of oxygen. The patient should be given a light diet the day before the operation, peptonized milk predominating, and some sedative will be found useful by reducing the amount of the anesthetic necessary. The tendency to vomit is increased, he thinks, by movement of the body, especially when the anesthesia is not complete, consequently he advises keeping the patient still under the influence of the anesthetic until he is safely returned to bed. Of equal importance is the maintenance of an even temperature of the body, and removal of the patient from an atmosphere charged with chloroform. Inhalation of oxygen after the operation may also aid in prevention of vomiting. If there has been much secretion and swallowing of saliva, lavage of the stomach, before the patient regains consciousness, may be advisable. If vomiting occurs, the tendency may be corrected by cold applications to the stomach or injection of ergot or picrotoxin. Paterson makes a practice of injecting 1 c.c of a 2 per cent. solution of picrotoxin after the operation, repeating the injection with half the dose if a tendency to vomit develops, and has reported good results.

Semaine Médicale, Paris

June 30, XXIX, No. 26, pp. 301-312

52 Hysterical Aphasia. G. Marinesco.

Archiv für klinische Chirurgie, Berlin

LXXXIX, No. 3, pp. 505-853. Last indexed July 3, p. 83

53 Injury of Pulmonary Vein. (Fall von Verletzung der Vena pulmonalis.) A. v. Eiselsberg.
54 *Unusual Metastases of Tumors. (Einige Fälle von seltenen Geschwulstmetastasen.) P. Clairmont.
55 *Operative Treatment of Brain Tumors. (Zur chirurgischen Behandlung von Hirntumoren.) H. Leischner.
56 Experimental Transplantation of the Hypophysis into the Spleen. (Transplantation der Hypophyse in die Milz von Versuchsthieren.) P. Clairmont and H. Ehrlich.
57 Operative Treatment in 61 Cases of Cleft Palate. (Uranoplastik.) E. Ranzl.
58 *Arteriomesenteric Occlusion of the Duodenum. (Zur Frage des arteriomesenterialen Duodenalverschlusses.) H. v. Haberer.
59 *Radical Operation of Carcinoma of the Large Intestine. (Radicaloperationen des Dickdarmcarcinoms.) W. Denk.
60 Functional Capacity of Lateral Enteroanastomosis. (Leistungsfähigkeit der lateralen Enteroanastomosen.) H. v. Haberer.
61 *Value of Colostomy in Inoperable Carcinoma of Large Intestine, and of the Rectum. (Werth der Colostomie bei inoperabeln Dickdarmcarcinomen, besonders bei Carcinomen des Mastdarms.) P. Odelga.
62 Primary Bilateral Mammary Carcinoma and True Umbilical Adenoma. (Zur Beurtheilung multipler Tumoren.) H. Ehrlich.
63 Deforming Osteitis. (Zur Kenntniss der Ostitis deformans Paget.) E. v. Kutscha.
64 Case of Multiple Enchondromas and Exostoses. H. v. Haberer.
65 New Method of Treating Habitual Dislocation of the Shoulder by Plastic Operation on the Muscles. (Zur Behandlung der habituellen Schulterluxation mittels Muskelplastik.) P. Clairmont and H. Ehrlich.
66 Inflammation of Tendons and their Sheaths without Effusion. (Ueber Tendovaginitis crepitans.) O. v. Frisch.

54. **Unusual Metastases of Tumors.**—Clairmont relates a number of case histories to call attention to the possibility of some unsuspected and hidden primary tumor when confronted with tumors in unusual locations with peculiar histologic findings. In one case a benign myxoma of the femur caused metastases which proved malignant. In another an apparently primary mammary tumor proved to have been the metastasis of a lymphosarcoma in the mediastinum. In another case bile and liver-cell structure was observed in a tumor removed from the skull which was then accepted as metastasis of a cancer in the liver, previously unsuspected, but suggested by darting pains under the right costal arch of which the patient had complained. A tumor under the right ear in another case showed the structure of a metastatic adenocarcinoma, and the right lobe of the liver was palpable and hard. In a case of cirrhosis of the enlarged liver a tumor in the right lower jaw also revealed a metastatic adenocarcinoma. In another case metastatic tumors in the inguinal region and elsewhere in the skin were the metastases after ablation of an adenocarcinoma of the male mamma. In two other cases a tumor in the subcutaneous tissue of the leg proved to be carcinomatous and probably a metastasis of the uterine cancer discovered months later. The necessity for search for the primary tumor in these unusual cases is apparent.

55. **Operative Treatment of Brain Tumors.**—Leischner gives the details of the tumors of the brain and posterior cranial fossa treated by surgical intervention at von Eiselsberg's clinic at Vienna during the last six years, a total of 23 cases. The outcome depends on the nature of the tumor and its operability, and this, unfortunately, can not be determined beforehand. Satisfactory permanent results to date have been obtained only with benign tumors or cysts.

58. **Arteriomesenteric Occlusion of the Duodenum.**—Haberer's case was a typical example of compression of the duodenum at its curve by the root of the mesentery although the compression was relieved as the operation proceeded and might easily have been overlooked. This finding explained the syndrome observed as a primary, frequently recurring kinking of the duodenum, caused by the artery in the mesentery root, with secondary hypertrophy and dilatation of the stomach. The case was complicated by a large umbilical hernia which was readily remedied through the laparotomy incision for the intestinal trouble higher up. The hernial sac was not excised but used as plastic material to re-enforce the suture.

59. **Operations on Cancer of the Large Intestine.**—Denk summarizes 39 cases in which the carcinoma was removed at von Eiselsberg's clinic during the last eight years.

61. **Colostomy for Inoperable Cancer of the Large Intestine.**—Odelga reviews the experiences in this line at the same clinic,

deploring the unsatisfactory results in many cases as the colostomy was not attempted until too late. He urges it as a routine procedure earlier, without waiting for severe stenosis, and states that under these conditions it may allow long survivals and give great relief. The colostomy, he thinks, should be done in two sittings and if possible be axial. Sixteen of the patients lived for two years or more thereafter, one for ten years, out of the 175 thus treated. Thirty-eight of the patients died within two weeks, including 15 with preexisting peritonitis.

Beiträge zur klinischen Chirurgie, Tübingen

May, LXIII, No. 1, pp. 1-243

67 Importance of Reactive Hyperemia in Arteriosclerotic Necrosis. W. Bergemann.
68 *Operative Treatment of Gastric Lesions. (Operativ behandelte Magenerkrankungen, 1897-1907.) J. Kindl.
69 Mechanism of Hole Fractures. (Mechanismus der Lochfrakturen.) E. D. Schumacher.
70 *Traumatic Separation of Lower Epiphysis of Femur. (Traumatische Lösung der untern Femurepiphyse.) H. Hilgenreiner.
71 Elasticity of Peritoneum in Connection with Development of Acquired Hernia. (Experimentelle Untersuchungen über die Elasticität des Bauchfells in Bezug auf die Entstehung der erworbenen Hernien.) G. Moro.
72 Changes in Peritoneum in Hernial Sac. (Histologische und functionelle Veränderungen des Peritoneums in Bruchsäcken.) Id.
73 *Subcutaneous and Intramuscular Neoformation of Bone by Injection or Implantation of an Emulsion of Periosteum. (Knochenneubildungen durch Injektion bezw. Implantation von Periostemulsion.) T. Nakahara and A. Dilger.

June, No. 2, pp. 245-445

74 *Operative Treatment of Gastric Crises by Resection of Seventh to Tenth Posterior Dorsal Roots. O. Foerster and H. Küttner.
75 Postdiphtheritic Stenosis of Esophagus. (Postdiphtheritische Speiseröhrenverengerungen.) W. Danielsen.
76 *Ultimate Results after Operations for Epigastric Hernia. (Dauerresultate nach Operationen der Hernia epigastrica.) Capelle.
77 Pedal Arrangement for Ether Drop Anesthesia Apparatus. (Ein Aethertropfnarkosenapparat mit Fussantrieb.) A. Bauer.
78 Blood Cysts in the Neck. (Blutcysten des Halses.) K. Spannaus.
79 Primary Sarcoma of the Joint Capsule. (Primäre Sarkome der Gelenkkapsel.) Hannemüller.
80 Occurrence of Langhans' Giant Cells in the Striped Muscles in Syphilis and Their Importance for Diagnosis. (Vorkommen von Langhans'schen Riesenzellen bei der Syphilis der quergestreiften Muskulatur und ihre Verwertung für die Diagnostik.) F. Landois.
81 Granuloma and Sarcoma. (Granulationsgeschwülste und Sarkome.) H. Coenen.
82 Research on Staphylococcus Opsonins. Id.
83 *Urinary Lithiasis in Württemberg. (Verbreitung und Aetiologie der Blasensteinkrankheit in Württemberg.) H. Küttner and S. Weil.
84 *Neuropathic Joint Lesions and their Diagnosis with Roentgen Rays. (Die neuropathischen Gelenkerkrankungen und ihre Diagnose durch das Roentgenbild.) R. Levy and K. Ludloff.

68. **Operations on the Stomach.**—Kindl gives the details of 230 operations on the stomach, only 112 of which were for malignant disease. The report issues from Schloffer's clinic at Innsbruck. In 82.6 per cent. of the 74 cases in which gastroenterostomy was done for a non-malignant affection, the patients were permanently cured (46) or materially improved (11). Of the 16 patients with cancer treated by resection, 4 are still living, 1 after three and a half years; the average survival was from two to nearly three years. Of the 69 cancer gastroenterostomies, 4 patients are still living, over a year since the operation. The technic, etc., are described in detail.

70. **Traumatic Separation of the Lower Epiphysis of the Femur.**—Hilgenreiner's article fills more than a hundred pages; he adds 6 to the 104 cases he has found on record, and gives the summaries of each. He is convinced that only the severe cases are published, so that the lesion is much more frequent in reality than the literature would suggest. Twenty illustrations accompany the article and the diagnosis, complications, treatment, etc., are discussed.

73. **Neoformation of Bone After Injection of an Emulsion of Periosteum.**—This communication from Narath's clinic at Heidelberg relates the successful outcome of experiments in which periosteum from the tibia of young rabbits was cut up fine with scissors and the scalpel, emulsified in salt solution and blood, and injected into the muscle or subcutaneously into another animal. The scraps of periosteum proliferated just as effectually as when large pieces are implanted. It is important, however, not to allow the periosteum to be crushed—the experiments with it ground in a mortar were always failures. It is necessary also to use large amounts of the periosteum. As it retains its vitality for a number of hours after death, it may prove possible to use the periosteum from young cadavers for therapeutic injections. The principle is similar to that of Bier's method of injection of blood into a joint to hasten reparative processes, but the periosteum emulsion has the advantage that it supplies along with the blood the material to ensure neoformation of bone. The patient is spared extensive surgical intervention, and the condition can thus be remedied without the necessity for extensive surgical measures.

74. **Operative Treatment of Gastric Crises by Resection of the Dorsal Roots.**—The details are given here of a case in which all the incessant tormenting gastric crises were permanently abolished by this operation, which actually proved life-saving under the circumstances. The results encourage similar intervention in all such cases of the severest form of gastric crises with inanition and impelling to morphin addiction or suicide. At the first sitting laminectomy had been done, but with merely an aggravation of the symptoms; resection of the seventh to tenth dorsal roots was followed by immediate cessation of all pain and nausea; "they were as if blown away," Foerster remarks, and the patient demanded food, notwithstanding the effects of the anesthetic. He is still gaining about four pounds a week, and not a trace of the former disturbances has been observed during the four months since, except that the morphin addiction has required gradual tapering off.

76. **Epigastric Hernia.**—All the articles in this issue of the *Beiträge* issue from the surgical clinic at Breslau, and the number is dedicated to the memory of von Mikulicz, the former chief of the clinic. Capelle reports 48 cases of epigastric hernia in which an operation was done with the ultimate outcome known in 35 instances. All but 6 of the patients were free from disturbances when examined later, but in these there was a tendency to recurrence of the hernia or development of lipoma. The trouble in 2 cases was evidently from the silk worm used in the suturing, suggesting that absorbable material had better be used for an epigastric hernia. In others the pain complained of before the operation still persisted, indicating that the hernia had not been responsible for it as supposed. No attempt had been made to seek for any other cause for the pain except in 2 cases and in both of these a gastric ulcer or inflamed lymph node had been discovered, the latter possibly referable to some undetected ulcer. This patient says that the pain is just the same as before the operation four years ago, or even more severe, especially after meals, and the diet has to be light. The underlying stomach affections had been masked by the epigastric hernia. The coincidence of gastric ulcer and epigastric hernia has been reported by several writers, and all comment on the months of improvement that follow the herniotomy, evidently due to the rest in bed and hygiene imposed by the operation. Six other patients have succumbed in the interim to gastric cancer, these cases emphasizing the importance of an exploratory laparotomy in every case of epigastric hernia with the slightest symptoms traceable to the stomach. Simple suture of the fascia does not guarantee sufficiently against recurrence, he concludes, and the Menge-Graser or some similar plastic technic is now used at the clinic, as he describes in detail.

83. **Urinary Concrements in the Württemberg Province.**—The statistics cited show that bladder and kidney stones used to be extremely prevalent in this region, especially in children, but that this is no longer the case. The improved methods of infant feeding in late years are probably responsible for the change.

84. **Neuropathic Joint Lesions.**—Twenty-one cases of tabetic affections of the joints are summarized from the records of the clinic, with illustrations, and their differentiation from other arthropathies is discussed. It seems evident that many of these joint affections belong in the class of spontaneous fractures. The Roentgen rays permit the ready differentiation of deforming arthritis from the neuropathic arthropathy.

and they also disclose latent arthropathies, thus permitting prophylactic measures in time—relieving the joint from the weight of the body—so that severe disfigurement and deformity can be warded off.

Berliner klinische Wochenschrift

June 21, XLVIII, No. 25, pp. 1149-1196

85 *Psychology and Psychotherapy. (Psychologie und Heilkunst.) Dubois.
86 Organic Hemiplegia in Young Girl after Emotional Shock. E. Frank.
87 *Diagnosis of Incipient Tabes. Kann.
88 *Return Cases of Scarlet Fever. (Scharlachinfektion durch geheilt entlassene Kranke.) K. Preisich.
89 Favorable Influence of Active Elements of the Thyroid on Experimental Tuberculous and Pseudotuberculous Infections. (Günstiger Einfluss der wirksamen Elemente der Schilddrüse auf die experimentellen tuberkulösen und pseudotuberkulösen Infektionen.) C. Frugoni and G. Grixoni.
90 Non-Malignant Invasion of Walls of Normal Uteri by Chorioepithelium. R. Meyer.
91 Treatment of Disturbances in Speech from Standpoint of General Practitioner. (Was muss der Hausarzt von den Sprachstörungen wissen?) H. E. Knopf.
92 Antiformin in Examining for Microparasites in Secretions and Excretions. O. Thilenius.

June 28, No. 26, pp. 1197-1244

93 Outcome of Operations for Myopia. (Erfolge der Myopieoperation.) A. Vossius.
94 Effects of Removal of Duodenum in Dogs. (Beobachtungen an Hunden mit exstirpiertem Duodenum.) A. Bickel.
95 *Serotherapy of Diphtheria Intoxication. F. Meyer.
96 Importance of Radium Emanations on General Metabolism in Man. (Einfluss von Radiumemanation auf den Gesamtstoffwechsel des Menschen.) H. Silbergleit.
97 Granulation of White Blood Corpuscles. (Granulationen der weissen Blutkörperchen.) N. v. Jagie.
98 Subphrenic Pyopneumothorax as Complication of Typhoid Relapse. W. Alexandroff.
99 Direct Visual Inspection of Distended Anterior Urethra. (Zur Endoskopie der Urethra anterior mit dem Goldschmidt'schen Irrigationsurethroskop.) A. Schlenzka.
100 *Biologic Diagnosis of Carcinoma, especially Gastric Carcinoma. J. Witte. Commenced in No. 25.

85. **Psychotherapy.**—Dubois emphasizes the importance of deep sympathy, absolute truthfulness and skill in persuasion as the three requisites for successful psychotherapy, and urges that young physicians should be trained along these lines. He is optimistic as to the benefits of treatment in psychopathies and psychoneuroses when treatment is based on rational grounds. Every psychosis is compounded of three factors, he says: (1) a primary *Fühlsanlage* or disposition (character, personality, mentality); (2) a *Fühlslage* or mood, a period during which the reactions are temporarily modified (by exhaustion, drowsiness, fatigue, disease, etc.); and (3) some event acting on the individual in the special mood and thus bringing on the psychosis. Treatment should be directed to the first factor, the character, personality, mentality, the *Fühlsanlage*, and here is where the skilled physician is able to soothe, influence and modify the underlying disposition which is the foundation on which all the rest is based. He has been extremely successful in treatment along these lines, disregarding the two other comparatively unimportant factors and exerting all his energy against the primary *Fühlsanlage*.

87. **Diagnosis of Incipient Tabes.**—Among the points useful for detection of tabes in the early stages is the functioning of the bladder. The patient may regard it as normal when it is beginning to show certain modifications such as delay in micturition after the impulse, relative incontinence at other times, especially after drinking, dribbling of urine during coughing or emotions—all suggesting weakness in the bladder musculature. The patient's denial of venereal infection can not be relied on, as a rule. Pain suggesting rheumatism, at various points, trigeminal or intercostal neuralgia, is important, as also paresthesia in the perineum or scrotum before it develops in fingers, toes or soles. Suggestive also are disturbances in appetite or digestion, obstinate constipation, abnormal sensations in the domain of the auditory or olfactory nerves. The ocular symptoms of tabes may occur as merely suggestions, but even the slightest indication is important from the diagnostic standpoint. Absence of the Achilles reflex or weakness on one side is suggestive, as also the behavior of the triceps reflex, and extremely important is the early relaxation of the muscles, especially the lack of the physiologic inhibition of the movements of the muscles of the joints. This is most marked first in the knee which can be flexed to an extreme degree, and the phenomenon is also liable to be pronounced in the ankle. This hypotony of the muscles is probably reflex, due to changes in the posterior roots. Study of various movements may reveal a tendency to ataxia before there is subjective consciousness of it by comparing the movements on both sides and palpating the action of the muscles. The palpating finger will detect the abnormal functioning of some muscle in the movement when to the eye the movement appears to be normal. This is particularly important in testing for the Romberg sign. Increased sensibility to cold, with otherwise unimpaired thermal sensibility, changes in the deep sensibility of the joints, as, when the toes are passively moved, the patient can not tell in which direction they are being moved, etc., and lack of perception of the vibrations of a tuning fork standing on the tibia—all these are important early signs of tabes. The gastric crises may manifest themselves first merely in the form of nausea and retching in the morning, salivation, hiccough or other vague disturbances. Other symptoms may suggest disturbances in the vagus domain, tachycardia, laryngeal, anal and genital crises, etc. In differentiating incipient tabes from neurasthenia, etc., it is wisest to lean toward the diagnosis of tabes at first, as measures for neurasthenia or rheumatism may fan an incipient tabes into a flame, while mercurial treatment, careful hygiene, and avoidance of mental or emotional strain and exertion of predisposed parts may keep the tabes under complete control. It is especially important for the general practitioner, he adds, to detect incipient tabes as when it is more pronounced the patient is liable to apply directly to the specialist.

88. **Return Cases of Scarlet Fever.**—Preisich has encountered 180 return cases infected by 145 scarlet fever patients dismissed from the hospital as completely cured and disinfected. The period of incubation of the return cases was from 3 to 15 days in 80 per cent. and from 15 to 25 in the remainder. Of the 4,178 cases of scarlet fever declared during the year in question, 2,392 were treated in the hospital in his charge. None of the adults gave occasion for the return cases; they occurred with children who were much embraced and petted. Another point to which he calls attention is the probability that the patients in the hospitals are constantly acquiring new virulent germs from others, after their own germs have probably lost their virulence. This seems the only explanation possible for one case which followed the return of the child to its home after 102 days in the hospital. The data presented seem to indicate that the secretions of the mucosæ are the vehicle of contagion. Preisich is convinced that the skin plays no further part in transmitting the virus after it is thoroughly cleansed, but that it is important to separate the convalescents from patients in the first stages of the disease, and, chief of all, to see that the mucosæ are brought into a healthy condition before the patient is discharged. The sound mucosa takes care of the virus but it must be given time to do this, fully two weeks after recovery. When the patient has completely recovered he should pass into another department and be detained 10 or 12 days longer. To ensure this Preisich would have this auxiliary department arranged for only 6 patients, all in the same stage of the disease. A single nurse could attend to this group. After two weeks here, the patients pass to the general ward for their third and final "station."

95. **Antitoxin Treatment of Diphtheria Intoxication.**—Meyer relates experimental research which confirms the effectiveness of antitoxin, not only in saving the lives of the animals in diphtheria intoxication, but in warding off acute heart failure, chronic changes in the heart, and cachexia. Much larger doses are necessary for this, however, than those generally employed, he says, and the injection should be made earlier. He advises intravenous injection of from 20,000 to 50,000 units when the symptoms indicate the severest infection, and an antitoxin should be made for this purpose without admixture of a preservative. Injection of adrenalin is the only means to arrest impending heart failure in diphtheria, but this is eminently effectual.

100. **Biologic Diagnosis of Cancer.**—Witte concludes his long review of the various methods of biologic diagnosis of cancer with the declaration that none shows much promise. The most encouraging results obtained to date have been with the complement-binding test (Livierato) and the cutaneous carcinoma reaction (Elsberg).

Deutsche medizinische Wochenschrift, Berlin

June 24, XXXV, No. 25, pp. 1089-1128

101 *Thrombosis of Pulmonary Artery. E. Stadelmann.
102 *Treatment of Epilepsy. Kellner.
103 Psychosis and Imitation Psychosis. (Psychose und Induktionspsychose.) A. Raebiger.
104 Determination of Proteolytic Ferment in Stools. (Bestimmung des proteolytischen Ferments in den Faeces.) A. Doblin.
105 *Sepsis from Diphtheria Bacilli. F. Hesse.
106 Incarceration of Cecum with Chronic Appendicitis. (Einklemmung des Coecums in der Fovea inguinalis medialis. verbunden mit Appendicitis chronica.) R. v. Hippel.
107 *Statistical Study of Outcome of Sanatorium Treatment of Pulmonary Tuberculosis. (Zur Frage der Kurerfolge Lungentuberkuloser in den Heilstätten. F. Köhler.
108 Technic for Measuring Tubercle Bacilli for Inoculation Tests. (Eine neue Methode zur genauen Bestimmung der Quantität der Tuberkelbazillen bei Impfversuchen.) M. Rabinowitsch.
109 Percussion Findings with Pleural Effusions. (Gewisse Perkussionssymptome bei Pleuraergüssen.) M. Gantz.
110 Fuchsin-Alcohol Technic for Forensic Determination of Spermatozoa. (Neue Methode zum Nachweis der Spermatozoen in Zeugflecken.) B. Baecchi.

July 1, No. 26, pp. 1129-1176

111 *Treatment of Abortion. K. Franz.
112 Intestinal Pulmonary Anthrakosis. T. Tsunoda.
113 Organic Disturbances with Functional Psychoses. (Körperliche Störungen bei funktionellen Psychosen.) A. Homburger.
114 Diagnosis of Cholera. H. Dold.
115 Influence of Mercurial Injections on Seroreaction in Syphilis. (Die provokatorische Wirkung von Sublimatinjektionen und deren Beziehungen zur Wassermannschen Reaktion bei Syphilis.) A. Buschke and H. Harder.
116 Atoxyl Poisoning. (Atoxylvergiftung mit besonderer Berücksichtigung der Wirkung auf das Sehorgan.) J. Igersheimer.
117 *Bacteria in Tablets for Spinal Anesthesia. (Sind die zur Lumbalanästhesie verwandten Tropakokain-Suprarenin- und Novokain-Suprarenintabletten steril?) W. Hoffmann.
118 *Etiology of Epidemic Cerebrospinal Meningitis. (Zur Aetiologie der Genickstarre und darauf bezügliche Nutzanwendung.) Knauth.
119 Special Form of Ileus from Constriction. (Chordapsus.) O. Klauber.
120 Invisible Virus. (Studien über sogenannte "unsichtbare Virus"-Arten.) Czaplewski.

101. **Thrombosis of the Pulmonary Artery.**—Stadelmann reports a case which demonstrates anew the impossibility of diagnosing during life occlusion of the pulmonary artery when it is not quite complete. His patient was a young man with mitral stenosis and isolated sclerosis of the pulmonary artery which contained an old, large thrombus.

102. **Treatment of Epilepsy.**—Kellner protests against the prevalent pessimism in regard to epilepsy, and states that his experience with 146 epilepties during the last eighteen years has shown that a large proportion are curable. He has systematically applied the Flechsig opium-bromid and baths course of treatment, and states that 31 per cent of the patients have been permanently cured, that is, free from recurrences to date. It may be necessary to repeat the course once or twice to maintain the benefit. He reviews his experience in detail, remarking that any nausea caused by the treatment can be cured by keeping the patient in bed for a few days, refraining from hot meat. Cold meat is generally well tolerated. His last series of 61 patients were thus brought safely through the 50 "opium days," although they generally lost considerably in weight but this was soon regained in the following weeks. He urges the importance of institutional care of epileptics during treatment and the separation of the mentally sound from the idiots. He states that Germany has from 30,000 to 35,000 individuals with epilepsy without impairment of the mind; the pessimistic standpoint of many physicians drives these unfortunates to the quacks when persevering systematic treatment would cure a large proportion.

105. **Diphtheria Bacilli and Sepsis.**—Hesse reports a case in which a previously healthy young man recovered spontaneously from tonsillitis, but sepsis developed not long afterward, proving fatal in a few weeks. Diphtheria bacilli were found in pure cultures in the blood; the injections of antitoxin came too late to have the slightest influence on the disease. Typhoid had been suspected at first, and later streptococcus sepsis.

107. **Sanatorium Statistics in Regard to the Cure of Tuberculosis.**—Köhler states that recent examination or news of 1,668 tuberculous patients two years after a course of sanatorium treatment showed over 61 per cent. with complete earning capacity; after four years 53.5 per cent., and after six years 69.4 per cent. Partial earning capacity was found in 17.5 per cent. after two years; in 14.2 per cent. after four years, and in 7 per cent. after six years, while 14.2 per cent. had died by the end of two years; 25.2 per cent. after four years, and 19.4 per cent. after six years. The tuberculosis was by no means responsible for all these deaths.

111. **Treatment of Abortion.**—Franz remarks in the course of this clinical lecture that the main task in treatment of abortion during the first seven months is to arrest the hemorrhage, but later the task is to ensure the complete emptying of the uterus. He warns that the curette should never be used with a vesicular mole as it is impossible to know the extent of the destruction of the uterus wall. After the uterus has been cleared with the finger, he rinses it out with two or three liters of 70 per cent. alcohol in every case of abortion.

117. **Defective Sterilization of Tablets Used for Spinal Anesthesia.**—Hoffmann has been testing various tablets of anesthetics for spinal anesthesia on the market. and has discovered bacteria in them. Attempts to sterilize the tablets by heat destroyed the suprarenal preparation in the tablets. He advises against admixture of any suprarenal preparation with the anesthetic, declaring that it is best to sterilize them separately.

118. **Prophylaxis of Epidemic Cerebrospinal Meningitis, etc., in Garrisons.**—Knauth tabulates the infectious diseases occurring in the barracks at Würzburg, showing certain connections useful from the standpoint of prophylaxis. Among the conclusions is the necessity for paying greater attention to tonsillitis and to guarding the patients for a few days afterward. The organism recovering from the struggle against the germs must be protected while it recuperates; otherwise the door is thrown open to other infectious processes. Protection during convalescence from acute tonsillitis, he asserts, will save the troops from many cases of nephritis, acute articular rheumatism and even epidemic cerebrospinal meningitis. His recent experience with prophylaxis along these lines has been convincing.

Jahrbuch für Kinderheilkunde, Berlin

June, LXIX, No. 6, pp. 625-744

121 *Jaundice in New-Born Infants. (Der Icterus neonatorum.) C. Hasse.
122 *Exudative Diathesis and Eosinophilia. J. Rosenstern.
123 *Chronic Nephritis in Children. O. Aronade.
124 Cutaneous Tuberculin Reaction in Children. E. Hellesen.

121. **Jaundice in the New-Born.**—Hasse reports study of the anatomy and physiology of fetuses and new-born infants which demonstrates that the jaundice is the result of the action of the diaphragm causing stasis in the biliary passages. Conditions right themselves as the at first disproportionately large liver becomes reduced in size under the influence of the regular respiration.

122. **The Exudative Diathesis and Eosinophilia.**—Rosenstern calls attention to the coincidence of eosinophilia with certain skin diseases, especially eczema and prurigo, affections of the mucosæ, helminths and certain nervous affections, including epilepsy, chorea and migraine, and discusses the connection between the eosinophilia and eczema in particular. The average in 6 breast-fed healthy infants was 242 eosinophile cells, and in 6 artificially fed, 226. In 14 with eczema they ranged from 146 to 4,377. In 6 with asthma, from 76 to 1,287. Study of the eczema cases shows, he says, that the eosinophilia is not dependent on the local process but is an independent symptom of a constitutional anomaly, the result of some injury which entails both the eosinophilia and the tendency to the eczema. Both are the consequences of a single cause.

123. **Chronic Nephritis in Children.**—Aronade gives the autopsy findings to complete the case reported, throwing light on the nature and course of such nephritic processes in children.

Medizinische Klinik, Berlin

June 27, V, No. 26, pp. 954-990

125 The Right to Life of the Child. (Recht des Kindes auf das Leben.) K. A. Herzfeld.
126 Roentgen Diagnosis of Gastrointestinal Lesions. (Zur röntgenologischen Diagnose der Erkrankungen des Verdauungstraktus.) Schürmayer.
127 Severe Anemia in Infant from Lack of Iron. (Schwere Säuglingsanämie durch primären Eisenmangel.) W. Stoeltzner.

128 *Treatment of Asthma. M. Saenger.
129 *The Terrace System of Construction of Houses, Hospitals, Etc. (Freilufthäuser.) D. Sarason.

July 4, No. 27, pp. 991-1028

130 *Syphilitic Involvement of the Joints. (Luetische Gelenkerkrankungen.) W. Harttung.
131 Liver Abscess. (Leberabszess.) Mac Lean.
132 Modern Treatment of Gastric Ulcer. (Moderne Therapie des Ulcus ventriculi.) W. Zweig.
133 *Intermittent Claudication. (Intermittierendes Hinken.) E. Tobias.
134 Preparation of Digitalis. (Zwei Digitalisfragen aus der Praxis.) C. Focke.
135 *Influence of Pregnancy on Laryngeal Tuberculosis. (Einfluss der Schwangerschaft auf die Tuberkulose des Kehlkopfes.) E. Glas and E. Kraus. Commenced in No. 26.
136 Bacteriologic Desiderata in Preparation of Catgut. Woithe. Commenced in No. 26.

128. **Treatment of Asthma.**—Saenger states that five years' experience has only confirmed the benefits of his method of treating asthma by training the patients to breathe and to endure long pauses between the inspirations. One way is to have the patient count and then take a short breath, or the patient can blow or whistle or play on a mouth harmonica instead of counting. The aim is to control the respiration and free the patient from the dread of suffocation during long pauses between inspirations. He should be trained to use his abdominal muscles more in breathing. Another important point is to teach the patient to control the tendency to cough, as the cough is liable to start the attack of asthma. The general hygiene must be regulated, and the physician must bear in mind that the patient is liable to have other morbid tendencies, besides the asthma, which may require correction. These patients are often lacking in will power and are obstinate and capricious, requiring pedagogic measures.

129. **"Terrace" Houses.**—Sarason's system of construction of buildings has already been described in these columns, but his recent modifications have rendered it more practicable. In order to have plenty of balconies for outdoor sleeping and living, without detracting from the light and air of the rooms beneath, he has each story set back a few feet from the front elevation of the story below. This forms a series of terraces at the different stories. In order not to sacrifice too much indoor space to these terraces, he has each terrace supplemented by being built out like a balcony, the width of this balcony being added to the floor of the terrace, while the balcony is too narrow to interfere with the light and air of the rooms in the story below.

130. **Syphilitic Joint Lesions.**—Harttung discusses the various forms and indications, remarking that general specific treatment, with surgical measures as indicated, will ensure complete restitution if taken in time. Even if there is much destruction or scar formation, specific treatment arrests the process and saves what is still repairable.

133. **Intermittent Claudication.**—Tobias reports nine cases, the dyskinesia being in the legs; four of the patients were working people and five were Jews. The first symptoms had been observed years before in some of the cases. Tobacco was not a factor in any instance, but a neuropathic diathesis was evident in all. In one case diabetic neuritis and in another the influence of trauma were evident. The frequency of the affection in Russia seems to suggest some climatic influence. Flatfoot may be a predisposing factor. The most important symptom is the weakness or absence of the pulse in the feet. He has made a practice during the last seven months of examining the pulse in the arteries of the foot and legs in all his patients. In only one case he found no pulse in the arteries of the foot, and this individual proved to have intermittent claudication. The immediate disappearance of the disturbance during rest is important for differentiation, as also the fact that palpation does not cause pain. Treatment should aim to regulate the circulation and cure the neuropathic tendency with symptomatic measures; the main point is to commence treatment early. Besides general hygiene, hydriatic and balneologic measures, systematic exercises are important but severe efforts do harm. He has never witnessed any benefit from massage; the important point is to alternate rest and exercise. Gangrene is rare from this cause at present, but in many cases the intermittent claudication still resists treatment although it can be kept measurably under control.

135. **Influence of Pregnancy on Laryngeal Tuberculosis.**—Glas and Kraus report the experiences at Chiari's and Schauta's clinics at Vienna with 59 cases of laryngeal tuberculosis in pregnant women. They confirm the unfavorable influence of gestation on a tuberculous process in the larynx. Küttner has declared that a pregnancy in women with laryngeal tuberculosis is equivalent to a death sentence in 90 per cent. of the cases, and the reported experiences are even more discouraging: none of the 32 women with diffuse laryngeal tuberculosis survived the puerperium. In another group of 11 cases the laryngeal process, originally very mild, became transformed during pregnancy into the diffuse form, fatal in all. On the other hand, in some of the patients in whom abortion was induced, the laryngeal process promptly took a turn for the better. In 20 per cent. of their cases spontaneous abortion occurred and these women all died. Of the 32 women delivered at term 60 per cent. of the children survived only a few days. Veit's dictum in regard to the importance of the increasing or declining weight as an index of the severity of the laryngeal process was found useful but should be estimated always in connection with the general findings. Early in the pregnancy the progressive character of the laryngeal process indicates abortion; later in the pregnancy interference has no effect on the progressive laryngeal lesion, but tracheotomy may relieve and it has occasionally a direct curative effect.

Münchener medizinische Wochenschrift

June 22, LVI, No. 25, pp. 1265-1312

137 *Clinical Importance of Seroreaction in Syphilis. L. Hauck.
138 *Origin of Uterine Tumors. (Entstehung der Uterustumoren.) A. Theilhaber.
139 *Internal Treatment of Skin Diseases with Lime Salts. (Innerliche Behandlung von Hautkrankheiten mit Kalksalzen.) Bettmann.
140 Serotherapy in Epidemic Cerebrospinal Meningitis. (Serumtherapie bei epidemischer Genickstarre.) B. Leick.
141 Flatfoot Shoes without Insole. Muskat.
142 Care of Umbilical Cord. (Zur Versorgung des Nabels beim Neugeborenen.) Krummacher.
143 Foreign Bodies in Nose. (Diametral gegenüberstehenden Folgeerscheinungen zweier Fremdkörper in der Nase.) Mühlenkamp.
144 *Treatment of Postpartum Hemorrhage. (Behandlung der Post-partum Blutungen.) A. Labhardt.

137. **Seroreaction in Diagnosis of Syphilis.**—Hauck ascribes great value to the Wassermann test in syphilis from his findings in 300 cases of syphilis and 184 control cases. It is not infallible, he says, but neither is the agglutination test in typhoid.

138. **Hematogenous Origin of Myoma and Carcinoma.**—Theilhaber thinks that there is an unmistakable connection between the composition and circulation of the blood and the development of myoma and cancer. Myoma occurs in hyperemic regions, carcinoma in anemic; this explains the prevalence of the former in the well-to-do and in regions subject to recurring hyperemia, while the poorer nourished are less subject to it and suffer more from cancer at points imperfectly nourished, as in the cervix of the uterus and in cicatricial tissue. His views are based on the findings in 228 cases of uterine myoma and 133 of carcinoma of the cervix, encountered among his 5,848 gynecologic patients during the past ten years. The composition of the blood in the leisure class, the meat eaters, probably differs from that of the defectively nourished, the working classes. He ascribes to certain substances in the blood the process of menstruation, the development of sexual characteristics, etc., and believes that the character of the food has a great influence on the composition of the blood, just as plants can be influenced in growing fruit and flowers by modifying the manure used on them. Myoma very rarely occurs in the badly nourished cervix while carcinoma is frequent there; when the circulation in the fundus has become defective after the menopause, carcinoma is liable to develop in the fundus while it is very rare in the fundus in young women. Myoma occurs more frequently the less the number of births, while carcinoma is encountered more frequently the greater the number of births with their resulting cicatricial processes. Cancer of the cervix is rare in women who have not borne children.

139. **Internal Treatment of Skin Diseases with Calcium Salts.**—Bettmann has obtained remarkable benefit in a certain

proportion of itching skin affections from internal administration of calcium lactate in a 5 per cent. solution, one or two tablespoonfuls an hour before meals, three times a day, for three or four weeks. His experience with seventy cases showed that the remedy failed to influence the affection in the majority of cases, but in others the effect was marked and encourages further trials of this simple medication which his experience has shown to be harmless. It proved efficient in conditions peculiarly rebellious to other measures, especially in the "toxicodermias." In senile pruritus, in particular, the effect was marked.

144. **Treatment of Postpartum Hemorrhage.**—Labhardt reviews the experiences at von Herff's clinic at Basle with atony of the uterus and placenta prævia; during the twelve years ending in 1903, 0.05 per cent. of 38,923 lying-in women died from the results of atony and 0.025 per cent. from placenta prævia. During the years 1901-1908 Dührssen's tamponing technic was applied in 6 cases to arrest threatening hemorrhage, but the women all died; another died without tamponing. In all the other 210 cases of hemorrhage from atony it was arrested without tamponing, merely under ergot, massage and hot douches. Adrenalin was used in 2 cases, but failed to display any efficacy, probably from the abnormal structure of microscopic elements in the uterus wall. This abnormal structure is one of the reasons why the results of experiments on animals can not be applied to man, as the organs of the animals are presumably sound. Bettmann thinks that resection of the bleeding uterus or hysterectomy should be considered more generally in treatment of rebellious postpartum hemorrhage. He applied it in 2 cases but while debating the indications precious time was lost and the operation came too late. The heart action must be the guide to determine when to operate, he reiterates. If the blood pressure has dropped until the pulse is almost imperceptible, and the measures previously applied have induced little if any response on the part of the uterus, the moment has come for operative interference. In any event, he adds, do not waste time tamponing. He advocates a laparotomy, drawing the uterus out and throwing a rubber tube around it at the vesicouterine plica, like a tourniquet, which arrests all tendency to hemorrhage. The drawn out uterus can then be packed in sterile cotton and prevented from slipping back by a couple of knitting needles inserted above the constricting band. The woman can then be carried to a hospital, or if already in the hospital the resection or hysterectomy can proceed. By this means the general practitioner is able to handle these urgent cases of postpartum hemorrhage; he requires only a knife or scissors for the incision, a band for the constriction of the pedicle of the uterus and two knitting needles—all of which can be readily sterilized. The main point is to make the abdominal incision as short as possible, only long enough to reach in and draw out the uterus; if too long it allows prolapse of intestine which dangerously complicates the case. In severe postpartum hemorrhage the only chance for the woman is in operative intervention before it is too late.

Riforma Medica, Naples

June 21, XXV, No. 25, pp. 673-700

145 Chemistry of the Stomach in Tabes. (Le crisi gastriche e lo stomaco dei tabici.) G. Tria and M. Landolfi.
146 Negri Bodies, Lentz Bodies and Changes in the Nerve Centers in Rabies. (Corpi Negri, corpi di Lentz ed alterazioni dei centri nervosi nella rabbia.) L. d'Amato and V. Faggella.
147 Syphilids in Third Stage of Syphilis. (Il periodo tardivo della sifilide in rapporto al periodo precoce.) P. Longo.
148 Bladder Disturbances in Spinal-Cord Disease. (Studio delle turbe vescicali nelle malattie del midollo spinale.) L. Segre.

Hospitalstidende, Copenhagen

June 2, LII, No. 22, pp. 681-704

149 *Attempt to Remove Tumors at Base of Brain. (Forsøg paa at tjerne 2 Tumores, den ene i Vinklen mellem Pons og Cerebellum, den anden i Cerebellum.) V. Christiansen.

149. **Tumors in Cerebello-Pontine Angle and in Cerebellum.**—Christiansen reports two cases in which an attempt was made to remove the tumors, and if they had been less extensive they might have been shelled out. This proved impossible owing to the ramifying growth of the large tumors. The ample access to the cerebello-pontine angle encourages further attempts in this line. The enormous tumor at this point, although in direct contact with the inferior cranial nerves, yet caused symptoms from only three of them. The patient was a child of 6, and autopsy disclosed a hemorrhagic cyst on one side of the pons, evidently responsible for the transient loss of consciousness observed several times during the last few weeks. The tumor grew both inside and outside of the pons, but its intrapontine part had induced only slight and vague symptoms, the syndrome being dominated by the involvement of the cranial nerves. The other patient was a man of 29 and the symptoms observed for nine months all pointed to a cerebellar tumor, especially the intense pain in this region, the vertigo and vomiting, but no tumor was discovered at the operation. Autopsy revealed it on the under surface of the cerebellum clinging also to the pons and medulla oblongata, but it was not definitely circumscribed. In both cases the comparative mildness of the symptoms in view of the large size of the tumors was most striking. The medulla in the second case was compressed to a ribbon for a few centimeters, but still no symptoms were observed suggesting involvement of this organ.

Norsk Magazin for Lægevidenskaben, Christiania

June, LII, No. 6, pp. 494-568

150 Studies on Radioactivity. E. Poulsson.
151 Nine Pubiotomies. (Hebosteotomi.) K. Brandt.

Upsala Läkareförenings Förhandlingar

XIV, Nos. 5-6, pp. 349-505. Last indexed June 12, p. 1966

152 Technic and Prognosis of Operations for Extraction of Crystalline Lens. (Kasuistika bidrag till kännedomen om lins extraktionens teknik och prognos.) A. E. Lidström.
153 Technic for Study of Capillary Circulation in the Frog, especially in the Frog Lung. (Om tekniken vid undersökning af kapillarcirkulation hos grodan.) H. Ohrvall.
154 Technic and Ultimate Outcome of 352 Various Gynecologic Operations. (Redogörelse för gynekologiska operationer.) G. Ekehorn.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Mental Medicine. By Oliver Huckel, S.T.D., Graduate, University of Pennsylvania. Cloth. Pp. 214. Price, $1 net. New York: Thomas Y. Crowell & Co.

Exercise in Education and Medicine. By R. Tait McKenzie, B.A., M.D., Professor of Physical Education and Director of the Department, University of Pennsylvania. Cloth. Pp. 406, with 346 illustrations. Price, $3.50 net. Philadelphia: W. B. Saunders Co., 1909.

American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania Hospital. Edition 5. Flexible Leather. Pp. 876, with 2000 new terms. Price, $4.50 net. Philadelphia: W. B. Saunders Co., 1909.

Surgical Diagnosis. By Alexander Bryan Johnson, Ph.B., M.D., Professor of Clinical Surgery in the Columbia University Medical College. Volumes I. and II. Cloth, with illustrations. Price, $18 per set. Three volumes in set. Sold in sets only. New York: D. Appleton & Co., 1909.

Principles of Pharmacy. By Henry V. Arny, Ph.G., Ph.D., Dean and Professor of Pharmacy in the Cleveland School of Pharmacy, Pharmacy Department of Western Reserve University. Cloth. Pp. 1175, with 246 illustrations. Price, $5 net. Philadelphia: W. B. Saunders Co., 1909.

Bier's Hyperemic Treatment. By Willy Meyer, M.D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital, and Prof. Dr. Victor Schmieden, Assistant to Professor Bier, University of Berlin, Germany. Edition 2. Cloth. Pp. 280, with illustrations. Price, $3 net. Philadelphia: W. B Saunders Co., 1909.

Vésicule Biliaire et Lithiase. Choix d'un Procédé Opératoire dans la Lithiase Vésiculaire. Par le Docteur Louis Hautefort, ancien interne des hôpitaux de Paris. Paper. Pp. 196, with 15 illustrations. Price, 4.50 francs. Paris: G. Steinheil, éditeur, 2, rue Casimir Delavigne.

Das Altern: seine Ursachen und seine Behandlung durch hygienische und therapeutische Massnahmen. Ein Handbuch für eine rationelle Lebensweise. Von Dr. A. Lorand. Badearzt in Karlsbad. Paper. Pp. 257. Price, 5 marks. Leipzig: Verlag von Dr. Werner Klinkhardt, 1909.

A Selection of Cases on Malpractice of Physicians, Surgeons and Dentists. By Martin J. Wade, Professor of Medical Jurisprudence in the College of Medicine, and Lecturer in the College of Law, State University of Iowa. Cloth. Pp. 896. Price, $4.75. St. Louis: Medico-Legal Publishing Co., 1909.

A System of Medicine. By many writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Senior Physician, St. George's Hospital. Cloth. Pp. 969, with illustrations. Volume V. Diseases of the Respiratory System, Disorders of the Blood. Price, $6 net. New York: The Macmillan Co., 1909.

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Addresses

WHAT THE INDIVIDUAL PHYSICIAN CAN DO TO IMPROVE THE MATERIA MEDICA *

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The subject of this address is, I believe, one of much importance to the physician, both as an individual and as a member of a learned and dignified profession, but a profession which has allowed itself to be imposed on and permitted even its dignity to be lowered and its usefulness lessened by certain influences both within and without. So much has been said in recent years on the subject of proprietary medicines that I might hesitate to bring it up again if the times did not seem so opportune for constructive work, and work in which the individual physician can and must take the leading part.

Before entering on this discussion, however, a few words may be said concerning the place of drug therapeutics in the practice of medicine. The best energies of the profession for almost a generation have been devoted to the discovery of the causes, and methods for the prevention, of disease, and to the development of surgical technic and to the improvement of diagnosis; the greatest successes have been achieved in these directions. These developments have concerned the public and certain specialties rather more directly than the general practitioner who is confronted with concrete and individual cases. The individual patients have profited by these discoveries, but not perhaps so much as has the public.

Forms of treatment other than with drugs are rapidly being developed and it is recognized that some of these methods have not received the general recognition they deserve and are not taught in the medical schools as well as is desirable. Most physicians are probably less skilled in the use of baths, diet, massage, etc., than they are in the use of drugs. And it is probable that these forms of treatment will receive full consideration before there occurs that further development of drug therapeutics for which the future seems so bright.

The important rôle drugs play in medicine is, however, frequently overlooked; it may be well to recall sometimes Naunyn's remark, that were it not for five or six drugs he would not care to be a physician at all. Surgeons especially are prone to forget the influence which drugs have had on their art. More than a century ago an eminent surgeon expressed the opinion that his specialty had almost reached the highest conceivable degree of perfection. This might have been true were it not for the lessons of asepsis learned largely from the use of antiseptic drugs and the discovery of general and local anesthetics.

The facts that there are other forms of treatment which need as careful study and teaching as that of drugs and that the field of activity of the physician in connection with the prevention of disease is ever widening are not valid arguments for neglecting drugs. They are, however, potent arguments for systematizing the study and use of the latter so that the best results may be obtained with the least expenditure of time and energy. Is this the case at the present time? An affirmative answer would imply that physicians do not begin with a handicap of ignorance and misrepresentation as to what they are using. That the profession in the past has been most shamefully imposed on in this respect is too well known to require any discussion; in the volume, "Propaganda for Reform in Proprietary Medicines," issued by the American Medical Association, will be found sufficient evidence, and the cases there quoted are only types of many.

Some seem to be under the impression that the profession is sufficiently awake to evils of the character discussed in the "Propaganda for Reform" and that deceptions such as those there exposed are no longer possible. There have undoubtedly been great improvements, but that the physician needs sources of information concerning new drugs other than the statements of those who are financially interested may easily be shown by a few examples.

It may be well to refer first to a case which has been practically settled, for the manner in which it was settled is instructive. In 1885 acetanilid, a simple chemical compound long known to chemists, was introduced into medicine. The name acetanilid is the true chemical name of the substance; it is not especially long or difficult to remember. Another name, "antifebrin," one not even suggesting the composition of the substance, was soon applied to it and has been in more or less extensive use ever since. While most physicians now know that the two names are applied to exactly the same compound, there was for years much confusion and cases are reported of eminent physicians who, not satisfied with the effects of "acetanilid," turned to "antifebrin." Every medical student must learn that the two are identical and it is often some time before he remembers whether antifebrin is another name for antipyrin or for phenacetin or for acetanilid. Even at present, when acetanilid has been included under its true name in most of the pharmacopeias of the world, if the physician turns to one of the leading handbooks supplied to him by the manufacturers he will find under antifebrin nothing to indicate that this is the same as the official acetanilid unless his knowledge of chemistry is sufficiently fresh for him to recognize the compound from its chemical formula. These two names for the same compound have already been in the medical literature of the world for nearly a generation and will continue to cause confusion and annoyance so long as the writings of this period are read.

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* Address before the West Branch of the Philadelphia County Medical Society, May 14, 1909.

Scores of similar cases have occurred and are occurring at the present time. New names for old drugs are often introduced in a manner to lead the physician to suppose that a new drug is being introduced. For example, I recently received a circular on "soamin" from a leading English firm. In this it is stated that "the arylarsonate 'soamin' was first introduced at the end of 1907," and there is nothing in the circular to indicate that the same substance had been introduced by another firm several years previously under the name "atoxyl" or that the compound itself had been made in 1863 by Béchamp. A little further on in this circular I read: "The toxic symptoms noticed by continental physicians when using other arylarsonates have not been observed with soamin." As a matter of fact, most of the toxic symptoms noticed by continental writers were due to the same substance but under a different name.

The history of many of the recently introduced synthetics is the same and is about as follows: Some manufacturer discovers in a compound long known to chemists therapeutic virtues or sometimes properties which lend themselves to commercial exploitation as therapeutic virtues. The compound itself and the methods by which it is made having long been public property the manufacturer can derive profit only if he can persuade the medical profession to prescribe it under some new trade-marked or copyrighted name invented by himself. Then in a short time the same substance is put on the market by other firms whose sole contribution is a new and often misleading name; in this way there are sometimes introduced for the same compound a dozen names often as dissimilar as human ingenuity can make them. In the confusion which results really new drugs are apt to be overlooked. Thus a short time ago an eminent American physician, not being satisfied with the results he had obtained in certain cases with "atoxyl," had, upon the advice of a well-known English practitioner, been experimenting with "soamin" (with equally unsatisfactory results); neither he nor another physician whom I met about the same time had thought it worth while to try the acetyl derivative of this substance because they were under the impression that this was "about the same as atoxyl." Yet this acetyl derivative is the result of months of work by one of the master minds in medicine (Ehrlich) and certainly well worthy of a trial.

The evil results of this pernicious practice of applying many names to the same substance does not end here, however. Other manufacturers add the "new drug" to complex mixtures, inventing still more new names or, with apparent frankness, naming the mixture after some other but unimportant ingredient. In this way physicians have been led to prescribe unwittingly some powerful habit-forming drugs.

Closely connected with this question of names is another evil—the direct introduction of powerful drugs to the laity. The attitude of the medical profession in disapproving of this practice is often misunderstood. As in so many other cases, self interest is stated to be the prime cause: Lady Montagu thought physicians would oppose the introduction of inoculation for smallpox because she did not think they had "virtue enough to destroy such a considerable branch of their revenue [from treating smallpox] for the good of mankind"; now antivaccinationists state that the profession upholds vaccination for the sake of the trifling fees. Physicians discourage the use of powerful drugs by the laity for the same reasons that they advocate vaccination and other measures against the spread of contagious diseases—for the good of the public. The Council on Pharmacy and Chemistry adopted as a rule that it would not approve an article advertised to the public except in the cases of foods and disinfectants; in explanation of this rule the Council states the objection to such advertising, in part, as follows, ". . . the well-known dangers of suggesting by descriptions of symptoms to the minds of the people that they are suffering from the very diseases described the dangers of an unconscious and an innocent formation of a drug habit, and the evils of harmful self-medication, including the dangers of the spread of many infectious and contagious diseases when hidden from the physician."

One of the most effective means of inviting or encouraging self-medication is the use of catchy, often therapeutically suggestive, names. A striking illustration of the harm a layman may do himself with powerful drugs is reported in a recent number of the *Lancet:* A man believed he had contracted syphilis and took "soamin" in increasing doses until he was severely poisoned. The physician, called in on account of the poisoning, found no indications of syphilis. This case well illustrates one of the chief dangers of self-medication —the absence of correct diagnosis. There is no reason to believe that the firm exploiting soamin had endeavored to persuade the laity to use it without medical advice, but the use of a scientific name (sodium arsanilate, for example) would probably have prevented such misuse and would at the same time convey a definite meaning to the physician.

Many firms make a practice of using names and trade packages which will lead to the introduction of their preparations to the laity as rapidly as possible. Striking illustrations of this practice have been offered by the exploitation of preparations containing hexamethylenamin as their active ingredient. By the use of therapeutically suggestive names and circulars discussing the value of the preparations in gonorrhea large numbers of the laity have been led to believe that some of these are almost specifics for this disease—which, of course, they are not. The wrong that may be done to innocent parties from a layman believing that he is effectively treating such a disease as gonorrhea need not be dwelt on. But is the physician who brings this class of preparations to the notice of the laity by prescribing hexamethylenamin under some of these objectionable forms any less culpable than the one who makes morphin habitués or inebriates by careless prescribing? Yet physicians are doing this daily and such preparations are advertised in most of the medical journals.

The current methods of naming new drugs not only lead to great confusion but serve as a cloak for all kinds of frauds on the physician and the public. The really new remedies, and especially the really new classes of remedies, are not so numerous but that physicians could keep fairly well informed concerning them if the essential facts were presented in a simple straightforward manner. Purely commercial interests are apparently absolutely dominant at present, so far as the nomenclature of new products is concerned, and there is little prospect of improvement until the medical profession—

or rather the individual physician—insists on being told, without any chicanery, exactly what he is asked to prescribe.

But it is not only in the matter of names that many of the even more prominent manufacturers do not deal entirely frankly with the physician and the public. A review of the literature bearing on proprietary medicines will readily show that the physician need not expect more detailed information from manufacturers than he actually insists on or demands.

That physicians have been content and have received but half truths concerning important matters is too well known to need much discussion. One illustration, of recent date, may, however, be given. Reference has already been made to a class of organic arsenic compounds which are attracting much attention. As they seem destined to attract still more interest in the future, and as many new compounds of the same class are being investigated, it was especially desirable that the first information given concerning them should be correct and complete. Yet the very first one, under the name atoxyl, was brought to the attention of the physician with an incorrect statement even as to its composition. Professor Puckner, Secretary of the Council on Pharmacy and Chemistry, seems to have been the first to discover the discrepancies between the manufacturer's statement and the truth. His results were soon confirmed by Ehrlich under the following circumstances: It had been recognized for some time that this compound had certain disadvantages and Ehrlich began a systematic and painstaking search for a derivative which would have the same therapeutic properties but which would be less toxic. He saw at once that the modification he desired to make would be impossible if the statements of the manufacturer concerning the chemistry of the substance were correct. A lesser genius than Ehrlich would probably have abandoned the attempt; Ehrlich did not and soon found, as Puckner had found, that the manufacturer's statements were not correct and that it was, after all, possible to make the derivative desired. The result was the discovery of a new compound, arsacetin, which promises to be of much value.

Illustrations such as the above could be multiplied almost indefinitely, but these are surely sufficient to show that sources of information other than that supplied by interested parties are urgently needed. Were it possible for the physician to learn promptly a new drug under a single name, and be given all that is known concerning its composition and action, he would be in a much better position to begin his clinical studies; he would have more time for careful observation and for the study of the dietetic and other forms of nonmedicinal treatment. The physician's task is sufficiently complex and difficult without the handicap of confusing names and imperfect or misleading statements concerning the drugs he uses.

While the entire method of the introduction of new drugs is far from satisfactory from the standpoint of either the physician or of the public, it is but the logical outcome of the failure of the medical schools and of medical institutions to support adequate departments of pharmacology. If every important medical school had a really efficient department of pharmacology, in which properly trained men received sufficient compensation so as not to be compelled to engage in the practice of medicine or in commercial work, but who could devote all their time to teaching and investigation, giving their results freely to the world as do the chemists and physicists in the best universities, the whole aspect of the proprietary medicine question would soon change. How fruitful university laboratories of pharmacology have been in the past is sufficiently attested by the introduction into therapeutics of chloral, of antipyrin and most of the other modern antipyretics, of cocain, of paraldehyd, sulphonal and most of the other newer hypnotics, of strophanthus, eserin, the nitrites, theobromin, the suprarenal glands, and many others.

The endowment of such pharmacologic laboratories would be a good investment for both the medical profession and the public. So long, however, as they do not exist, or are so inadequately supported, the physician must pay the toll of lost prestige and the public that of high prices for new drugs, and neither has much cause to complain. And the manufacturers who make real contributions—and there are many such—have the right to expect the physician to recognize their just claims. But neither the physician nor the public is under obligations to pay toll to the parasites who simply appropriate the discoveries of other manufacturers or of physicians themselves. There are also limits to the benefits which would be reaped by even the worthy manufacturer; for many of the discoveries of the latter are such as would inevitably soon have been made by others and no one should be allowed to secure a permanent monopoly on them.

What steps can the medical profession or, rather, what steps can the individual physician take to secure the information necessary for him to derive the best results from drugs with the least expenditure of time and energy? The answer is as old as the history of medicine itself: by cooperation to establish and maintain standards which in the last analysis shall represent the contributions the individuals make for the common good. Little patience is shown nowadays with those who hold up the past as a model for the present. Yet in the making and maintaining of standards for drugs the medical profession in this country does seem to have departed from one of its most honored traditions, but there are many indications that this departure is only temporary. Until comparatively recently the books of standards—or pharmacopeias—were the work of physicians; they represented the contributions of individual members. Through a variety of influences, some of which are difficult to determine but in which the low standards of medical education played a rôle, physicians took less part in the revision of the Pharmacopeia. With the diminished interest in revision came diminished adherence to standards; and then the Pharmacopeia came to represent less and less the needs of the medical profession. One of the earlier indications that this was the case was the preparation of the first edition of the National Formulary in 1888, by which the pharmacists endeavored to supply a book of standards for non-secret, in many cases elegant, preparations. But the physicians were abandoning more and more standards prepared by disinterested parties and accepting those of manufacturers, and, moreover, the works now prepared almost entirely by pharmacists failed to meet not only the fancied but often the real needs of the physician.

It is not necessary to trace the further history of this subject in detail or to relate the sporadic efforts made to counteract some of the evils resulting from proprietary medicines. A new era began about ten years ago when Dr. George H. Simmons was called to the editorship of THE JOURNAL of the American Medical Association. Dr. Simmons proved himself to be one of those—unfortunately few—editors who do not feel that their duties end with keeping the reading pages clean. As the result of a review of the advertising pages thousands of dollars worth of advertising was discontinued and a firm stand taken concerning the attitude of The Journal toward proprietary medicines. This required rare courage, when there was no Food and Drugs Act, when strongly intrenched and insolent proprietary interests were threatening law suits at the least suggestion that the truth be told about their products, when the timorous feared that The Journal would be wrecked, and when the medical press was hostile; but he won the battle and to-day edits the cleanest medical weekly of the world. Medical journalism does not record a more courageous course.

In the attempt to purge the advertising pages of The Journal of fraudulent products some competent and reliable authority was needed that could be referred to to decide what was right and what was wrong, especially as regards composition of the medicinal products offered to physicians. The final outcome was the formation of the Council on Pharmacy and Chemistry charged with the preparation of the book "New and Nonofficial Remedies." The purpose of this book has often been misrepresented. The authors are frequently accused of trying to dictate to the doctor or of conspiring against his freedom. The simple truth is that the American Medical Association, through the House of Delegates and Board of Trustees, has requested a number of men to serve as a committee, without remuneration of any kind, to prepare a small work on drugs which for some reason or other are not in the United States Pharmacopeia or the National Formulary. The one criterion for the admission of proprietary articles to this book is this: are they as represented; and the primary question is always, do they have the chemical composition claimed? In considering the question whether the drugs are as represented the Council is frequently confronted with a dozen preparations of the same class claiming to be "absolutely the best"; thus there are about a dozen of the "most powerful" but "least toxic" germicides, a dozen or more of "absolutely the most powerful" diastases; quite a number of the "safest" hypnotics and so on. Evidently some of the gentlemen making these claims are mistaken and the Council has asked "to be shown." Some firms have admitted that their statements were incorrect and have changed them to correspond to the facts; others have admitted that their claims were false but stated that they would try to make products corresponding to them in the future, but that in the meanwhile they could not afford to injure their standing with the physicians by telling the truth; still others have stated that it is none of the physicians' business whether the truth is told them or not. As a rule no further attention is paid to these latter classes of products; occasionally one of them is exposed as an example of the kinds and varieties of frauds that are being practiced, but the Council desires its work to be constructive and not destructive.

The Council has found that there is a large and increasing number of physicians who desire information such as the Council attempts to collect; this desire comes partly from a fuller realization that a physician should neglect no opportunity to be certain of the composition of the drugs he uses. As a concrete example of the deception that may be practiced unwittingly I may refer to a preparation claimed to be a solution of mercuric iodid in an oil suitable for hypodermic injection in syphilis. Dr. Seidell examined a sample of this preparation in the Hygienic Laboratory; not a trace of mercuric iodid could be found. A second sample, of a lot made in the presence of a medical practitioner who weighed the mercuric iodid himself and saw it added to the oil, was also found to contain no mercuric iodid. We do not know in what stage of the process the drug was lost, whether by volatilization, by filtration or how; we do know, however, that it was not in the preparation which reached the physicians—as indeed the clinical results of some of the latter showed. Would not a physician who had used such a preparation in a critical case of syphilis and lost his patient feel as guilty as if he had made any other kind of a fatal mistake in prescribing, and might he not be liable in a court of law? The Council desires to give physicians information which will prevent such possibilities as this. There is a rather large number of physicians who resent having lies told to them about drugs, just as the self-respecting man in any other walk of life resents a lie. There are also those who are weary of having chemists, pharmacists, and other laymen (in one case a piano salesman) endeavoring to teach them therapeutics. There are others, again, who are becoming impatient of having the same drug presented to them under a variety of meaningless or misleading names. There is also a large number who do not care especially whether the absence of mercuric iodid, pepsin, cod-liver oil, iodin, quinin, etc., in so-called preparations of these drugs is due to incompetency or knavery but who do want some evidence of their presence in addition to that of individuals financially interested. The Council is endeavoring to make "New and Nonofficial Remedies" a work of standards for such physicians as these and it invites, as it has from the beginning, the cooperation of all.

Soon after the Council began its work an endeavor was made to arouse the antagonism of manufacturers on the ground that their property rights were being attacked. Not many of these, however, have had the hardihood to ask physicians to use their preparations and at the same time to tell them that it was none of their affairs what these contain. On the contrary, many have found it good policy not only to state the composition but to state how this may be verified by other chemists, just as the Pharmacopeia gives tests of identity and purity for the various products contained in it. I know of no physicians or editors of medical journals who deny the necessity for work such as the Council is doing. It has, however, bitter enemies. One of the leaders of these stated that it was folly to attack the American Medical Association or the Council on Pharmacy and Chemistry directly; and that the only chance of checking the work of the latter was to attack the members personally. Dr. Simmons, as Chairman of the Council and as editor of The Journal which has led in the movement, has been the subject of most frequent and persistent attack. Most of the recent ones, some of which are anonymous, can be traced directly to those who are financially interested, in one way or another, in proprietary medicines. It is scarcely necessary to consider these; a glance at the advertising pages of the medical, or rather pseudomedical, journals containing some of them, or a moment's consideration of the editors' commercial affiliations, will suffice to disclose the animus.

The incompetency or insincerity of some of the manufacturer-editors, who, till recently at least, were most persistent in these attacks and who pose as working for the uplift of the profession, may be illustrated by a concrete example which came to my attention. Dr. Seidell and I examined some time ago in the Hygienic Laboratory a number of samples of a solution of nuclein exploited by a company whose fervent appeal for a "square deal" is known to many of the physicians of the country. Here are a few typical statements from a circular issued at that time by the firm: "For years we have been the chief promoters of nuclein therapy, endeavoring to place its principles before the profession in the right light—in a practical, usable form and as far as possible deprived of all uncertainty. Out of our experimental work we have developed the chemistry of nuclein to a point that produces a product second to none." They stated that their nuclein was "all right;" that it had the unqualified endorsement of "hundreds and thousands" of physicians well able to judge by results; that they believed it to be far the best product on the market, etc. The following is said as to its dosage: "It should be remembered that, except in acute toxemias, over-stimulation of the cells is not to be desired; therefore, in low states of vitality, small doses (gtts. 2-5), long continued, give best results. In all acute invasions of the system LARGE DOSES (gtts. x-xx, preferably hypodermically) are, however, necessary. These should be repeated at least twice daily. In emergencies, where the patient is overwhelmed with toxins, the exhibition should be made every few hours." Our examination of the solution thus described in such enthusiastic terms showed the presence of from 0.04 to 0.05 per cent. of solids (about the amount present and permitted in many potable waters). Assuming these solids to have consisted entirely of nuclein (a rather rash assumption perhaps) the usual dose of the solution recommended would have contained from 1/400 to 1/1300 of a grain of nuclein. If the dose were repeated about a dozen times a day the patient would in the course of a month have received nearly a grain of nuclein—an amount obtained several times over in any ordinary single meal. If the case were desperate—if, as the circular states, "the patient were overwhelmed with toxins"—and, following the directions, large doses (gtts. x-xx) were given hypodermically, it would have required about 100 hypodermic injections to introduce a grain of nuclein. Why not give the patient a bite of sweetbread? It would have contained as much nuclein and been more agreeable. The difference in price might be a factor; for, while sweetbreads are somewhat expensive, fifty times the price of pure gold was asked for the nuclein in this solution. The crushing reply to such suggestions would probably have been, quoting from the circular: "This nuclein is all right. It has the unqualified endorsement of our Drs. . . . as well as hundreds and thousands of others well able to judge by results." Seriously, has not such so-called clinical evidence about the value of that of physicians who a few years ago were "curing" malaria with powdered gypsum sold under the name "tasteless quinin" or of the laity who "cure" measles with sheep dung? And think of wasting valuable time in the case of serious illness experimenting with such stuff. The company exploiting this nuclein took the commendable step of practically withdrawing it from the market until they learn something about the subject; but what are the "hundreds and thousands" who obtained such good results with the old preparation doing in the meanwhile?[1]

Will the medical profession allow itself to be influenced by criticisms coming from such sources as the above? And nearly all the criticisms of Dr. Simmons and of the Council have come from exactly such sources and similar interests closely allied, commercially, with them.

Before leaving this subject a word may be said concerning the attitude of many medical journals toward secret proprietary medicines. Disappointment is frequently expressed that so many of these continue to accept the advertisements of preparations which have been shown clearly to be fraudulent. It is unquestionably humiliating to see that the standards of so many medical journals, in this respect, are decidedly lower than those of some other professional journals and of many of the popular magazines. Still, an improvement is very noticeable; a sharper distinction has been made between the reading and advertising pages and several have dropped some of the most objectionable advertisements altogether. The editors of many have become apologetic. Some say they would like to reform but will not be dictated to; like Falstaff, they will not tell the truth on compulsion. One editor remarked that some of the advertisements in his paper were so evidently frauds that nobody could be deceived! As regards those journals which are published simply as business enterprises and in which there is a real division between the provinces of editor and advertising manager, the profession may as well accept this fact: Dishonestly exploited drugs will be advertised so long as there are doctors to use them or so long as doctors subscribe for such journals. The fact may be deplored, but it will remain a fact. The case is different with the journals supported by medical organizations. An organization which can not support a journal which is clean from cover to cover should not try to publish one at all. At present the advertising pages of the *Military Surgeon*, the official organ of the Association of Military Surgeons, are a striking example of what should not be tolerated in a journal controlled by a body of medical men; it is to be hoped that the new management will make radical changes.

Instances could be multiplied almost indefinitely of how secret or semisecret proprietary medicines stand in the way of progress. Many physicians in their zeal to give their patients the benefit of the latest discoveries are prescribing preparations which contain practically no medicinal ingredients at all or only the old familiar drugs under a new name. The remedy is to turn to the practice of using only those drugs, the composition of which has been determined by physicians or by their representatives.

Of the standards at present available the United States Pharmacopeia is, of course, the best. By the enactment of pure drug laws by the United States and by the several states this has practically become the national standard. Where there is the proper cooperation between physicians, pharmacists and officials entrusted with the enforcement of pure drug laws the difference between the value of official and proprietary preparations is about as great as that between the legal currency and the promissory notes of Tom, Dick or Harry; those of Tom may be all right, but the probabilities are that those of Dick or Harry have not their face value. Hence one of the first duties of the physician is to adhere as closely as possible to the preparations of the Pharmacopeia. A little study or consultation with one of those truly professional pharmacists who are to be found in almost every community will convince many a physician that he is using drugs for which officially recognized ones may easily be substituted. If, however, after careful study, he fails to find in the Pharmacopeia or in the case of a pharmaceutical mixture, in the National Formulary, the drug he desires to use, I believe the next best source of information is New and Nonofficial Remedies. The latter contain, in the case of proprietary preparations, not only the statements of the manufacturers, but also the results of the investigations of disinterested parties made by the authority of the American Medical Association. It is a noteworthy fact that of the several hundred preparations admitted to this book not a single one has been shown to have a composition differing from that given, whereas the larger part of the proprietary preparations at present on the American market which have not been admitted to New and Nonofficial Remedies have been found to be of uncertain or variable composition or exploited in a questionable manner. Hence a physician should be very cautious in using a drug which is not contained in one of the above-named books. If, however, after careful investigations he is convinced that he has found a drug of value which has not been admitted to these works he is false to the traditions of his profession if he does not make the fact known to his colleagues. It would be safer, however, for him first to submit his findings to the secretary of the Council on Pharmacy and Chemistry, Professor Puckner, who probably has a more encyclopedic knowledge of new drugs than any other man in the world. Professor Puckner, as secretary of the Council, has from the first requested such suggestions as well as criticisms of the products contained in New and Nonofficial Remedies. If more such requests were sent than he could answer it would pay the profession to provide additional assistants for him. The office of The Journal of the American Medical Association should continue to be, as it is at present, a trustworthy source of information to physicians generally as well as to the members of the Association.

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[1] "Nuclein" has frequently been a source of confusion and misrepresentation in the "literature" of proprietary medicines. In strictly scientific literature the physician reads how Loewi administered thirty grams (450 grains) pure nucleic acid to a man without observing any ill effects. From this a physician would infer that ordinarily, at least, nuclein is a harmless substance. Another proprietary preparation with the innocently sounding name "Protonuclein" was found, however, to contain considerable thyroid. There was recently placed on the market another secret proprietary product, Iodonucleoids, purporting to be a compound of iodin and nuclein. To a physician who is at all familiar with the subject of the nucleins a compound of iodin and nuclein would appeal as something new and worthy of trial. On examination, however, this preparation was found not to contain a true nuclein at all, but seemed to be a product such as can easily be made by simply evaporating a solution of hydriodic acid with ordinary casein.

By far the larger number of drugs used by most physicians are those recognized by the above standards, but, on the other hand, there are not many physicians who do not use at least a few drugs of questionable character. It is the sum total of the latter which is largely responsible for the present unscientific and unsatisfactory state of drug therapeutics. Most proprietary remedies are sold at such a large profit that a comparatively few orders will keep one of them alive. If each individual physician would carefully consider the drugs he uses and then either abandon those which are not official or are not contained in New and Nonofficial Remedies, or, if convinced that they are of value, use his endeavors to get them admitted to these works (the door of the New and Nonofficial Remedies is always open for honestly exploited drugs) much would be done to solve the proprietary medicine problem. The ideal condition will be reached only when every drug which the physician needs has been admitted to the final legal standard—the United States Pharmacopeia—and the physician should consider it one of his duties—to his patients, to his colleagues and to the public as well as himself—to use his influence to perfect and maintain this great work. The opportunity to support the Pharmacopeia comes to the physician every day; the opportunity to make his influence felt in its revision comes to him but a few times in his life. One of these times is now approaching. The Convention which meets in Washington next spring will formulate the plan of the Pharmacopeia which will be the great guide for the next decade. It is the duty of every physician to endeavor to have his state medical society and his alma mater represented at this convention by three (the number each such organization is entitled to) earnest, broad-minded men who will insist that, among the multitudinous interests seeking recognition, those of the physician and his patient will not be overlooked.

Finally, I desire to put in a plea for the support by the physician of research work in pharmacology. For thousands of years the great contributions to materia medica came from the medical profession; in the last few years only have they been coming more and more from without. The profession has lost prestige and in addition has become confronted with the proprietary-medicine problem. The solution is for the contributions to, as well as the control of, new drugs to come from the pharmacologic laboratories of the medical schools, of the Government and of medical associations. Nothing is so potent, not only for positive progress, but for dispelling darkness, as a great discovery.

CERTAIN IDEALS OF MEDICAL EDUCATION

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It is the function of the teacher to perpetuate, by transmission to the on-coming generation, the knowledge and traditions on which civilization is based. We who have for our share of this indispensable work the transmission of medical knowledge and of medical traditions find the difficulties of getting our freight into the depots of youthful minds always numerous and often great. We, therefore, are constantly busy with efforts to improve our transactions by selecting the most valuable knowledge to transfer, by seeking devices to quicken the business, and by trying to save the labor-waste of the students. We have, besides, to add daily to our stock all the latest novelties. Despite all these pressing demands, we must keep the whole army of data in perfect order, under the command of general ideas and of natural laws. It is inevitable that the pressure on our energies should absorb most of their power so that we are habitually too busy to pause; and yet it is , I am sure, helpful to pause occasionally to consider, not the details, not the ways and means of our business, but its underlying principles.

May I regard this hour as such a pause, which we dedicate to an examination of the purposes of medical education and their best fulfillment? The function of a good medical school is to produce competent practitioners of medicine. I can not venture to call this an original idea of my own. Though it is a platitude to which all assent, it has its place here, in order to permit us to add that it is not the sole function of a good medical school, for only that medical school attains a high place, or even real importance, which adds on a large scale to medical knowledge and trains a steady succession of young men to become medical teachers. Only by the active pursuit of these high aims can the influence of a medical school inspire sound professional ideals in

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* Commencement Address delivered before the Medical School of Washington University, St. Louis, May 27, 1909.

the minds of its students, practitioners to be. It appears, then, more accurate to put our platitude thus: The *chief* function of a medical school is to produce practitioners.

THE ESSENTIAL QUALITIES OF A PHYSICIAN

If we are to proceed intelligently, we must begin, it seems to me, with an inquiry as to what are the qualities which a physician should have, and the development or acquisition of which by students a medical school ought to render possible.

There is one quality the possession of which is the supreme need of the physician, without which he is as unfit and useless as a tone-deaf musician, or a color-blind painter. It is a quality with which every normal man is naturally endowed, just as every normal man is endowed with hearing and sight. But just as it is true that not every man can become a musician or an artist, so is it also true that for most men it is impossible to become good physicians, for the reason that they lack the one fundamental indispensable quality, that rare gift—a faculty of exact observation.

Accurate observation is by far the most difficult art which mankind has ever essayed. A nation may count on furnishing abundance of military talent—I begin with the lowest profession—plenty of politicians and statesmen, enough of competent lawyers; it may even hope to have gifted artists and authors; but it can scarcely expect to produce a single master of the art of observation in a century. It is important to realize this fact. Although the fact itself is beyond discussion, its significance is little heeded. The reasons for it are not far to seek. In most occupations a partial success is valuable; if a good result is gained it has a practical value. If a general wins a campaign, he is victorious; yet there probably was never a war which might not have been ended with less than the actual loss to the victors. A statesman whose constructive work benefits his country still does not produce perfect laws. Bismarck always dreaded the unforeseen consequences of his statesmanship. Lawyers have proved themselves useful, though litigation due to their imperfect work is incessant. A beautiful poem or picture may be a precious joy without reaching to the standard of absolute perfection. Scientific observation, on the contrary, aims for the absolute, and so far as it fails to establish the absolute truth it must be renewed, tried again and again, until every blemish is removed from it. Observation is accurate and good only when it attains absolute perfection. Religion sets before us an ideal of absolute moral perfection. All other ideals of men admit of limitations, allow of boundaries, save in our waking dreams and saving else only science, which claims from us the ideal of perfect observation, which alone can reveal the absolute truth.

In most professions merit is measured by a finite scale, but the scientific observer must strive toward the Absolute, which to our human powers seems infinitely remote. Because the ideal is so lofty very few come near it. In a century Germany produces one Helmholz, France one Pasteur, England one Darwin—an American peer of these three is yet to become known.

Observation is much more than seeing, hearing and feeling. Our sensory perceptions are but the beginning, and the simplest link in the chain of processes. Yet in my experience no young man, without prolonged and severe discipline, can be trusted to forge aright even this first link on the anvil of opportunity. To appreciate the real difficulties, we must pass behind the scenes and study the mental apparatus.

The faults of the observer are to be explained not so much by the working of his eye as by the failure to work of his brain. The organs of sense are, as the physiologists have taught us, imperfect, severely limited in their scope and ever ready to furnish us with defective sensations and illusions, but they work with astonishing accuracy as compared with the mind. In my long career as a teacher of medical science, I have had only two students whose eyes were not equal to good microscopic vision, but I have never had even a single student whose mind could perceive the retinal images obtained from microscopic preparations.

Successful scientific observation depends on three psychic factors: intelligence, concentrated attention, and judgment. Intelligence is necessary to guide the observer, who must before he begins have a clear understanding of the conditions by which the character of his observations is determined or modified. Above all, there must be an intelligent appreciation of what to look for, and an intelligent technical acquaintance with the methods to be employed. Only to a very limited extent, indeed, can the direct observation of natural conditions suffice. Herein, to my thinking, lies perhaps the most characteristic distinction between ordinary and scientific observation: the latter relies constantly on factors artificially introduced to expose objects too hidden or to record phenomena too remote or swift for observation. Indeed, science is based on the invention of methods of research, and the introduction of each new method is followed by an advance of knowledge. In order to realize this, we have merely to think what we owe to the methods of injection, of staining sections and bacteria, of making graphic records of the pulse and muscular contractions, of filtration and dialysis, of electric measurements, and so on through a list of immense extent. Without these numerous artificial methods our sciences would have remained rudimentary. Intelligence is, therefore, especially necessary to master methods, and no training in any natural science is more than a farce which does not give the student, first of all, a practical acquaintance with the methods used and of their advantages and their errors.

Concentrated attention we, of course, all know is indispensable, but, like other virtues, it is easier to commend than to practice. It is comfortable, after receiving a general impression, to pass on to something different with a fresh interest; but power is only for those who can sustain the closest attention for a long time, because otherwise details are overlooked, and the anticipated fact remains unnoticed. The ability to catch hold of the wholly unforeseen and significant phenomenon is the distinctive gift of a great mind. We are mentally blind to what we do not anticipate or at least know as a possible occurrence. The history of science is rich in illustrations to the point. One such curious illustration I may mention. For many years the red blood corpuscles of man and other mammals have been described as like biconcave discs in shape, but this form is to be observed really only as an artefact, and, as we now know, the corpuscles in life are cup-shaped, being hollow on one side and convex on the other. The truth has been known to us, however, only a very few years, because every one who examined the blood had a preconception of the corpuscular form, and was mentally blind to the evidence as to the real shape, of which any one can now easily satisfy himself, because his attention will be rightly directed. Innumerable instances could be compiled of scientific discoveries long missed because of failure to attend to some unexpectedly significant fact. It is by trained attention that we achieve accuracy and thoroughness; hence the first aim of the instruction in every scientific laboratory should be to impart to the student a habit of relentless attention and a high standard of exhaustive precision of observation. The quantity of information acquired is of minor importance.

Judgment is the highest quality. By attention and intelligence we may gather data, but judgment coins them into conclusions for the intellectual commerce of the world. Judgment, as here conceived, is much more than the judicial faculty, which is merely skill in balancing the pros and cons—a useful legal faculty, for the law courts deal with evidence mostly from average persons who are often biased by their interests, and in any case are ordinarily incapable of accurate observation. The law courts also follow a method, that of having opposing counsel on the two sides, which is absurd in science, though—be it confessed with sadness—this deplorable method is often mimicked in scientific debates. The scientific method is based on our belief that invariably the evidence must be wholly and exclusively on one side. If there is an apparent conflict, the duty of judgment is to find out, first, what part of the evidence is erroneous; second, what logical errors have occurred in the inductions drawn from the observations. As to the observed data, judgment must decide, first, whether they are to any extent erroneous; second, to what extent they are incomplete. For such a decision in any department of research to-day a thorough expert knowledge of the special subject is necessary, which must include not only intimate acquaintance with all previous work—a requirement too often shirked—but also intimacy with all the possible sources of error. Scientific judgment is a mental faculty which becomes efficient only after long experience and development. It is by illustrating in his own person the successful activity of this faculty that the professor of natural science exerts his most beneficent influence on his pupils.

Judgment renders its loftiest service when it deals with the logical inductions from the data. The first step logically—though often not psychologically—is the determination of the differences and of the resemblances among the data. Resemblances are far more difficult to recognize than dissimilarities and they are often as nonexistent to untrained minds. Then follow the proper reasoning processes which, if successful, carry us beyond the observations to the generalization, which makes part of the growth of science.

Now the nearer a practitioner of medicine comes to possessing the gift of observation, as just described, the better practitioner he will be; and, inasmuch as it is only in science that such ideals of observation are maintained, it is evident that a scientific training is indispensable to produce physicians psychologically fit. One still sometimes hears the distinction drawn between the "practical" and the "scientific" doctor; so far as I know, the most important difference between a "practical" doctor and the truly scientific is that the patients of the former are the more likely to die. Yet, of course, practical experience is of the utmost professional importance. Medicine is one application—only one of many—of biologic knowledge to practical needs, and the practical technic of the application must be mastered. There are useful practitioners of medicine whose utility is founded on their practical experience, but I had rather entrust myself to the care of one who had in addition to a practical technical mastery a mind educated to observe with scientific accuracy and reason with scientific precision. Those who extol the practical man and decry the scientific are of the sort who would rank plumbers above engineers.

St. Louis has had two physicians to whom I wish specially to allude, because they possessed the noble spirit of research to a pre-eminent degree. Their memories are held in honor wherever biologic science has a foothold. Both owe their well-earned reputations to their ability as scientific observers; Beaumont and Engelmann were practitioners, but their investigations demonstrate that they realized in their own persons the ideal we have before us. Their work has added an enduring luster to the fame of St. Louis. May they have many worthy successors!

The second quality, which both the medical student and the graduated physician must possess is, at least in my opinion, intellectual endurance. The medical mind must work not only well, but strenuously and continuously. The period of study in America is now actually from six to eight years, since four years has become the standard of the medical schools, and admission to them demands one or two years' work in the preliminary sciences, to all which a year or two in the hospital ought to be added. During every one of these years the student must work at high pressure, mastering one branch of science after another, learning the general principles, the technical methods and the practical applications of each, and gradually fitting himself for the art of practice. Having accomplished so much, he can not for an instant relax his acquisition of further knowledge, not merely from his own direct experience of diseased persons, but also by keeping abreast all his life with the progress of medicine. He must keep up not only with the improvements in medical treatment, but also with the advance of scientific knowledge. To do this perfectly has already become impossible, and the difficulty is constantly increasing. The older practitioner as he becomes busier, and his years render new modes of thought more difficult for him, must lag more and more behind the times and feel himself less and less well equipped than the on-coming young man. He is saved from discard only by his ripened judgment and his wisdom in dealing with patients. It is evident that intellectual endurance, a sustained mental power, an ever-active gift of apprehension, a ceaseless passion for knowing—call it what you will—is demanded of the members of the medical profession as of no other. Medicine is a profession which only men of exceptional ability should enter. Men of moderate gifts should seek other occupations. In the future, as medical knowledge becomes still more vast, high ability will be indispensable for those who try to master and apply it. No other profession is likely to equal it in difficulty, for the lawyers, engineers, architects, chemists and others have far less complicated problems than the physician; and their fields of knowledge are smaller. Moreover, specialization in the learned professions mentioned is far more feasible than in medicine, for every part of our bodies is related so intimately to every other part that no specialist can deal with his subject as an isolated field of practice. Not merely as in all scientific professions must a man keep up with the general progress of knowledge, but, since every organ is related physiologically and pathologically to every other, the medical specialist can not seclude himself in his chosen subject, but must preserve his active intercourse with all medical domains. The practitioner, no matter how much absorbed in work, must remain all his life a quick, diligent, alert, receptive learner. Never may he let himself feel a senescent apathy to new ideas. The ideal physician possesses a life-long intellectual endurance.

The psychologic traits desirable in members of the medical profession are many and complex. Even were I competent to review and discuss them all, such a disquisition would not suit this occasion, and it will suffice to keep our attention concentrated on a few fundamentals. Let us, therefore, content ourselves with adding loyalty as the third indispensable quality, for loyalty best expresses that quality of single-minded devotion, that trinity of faithfulness to occupation, to purpose and to person which makes us gratefully reverence the great physician. Loyalty is a natural gift, but, like all natural endowments of character, it may be cultivated, trained and strengthened. Our entering students rapidly classify themselves according to their loyalty to their immediate work. The best men already feel the gravity of their decision to become physicians; they appreciate the seriousness of their studies, and work faithfully each day with a prophetic instinct that each day's knowledge builds up the base for their future decisions. They are already filled with a sense of responsibility; and to nourish that sense, to sustain the loyalty of the learners should be the constant goal of the medical teachers' ambition. The student should be made to feel from the very start that his purpose in life must be to serve, and that devotion to his studies is his initiation into the life of perfect devotion to his patients.

REQUIREMENTS FOR A GOOD MEDICAL STUDENT

The man who purposes to study medicine should have in high degree three gifts, not one of which is common among mankind, yet all of which he must have. The three gifts are: the power of reliable observation, intellectual endurance, loyalty.

If the estimate we have made of the needed capacities of a physician be correct, it follows that a good medical school can exist only with good students. Coins of full value can not be made of impure metal. We must, therefore, start with the consideration of the means to select students to the exclusion not merely of the bad ones, but also of the mediocre. We must not attempt to mint doctors from merit basely alloyed. Examinations should have their main use, not as a means of admission, but as a means of exclusion, and the more men of low and middle rank that are excluded the better. One poor student damages a whole class. We should look forward to the exclusion of all men who fail to get high marks in the preliminary tests, so that there may be a reasonable probability that all who get in are capable of hard sustained mental work and of loyalty to their studies. The examinations ought, however, to accomplish more than this: they should afford evidence that the candidate has a natural power of observation, and that the power has already received some scientific discipline, and, finally, they ought to prove that the candidate has the preliminary knowledge of chemistry, physics and general biology without which the pursuit of the medical sciences is impossible. It is a welcome sign of progress that these entrance requirements are being rapidly adopted by the medical schools of the country, and there is, I am glad to perceive, a steady advance toward uniformity. In my opinion, such a preliminary training, with the appropriate sifting of the unfit, can be accomplished by two or three years of college work—and it is not and can not be accomplished by requiring an A.B. degree (or its equivalent) unless that degree represents adequate courses in chemistry, physics, biology, French and German. Under the prevalent elective system, a man may become a bachelor of arts and yet be not only undisciplined, but also very ignorant of natural science. I have had to do with many such men, and can only say that they are so inferior at the start that only the most brilliant of them can overcome the heavy handicap. Indeed, I can not affirm that even the brilliant men are able wholly to repair the evil, for in the rush of medical study they have no time to make up their deficiencies in the preliminary sciences. They enter as cripples and as cripples still they are likely to graduate from the medical school.

Although observation is the foundation of knowledge, and no human knowledge is built on any other foundation, men of intellectual power are by no means always interested in observation. There are mathematicians who can scarcely be said to feel interest in any observations. I often recall with amusement a distinguished mathematician whom I would not have trusted to make an original observation beyond a simple measurement, and yet who condescendingly explained to a company of biologists that their science must remain inaccurate until its results were mathematically formulated. The reply might have been made to him that no mathematical result can be accurately known until put in graphic form, so that it can be observed. The one half-truth is as good as the other. Our mathematical friend had still to learn that there is an accuracy in a complex visual image with which mathematics can not even distantly vie. We might construct a scale, with the anatomist at one end and the mathematician at the other; both alike depend on observation, but one seeks his accuracy chiefly in the renewal and extension of his personal observations—he loves first-hand knowledge; the other seeks his accuracy in the logical evolution of quantitative relations, and cares but little for the simple observations on which his mathematics depends. Between these two extremes we must range those minds which enjoy and seek both observational and logical satisfaction, and who are often experimenters. Among experimenters there is a wide range in the degree of relative interest—on the one hand, in what can be directly observed, and, on the other, in the logical work following the experiment. Only those in whom the love of observation is predominant are likely to succeed as physicians. For the pure experimenter there is plenty of room in medical science, but he can hardly find his right opportunity in medical practice.

The natural observer differs both from those who, like the humanitarians, are satisfied by second-hand knowledge, and from those who prefer experimental work, by his insatiable craving for seeing, and, to a less extent, for hearing and feeling. His inborn need is to have direct contact with the phenomena. Nothing short of the personal acquaintance with the phenomena satisfies him. Now those students who while in college elect the humanitarian studies, and neglect the natural sciences, are extremely unlikely to have the observing faculty. If they are required to study chemistry, physics and biology before they get to medical work they will be tried out, and those who have not the observer's gift, will learn their limitations in time to avoid becoming medical impedimenta.

THE STANDARDS FOR THE MEDICAL SCHOOL

Having obtained our students, we ask next: "What shall we teach them?" Really good answers to this question are given by the curricula of our better schools, which differ from one another only in detail, since in all the subjects are the same and the order in which they follow is essentially fixed.

Two comments on the present typical medical curriculum may be ventured: too much time is devoted to lectures, too little time to physiology. It is, if I be not mistaken, universally true that in American medical schools a large number of lectures are given which are mere repetitions of what is often better expounded in the text-book. It would, in my opinion, be wiser to devote many of the hours now used for lectures to practical work, restricting the lectures to general principles, the elucidation of complicated subjects, especially those which can be made clear by verbal explanation combined with drawings, models or experiments. Lectures at best can convey very little actual information, and their greatest usefulness is in exhibiting to the students the point of view, the intellectual attitude of the professor, who is not fit for his position unless his mental work is better than that of any of his students. The outlook in America is full of encouragement. Nowhere else in the world has laboratory instruction advanced as far and well as in this country. Germany must look to her laurels, for the whole university tradition there exalts the lecture. The system is strongly entrenched, for the professors depend on lecture fees. The future of scientific education depends on laboratories, and unless European universities imitate the American laboratory standards the stream of students from Europe to the United States will soon be greater than that of a generation ago from our country to Germany.

As regards physiology, have we not to deplore the fact that very few physicians think physiologically? It is only too true that if a practitioner is asked for a physiologic explanation, his answer is usually so lame that it can scarcely be said to go: Ask an oculist why the tears run on a cold day; or a clinician the cause of pain from indigestion, or how opium works, or what is the physiologic basis of shock; ask a gynecologist why birth occurs; ask a general practitioner the cause of senescence; or ask a surgeon how the after-effects of ether are caused—and the answer is likely to be by no means in physiologic terms, by no means an analysis of functions, but rather an empirical statement; and a physiologist listening might well feel himself transported to the middle ages. The body is a functioning machine, and when it does not work properly it ought not to be tinkered by empiricists working by rules, but examined and repaired by physicians, whose chief claim to confidence is that they are expert physiologists, whose knowledge of the bodily functions guides their practice. I deem the opinion sound which regards physiology as the central discipline of medicine, and maintains that a generous development of clinical physiology is the improvement needed above all others in our medical curriculum. We are all agreed as to the importance of anatomy in medical education—it can hardly be exaggerated—nevertheless, we may feel tempted to say that physiology is even more important.

In regard, however, to material resources, our schools differ widely; and those which suffer from deficient laboratories must either make up their deficiencies or go under, drowned in the flood of the progress of the others. We have in America to-day a number of laboratories at various medical schools which are serving as present standards. All the best teaching in the medical sciences is laboratory teaching. Each one of the sciences must have a large building and expensively equipped. The building must afford a separate work place for every individual student, rooms for the staff, rooms for advanced students and research; a lecture hall, library, and other necessary conveniences. These are merely minimum requirements, and mean that the cost of the plant for a respectable medical school is not to be reckoned by thousands, but by millions of dollars. There is no choice. Those responsible for the financial management may be staggered by the demands of their medical faculty; they may be able to meet the demands only partially for the time being, but in a comparatively few years from now only those medical schools will be found surviving which have met these demands. With time, too, the demands are sure to become more insistent and more numerous. Never have the financial responsibilities been so great, but, I repeat, there is no choice. The laboratory education is our one sure foundation. It is indispensable that it be amply provided for; if that can not be, the failure ought to be acknowledged and the school closed.

It is in the laboratories—and only in them—that the power of observation can be disciplined and developed, and only in them that the students can acquire genuine knowledge. In speaking thus, we class the hospital with the laboratory. It is my belief, strongly held, that a laboratory is an efficient influence only when it is a place where original research goes on actively. While it is true that the informational purpose guides the daily labor, and that it is indispensable that the student make by observation personal acquaintance with as many phenomena as practicable, yet it remains also true that the student should find in the laboratory an ideal standard of work—and the only possible high ideal is that of original investigation. It is relatively easy, under the guidance of an experienced instructor, with materials carefully prepared beforehand, to confirm by actual observation the statements of the text-book.

No doubt one exclusively so trained can become a useful mediocrity among practitioners; no doubt, even, that gifted men so trained will forge ahead despite the training; yet certainly a better education is secured when the students acquire appreciation of productive scholarship, and feel themselves so near it that it is an actual and living interest to them. Old discoveries do not stir much. We read calmly that some fact, which we find stated in all the text-books as familiar to everybody, was discovered fifty or forty or two hundred years ago by a man whose name awakens no significant associations. Utterly different is the effect on the student's mind when he learns that his instructor has made a successful research and has new discoveries to report. It is inspiring to him to know the discoverer. He feels himself a witness of the work of creation, and unconsciously his belief in the possibility and value of original work becomes a living influential conviction; and he rises at once to a higher intellectual plane. He advances on his way toward becoming a man of culture —a title which to-day only those can claim who have learned to revere productive scholarship.

Let us never forget that in contemporary education the moribund ideal is slavery to books; the nascent ideal, mastery of facts!

The consideration of our needs forces on us the conclusion that medical schools not only ought to be, but must be centers of research in order to succeed. To this end each school should be closely allied with the postgraduate department of its university, and the various medical sciences should be on a par in academic standing with the other natural sciences. Scientific students not intending to become physicians should be encouraged to enter the medical laboratories, and the highest university degrees should be as open to students of anatomy, pathology, bacteriology, physiology, etc., as to students of zoology, chemistry, or physics. If this policy be adopted with zeal, the reaction on the medical school will be wholesome, the effect on the university at large, uplifting.

THE SELECTION OF THE FACULTY

We have passed in review important aspects of the problem of maintaining a good medical school, but the most important factor of all, on which the successful solution of the problem chiefly depends, we have not yet mentioned; it is the corps of professors. Is it reckless to assert that no school has ever secured a sufficient number of sufficiently good professors? Perhaps no school ever will. As President Remsen has said, keenly and justly, the supply of good professors is always short. One great professor may leaven a whole faculty, but the need is for a great professor at the head of the five principal divisions: anatomy, physiology, pathology, medicine and surgery, and for first-class men at the head of the principal specialties. The majority of American medical schools certainly are without such corps of leaders.

The prevalent constitution of the medical faculties is due to various causes. First may be mentioned the survival of professors from an early epoch with lower standards; professors of anatomy who are not professional anatomists; of pathology who are busy practitioners; of clinical medicine, without knowledge of modern pathology. This difficulty cures itself. A second cause is the custom of promoting local men, who are rewarded with professorships for their faithfulness rather than for their ability. Every such promotion prevents the appointment of an abler man from outside. A third cause, and the most potent of all, is the American system of appointment by the president and trustees of the university, which often amounts to appointment by the president alone.

The administration of our colleges and universities has become more or less autocratic. The university president has great power, which we are accustomed to see liberally employed, on the whole, to the immense advantage of the university cause. President Gilman's service to higher education has our fullest admiration, and there are other presidents still living who are great leaders and whom we delight to honor. We can not regret this phase of our development, though there are many now who hope and believe that it is only a phase, and who welcome the unmistakable signs of the transformation of the office, by which the university president of the future will be more a business administrator and less a minister of education. The president is likely to long remain a valuable—an almost indispensable—factor in our university life; but, in my opinion, is not likely to retain any such control over appointments as he at present exercises. This control depends on the custom of having appointments made by the board of trustees, which is typically composed of business and professional men who are qualified to advise about the management of funds, the conservation of resources, and the distribution of income. The trustees ought, however, to admit frankly to themselves that their chief usefulness is, first, to increase the resources of the university; second, to determine the broad questions of general policy so as to secure a symmetrical growth of the institution. It is inevitable that the large majority of them should be inexpert in education, inadequate in their notions of scholarship, and ignorant of the needs, methods, and possibilities of most—if not all—kinds of original research. Such a board at its best can not by any possibility be a very successful piece of machinery for the selection of professors, because the members can not form a valuable judgment of their own concerning the only indispensable qualification of a candidate for a professorship—his ability to do original research of a high order. They forget too readily and too often that it is a disgrace to a university to appoint a man as professor chiefly because he is a "good teacher"—such a man may be a good school teacher, but only investigators can give university instruction.

In securing a faculty, the president and trustees must be guided by advice, and they undoubtedly are so guided to a very large extent at the present time. But the advice is too often gathered more or less fortuitously, and not by any definite custom or fixed principle. For our future welfare it is important to plan for obtaining the best advice, or, in other words, to make sure of good nominations being systematically presented. Accordingly, I look forward to seeing in the near future the task of nominating candidates for professorships and other teaching positions assigned to the university faculties.

It goes without saying that a university teacher must be by character and manners fitted to join a society of scholars and to come into intimate contact with young men and women. We can not, however, make every respectable gentleman a professor; but we must be sure that he has a sound, powerful, creative intellect, of which the only satisfactory proof is original research of a high order. In comparison with the possession of this intellectual gift, all other endowments are subsidiary. Professors may vary much in their ability to lecture, their availability for administrative work, in their adaptation to social life, in their capacity for business, in the quality of their minds; but all good professors are necessarily alike in the possession of creative mental power.

The selection of candidates for professorships must, then, be made by persons who can form expert judgment on the original investigations of the possible candidates. In universities, qualified judges are found in the faculties—and usually only in the faculties. To the faculty, then, ought to be given the exclusive right of nomination, leaving to the trustees only the right of confirmation; partly as a check against possible occasional errors of judgment by the faculty, partly as a financial safeguard against expense not warranted by the actual resources. This implies a radical reform in our universities; but until the time comes when teaching appointments can be initiated only by faculty action there will continue to be an unnecessarily large proportion of more or less incompetent professors.

Let us summarize the opinions expressed: A good medical school produces good physicians. The medical profession is a very difficult one, and to meet its requirements exceptional men must receive a splendid special training. Therefore, a good medical school will accept only such students as have been selected by severe tests with high standards; it will maintain lofty ideals of knowledge, of observation, of judgment, of original thought and of loyalty. It will uphold these ideals not only by striving to furnish every important material facility in laboratory and hospital, but also by engaging able instructors. The good medical school may become great which adopts as its motto: Great professors make a great school. Let this be your device, for the greater in ideals and achievement your school becomes, the more you will help and inspire all the other medical schools in our country.

Harvard Medical School.

THE SCIENCE OF CLINICAL MEDICINE

WHAT IT OUGHT TO BE AND THE MEN TO UPHOLD IT *

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NEW YORK

The honor of the presidency of a society goes with the privilege of discussing some of the aims of that society. Such a privilege becomes a duty on the occasion of its first birthday. We have to show the specificity of our objects to justify the addition of a new medical society to the many already in existence. As your first president and as one of the instigators of the movement which led to the formation of this association permit me to discuss some of the problems to the solution of which this association wishes and hopes to contribute.

CLINICAL MEDICINE AS A SCIENCE

In the first place, I wish to discuss the problem of clinical medicine as a science. In years gone by, medicine was a unit and its leaders tried to master all its aspects. With the development of scientific methods and the growth of knowledge a process of differentiation took place. Heavy branches grew out of the stem of medicine, broke off and obtained an independent existence. Anatomy with all its dependencies broke away early, then followed physiology, pathologic anatomy, pharmacology and physiologic chemistry. Bacteriology tore off the branches of etiology and established itself as an independent growth. All these offsprings of medicine are now well established as pure sciences; they still closely affiliate with the mother-stem and are often designated as the sciences of medicine. That what is left of the old stem is clinical medicine. What is the character of this residuum? It is generally designated as the practice of medicine. I am not aware that any one has had the courage to call it a pure science. Those who do not like to call it an art say that it is an applied science. According to this view, the relation of clinical medicine to the sciences of medicine is that of technology to science in general. I am afraid that this conception of clinical medicine is widespread among those who are in the practice as well as among those who are in the sciences of medicine.

However this may be, I feel sure that such a view is logically erroneous and practically harmful. I wish to plead for an extension of the process of differentiation also to clinical medicine. I am of the opinion that clinical medicine as it exists now is made up of two constituents: one part has all the elements of a pure science and ought to be coordinate to the other pure sciences of medicine, and the other part is the real practice of medicine, an applied science which has many elements of an art. At present both parts are so closely interwoven that they present the appearance of a natural unit the splitting of which into two parts might appear to some as an impossible and undesirable process. I shall call to mind, however, that medicine made the same impression of an indivisible unit in the days when pathologic anatomy, physiology, etc., were inseparable constituents. To-day nobody doubts the necessity of an independent existence for the last-named constituents of former medicine. A considerable degree of separation of the science of clinical medicine from its practice is more desirable than even the separation of the coordinate sciences, because the requirements of sciences and practice are in a certain sense mutually antagonistic to one another and the simultaneous cultivation of both branches with equal attention is detrimental to the progress of either of them.

There is a fundamental difference between science and its correlated practice in any sphere of human activity. Science wishes to attain truthful knowledge of the subject it investigates. It attains this end in the safest way when it is least side-tracked by any extraneous motives. The motive of utility obscures its vision, and haste retards its progress. Practice, on the other hand, avails itself of acquired knowledge for the purpose of attaining a certain useful end. The more reliable that knowledge is which it has to employ, the more safely will it attain that end. But the use of any part of that knowledge which is indifferent to the attainment of the useful end hampers the practical progress. In other words, practice gains its ends best the purer the quality and the smaller the quantity of the science which it has to use. Permit me to say that my advocacy of the separation of a clinical science from its practice is not actuated by any disregard for the practice of medicine. On the contrary, I entertain now and have always entertained a strong conviction that the efficiency of practice should be the supreme object in medicine. At the same time I feel sure that the efficiency of that practice will be best attained when the search for the knowledge which the practice has to use should be carried on in the same manner and by the same methods as are employed in the search for knowledge in other branches of intellectual activity. In other words, clinical research should be raised to a department of a clinical science and be theoretically and practically separated to a considerable degree from the mere practical interests, that is, separated so far as the various and variable conditions permit. It will be the practice not less than the science of medicine which will benefit by such a separation.

Now let us see what the domain of clinical medicine is and whether it contains problems which can be treated by the methods employed in pure science. The sciences of normal anatomy and physiology teach us the structures and functions of the normal body; pathologic anatomy tells us of the anatomic changes found in a body dead from one disease or another. To clinical medicine is left the study of the phenomena and their sequence as they occur in a living body during the entire course of a disease. It has to interpret these phenomena by known physiologic laws, to identify them with similar phenomena experimentally produced in animals and it has to correlate the phenomena observed in the course of a certain disease during life with the anatomic changes found at the postmortem examinations in case the disease has a fatal termination. It is also one

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* Presidential address at the first meeting of the Association for the Advancement of Clinical Research, May 10, 1909, Washington, D. C.

of the tasks of clinical medicine to study the influence on the onset and course of phenomena of diseases which certain means and remedies may exert whose physiologic actions are well established. In other words, the domain of clinical research comprises the study of the natural history of diseases, their physiology and their pharmacology. Can there be any doubt that these studies constitute legitimate objects of a pure science? Objections may be raised, and will be raised in certain quarters, against the admission of the clinical science to the sacred inner circle of pure sciences on account of the impossibility in clinical medicine to verify the conclusions by the experimental methods. Assuming that this is an unassailable fact, what of it? Are the problems of biology, a science which enjoys an unassailable position in the councils of pure sciences, all or many of them provable by experiment? Or are the sciences of paleontology or geology amenable to an experimental proof? Yet nobody questions the scientific right of these branches of human knowledge. Furthermore, admitting that clinical research must necessarily remain less precise and its results less convincing than that, for instance, of physiology. But, then, physiology itself is again a great deal less precise than physics and chemistry and is certainly less irrefutable than anatomy. Does this throw a doubt on the claim of physiology to be a pure science?

As to the impossibility of verifying certain conclusions regarding human diseases by human experimentation, there is still this much to say. Each disease is an experiment which Nature makes on the organism. The very large number and the great variations of these experiments of Nature offer favorable opportunities for testing the theories made regarding the nature of these spontaneous experiments. Furthermore, clinical research should, indeed, be coupled with animal experimentation; any new point of view gained by observation in clinical medicine which can not be verified on human beings should be tested by experiments on animals. By such a procedure not only clinical medicine, but also physiology may learn a good deal, for which the following facts from the recent history of medicine are classical illustrations. The recognition of myxedema as a special type of disease led to the understanding of the function of the thyroid glands, and the observation of the coincidence of pathologic processes of the pancreas with diabetes led to the discovery by clinical investigators of the glycolytic function of the pancreas. Finally, it should be borne in mind that there are lines of experimentation which may be carried out even on the sick human being without any detriment to him and which can be conducted with profit only by trained scientific observers, for instance some studies in pharmacology or in metabolism.

Among the tasks of clinical medicine there is one which is on the borderland between the science and practice of medicine, being perhaps of greater importance to the latter than to the former. It is the search for simple or complicated means by which established units of diseases may be recognized safely and perhaps also easily. In one word, it is diagnosis. Since this activity is not carried on with a purpose of adding knowledge, it would appear that it belongs rather to the department of the practice of medicine. Such facts can be established only by means of careful critical observations and it will be more to the purpose when at least the development of the principles of diagnosis should remain in the hands trained in careful methods of research.

After showing that there is a definite field for a science of clinical medicine the next question is who should be the men to carry on the research in this field, what should be their qualifications? In the first place, they must have a training fitting them to carry out investigations in conformity with the requirements existing in all pure sciences. They must not only be informed and trained in the other sciences of medicine, but must have carried on various investigations in one or more of these pure sciences, so as to become familiar with careful scientific methods and imbued with a scientific spirit. They will thus learn best how to shape a problem so as to make it amenable to a solution; how to marshall the consecutive steps of an investigation so as to bring out the reply to the question in hand. They will learn to avoid bias in the search, to apply criticism to the findings; they will learn not to trust only few facts, not to rejoice prematurely over findings and not to be disheartened by failures. They will thus acquire the habits and the tastes of the investigator, the scientist, which may then stick to them for life.

However, after all these preparations they must select clinical research as the main field of their scientific activity. Clinical science will not thrive through chance investigations by friendly neighbors from the adjoining practical and scientific domains. Such volunteer service which for the present is keeping up the cultivation of the unacclaimed region is most certainly very welcome. But the acclamation, cultivation and maintenance of a field of pure science of clinical medicine can not be accomplished by chance services from volunteers; for such a purpose we need the service of a standing army of regulars. The investigator in clinical science must devote the best part of his time and intellectual energies to the cultivation and elevation of this field just as the the physiologist does in his domain—or at least as he ought to do. For the sake of elucidation let us compare the relations of a science of clinical medicine to its practice with the relations of science to technology in any part of physics or chemistry. Let us take electricity as an instance. In the electrical industry there is a large corps of electrical engineers who are bright, inventive and on the alert to make practical use of any newly discovered principle in general. Some practical engineers manage to make valuable contributions to the theoretical knowledge of their branch. Nevertheless the science of electricity is in the hands of pure scientists who are setting the pace of progress in the correlated practical branch. It is the discovery in pure science which makes great inventions possible. It was, for instance, the purely scientific demonstration by Hertz of the existence of electric waves that gave the impetus to and made the invention of wireless telegraphy possible. The following is a quotation from the presidential address of Professor Nichols before the Association for Advancement of Science[1]: "Communities having the most thorough fundamental knowledge of pure science will show the greatest output of really practical inventions." This is surely true also for medicine. And let me say to you that the Hertz's, the Roentgens, the Bunsens, the Emil Fischers, and a host of others, who are the real creators of knowledge and invention, are satisfied to live on comparatively small salaries, while it is within their easy reach to make twenty times the amount of their salaries as consultants, if they would be willing to give up a part of their time which they devote to investigations in pure science. Now, the leaders in practical engineering in electricity surely compare favorably with the leaders in the practice of medicine with regard to the completeness of their knowledge in the respective spheres. While thus the search for knowledge in electricity is carried on by men devoting themselves to pure science, the search for knowledge in clinical medicine is left in the hands of men who devote most of their time and energies to their practice and to the golden fruit it bears. Under such circumstances, how shall we expect to find the progress in science and practice of medicine keeping abreast with the striking progress to be met with in other branches of science and practice?

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[1] Science, Jan. 1, 1909, p. 5.

A few years ago I tried to fix the responsibility for the shortcoming of internal medicine in physiology, because this science is keeping aloof from medicine and its problems.[2] Anatomy, which gave its undivided attention to the human structures, prepared an excellent basis for a successful surgery, the problems of which are essentially mechanical in character. The problems of clinical medicine are essentially of a functional character, and the enlightenment which it requires must come from physiology. This science, however, developed a tendency to keep at a distance from medicine on account of the inexactness of the latter. There is an improvement to be noted in this regard; there is a growing tendency in physiology nowadays to pay greater attention to medical problems. However, even if physiology and other related medical sciences would devote all their time and energy to the study of purely medical problems, it would not bring about a radical solution of our perplexing problem. Neither will this be accomplished by the creation of chairs for experimental medicine. The regeneration or rather creation of a science of clinical medicine must come from the innermost of medicine itself. It is true, as stated before, that the men who are to tackle these problems must have a thorough training in the sciences allied to medicine, but the center of their activities must be within clinical medicine itself. They must have a bringing up within medicine, their minds must have been filled up with thinking, worrying, brooding over practical and theoretical problems of clinical medicine.

Let me recapitulate. There is a necessity for a differentiation of clinical medicine into a science and a practice. The clinical science has well-defined objects and is a most important department. It must be managed by a set of men specially trained for and almost exclusively devoted to that task. Without the development of such a department of clinical science the efficiency of the practice of internal medicine will lag behind, no matter how progressive the allied sciences of medicine are and how great their efforts to be useful to medicine may be.

THE CONDITIONS AS THEY ACTUALLY EXIST

In conjunction with the foregoing considerations let me glance at the conditions of clinical medicine as they actually exist here and abroad. I may state that neither abroad nor here do we find a separate class of investigators confining their activity solely to the domain of the science of clinical medicine. Everywhere science and practice of clinical medicine go hand in hand. We may, however, admit at the outset that there is an enormous difference in the status of medical research between abroad and here. Let us take the development and the present status of clinical medicine of the German-speaking countries as an illustration of the conditions abroad. We shall notice that there the mother stem of medicine managed to retain a scientific aspect despite all processes of differentiation.

When for the first time pathologic anatomy broke away completely from medicine and was taught by Rokitansky at the University of Vienna as an independent branch of medical science, we find that at the same time and at the same place the celebrated Skoda was teaching the remaining trunk of clinical medicine as a natural science, constructing the methods of auscultation and percussion on a sound basis and establishing a firm connection between the *intravitam* diagnosis and the postmortem findings. The purely anatomic tendencies of that celebrated school of medicine which unfortunately gave birth to nihilism in medicine, was soon curbed by the appearance of Virchow on the medical scene in Berlin. While also working for the establishment of pathologic anatomy, gross and histologic, as an independent natural science, he manifested throughout his long life a deep interest in the development of clinical medicine on sound lines. At the very beginning of his brilliant career we find him stating (in the prospectus to the first volume of his *Archiv*) that practice of medicine should be an applied science and the ideal of the science should be a complete pathologic physiology. The great clinical contemporaries of Virchow strove for a similar ideal. Frerichs introduced chemistry and Ludwig Traube the methods of experimental physiology into the domain of clinical medicine. I shall not dwell here further on historical details. I shall only say that clinical medicine in Germany remained true to this ideal throughout all these years of marvelous growth of medicine. The exponents of clinical medicine in Germany are the flag bearers of pathologic physiology. The contemporary clinicians master the immense knowledge and manual skill which contemporary clinical medicine demands of its disciples, and nearly all of them are themselves diligently adding new facts to the store of medical science. I do not need to tell you the particulars. Some of you know from personal experience such master clinicians like Müller, Krehl, Kraus, Minkowsky, and a good many others like them. However, the standard of medicine is kept high not only by the heads of university clinics; the various members of their staffs, heads of hospitals and their staffs and a host of volunteer workers are continually digging for new fruit in the soil of clinical medicine. The medical literature is full of original, first-rate work in the science of clinical as well as of experimental medicine contributed by men whose main abode is clinical medicine.

Now there is in Germany no special chair for the science of clinical or even experimental medicine. All these contributors to medical science are in a sense simply medical practitioners. What is the secret of their scientific success? It is simply this: to these men science is the first and practice the second object of their life. To most of the leaders of medicine in Germany the tasks of gaining and diffusing knowledge receives their first attention and the consultation practice comes in last. Again, these very leaders before they have acquired their commanding positions spent many years of their life in preparing themselves for it; in training in scientic methods, in acquiring knowledge in the allied sciences and in the science and practice of clinical medicine, living meanwhile on small incomes, having no private practice at all or having a practice too small to interfere with their life ambition. You can not lead such a life unless you are possessed by idealism and a scientific spirit. That is the key to their success. And when these men become teachers, they can not fail to impart this ideal spirit to their students. That is the way they themselves received it. But they received it also in the institutions of their early education, where sport and habits of millionaires' sons are not the factors which form the character of the youth. They received it from the people among whom they grew up, among whom the worth of the individual is not measured exclusively by a gold standard. They received it from the care and encouragement of the government which, no matter what its political ideals may be, never loses sight of the fact that the cultivation of science is one of the greatest assets of a people. They received it in the traditions of medicine of their country; even before the new era when medicine was all in a cloud of so-called natural philosophy, only the substance of medicine was all wrong, its spirit was all right.

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[2] Congress of Science and Art, 1904, v, 395; chairman's address.

That is the situation abroad. Now let us look at the development and the present status of clinical medicine in this country. At a glance one observes with amazement that nearly all the factors which favored the development of a scientfiic spirit in Germany are absent. However, I shall not try to enumerate all the shortcomings with which the development of medicine in this country had and still has to contend. There is no educational advantage in doing it and you are all familiar with the situation. On the contrary, I take pleasure in pointing out the encouraging fact that, despite all the difficulties, medicine in this country gradually rose to a commanding position in many respects. It is an instructive and stimulating fact that the progress of medicine in this country was carried on through the efforts of a few high-minded men or groups of men who at various times transplanted the spirit prevailing abroad into this country. I shall, of course, not attempt to enter into the particulars of the history of this progress. I wish to refer briefly, however, to a few phases in this history. In the first important phase, clinical medicine in America received an elevating impulse through the activities of a group of medical men who continued their studies in France, where they came especially under the influence of the famous clinician Louis. Statistical methods of observation of diseases and diagnosis by auscultation and percussion became, then, the chief characteristics of internal medicine in this country. During the second period, young American physicians pursued their postgraduate studies in Austria and Germany. They brought home a knowledge of gross and minute pathologic anatomy and an aptitude for the use of the microscope. Pathologic societies were started and the teachers of medicine began to give separate lectures on pathologic anatomy and to instruct in the use of the microscope as a clinical aid. The studies and teaching of these new subjects gave at that time a scientific flavor to clinical medicine. The last period covers about the three last decades with the contradictory results of which we are confronted to-day. Again, medical men went abroad for postgraduate studies and perhaps in larger numbers than ever. But what this high class of young medical men studied there now was no longer in the direct interest of clinical medicine; they trained themselves in the intricacies of the sciences of medicine. The results of the studies of this period were again of great benefit to medicine in this country; in fact, they were of greater benefit than ever. In a comparatively short period the special sciences of medicine, thanks to the activity of a brilliant group of men, have gained a strong foothold in this country; special chairs and laboratories were created in many schools of medicine for pathology, physiology, bacteriology, pharmacology and physiologic chemistry. The work which is being accomplished now in these laboratories compares favorably with the work done in the countries with older scientific traditions and much more favorable surroundings. However, by this very departure clinical medicine itself suffered a visible retardation in the development of its own department. I discuss this phase not with pleasure, but the truth must be said. To my mind it is a fact that the leading clinicians of this generation do not compare favorably with their predecessors in this country, not to speak of a comparison with the leaders of clinical medicine in other countries. One of the reasons for the retardation in the progress is the loss to clinical medicine of the brainy men who now devote their energies to the pure sciences of medicine. Another reason may be found in the fact that by giving up pathologic anatomy and microscopy to special departments clinical medicine lost that part which has given it formerly its scientific character. An evident drawback to the progress of internal medicine in this country is the fact that its teaching at the present time is mostly still in the hands of men who received their medical training nearly exclusively in this country and at a time when pathologic anatomy was the exclusive basis and auscultation and percussion practically the exclusive methods of diagnosis. But in the last twenty-five years internal medicine changed its aspect greatly. The men who want to teach the medicine of to-day must have an education and training radically different from those which were customary and sufficient in former years.

However, the greatest evil of them all is the deplorable fact that in most instances internal medicine is taught in this country by very busy consultants who can give only a small fraction of their time and mental energy to this one of the side issues of their busy lives. Teaching medicine and furthering its science is a very serious business which ought to be carried on by men who are ready to devote all or most of their time to it.

Here are problems for you to solve. The progress of clinical medicine in this country has to be accelerated again. We might reach the level which we have seen to exist abroad. But we ought to strive to get still higher; in this field lack of modesty is a stimulating virtue. Look at the allied sciences of medicine, the level of which they have reached in a comparatively short time without any tradition and only through the activity of a small group of high-minded men. The progress of medicine in this country was always carried on by the few and not by the masses. Clinical medicine must reclaim some of the brainy young men who were enticed by the sciences of medicine. You represent a new generation. You have had an education and a training in modern medicine and the allied sciences. You have a training in investigation, the constitution requires it of you. The constitution which you have adopted shows your spirit. Among its objects is "the cultivation of clinical research by the methods of the natural sciences and the diffusion of a scientific spirit among its members." But you will accomplish more; the constitution imposes on you the obligation to be active in the diffusion of the principles of the society particularly among the students who come under your charge. I would recall this obligation to the minds of the members who were called within this year to chairs of medicine at influential places. The constitution does not keep you down exclusively to science, but let me tell you: beware of practice. It is a bewitching graveyard in which many a brain has been buried alive with no other compensation than a gilded tombstone.

One last word. The men whom you now see sitting on the bank left behind while the boat of progress swiftly glides away with fresh winds and under fresh sails were themselves in their youth passengers of similar boats and cut faces at others who were left behind. Be generous to them, but do not repeat their mistakes. The secret is: never leave the boat.

Rockefeller Institute for Medical Research.

Original Articles

THE NEED, METHODS AND VALUE OF MEDICAL COLLEGE INSPECTION*

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That we have in this country no national body having legal power to charter and control educational institutions is generally understood. Under our system of government this control, along with the licensing of physicians, belongs to the police powers of the various states. In the majority of foreign countries, however, there are national boards or committees which charter all schools, including medical, and which insist on definite standards being maintained.

This country is still comparatively young and in some respects has not attained full growth. Our educational institutions have been allowed to shift for themselves and, of course, much confusion of standards has resulted. The past eight or ten years, however, has seen a gradual development toward system and in the last few years particularly rapid progress has been made. At the present time only three or four states regulate the chartering of institutions, while in the majority of states any body of men can secure articles of incorporation for a college or school by paying the required fee, no question being raised regarding the ability of the incorporators to furnish education.

As might be expected, we have, taking the country as a whole, a large number of educational institutions—including medical colleges—with a great variety of methods and standards. We find some high schools and academies attempting to teach college subjects to students from the elementary grades and, worse still, we also have so-called colleges and universities teaching high school subjects and granting baccalaureate degrees on that basis.

VARIETY OF "MEDICAL COLLEGES"

When we come to the institutions professing to teach medicine in whole or in part, we find even greater confusion. From the various healing cults which have no use for the fundamental principles of medical science up to the thoroughly equipped, high-grade university medical schools—and all must be included in any complete investigation of medical education—this country has more medical schools than all the rest of the world combined and, on the whole, lower standards than are to be found in any other country.

The medical cults referred to have practically no standards or, at best, enforce only a common school education for admission and give a two or three year course, after which they turn out "doctors" of this, that, or the other—it does not matter to the average layman who doesn't know the difference. But even among the schools usually included in the term "medical colleges" there is a most amazing variety of standards. There are several, the entire equipment of which consists of a blackboard, a table and some chairs. There are some which merely drill their students in answering questions asked at state board examinations, having no use for laboratories and clinics. Meanwhile the graduates of these schools usually succeed in passing the state license examinations. There are colleges which grant the degree after a course given in the 2½ or 3 hours at night for four years of 30 or 40 weeks each, which, to equal the actual time spent by students in our day schools, would require from 12 to 14 years. There are still colleges at which ungraded courses of lectures are given year after year to all classes alike. There are legally chartered medical colleges located in towns so small as to make clinical material seriously limited or entirely lacking. There are several at which no clinical training in obstetrics is given and more at which no postmortems are seen by the students and where there is no opportunity to study gross pathologic specimens. On the other hand, there are numerous grades of institutions up to the small but increasing number of high grade medical colleges which are probably equal to any in the world.

I have given only a brief statement of the amazing variety of institutions professing to teach medical students and which are annually turning out armies of those who seek the privilege of practicing medicine. While many are thoroughly competent, there are, doubtless, many who are illiterate, untrained and decidedly incompetent. While they differ greatly in their educational qualifications and possibly in their "methods of treatment," those who, by whatever hook or crook, secure the right to practice will be alike in this respect: they will all be required to differentiate between health and disease, to determine the nature of diseases, deformities and injuries, and to stand between life and death in many of the cases to which they may be called.

IMPORTANCE OF STATE BOARDS

Under our form of government, the only legal barrier which stands between a sick and suffering humanity and this job-lot of would-be practitioners is the state licensing board. How important it is, therefore, that the state board be given full power, and that all obstacles be removed from its path. The splendid work that has been done by these boards, often in spite of many difficulties, is the most hopeful sign that this problem will, in time, be properly solved.

At the present time, however, too many obstacles are hindering the boards from obtaining the best results. There are now some 65 or more boards in the 50 states, only a few of which are given sufficient financial support to permit of the best work, and many are continually having to contend with the inconsistencies of legislatures, which, after adopting strong medical practice acts, containing fair educational standards, proceed to limit seriously the board's power by granting special legislation to this, that or the other medical sect, providing for special standards or special boards. It has been stated by attorneys that, if fairly tested in the courts, such special legislation would probably be declared unconstitutional. The solution of the sectarian problem seems logically to be the adoption of an educational standard with which all medical schools professing to train those who are to practice medicine and differentiate between health and disease must comply. If it can be ascertained that the medical school is up to that standard and the graduate passes the examination, then grant a physician's license and let the holder practice by whatever method his educated common sense may dictate.

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INVESTIGATIONS OF MEDICAL COLLEGES NEEDED

Such an educational standard could not be drawn up without a complete knowledge of the conditions existing and nothing would more thoroughly reveal the need of an effective regulation of medical practice and thereby strengthen the power of state examining boards than a thorough investigation of medical education, including an actual inspection of every institution professing to teach medicine. This investigation should be national in its scope and should be free from any political, local or sectional bias. If thoroughly made it would be of much benefit in many ways. Low grade and fraudulent institutions would be exposed properly, while colleges which are honestly endeavoring to keep abreast of the increasing demands of medical education would be benefited. The necessity for the endowment of medical education could be emphasized and deserving schools pointed out. Such an investigation would also simplify the work of the State Examining Boards. It would reveal the schools which state boards would not care to recognize and, although some practice acts may require that the board itself make inspections before the withdrawal of recognition, such inspections would need to be made only of the colleges which were declared unsatisfactory by this investigation. From the standpoint of expense alone, each state board could scarcely be expected to examine every medical college in the country and fifty different inspections by as many different boards would be poor economy, would lead to much confusion and would be an unnecessary burden on the medical college.

I have purposely used the word "investigation," since to obtain accurate knowledge would require much more than is usually meant by an "inspection." Nevertheless the inspection is a very essential part of the investigation. In fact the inspection should be an investigation at first hand, on the premises, to find out whether the college really exists, what it has in the way of equipment and what it is doing. Without this actual inspection any investigation is far from complete, considering what is so generally known, that statements made in medical college announcements can not always be relied on. You all have doubtless heard it remarked that a statement not strictly true may be so often repeated that the narrator comes to believe it true. At any rate, at the inspections the investigator will sometimes hear statements which are not borne out by the facts. During the investigation, therefore, nothing should be taken for granted and leading questions should be avoided. Careful notes should be taken and as much corroboratory evidence should be secured as possible. These statements may seem harsh, but to learn the truth the methods outlined are in some instances quite necessary. If falsification in college announcements has been resorted to or if wrong or misleading statements are made during the inspection it is highly important that the investigator learn the actual facts. Colleges which are honest in their efforts and intentions always welcome investigations and doubtless prefer that such investigations be thorough. Each college is a problem in itself and the methods followed in the investigation will necessarily vary. The following, however, will give a rough outline of some of the points which should be systematically taken up in the inspection of all colleges:

METHODS OF INVESTIGATION

1. THE CHARACTER OF THE COLLEGE.—Inquiry should be made to learn whether it is a stock corporation or whether a department of a university; whether its finances are controlled by the faculty or by a separate board of trustees and, if a department of a university, what control the latter has of the finances and standards. If there are departments of pharmacy and dentistry it should be learned to what extent the students are taught together and the differences, if any, in the preliminary requirements.

2. FINANCES.—The income from students' fees, endowments or other sources should be learned, as well as the various items of expenditure. Financial statements should be studied if available. The number of students enrolled and the tuition fees should be noted.

3. FACULTY.—The relation of the faculty members to the various chairs should be learned, and, when chairs are vacated for any reason, how successors are chosen. The number of salaried instructors should be learned, the amount of time devoted to teaching and the subjects handled by each. The qualifications of the faculty members is, of course, a matter of much importance.

4. ENTRANCE REQUIREMENTS.—The entrance records should be inspected and also the original credentials handed in by the students. Special note should be made of the institutions granting the credentials and from any source possible a knowledge of these institutions obtained in order that a proper valuation of the credentials can be made. If any outside party, such as a high-school principal or the county superintendent of schools, passes on the credentials or conducts the entrance examinations for the medical college, he should be interviewed and his methods learned.

5. ADVANCED STANDING.—The methods of granting advanced standing from other institutions should be learned and note made of the medical schools from which credentials have been accepted.

6. LENGTH OF COURSE.—The dates of beginning and ending the sessions should be obtained and inquiry made regarding holidays, time allowed for matriculation and the requirements of attendance at classes.

7. CHARACTER OF THE CURRICULUM.—The lecture or class schedule actually in use by the college should be studied to learn whether the course is graded, to see what subjects are being taught and by what methods: lecture, laboratory or clinic. If clinics are mentioned it should be learned whether they are held at the college dispensary or at hospitals, and what hospitals.

8. BUILDINGS.—The condition of the buildings as regards care and utility should be noted. Ample space for the accommodation of the classes and ample provision for light, heat and ventilation are of more importance than architectural beauty. General cleanliness is important since aseptic methods cannot well be taught in filthy buildings and laboratories.

9. LABORATORIES.—The number of laboratories, the subjects taught in each, the equipment and the evidences of recent active work are of much importance. This furnishes a fair idea as to whether or not the college is keeping up to date in its methods of teaching. Any

evidences of original research should be noted. The inspector should examine students' note-books, tracings or other evidence of students' work. The presence of an all-time, salaried instructor and the character of his work are usually indicated in the appearance of the laboratory and equipment. According to the subject taught in the laboratory, the following points should be noted:

(*a*) *Anatomy.*—The amount and character of the dissecting material should be noted and whether modern methods of embalming are used by which dissection is made more safe and pleasant than by the old methods. The use of cadavers for operative surgery and the use of frozen cross sections, or other prepared anatomic specimens, charts, or other modern adjuncts should be noted.

(*b*) *Physiology.*—In any laboratory which is at all equipped for teaching physiology the inspector will invariably see such apparatus as kymographs, levers, time-markers, electrical apparatus, etc. The presence of animals and frogs will be additional evidence of modern methods. Students' individual work, such as note-books, tracings, etc., will furnish a good idea of the work done.

(*c*) *Chemistry.*—Here cleanliness is an important consideration. The presence and character of the apparatus and reagent bottles will indicate whether the work is limited to general chemistry or whether organic and physiologic chemistry are also taught. Outlines of the courses taught should be studied if available.

(*d*) *Histology and Embryology.*—The supply and character of microscopes, microtomes, bottles of blocked specimens, or cut sections will usually be seen. Any additional apparatus such as stereopticons, charts, etc., should be noted. Evidences of active work by teacher or students are important. For embryology the same apparatus and in addition the presence of incubators, charts, models or other adjuncts should be noted.

(*e*) *Bacteriology.*—An ample supply of good oil-immersion microscopes is a necessity. Note should also be made of sterilizers, incubators, test tubes, prepared media (potato, gelatin, agar-agar, etc.) and cultures. Cleanliness in this laboratory is of particular importance for the sake of the student himself as well as for the reliability of his work. The presence or use of animals and the manner of caring for them should be noted.

(*f*) *Pathology.*—An ample supply of microscopes is necessary, unless those used in histology or bacteriology are easily accessible. The number of gross and microscopic material should be noted. If any postmortems are being done by a careful instructor, there will usually be evidences of it in a supply of preserved gross specimens in this laboratory or in the museum.

(*g*) *Pharmacology, Materia Medica and Therapeutics.*—Note should be made of laboratories for these subjects, particularly the first, and any available outlines of work should be studied.

(*h*) *Clinical Laboratories.*—Of great importance are the facilities for training students to make the various laboratory diagnostic tests of blood, urine, sputum, etc., and note should be made of any laboratories for the purpose and whether they are amply equipped with microscopes, reagents, stains, burettes, blood counting outfits, etc. Small laboratories for this purpose are sometimes found in hospitals, in which case it should be learned whether the students have regular work there or whether the work is all done by the internes.

(*i*) *Other Laboratories.*—Any advanced research, public health or other laboratories should be noted, but particular inquiry should be made as to the part such have in the training of medical students, since that is the chief function of the medical college.

10. Dispensary.—It should be noted whether a suite of rooms or a single room or merely the college office is used for dispensary purposes. The sanitary condition of these rooms, the equipment, and the evidences of active work are important. If possible the visit should be made during the regular dispensary hours that it may be seen how many patients are in attendance and what part the students have in the examination and care of these patients. The records of patients should be inspected and the average daily or weekly attendance noted:

11. Hospitals.—All hospitals at which the college claims to hold clinics should be visited and evidence obtained regarding the actual attendance of students. The average number of patients in the hospital and particularly the average number of free or ward cases which can be used for teaching purposes should be learned. The number of clinics per week held in each hospital should be noted and whether they appear on the lecture schedule or not. The amount and character of the work done by the students in the examination and treatment of patients is of particular importance, as well as the opportunity for training in the various departments of medicine, surgery, gynecology, obstetrics, pediatrics, etc.

12. Maternity Work.—Special inquiry should be made regarding the number of cases required of each senior student, the extent of the student's responsibility in the handling and care of each case, the number of cases obtained and where they are obtained. Maternity wards of hospitals should be visited and the actual number of patients noted.

12.—Library.—If the college has a medical library, note should be made of its accessibility to students and the arrangements for the students' comfort, the presence of a librarian, the number of modern and useful text and reference books and the number of useful medical periodicals. Only too often there will be found a lot of old, out-of-date volumes of no particular use to medical students. Of far more importance than the mere presence of a medical library are the evidences that it is used and useful in the training of medical students.

14. Museum.—It should be noted whether there is a good supply of modern useful anatomic, pathologic, surgical, obstetric or other specimens or whether the collection consists merely of old, useless curiosities; whether the specimens are labeled; whether an index is kept and, in connection with the pathologic specimens, whether the clinical histories are systematically filed for reference. In fact, the important point, as with the medical library, is the extent to which this museum is used in medical teaching.

15. Special Features.—Note should be made of any special features, such as freezing plants for preserving cadavers, animal houses or dog hospitals, and of any special apparatus, as reflectoscopes, Roentgen-ray outfits, charts, models, manikins, etc.

16. Supplementary Information.—Besides the information obtained directly through the inspection, other sources should be looked to for whatever will aid in forming an accurate idea of what the college is doing. The finished product, the graduates of the colleges, should be considered. The success or the failure of its graduates at state license examinations, their success and standing among practitioners and educators, the places they secure in hospitals, public health positions and elsewhere wherein they can show the training received while in the medical college—all these facts are of much importance.

OTHER FACTORS

This outline has not been given with any intention of indicating a complete equipment for any medical college, nor should there be any fixed requirement of equipment any more than there should be a hard and fast curriculum. After all has been seen and learned, much must be left to the judgment of the inspection committee. While the entire absence of equipment is serious, the mere fact that apparatus is present is of little consequence. There may be dissecting tables, but no anatomic material and other evidence may lead the inspectors to believe that no dissecting is done. There may be a stereopticon, but close observation will show no connections to allow of its use. In one state where a fixed supply of apparatus is required by the examining board, colleges were found with a full supply, but having no one who knew what the various articles were for nor who was capable of making use of them. There may be beautiful buildings or an abundance of dispensary and hospital material but an absence of proper supervision so that little use is being made of them. There may be a large, well-stocked library, but inquiry reveals that it is closed except for a few brief hours each week, or it is otherwise inaccessible to the students. A college may have an abundance of expensive apparatus in its laboratories, but investigation may show that enormous classes, not only in medicine, but in dentistry and pharmacy, may be crowded through the course in a wholesale manner bewildering to the student and very detrimental to his training.

On the other hand, a college may have a comparatively meager equipment, but there may be many evidences of careful oversight, showing that a splendid course, including laboratory training, is being given. So long as the equipment is being used, it is probable that the simplest, possibly home-made, apparatus is to be preferred, since the student will be more apt to provide himself with such apparatus and continue his laboratory methods after he goes into active practice than he would if his training was altogether with complicated and expensive equipment.

An accurate knowledge of foreign medical education should be obtained, not only to see how the standards abroad compare with those of this country, but that any strong points may be adopted and the weak places avoided. As before stated, this is a comparatively new country without a fully developed educational system. There will be much benefit derived, therefore, from a study of educational systems of foreign lands which are the result of several centuries of development.

The investigation should be an effort to obtain from all possible sources all the facts regarding medical education, bearing in mind that the teaching of medical students is the first work of the medical school. The chief aim in the fixing of any minimum standard should be that the finished product of our medical schools may be well trained and fully qualified physicians. Before any committee can draw up an acceptable minimum standard it must obtain complete knowledge of the weakness in our system of medical education as well as of the points wherein we excel, and the only way to obtain that knowledge is by a thorough investigation of medical education, including the actual inspection of every medical college.

103 Dearborn Avenue.

Charity.—If all the money available for charitable distribution were properly expended, the suffering of the unfortunate would be much more largely limited than it is under present methods.—B. E. Nelson, in *Hygiene and Physical Education.*

THE METHODS AND THE OBJECT OF STATE EXAMINATIONS*

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In any discussion of this subject it would seem that at the outset certain general propositions may be stated to which all will agree. Certainly the primary object to be attained by an examination in medicine conducted by the state is to certify that certain individuals are capable of rendering useful service to the citizens of the state in matters pertaining to health. The law in this respect has a certain analogy with the pure food laws. The public realizes that it is unable to distinguish the false from the true, and places the matter in the hands of a committee or board who by proper methods of inquiry will make this differentiation and give the approval of the state to the true wares. In the pure food laws the differentiation is easily made by the application of tests, which, though they may vary somewhat in complexity and difficulty, are sufficiently accurate. When the objects of test are individuals instead of chemical substances, the test is much more difficult and the responsibility of the testing is much greater.

To these matters the general public which is the most concerned show an indifference which is founded on ignorance. Both the pure food laws and the medical-practice acts have been forced on a public indifferent and often distinctly hostile. Medicine is destined in the future, to a greater extent than it has in the past, to play an important, perhaps the most important, rôle in the social life of the people. Nothing is of so much importance to a nation as the health of its people and the vast possibilities of preventive medicine are just beginning to be appreciated. The realization of preventive medicine will be possible only when the present ignorance concerning disease and distrust of preventive measures are replaced by knowledge and confidence. It has seemed to me that a part of the distrust which has found expression in the satires of every nation is warranted, for medicine in the past has been influenced too much by dogma, by empiricism and superstition; even now these influences have not disappeared.

What are the qualities which we are warranted in insisting should be the result of the training of the student and which he must possess to render efficient service? I do not hesitate to give the first place to knowledge of methods and familiarity with their use and application. Modern medicine is, in fact, based on methods which enable us to find out what is taking place in the sick individual. We no longer conjecture, but we ascertain by the use of our senses and by methods which represent an extension of the senses. Medicine has advanced far on the path followed by the sciences, and the medical art is now to a great extent based on knowledge which in many cases enables us to predict. There is no longer conjecture as to whether a patient has a certain infectious disease, or whether there is a certain disease of the blood or the blood-forming organs, or whether digestion is taking place in a proper manner, but the problem presented by the sick individual can and should be definitely solved by the application of tests. The knowledge on which action is based must be derived from the sick individual; it can not come from books. The records of observations and experience are no doubt valuable, but the limitations imposed by such knowledge alone are enormous. In the first place, there are few diseases of which so accurate a description can be given that recognition of the disease is possible by a comparison of symptoms with the records. The actual diagnosis is not the final matter, for the treatment is directed not to the disease, but to the condition which the disease produces in the individual. The medical man must have such knowledge of disease as to know whether in a given case the disease may extend from the individual to others in his vicinity or remotely, in what way the extension takes place and how it is to be guarded against. In surgery there are not only the methods of diagnosis, but the chemical and mechanical methods of treatment. The medical man must not only be able to use all these methods, but must be able to make the deductions which are justified from the knowledge obtained by methods.

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*Read at the Nineteenth Annual Convention of the National Confederation of State Medical Examining and Licensing Boards, Atlantic City, N. J., June 7, 1909.

We must go further. We are justified in demanding not only facility in the use of methods, their application and the proper use of knowledge gained by observation, but we also must demand thorough training in the fundamental branches of medical science. This for two reasons:

First, it is necessary in order that the student may acquire the habit of mind which will enable him to distinguish between proof and statement, knowledge and conjecture, which will lead him to appreciate new knowledge, and to strive constantly to increase both his own and the sum of knowledge. We are certainly much more appreciative of new knowledge at this period than ever before, and yet it has taken a long time for the body of physicians to become thoroughly aware of the fact that tuberculosis is an infectious disease. Such knowledge as that regarding the nature of malaria and its mode of extension, the mode of extension of yellow fever and of plague should extend much more rapidly than has been the case. When medical men have been called on to deal with situations in which knowledge of disease should have governed their actions and enabled them to cope successfully with the conditions, have they not frequently proved themselves to be ignorant or at least unappreciative of new knowledge? We might cite typhoid fever in the Spanish war, in which case there was certainly enough knowledge of the disease and the conditions of its extension to prevent the appalling loss of life, and the plague in San Francisco, the existence of which for so long a time was unrecognized or denied. Have we any assurance that the conditions of 1898 would not be repeated in case of another war? How much confusion remains as to the diagnosis of malaria and typhoid fever when their differentiation is so simple!

Second, the knowledge of the fundamental sciences is necessary because it is of constant use. The laboratory teaching which is becoming such a prominent factor in medical education gives the proper mental training and the objective knowledge. Medicine is a branch of biology in which the phenomena of living matter in an abnormal environment are studied. How ineffective must be such study when not preceded by study of the phenomena of living matter in a usual environment!

How shall these necessary qualifications be determined? It is obvious that the diploma of the medical school can not be accepted as evidence that the holder possesses the proper training and knowledge. If the state certifies to fitness it must itself determine this either by taking over the education, as in a state university, or by an examination. It has been found, however, that even when the state gives the education a final examination to test its character is necessary. In certain of the states some supervision of the medical schools is exercised through the board of medical examiners. There would seem to be no doubt that such supervision is capable of a salutary influence on medical education. There are two dangers connected with it:

1. It is difficult to make the supervision effective—to see that the medical schools really conform to the conditions imposed by the state board in their actual conduct and do not merely insert the conditions in their catalogues. It would be difficult to obtain any real idea of the state of medical education in the country by a diligent study of the catalogues of the schools. A catalogue is a very human production and, consciously or unconsciously, the imagination has a pretty free play in its formation.

2. If, on the other hand, the supervision is real and effective, it can easily be meddling. All who are engaged in teaching medicine must realize that medical education is now in a very unsettled condition. The subject-matter has enormously enlarged, and there is undoubtedly the attempt to teach too much, to hold on to the old traditional teaching and to add the constantly increasing new knowledge. Thirty years ago the only laboratory in the medical school was the dissecting room in which human anatomy was taught, usually by a man who had no conception of the general subject and who took the time for a course of lectures out of a busy practice, his anatomic teaching being, in commercial parlance, a by-product. The laboratory side has now developed enormously and there is a feeling which seems to be more prevalent in the laboratory than in the clinical teachers, that the laboratory unconnected with the clinic has been unduly developed. In the present conditions in our medical schools, in which there is, save in a few fortunate instances, no real amalgamation between the school and the clinic, no power of appointment by the school of its clinical teachers, it has been easier to develop the laboratories and to consume in them a large part of the obligatory four years. There is in most instances too sharp a separation of the laboratory and the clinic and lack of application to clinical problems of knowledge derived from laboratory work. There is less uncertainty with regard to the advantages of a preliminary training in science before medical studies are entered on, but there is much uncertainty as to the extent of preliminary training which should be demanded. Depend on it, those engaged in medical teaching will work out these problems better than an outside body. As I have looked over the requirements for examination in certain of the states it has seemed to me that the element of protection has entered into demands of some of them. A definite curriculum of study is demanded by some, and in certain instances the requirements directly conform to the scheme of medical education in the state universities. Certainly this serves an end, probably an important one, in bringing the entire scheme of legislative protection into disrepute, but this is not the end aimed at. After carefully weighing in my mind the advantages and disadvantages of state supervision and control of medical education, I think more is to be gained without it and that medicine had better be on a square free trade basis.

The most effective control combined with perfect independence in medical education can be exercised through the state board examination and on the character of this everything depends. The present method of these examinations is unsatisfactory and has about reached the limit of its usefulness. The examination consists in giving a number of questions on the different medical subjects, the answers to which are written out and afterward marked by the examiners. In conducting the examination there are various more or less elaborate rules, the reading of which gives one a rather pessimistic view of human nature, which are designed to prevent impersonation and other forms of cheating. Written answers to questions can not test the candidate's knowledge. They may test information which he has acquired from reading or lectures. They form no test of his power, of his ability to carry out methods of work; and to apply these methods in the treatment of disease.

I have recently examined a book compiled by Dr. R. M. Goepp and published by Saunders & Co., entitled "State Board Questions and Answers." The stated purpose of the book is "to provide a convenient compend for the use of those who wish to prepare themselves for the state board examinations." The material embraced in the 631 pages is selected from state board questions asked during the past four years, the preference being given to those asked in the larger and more representative states. The collection of the questions was undertaken by the publisher, the author, with the assistance of several persons named in the preface, being responsible for the answers only. The first impression on going over the questions is that they are rarely so framed as to bring out any exact knowledge in the answer. They are text-book questions compiled from text-books, which are themselves compilations. All of the old questions for which definitions of formal content could be given are there. The answers are generally unsatisfactory, often vague, often inaccurate. Many of the questions would really demand rather a discussion of a subject, from which discussion valuable information of the candidate's knowledge could be obtained, than a categorical answer. For instance, to the question, "Give a general explanation of the pathology of edema and include its chief factors," the answer is given in sixty words. Still, after an examiner had gone over 100 books, he would probably be thankful for the concise answers, even though in many cases it would be difficult to interpret their meaning. The book serves a valuable purpose in one way, for it ought to be possible for a good student well versed in examination methods, and with expert tutoring which would involve some elimination of unusual questions, to pass any written state board examination, after three months' close study—this without having ever seen a patient or the inside of a laboratory. Certain of the poorer medical schools, knowing that their men must pass the state boards or they must close their doors, have adapted their instruction to this end with great success; and such books as that referred to will prove a valuable addition to the library of both teacher and student. Whether the scrappy and often false information obtained by the study of such a book has any other value is uncertain.

The examination, to be effective, must be practical. The candidate must show, not what cramming, but what medical training he has had and what he can do with the knowledge he has obtained. At the first sight there would seem to be many difficulties involved in the change from the written to the practical, but they are not so serious as they appear to be. It has been found possible in other countries to base the grant by the state of authority to practice on an examination of practical character, and it seems really absurd to say it can not be done here. We have only to adopt methods which are practical, which have been tried and approved elsewhere. Such examinations would undoubtedly demand the use of laboratories and of hospitals for their conduction, but they could be obtained. Examinations should not be held in cities where such indispensable aids can not be obtained.

The simplest part of the examination would be in those divisions in medicine in which the instruction is given in laboratories. Arrangements could be made by the examiners for the use of the laboratories in which the instruction is given. All good schools require a practical examination in anatomy, histology and embryology, physiology, physiologic chemistry, pathology, and bacteriology, and no difficulty has been found in giving it. In all of these branches the examination would doubtless include the recognition and description of specimens, and the demonstration of ability to do the technical work demanded by the study. In addition to this, a few wisely chosen questions could be given to show that in addition to technical ability the candidate has some appreciation of underlying principles and of the bearing of the study. In anatomy a part of the examination should be devoted to the demonstration of regions on the living model. With these examinations could very properly be included the examination in clinical pathology, covering such matters as the chemical and microscopic examination of the urine, stomach contents, feces, blood, etc. For this last examination certainly more time would be required than for any one of the others and the marks given should be based on the time required and the importance of the subject. A student might very well be passed who had hazy ideas about bones, ligaments, and muscle relations, or who failed to detect the differences in appearance and structure of certain nearly related tumors or who had unconventional ideas as to cell origins, but inability to examine sputum, urine and blood should cause his rejection. With the time which is given in all schools to laboratory work we are warranted in giving a rigid examination in the laboratory branches and in demanding that the work should be of such a character as not only to give the necessary discipline, but to teach thoroughly those procedures which are to be used in practice and on which the accuracy of clinical work chiefly depends.

These examinations would consume not less than ten hours, with some leeway allowed to the slower men, and should be distributed over two days. The candidates could be divided into batches of twenty-five and the examinations conducted by one chief examiner and one assistant. In such an examination it would not be necessary to take any very elaborate precautions against cheating. The question very properly comes up as to what time in the medical course such an examination should be held. I think, on the whole, it would be better to allow candidates to take it either in the middle or at the end of the course. This would give the advantage of weeding out at an early period the men who were totally unfit and of allowing some who failed to go back and make up again. The candidate should be passed or rejected on the examination as a whole and not allowed credit for any single branch. I have estimated the expense of such an examination at $1,000 for 100 men examined at one period. This allows $25 a day for three days' work of the chief examiner and $15 a day for the same time of the assistant, and $160 for general expenses in providing apparatus, etc. It is possible that this is too little, but for many reasons it is not desirable to place the remuneration of the examiner at too high a figure, and the element of rendering service to the state should enter into the compensation.

The second part of the examination embraces the purely clinical. It should be thorough and practical. It will be necessary to have patients and to make some use of a hospital. The patients may be selected chiefly from the dispensary ambulant material, and among these cases can be found illustrative of the more common diseases of organs. The candidate should be given the necessary appliances, chemical and physical, to be used in diagnosis and should show not only his ability to use them, but to understand their use. How much use would be made of acute cases in the wards is uncertain. Certainly in the beginning of this method of examination it would be well to excite just as little opposition as possible. Any objections on the part of the patients themselves to their being used for examination purposes could be easily overcome by a small fee. It would be well, of course, to include with the sick a certain number of the normal. The examination in surgery also would offer no difficulties. Numbers of surgical diseases can be found in the ambulant material, both acute and chronic conditions, which could be diagnosed, described, and treatment indicated. Certainly a part of the surgical examination should consist in the preparation of a patient for an antiseptic operation both under conditions in which all appliances are at hand and under more primitive conditions likely to be encountered. The examination should also deal in some measure with psychiatry, that greatly neglected branch of medicine. It is entirely possible either to take the candidates to an asylum for examination or to use cases which could be brought to the examination rooms. The candidate should demonstrate his ability to diagnose the more common forms of insanity.

It is probably not possible to conduct a practical examination in obstetrics and gynecology. In obstetrics the manikin can be used with advantage, but this would have to be supplemented by the written or oral examination. It might be possible to introduce a few cases of early pregnancy among the ambulant cases and have the candidates understand that they might be required to examine such a case. Just as in the primary laboratory examination certain questions might be asked for written answers, and it would be much better that histories, diagnosis and treatment of cases assigned should be written. I do not think it would be necessary to conduct special examinations in the skin and other specialties. Among the cases selected, patients illustrating many special pathologic conditions could be included and given out for examination. The candidate could not tell whether he would receive a case of psoriasis or laryngeal tumor, diabetes or chronic disease of the kidneys or liver. In any case it is essential that he be given the apparatus for diagnosis and opportunity for its use.

The examination in hygiene would be partly covered by the examination in chemistry, bacteriology and physiology, and if all the other examinations were successfully passed it might be assumed that the candidate would know the most essential matters in the subject. Such an examination would probably consume ten or twelve hours, and for 100 men examined in groups of twenty-five would extend over three days and would probably require six chief examiners and six assistants who would receive the same compensation as in the first examination. I have thought that such an examination, allowing liberal compensation for patients, for use of apparatus, etc., could be held for $1,500 for 100 men. This gives the cost of the entire examination at $25 per candidate. This is, of course, the bare cost of the examination with a proper compensation for the examiners, and it does not seem to me that there should be much additional expense. A permanent secretary who would have to give some part of his time to the work would be necessary, and some expense in addition would be incurred. I see no objection whatever to raising the fee sufficiently to include such expenses. The fee with a corresponding lengthening and increase in the efficiency of the examination might be made $50 or even $100. Of course, difficulty would arise in regard to the medical sects, but these sectarian differences chiefly or only concern therapeutic measures, and the sectarian candidates who had successfully passed the other examinations could be turned over to sectarian examiners for the therapeutic examination. No osteopath, homeopath, eclectic, hydropath or Eddyite could object to their candidates being required to show practical knowledge in anatomy, physiology, chemistry, clinical methods, and the general features of disease. Certainly we would feel that such men were to be trusted, no matter under what banner they chose to serve.

The final examination should be given to candidates only who have successfully passed the primary. Whether the two examinations are taken separately or together may be left to the choice of the candidate.

The objections which have been urged against this practical examination have never concerned the real question as to whether or not it is the best method, but have been mainly on the score of expediency. I can not help quoting the objection urged by the president of one of the state boards. He says:

> "We examine for instance at a single examination four hundred applicants. All of you gentlemen I take it are practitioners of medicine; are there any of you who have had a patient in the hospital that you would be willing to have these four hundred men pound on the chest to ascertain the condition of his lungs, or to see whether he had a heart lesion or not? I don't think you would."

Such objection does not have to be met. At any rate his board could not give a practical examination for the fee demanded, $10. Another objection is on the score of expense. I have shown that the examination can be held for the fee charged by most of the states and the examiners paid. It is absurd to think that men capable of giving a proper examination can be obtained without compensation. A third objection is that the examination will take more time than the written; and this, of course, is true. But the candidate at about this period of life has plenty of time, the examiners are compensated for their time, and the thorough examination has great educational value. A fourth objection which has been urged is that the candidates may be known to the examiners and favoritism shown. This is a pretty low objection and it does not hold, for there are many examiners, and a candidate who passed one examiner by intrigue or favoritism would be pretty sure to be rejected by the others. If a candidate has the qualities which would incline all the examiners to favor him regardless of the knowledge shown, he might be a useful man in the profession.

The last objection, and probably the most serious, is that the state boards as at present constituted are incapable of holding such examinations as are here indicated. The men in every state who are most capable of conducting proper examinations and who have hospital and laboratory connections which afford facilities are generally teachers of medicine, and as such are excluded from examining boards, and there is some justification for this. Men who have been a number of years in practice and who have not had special training are incapable of holding proper examinations in many of the subjects in medicine. I regard the examination as the most difficult part of my work; and how can a man without special training examine in such subjects as anatomy, physiology, bacteriology and pathology? The difficulty, it seems to me, could be met by appointing men as examiners who had made themselves capable by a special training to this end. Among the recent graduates of medical schools, men perfectly capable of acting as examiners or who could make themselves capable by work directed to this end can be found. I hold, however, that if a man has not had the training and has not the knowledge which qualifies him for the position of examiner in a subject he should not accept the position if offered him.

I can not close this paper without apologizing for my temerity in offering advice to men who have a most difficult position to fill and whose work has been faithfully performed and of great benefit to the public, to the medical profession, and to education. But it has seemed to me that by a somewhat radical change in the method a very much greater amount of good can be accomplished. The position on the state board of examiners is one of great responsibility, for on their action depends the value of the relation between medicine and the public, and they hold in their hands a lever of immense power; in fact, they are the chief agency for the uplift of medical education. At the present time there is no medical position in state or university which is of equal importance and responsibility. I know that there are difficulties in the change in the method of examination which I have advocated, but the difficulties are not so great as those which were in many states overcome in the establishment of medical examining boards.

These difficulties may not be overcome at once, but they finally will be. Let us convince ourselves that we want to find out whether or not a man can do properly the things which are demanded in the practice of medicine, and that we can not find this out by asking a question and requiring a written answer, but we can demand that he show us his ability. We would not test a bricklayer's ability by questions and written answers, nor can we test any art in the same way. A painter must be able to paint; whether he can describe the process or not does not much matter. Medicine is an art, and its success depends on the proper use of many methods. I am further convinced that it is most important to begin the change in examination methods and to begin along the line of least resistance, adding more and more subjects at each examination. I will not admit that the plan is not capable of being carried out, and it is our part in every way to assist the state boards in carrying out their arduous task.

THE MOVING PICTURE SHOW

A NEW FACTOR IN HEALTH CONDITIONS

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The development of the cheap moving picture and musical theaters as factors in the health of the community seems to have escaped the notice of the medical press. To-day every village and hamlet in the United States boasts a moving picture show. In the large cities of the north and east it is not unusual for a hundred and often more to be in operation. In Europe they are outnumbered only by the public houses and cabarets. As is well known, the great majority of these theaters exist where the population is greatly congested, as in tenement districts and laboring settlements. The reason for this is obvious. It is the patronage of the poorer classes which makes the moving picture industry a paying proposition. These cheap theaters are usually located in old rookeries or poorly paying commercial sites, as abandoned shops of small tradesmen, etc. In the construction or building alteration of these places for their special needs the one object in view is to obtain a maximum seating capacity in as small a space as possible. No attention whatever is paid to ventilation and not the slightest heed given to the simplest sanitary details. The health or comfort of the patron is a secondary consideration. Municipal regulation is limited to fire prevention and safety exits—and this only after several serious catastrophes.

The performances are continuous, and thus an ever-moving stream of humanity, constantly passing in and out, stirs up dust and dirt that verily reeks with tubercle bacilli. The programs in these resorts have been considerably lengthened owing to the keenness of competition. The result is that an audience is confined within these ill-ventilated and poorly sanitated amusement resorts often for more than an hour and a half, breathing in air which has become befouled and disease-laden through lack of sufficient air capacity. The superabundance of carbon dioxid and organic matter in the air gives rise to sick stomach, headache and a drowsy feeling. The small fee of admission is responsible for a class of patronage which is entirely oblivious of the simplest health precautions. Spitting on the floor is a common practice and is allowed to go unnoticed. Signs calling attention to the dangers of the vicious habit of indiscriminate expectoration are rare. The use of the electric fan in certain of these resorts, while refreshing to the overheated patron, also serves to dry up the sputum with greater dispatch, thus increasing its disease productiveness. Cleaning the premises is impossible during the hours of operation, which gives some idea of the amount of filth that accumulates.

Robust and vigorous individuals employed as singers and musicians, appearing as often as twelve and thirteen times a day in these crowded resorts, soon undergo a remarkable change of health. Poor ventilation produces not only discomfort and loss of energy, but greater susceptibility to disease, especially tuberculosis. Many of the singers are raw amateurs and know nothing of the care and preservation of the voice, and in many instances a voice capable of greater things is lost to the public through exposure to such unfavorable conditions. Laryngeal troubles are a frequent source of annoyance to this class of people through excessive vocal effort and constant confinement. I have treated many of the singers employed by the cheap moving picture shows and found the majority of them to be of a decided phthisical tendency. The film operator who is confined in a small cubby-hole at an exceedingly high temperature falls an easy prey to tuberculosis. Constant attendance at the scene of employment, coupled with the irregularity of meals and uncertain hours, is responsible for the fact that many of the male artists become alcoholics. Taken all in all, the cheap moving picture theater artist has no easy task and sooner or later another victim is enrolled under the banner of the white plague.

The general practitioner is often consulted by a patient complaining of headache and burning eyes which run water as soon as they come in contact with strong light. After a thorough examination, including urinalysis, the patient is referred to an ophthalmologist in order that a refractive error may be corrected and the patient relieved of the headache and the visual irritation. In a great number of cases the ophthalmologist will report that there is no error of refraction and that he is unable to account for the headache and the running burning eyes. An inquiry into the habits of the patient will elicit the information that he is a devotee of the moving picture show. The constant gazing on a rapidly moving and scintillating film with every mental faculty alert to maintain the connection of the story is sufficient to produce an eyestrain of great severity and thus cause headache and burning eyes. The only remedy is rest and cessation from this form of amusement. After a few weeks vision becomes normal or nearly so and no ill results are experienced unless the patient resumes his former habits. In many cases the eye trouble assumes a severity that calls for long and persistent treatment on the part of the ophthalmologist.

Moving picture shows in tenement districts and labor settlements should exhibit pictures that tend to elevate the mind and improve the moral condition of their audiences. Pictures portraying scandal, illicit amours and criminal cupidity very often have a debasing effect on a mind that is already morally warped through environment and surroundings, thereby bringing to the surface a latent criminality. If the moving picture shows are to remain, radical changes must be made.

Rigid inspection by the health authorities is absolutely necessary. Proper ventilation by means of exhaust air fans, airifiers and other ventilating appliances and numerous apertures with sufficient air intake must be provided. The number of cubic feet of air necessary for health should be determined by the seating capacity. The flooring should be oiled, not carpeted or covered with dust-gathering material. Plush-covered and velvet-covered seats should also be prohibited for obvious reasons. Suspension of the performance at the end of every five hours, when the orchestra or seating hall should undergo a thorough cleaning, is of urgent necessity. The cleaning could be accomplished within forty-five minutes by the aid of the vacuum cleaner and should be followed by a draught of pure air throughout the place, if possible. At the termination of the day's performance the whole resort should be given the proper sanitary attention. Signs should be conspicuously posted as to the evils of spitting.

CONCLUSIONS

That a great deal of eye trouble is due to moving picture shows can not be denied. The singers, musicians and film operators of these resorts fall an easy prey to tuberculosis through excessive vocal efforts, constant confinement, irregular habits and long hours. As a disseminator of tuberculosis the moving picture theater ranks high and it will become necessary to enact special health laws to remedy the evil.

2131 Baronne Street.

HELP THE MOTHER NURSE HER CHILD

A PLEA TO PHYSICIANS NOT TO BEGIN ARTIFICIAL FEEDING WITHOUT FIRST TRYING TO HELP THE MOTHER MAINTAIN HER MILK SUPPLY *

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That no artificial food can take the place of breast-milk has always been admitted, even by those who have had the most success with artificial feeding, men like Holt[1] and Rotch.[2] In some parts of this country, however, it is uncommon to see any attempt made to induce a mother to nurse her child, even when her breast-milk has not been examined to see whether it was abnormal or not. Is this not chiefly our fault—that is, the fault of the physicians?

Not only are no efforts made three to four days after birth, but later, when the child is between three and six months old, breast-feeding is often stopped for no apparent cause, here again without examination of the milk to find out its composition. Would it not be more just to the infant first to try to help the mother so improve her supply of breast-milk that there may be enough for the child, for some months longer, at any rate?

Baginsky[3] states that any other food than woman's milk requires considerable work from the infant. Chapin[4] declares that "normal maternal milk supplies the necessary quantities of fat, proteids, carbohydrates, etc., for proper structural development and maintenance of the vital processes, in forms that automatically adapt themselves so as to develop the digestive functions of the growing animal." Rotch,[5] with interesting detail, gives the principles, diet and exercise chiefly, which produce variations in mothers' milk, basing his results on frequent examination of the breast-milk in question. Holt[6] also discusses the value of food, drink and exercise in bringing about changes in breast-milk. He lays stress on examinations of the mother's milk also. Griffith[7] says:

> The possibility of improving the quality or quantity of breast-milk must never be forgotten before weaning is advised. An alteration in the diet, in the quantity of liquids taken and in the amount of exercise employed will often attain the result desired.

Morse,[8] in a most interesting article, says:

> The nursing woman ought to lead her usual life and not be treated as an invalid. . . . She should take her usual food, but more of it. . . . She must have light and air and must not be shut up in the house. . . . The best method of increasing the quantity of breast milk is the use of the breasts. . . . Within reasonable limits, the more taken, the more there is produced. Other methods are entirely subordinate. Among them may be mentioned, first, improvement of the general condition; second, a liberal diet.

Jaschke,[9] in his excellent monograph on the importance of breast feeding in the struggle against infant mortality, ridicules any special article of diet or

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Holt, L. E.: Diseases of Infancy and Childhood. 1897, p. 126.
2. Rotch, T. M.: Pediatrics, 1901, p. 116.
3. Baginsky, A.: Berl. klin. Wchnschr., 1900, No. 17.
4. Chapin, H. D.: New York Med. Rec., Dec. 12, 1903.
5. Rotch, T. M.: Pediatrics, 1901, p. 141.
6. Holt, L. E.: Diseases of Infancy and Childhood, 1897, p. 164. xxviii, 271.
7. Griffith, J. P. Crozer: Am. Med., May 3, 1902.
8. Morse, J. L.: Phys. and Surg., March, 1907.
9. Jaschke, R. T.: Monatschr. f. Geburtsh. u. Gynaek., 1908,

drugs, referring to Finkler's list,[10] and states that the best galactagogue is the nursing infant. He insists only that the nursing mother be well nourished. Schlossmann[11] and Engel[12] believe that the nursing mother may eat whatever she pleases.

Notwithstanding these and other unquoted opinions, it has been my lot to find that much could be accomplished in every case by persuasion, encouragement, advice and perseverance, even though the mother dislikes the idea of nursing her child and decides not to do so. Later, when the baby is several months old and the mother believes her milk no longer to be as nourishing or as plentiful as it had formerly been, much can again be accomplished if directions are correctly carried out.

Old as is the recognition of the fact that every well woman ought to nurse her baby (and only recently Walcher[13] has shown that no actual diminution in the ability of women to nurse their offspring can be demonstrated anatomically) it was never so important as at present when the success following the use of cows' milk mixtures (and, unfortunately, the popularity of the proprietary infant foods) have made the use of the infants' bottle seem almost a necessity. That one or two bottles daily, given when the baby takes his nap, or to allow the mother time for fresh air and exercise, can do no harm has been shown by many careful observers, provided the mother follows other directions rigidly.

Since the appearance of Dr. Southworth's article[14] on this subject, in 1902, I have urged all those with whom I have come in contact, socially as well as professionally, to continue breast-feeding until the baby is at least eight or nine months old. In contrast to the subjects observed by many in cities, the mothers I have treated have been normal women or nearly so, and on this account, perhaps, my directions have resulted successfully.

During the last few months of pregnancy, not only should the nipples receive daily attention, but every pregnant woman should cultivate the excellent habit of drinking water. It is well to have a pitcher of drinking-water always near at hand so that she may drink frequently. She should learn to drink without discomfort three quarts or more every day. The value of large amounts of drinking-water during pregnancy has also been urged by Holloway[15] as tending to prevent the toxemias that so readily occur from retained products of metabolism. Other rules of decided importance during pregnancy are: exercise in the open air, a walk or drive, or in bad weather a walk on a piaza or in a room with windows open; sufficient sleep, not only eight to ten hours at night, but also a nap of two or three hours every afternoon; correct, wholesome, plain food and enough of it (red meats to be taken sparingly); and the regular daily evacuation of the bowels, brought about by regulating the food, water and exercise, although it is sometimes advisable to add some mineral water, besides.

After delivery it is most important that the mother take daily three or four quarts of water, some with meals and a great deal between meals. This is not difficult if the woman has grown accustomed to drinking large amounts of water daily during pregnancy. Tea and coffee should be absolutely prohibited during lactation. Next in importance should come the thin corn-meal gruel advocated so strongly by Dr. Southworth. This is easily made, boiling one or two tablespoonfuls of yellow corn-meal in a quart of water for five hours, in a double boiler, with the lid on. It may be flavored by putting in ten or fifteen large raisins, a little salt, wine or nutmeg. It is kept on ice and drunk between meals, poured on ice in a bowl or glass, at 10, 4 and bedtime. The taste is not bad and most women like it. For those few women who like milk and are used to drinking it, a quart or more may be allowed daily; but milk should never be urged on those who dislike it or believe that it disagrees with them. In such cases cocoa prepared with milk may be substituted.

In many women with a tendency to anemia during lactation, the use of one-third or one fourth of a bottle of brown stout (imported), not more, taken with the midday meal occasionally seems of value. Ale, beer and malt extracts are not good, as they tend to obesity, without affecting the milk or the general condition of the woman. In a few of these anemic mothers some iron preparation, such as the phosphates, glycerophosphates or hypophosphites, has seemed of decided benefit. As before delivery, exercise, fresh air, sufficient sleep, enough food, regular bowel movements and a routine existence are to be insisted on. It should not be overlooked, however, that an active cathartic will greatly, though temporarily, diminish the amount of milk secreted. Great stress must also be laid on the regular care of the breasts, washing them both before and after nursing.

Though Jaschke[16] says there is no absolute contraindication to nursing, most medical men prefer not to allow a mother with advanced tuberculosis to nurse her child; and other conditions in the mother may rarely exist which would make nursing injudicious for her. There is a group of nervous women found in cities especially in whom all efforts are apparently wasted, the women growing stout without any improvement in the milk-supply being noticeable. Dr. Southworth's suggestion[14] to give the child both breasts temporarily, alternating with one or two bottles a day, when the mother first begins treatment, will be of value in some serious cases. By this means the mother's supply of breast-milk may be saved.

My notes cover 73 cases, including private and hospital patients during six years. In 24 of these my directions were not followed, or they were carried out incorrectly or for only a short time. In 6 of these cases the mothers were neurotic and grew stouter without any noticeable improvement in the milk. The mothers have carried out directions in 49 cases and have been able to nurse their children to between six and eight months. Directions were given before the birth of the child in 21 cases; in 14 cases the infants were under three months of age when treatment of the mother began; in 9 cases they were from three to four months old; in 5 cases, over four months of age. In only 6 cases was one bottle allowed daily; in 2 cases two bottles were given daily.

At some time between six and eight months the great majority of mothers noticed that their babies cried more than formerly and they soon realized that this was due to hunger. When this occurred, in spite of having conscientiously carried out directions, weaning was first considered. By this time most babies were being nursed at 6, 9, 12, 3 and 6; or possibly at 6, 10, 2 and 6, with one night feeding. A cows' milk mixture was first substituted for the afternoon feeding, as most infants appear to take least at that feeding. The first mixture given was composed of 1 ounce of boiled water (or barley-water), 1 ounce of lime-water and 2 ounces of milk (4 per cent. certified, from which the upper 6 ounces from a quart bottle had previously been removed by dipper). After heating the mixture, it was in most cases given with a spoon; in a few cases, those used to bottles, the baby's bottle was again used. For colicky infants the bottle is to be preferred; and a hot-water bag may be applied to the abdomen during and after feeding. A few days later, when the infant learned to take the entire 4 ounces, the amount given was increased to 5 ounces; then gradually to 6, 7 and 8 ounces, still using one-half milk, with the upper 6 ounces dipped off a quart. By the time the baby took 6 or 8 ounces at each feeding, the milk mixture was substituted for the breast twice daily; in a few more days, for three feedings, and by the end of three weeks the infant was weaned. Then, instead of removing the upper 6 ounces from the quart, only 5 ounces were dipped off; later only 4 ounces.

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[10] Finkler: Zentralbl. f. allg. Gsndhtspflg., 1907.

[11] Schlossmann, A.: Arch. f. Kinderh., 1900, xxx.

[12] Engel, S.: Diseases of Children, by Pfaundler and Schlossmann, Am. trans., i, 351.

[13] Walcher: München. med. Wchnschr., 1908, p. 2440.

[14] Southworth, T. S.: The Improvement of Breast Milk and the Prolongation of Lactation, THE JOURNAL A. M. A., 1902, xxxix, 249.

[15] Holloway, T. C.: Kentucky Med. Jour., April, 1908.

[16] Jaschke, R. T.: Monatschr. f. Geburtsh. u. Gynäk., 1908, xxxiii, 191.

The baby has now learned to digest the proteid of cows' milk and is learning to tolerate the fat; the strength of the mixture is gradually raised, although it is unwise to exceed 6 ounces of 4 per cent. certified milk (still with the upper two ounces dipped off each quart bottle) in an 8-ounce mixture, 7 ounces in a 9-ounce mixture, or 8 ounces in a 10-ounce mixture, until the child is one year old. Then orange juice and a cereal, such as strained oatmeal, well cooked, may be begun; later, junket, custards, dry toast, soft-boiled egg, etc., may be added. Well-baked potato and baked apples are favorites with some babies.

While special stress has been laid on the feeding, ordinary hygiene should by no means be neglected. The child, as well as its mother, needs fresh air, baths, drinking-water, regular habits of sleep, defecation, etc.

The object of this paper has been simply to reiterate the immense importance of breast-feeding and to report my results, achieved by persuasion, advice, encouragement and perseverance in the overcoming of difficulties, few of which are found on investigation to be as real as young mothers think them. That this experience may help others to obtain like results is my hope, so that every woman may try, for a time at least, to nurse her offspring, an act which is sure to be followed by a generation of stronger individuals and by a great decrease in infant mortality.

118 South Twenty-second Street.

ABSTRACT OF DISCUSSION

Dr. H. M. McClanahan, Omaha: As the school question is of importance after the child is brought into the world, and reaches school age, this question is of importance in saving the child to enable it to live to school age. Recently I have been asking mothers why they weaned their babies, and when they weaned them. Sixty per cent. of the mothers replied that the family physician had told them to do so. Many weaned them within the first two weeks of life because the child cried. Without knowing why it cried it was put on the bottle. I am an advocate of mixed feeding rather than leaving the child without breast milk altogether. If a child is given the breast part of the time, I think the mother is entitled to give it the bottle a part of the time. Breast milk makes the baby more resistant to infections, but our knowledge of mixed milk makes it easier to have a baby partly on the breast and partly on the bottle. The mother should be taught that nothing but organic disease justifies a mother in weaning a baby. If necessary she may give it the bottle as a supplement to the breast feeding if the child does not get enough milk. In text-books on the diseases of children ten pages are given to the subject of artificial feeding and almost nothing to breast feeding and how it may be brought about. Frequently mothers will say to me: "I understand that it is just as well to feed the baby on the bottle." Recently I saw a baby on the fifth day of life. It had a temperature of 105 F. The mother was a primipara. She told me she was sorry she could not feed the baby. By keeping the baby persistently at the breast she is now able to nurse the baby. Those are the questions that lie at the very foundation of the supply of human beings. Seventy-three per cent. of the children in the large cities are foreign born and are nursed by their mothers.

Dr. J. P. Sedgwick, Minneapolis: It is gratifying to see that we are coming out of a state of pessimism in regard to mothers nursing their babies. I have kept a record of private cases I have had since I began practice, as to whether the mother nursed her child and, if she stopped, why, and when she stopped. Some of the answers are so ridiculous that it would surprise most of us if we kept such a record. In the first place, we are led to believe that it is very frequent that breast milk does not agree with the baby. That I believe is a rare condition. I think it is usually a quantitative question rather than a qualitative one. Let me recite one example. A baby had been taken from the breast and put on the bottle on the advice of a physician who had examined the mother's milk, reckoning the amount of cream and protein. The physician found 4 per cent. of protein and for that reason thought that the baby could not be kept at the breast. He got doubtful results when the baby was put on the bottle and very soon the baby and its mother came to me. I could see no reason why the child should not be nursed by its mother; I examined the milk and I got 1.4 per cent. protein in two samples, showing how much harm can be done by inaccurate examinations, and then basing our therapy on such examinations. I am so convinced that it is a general quantitative question that I have scales not only in my office, but other scales that are sent from house to house, allowing the mother to see for herself what the child gets. We should have very accurate data before we take a child from the breast.

Dr. L. Duncan Bulkley, New York: For years I have fought for mothers nursing their children. I have not used the scales and I have not analyzed the milk. I am an old-fashioned practitioner, but I am positive that attention to the mother has accomplished results that could not be secured otherwise. Over and over again a mother comes to me and tells me she can not nurse her child. I analyze the urine and examine the mother carefully, and find metabolic or other errors which I correct, and in nearly every instance the mother is given iron. In eczema in small infants I give the mother arsenic and iron and seldom give the child anything internally. Time and again people have spoken of the fact that when I stopped the mother from taking tea the child's eczema stopped. I have seen so many cases of eczema in children in which the mother was given stout, and in which the eczema was cured when the stout was stopped, that I can not help believing that the stout has something to do with the eruption. I believe mothers can be educated to drink milk, but I never give milk with the meals. The mother drinks the milk like water, one hour before her meals. I think the milk should be warm, so I commonly dilute it with one-third of boiling water. The mother's appetite is increased thereby, and the milk does not to my belief, go through the stomach in the usual way: I believe it is absorbed. My directions are that the moment the mother awakens in the morning she should drink eight ounces of milk, with one-third hot water, and that she repeat this one hour before each meal. She should let four or five hours pass after the ordinary meal before taking it. The idea is to supply the mother with milk which she gives the baby.

Dr. A. F. Furrer, Cleveland: The frequency with which the mother should nurse her baby is important. It is common experience that mothers nurse their babies too often. "Every time it cries" is the admission (during the day and all night long). At the Babies' Dispensary and Hospital in Cleveland, the four-hour intervals, after the German method, is in vogue and works very nicely. I believe that if we as physicians instruct the mothers to nurse infrequently more mothers would be willing to nurse their babies.

Dr. Charles Douglas, Detroit: A little confusion has arisen by not drawing the line between the normal child and a delicate child. Those of us who give most of our time to correcting the damaging results due to our feeding, realize that success depends on recognizing that the digestive power is only so great for each meal and we have to get in enough nutrition within twenty-four hours to meet the needs of the child. We must give the child at each feeding the amount it can digest perfectly and get a proper stool. Then when it becomes hungry we must feed it again regardless of the time since last meal. To be successful we must recognize that fact. I did not notice whether or not the essayist had made any provision for the dilution of the food. I am in the habit of weaning children by gradually introducing a starchy diet. Dr. Ostheimer's plan would certainly appeal to any one doing this work.

Dr. John Lovett Morse, Boston: Dr. Ostheimer has read his paper before the wrong audience. He should have read it before obstetricians or nurses. The pediatrists are now all awake to the necessity for breast feeding.

Dr. Frank P. Gengenbach, Denver: Every day, every week, every month, that the child receives breast milk increases its resistance in the battle for existence which no other feeding method makes possible. This is the teaching of Salge, the professor of pediatrics at Göttingen. The Germans try in every way to give breast milk. They would no more have an infant hospital without wet nurses than they would think of having such a hospital without the infants themselves, because they have so many babies who can not be fed in any other way. Some babies will only get along with bottle feeding if that is supplemented with breast feeding, and others can only get along on the breast. The Germans recognize only one contraindication to breast feeding and that is tuberculosis on the part of the mother. Even in cases of mastitis they do not consider it a contraindication, even if a slight amount of pus is present. They believe that so long as the mucous membrane of the throat and mouth are intact there is no danger of infection. For that reason they object to mouth washing because they believe more harm results from the abrading of the mucous membrane than good can come of the mouth washing.

Dr. Thomas S. Southworth, New York: In the diet of the nursing mother I believe that milk as a milk maker stands first. Second to that, I place cornmeal gruel. I do not use the latter in such large quantities as formerly. I find that about four tumblers of an equal mixture of gruel and milk are enough, giving the rest of a quart of milk at other times. This gruel should be cooked long to take off the raw taste, and salted to prevent a flat taste; then it should be mixed with milk and it is for most people fairly palatable. When the supply of breast milk is small and weighing shows that the child does not receive enough milk to satisfy it, much good is done by nursing it each time at both breasts. Again, if the fat is high there is less fat from the first milk of breasts than if one breast is stripped. When the number of breast feedings and supplementary feedings are equal, it is imperative that each nursing be from both breasts or else the amount of milk decreases. I am not in accord with one writer who claims that the giving of one or two supplementary feedings to a nursing infant involves a diminution of the breast milk. On the contrary, I think that it often tends to build up the breast milk rather than to decrease it.

Dr. Maurice Ostheimer, Philadelphia: I appreciate Dr. Morse's suggestion, for I think the obstetricians are largely to blame. While I realize the value of milk as a food, there is no doubt in my mind that it will cause indigestion in many women, even a very little of it. I have never tried Dr. Bulkley's method, but will do so.

Playground Space.—The London school authorities have determined that fifty square feet is the minimum playground space for each child.—*Hygiene and Physical Education.*

MIDDLE MILK MIXTURES *

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NEW YORK CITY

It is some years since it was shown that when milk is allowed to stand the bacteria are carried upward with the fat globules so that the cream layer contains a far greater number of micro-organisms than the underlying skim milk.

This teaching has been corroborated many times, although it has been frequently forgotten in practice and in experiment. In a study published about one year ago,[1] from the Research Laboratory of the New York Board of Health, I went somewhat deeper into this question, in which by chance I had become interested. As some of those present are acquainted with this investigation, I shall not review the experiments which I undertook in this work. Briefly stated, they resulted in establishing a fact which had not, I believe, been previously noted, namely, that the bacteria which the cream is known to harbor, are not homogeneously distributed throughout its depth, but are present in far greater numbers in the surface cream than in its lower strata. In other words, it is incorrect to regard the cream as a unit when we are considering its bacterial content. It was frequently evident from a glance at the Petri plates that the uppermost two ounces of the bottle contained decidedly more bacteria per cubic centimeter than the succeeding two ounces, and these, in turn, more than the lowest portion of the cream or milk (Table 1). This was true even when the milk was simply poured from the bottle. Tubercle bacilli also were shown to be carried to the surface, for the animals inoculated with the upper two ounces of cream developed tuberculosis oftener than those inoculated with the lower ounces. As typhoid fever of late has been frequently traced to the milk supply, I took the opportunity recently of inoculating with typhoid bacilli two bottles of a certified milk, which at times is almost sterile, and, after allowing them to stand over night, made bacterial counts from the various layers. As was to be expected the result was the same; the greatest number of typhoid bacilli were found in the upper two ounces of the cream (Table 2). This result preaches its own remedy.

TABLE 1.—Bacteria Per c.c. in Layers of Bottled Milk.

1st 2oz.	2nd 2oz.	Remainder.
93,500	49,000	
86,500	14,000	
235,000	96,000	40,000
115,000	36,000	6,000
102,000	57,000	
1,383,000		160,000

TABLE 2.—Typhoid Bacteria Per c.c. in Inoculated Bottled Milk

1st 2oz.	2nd 2oz.	Remainder.
320,000	103,000	43,000
1,200,000	395,000	155,000

In the paper to which I have referred I suggested a way of taking advantage of this physical principle and adapting it to the practices of infant-feeding. This new modification of preparing milk was not complex and did not clash with the accepted method of estimating top-milk mixtures, for, after discarding the upper two ounces of cream, it was ascertained by quantitative analyses how many ounces should be removed to obtain 12 per cent., 10 per cent., or 7 per cent. cream; in other words, the different strengths of cream which are used as a basis for preparing top-milk mixtures.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] The Distribution of Bacteria in Bottled Milk, and its application to Infant Feeding. Arch. Pediat., August, 1908.

Nevertheless, in spite of its basis of scientific fact and apparent practicability, this partially skimmed milk which I now term "middle milk" has, so far as I am aware, found no acceptance. In the recent literature are found references to the usual top-milk mixtures as frequently as before, some writers urging the use of the upper two or four ounces of the gravity cream for milk mixtures, or even the use of the uppermost cream from two or more bottles. No argument against the theoretical or practical soundness of my suggestion has come to my notice. As I have found this modification of top-milk feeding practicable in a clinical experience extending now over a year, I thought it excusable to point out in a few words that middle milk is not merely an interesting laboratory suggestion, but that it permits of a simple and practical modification of top milk feeding, and one which possesses decided advantages.[2]

I have used the middle-milk mixtures mainly in the dispensary, prescribing them to women who are certainly not endowed with more than average intelligence. These mothers were given the following directions: Remove the upper two ounces of cream and keep it for table use. Then dip off the next eight ounces of milk. (This furnishes them with a standard 10 per cent. cream.) They are then directed to dilute a certain number of ounces of this cream with water or barley water according to the age or condition of the infant. If a 12 per cent. cream is preferred as a basis, 7 instead of 8 ounces of middle milk, is ordered removed; if a 7 per cent. cream is desired, 12 ounces are removed. It is certainly a very simple matter to carry out these directions. The only possible disadvantage is that there are fewer ounces of cream as a basis than in top-milk mixtures; for example, whereas we are able to obtain 16 ounces of 7 per cent. top milk from the bottle, we can have only 12 ounces of middle milk. The mothers understood the directions readily, quite as readily as they did the formulas based on top milk which I had been in the habit of prescribing.

We are all aiming at supplying better milk for the infants of the poor, and are striving to make it possible to obtain, especially during the warm weather, a cheap milk with a low bacterial count. Here, then, is a supplementary method by which the count may be materially reduced without in any way affecting the natural properties of the milk.

We can not hope to obtain clean "middle milk" from dirty whole milk, but it is certainly true that the more contaminated the milk the more is to be gained by removing the upper two ounces. And, on the contrary, the better the milk, that is to say the more nearly it approaches the standard of certified milk, the less is to be accomplished by this process. At present there can be no question but that comparatively little of the milk fed to the infants of the large cities approaches this latter standard. If the milk is contaminated by pathogenic bacteria, for instance, by tubercle or typhoid bacilli, the dose of these bacteria fed in the "middle milk" will be much less than that in the top milk.

I realize that many here have made use of middle milk, although they have not used middle-milk mixtures, that they have, for perhaps years, prescribed the removal of the upper ounces of the cream in order to reduce the fat content of the milk. In this way they have unconsciously killed two birds with one stone, and the fact that the modification which I suggest chimes well with the teaching against high fats should argue strongly in its favor. Especially is this so as regards feeding in warm weather, when bacterial and fat intoxications woefully combine to increase the infant mortality.

I do not urge this modification as a method of purifying dirty milk, as a substitute for pasteurization or sterilization, but wish merely to call the attention of those who prescribe cream dilutions to the fact that "middle milk," that is bottled milk deprived of its upper two ounces, not only contains fewer bacteria than top milk, but has been found of practical value in the feeding of infants.

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ABSTRACT OF DISCUSSION

Dr. Frank S. Churchill, Chicago: I take it that the point in feeding babies is first of all to feed them clean milk and then to feed them percentages that are adapted to the child. These two objects can be better attained through the milk laboratory. It is true that the milk laboratory is an expensive thing, but in all the larger cities we have charitable milk laboratories where such milk can be obtained at a very small cost and in case of need it can be obtained free. We can send the prescription to the laboratory and give directions as to the exact amount to be fed to the child. The laboratory at Chicago is inspected and subjected to bacteriologic investigation and we feel that we can depend on the milk from this laboratory.

Dr. L. T. Royster, Norfolk, Va.: The feeding of babies, especially babies of the poor, resolves itself into getting clean milk. In Norfolk we have greatly lowered the mortality by getting clean milk. If we can get a certified milk from a laboratory we are doing a wise thing. We can also give to the poor prepared milk with great benefit, but with an intelligent mother handling milk that is delivered cool from the dairy and kept clean at home we may also get excellent results. In reducing the bacteria to the minimum Dr. Hess's method is a very good one.

Dr. Frank W. Pinneo, Newark, N. J.: Clean milk would obviate the necessity for discarding any part of it. The investigations of Dr. Hess are interesting and commendable, but as we can not remove all the bacteria with the upper two ounces of cream why not strive for a still better product—initially clean milk. In Essex County, N. J.—the cradle of certified milk—we have such a product, and where you can have milk that is so nearly free from bacteria (even in the upper two ounces) it will not be necessary to employ the method of Dr. Hess.

Dr. J. J. Thomas. Cleveland: Does Dr. Hess consider the germs themselves as a cause of the summer diarrheas? If so, the removal of the germs by this method would answer the purpose, but, according to recent investigations by Czerny, the summer diarrheas are caused by the acids produced by bacteria acting on the fat or sugar. In that case the harm has already been done and the removal of the upper layer of cream will have no effect at all. It is time for us to wake up to the point of proving or disproving that the condition is due to the germs. The thing of greatest importance is to keep out the germs, but it is a question in many cases of doing the best we can with poor milk. It seems to me that when the laboratory milk is of doubtful quality and we have certified milk, it is better to discard the laboratory milk and to depend on the certified milk. Owing to the pressure brought to bear in Cleveland, certified milk is now being used in modifications, but Cleveland is only one of the two cities in the country where this is done.

Dr. Alfred F. Hess, New York: No doubt it would be better if all the children and infants of the poor could get their milk from laboratories, but I know that in New York most of the babies treated in the dispensary do not get their milk from the laboratory, but are given loose milk, or bottle milk. If we could induce these people to get it from the philanthropic institutions it would be better, but they do not get it there and so we must deal with conditions as we find them. These counts were made from ordinary 8-cent bottle milk, the ordinary cheap milk. I ordered analyses to be made so that I would know just how much to use in order to get a 7 per cent., 10 per cent., and 12 per cent. cream. I do not think Dr. Pinneo quotes the German authors quite correctly in the statement that all the trouble is due to the fat. I believe they admit that there is also some trouble due to the bacteria. There is no reason why this middle milk should not be pasteurized afterward, one will have fewer dead bacteria. Whether the bacteria do harm or whether only the chemical qualities do harm, we know that tubercle bacilli do harm and that the typhoid bacilli do harm, and these two germs are found largely in the upper milk, and if we could avoid these we could avoid many cases of illness.

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[2] Since this article was written, a review of this subject by Dr. John F. Anderson, entitled "The Relative Proportion of Bacteria in Top Milk and Bottom Milk and its Bearing on Infant-Feeding" has appeared in the Journal of Infectious Diseases. I was pleased to find after the lapse of a year a complete confirmation of my laboratory experiments, as these investigations are the structure on which I base the desirability of using middle milk. Dr. Anderson also believes that question is of importance in infant feeding and concludes that "the preponderance of bacteria in top milk may explain why infants sometimes do not thrive on milk made from top milk."

THE ETIOLOGY AND TREATMENT OF THE SO-CALLED SUMMER DIARRHEA IN INFANTS *

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CHICAGO

Six or seven years ago there were carried out under the supervision of the Rockefeller Institute extensive bacteriologic examinations of the stools of infants suffering from summer diarrhea, with especial regard to the presence of the *B. dysentericus*.[1] Not only the Rockefeller Institute, but many hospitals and laboratories undertook at the same time the same careful research. The results of these researches seemed at first to throw some light on the etiology of this affection. Not only was the *B. dysentericus* (usually of the Flexner type) found frequently, but in some of the cases agglutinins were found in the blood. Soon after these researches in the east, Weaver[2] published a series of examinations by which he was able to show that the dysentery bacillus was to be found in the stools of infants suffering with summer diarrhea in only 25 per cent. of the cases. About the same time Dr. J. S. Welch and myself[3] examined the stools of 17 children with diarrhea in Cook County Hospital, with the result that only one case showed the Flexner bacillus; but we were able to isolate other bacilli, which with the variations from the Shiga-Flexner type recorded by other observers served as links in a chain connecting the *B. coli communis* to the *B. dysentericus*. We came to the conclusion that true dysentery, if such existed in infants, was a relatively rare disease in Chicago.

There are many reasons for believing that *B. dysentericus* is not etiologically connected with a large percentage of the diarrheas in infants. In the first place, the cases which showed the dysentery bacillus in the stools differed clinically in no way from those cases in which no dysentery bacilli were found. In the second place, the dysentery bacilli were usually few in number and extremely hard to find. In the third place, agglutinins were by no means constantly present and, so far as could be ascertained, the antidysenteric serum which has excellent results in the true dysentery in the adult, as found, for instance, in Japan, seemed to have no effect whatever on the condition of the infants affected. The dysentery bacillus has never been cultivated from the blood of these infants nor has it ever been found outside the human body (except in the laboratory animals).

I think it is safe to say that unless more certain proof is brought that the *B. dysentericus* is etiologically connected with summer diarrhea we may regard it as at least an open question with the burden of proof resting with those who support the theory, for such it is.

Escherich[4] and very recently Jehle[5] have described a streptococcus enteritis with a definite clinical history and the presence of such complications as nephritis, peritonitis, etc. Jehle regards a given case of diarrhea as due to the streptococcus when that organism is found in great numbers in the stools at the very onset of the attack. Evidently the condition is a streptococcemia with the intestinal canal as its point of entrance.

Escherich[6] has described a so-called epidemic of gastroenteritis occurring in a home for nurslings in which the *B. acidophilus* was found in the stools, and Finkelstein[7] one in which the *Bacillus enteritidis* was found. That there was any connection etiologically between the *B. acidophilus* and the diarrhea was not definitely proved. Cooley,[8] of Detroit, has recently described an epidemic in which the *B. pyocyaneus* was found in the stools.

Many years ago Escherich[9] advanced the theory that the *B. coli communis* suddenly became more virulent and either affected the gastrointestinal canal itself or produced toxins which caused the disturbance. Vaughan[10] is the only one who has been able to produce a toxin from the colon bacillus, and his conditions varied so greatly from those which we encounter in the infant that it is fair to assume that no such toxins are formed by the colon bacillus in the intestinal tract of the infant.

If we stop to consider the clinical picture which the ordinary summer diarrhea presents, we will see that there are present many things which are not compatible with the theory that this is due to infection of the intestinal wall. Usually, although the onset apparently is very sudden, still if we inquire more closely we will find that there have been present for days, weeks and even months, symptoms which point more or less directly to derangement of the gastrointestinal functions and the normal metabolism of the child. Why should we resort to infection to explain a condition which is more easily explained by a graver dietetic error of the same sort or a continuation of the same error past the point of tolerance? But the onset is not so significant as the course. If we take all food from a child having an acute attack of summer diarrhea and give in its place only water, perhaps sweetened with saccharin (not sugar), and containing a little barley or tea, in from 24 to 48 hours the temperature returns to normal, or almost normal, and the child's general condition becomes very much better, so much better, in fact, that the mother frequently regards it as well. To me it is not conceivable that the infection of such a long tube as the intestinal canal could be so readily and easily removed.

At present it seems to me that the infectious nature of summer diarrhea has not been proved; in fact, quite the contrary, and that we must look elsewhere for a satisfactory explanation of conditions as we find them.

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* Read before the Douglas Park Branch of the Chicago Medical Society, May 3, 1909.

1. Rep. of Rockefeller Inst., i. 1903.
2. Jour. Inf. Dis., 1905, ii, 70-96.
3. Am. Med., 1905, ix, 942-945.
4. Wien. klin. Wchnschr., 1897, x, 917-920; Jahrb. f. Kinderh., 1899, xlix, 137.
5. Jahrb. f. Kinderh., 1907, lxv, 40.
6. Jahrb. f. Kinderh., 1900, lii, 1.
7. Deutsch. med. Wchnschr, 1896, xxii, 608, 627.
8. The Journal A. M. A., Feb 22, 1908, 607.
9. Verhandl. des 17 Congresses für Innere Medicin, 1899, 425.
10. Ztschr. f. Physiol. u. Chem., 1886, x, 146.

Within the past year Finkelstein[11] has described a disorder of nutrition which he designates "metabolic intoxication." The symptoms of this affection are the same as those of summer diarrhea as we commonly encounter it. Finkelstein has proved that this entity is an intoxication metabolic in nature caused primarily by the inability of the organism to assimilate the sugar properly, a condition to which too much fat in the food predisposes. He has proved that after a hunger diet the pure casein of cow's milk can be taken care of, and that sugar as well as fat in any appreciable quantities causes return of the symptoms. His argument in favor of this being due to the food is that on removal of food the symptoms of intoxication quickly disappear. In this condition we find a leucocytosis and albumin, sugar (lactose) and casts in the urine. The breathing is deep and rapid. Meyer,[12] who has worked on the metabolism of metabolic intoxication, believes it to be an acidosis. He thinks that the loss of weight for which the diarrhea does not give us sufficient explanation is due to the escape of moisture from the lungs.

Czerny and Keller,[13] while agreeing with Finkelstein to a degree, suggest that we may have a "toxicosis" due to the decomposition of the food by bacteria, either before ingestion or in the gastrointestinal canal. Although offering no proofs, they are inclined to the opinion that the toxic products are acids split off from the sugar or the fat. Like Finkelstein, in no case have they seen any reason to believe that the casein of cow's milk caused any disturbance in these cases. Czerny and Keller state positively that they do not think that there is such a thing as infection of the gastrointestinal wall, except in the various diseases of the new-born, hemorrhagic diseases, sclerema, etc.

If we are to accept the ideas of Finkelstein or of Czerny and Keller, or both, we must answer several questions. The first one of these is: Can we explain all the clinical findings by these theories? The only symptoms about which there would likely be much question are fever and the urinary findings. That fever is not always due to bacteria and their toxins is proved by its presence in such conditions as uremia, a condition marked by a profound disturbance of metabolism.[14] The presence of sugar in the urine indicates at least a disturbance of absorption and probably also of metabolism. As to the presence of albumin and casts, recently we have found them so frequently and in such a variety of diseases that their presence has lost much of its former significance. In nearly any severe disturbance we would not be surprised to find them, and hence any disturbance of metabolism so severe as to allow lactose to pass into the urine would certainly give rise to substances sufficiently irritating to the kidney to account for the presence of albumin and casts in the urine.

The second question is: Can we account for the pathologic findings on these theories? We can divide the pathology into the lesions of the intestinal wall and the lesions of the other organs. The lesion usually encountered in the intestinal wall is congestion; this may be followed by round-cell infiltration and even by ulceration with infection of the lymphatic tissue. The presence of toxins, whether metabolic or alimentary in origin, would be sufficient to cause a congestion, and if more irritating an infiltration. We have so long been accustomed to regard bacteria as the cause of intestinal ulceration that we have forgotten that when we speak of bacteria acting in this way we mean their toxins. That chemical poisons produced in the body, whether by disturbance of metabolism and excretion through the intestinal wall or by the decomposition of the food, can cause ulcer formation in the intestine, would seem more than probable. Any involvement of the lymphatic tissue must be regarded as due to secondary bacterial invasion. The finding of bacteria in the epithelial cells of the intestinal tract is of little significance, since even a half-hour after death they are often found in cases in which no pathologic condition of the intestine is evident. That they should be found in the epithelial cells of the feces is not to be wondered at, for these in most cases have become detached much earlier than one-half hour previous to defecation.

The only organ outside the intestinal tract involved in most cases is the liver. One of the chief functions of the liver is to arrest poisons on their way to the general circulation. In a condition such as this, in which poisons are present in large amounts, we would expect to find the liver swollen and showing some degeneration of the cells. This, in fact, is the condition in which we find this organ. But some one may ask if this condition is metabolic in nature why does it occur more frequently in summer? To answer this question we must take into consideration three facts: first, in proportion to its weight the skin surface of the infant is much greater than that of the adult; second, a small baby is usually much too warmly clothed, and third, in the hot weather less food is required than in colder months. The first fact shows that the child is more susceptible to heat because of a relatively greater body surface. In addition, the warm clothing prevents the proper excretion through the skin. A mother practically never thinks that a child should have less food during hot weather, and hence the child is kept on the same high diet. The result is that a disturbance of metabolism occurs because of excessive food supply and defective excretion through the skin. On the other hand, if we agree with Czerny and Keller, the whole can be explained by a decomposition of the milk, a thing which is certainly most apt to occur in the summer months.

When, therefore, we stop to consider the question of the etiology of summer diarrhea, we come to the conclusion that, though infection of the intestinal wall probably takes place in some cases, it is not the usual cause of a summer diarrhea in infants, but that this affection is, as a rule, due to a disturbance of metabolism or decomposition of the food.

Having arrived at this conclusion, we can now intelligently turn to the treatment. If we are dealing with a condition which directly or indirectly is due to the food ingested, the first indication is to stop all food. But this is not sufficient. Meyer has shown that in the acute attack the loss of weight, which at times is relatively very great, is due to the loss of fluid in the form of watery solution of the body salts. This takes place primarily from the intestine in the form of diarrhea, but the amount lost in this way will not account for the total loss. Meyer suggests that in all probability the loss takes place in large part through the lungs and that this excretion is evidenced through the rapid deep breathing. Be this as it may, the indication is present for the supply of fluid to the system. This we accomplish by giving barley water or weak tea. However, it is occasionally impossible to give these fluids by mouth because of the comatose condition or extreme asthenia of the patient, and, since it is imperative that fluid be given to these babies, at times it is well to resort to a continuous enema, or even to subcutaneous administration of normal salt solution.

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[11] Jahrb. f. Kinderh., 1907, lxv, 1, 263; lxvi, 1, 521.

[12] Jahrb. f. Kinderh., 1907, lxv, 585.

[13] Des Kindes Ernährung, Ernährungsstörungen und Ernährungstherapie. Leipzig. u. Wein., 1909, ii, 134.

[14] Since this paper was written Rosenstern has published some interesting experiments in which he shows that giving even a 1 per cent. sodium chlorid solution to a child suffering from a nutritional disturbance will not only raise the temperature but cause a leucocytosis. Monatschr. f. Kinderh., 1909, viii, 9-23.

The starvation diet is continued for from 24 to 48 hours. At the end of this time all symptoms have usually disappeared; even if they have not, nothing can be accomplished by a continuance of this treatment, and food in some form should be administered. For the past two years, I have used skimmed milk as the first food to be given these children and have never had cause to regret my action. I have usually brought this to a boil before giving it, because in this condition it seems to be more readily digested. This kills any bacteria which might act on the milk sugar and which are present in skimmed milk in large quantities. The skimmed milk is given to the amount of from 1¼ to 1½ ounces to the pound weight of the child in 24 hours, and diluted so as to afford enough in quantity to each feeding. The food is sweetened with saccharin when necessary and given at four-hour intervals. This, of course, is a temporary measure and as rapidly as possible milk sugar should be added and the skimmed milk replaced with whole milk. In this no rule can guide us except the condition of the child, and hence the gradual resumption of sufficient food must depend on the judgment of the physician. As a rule, we must be very cautious or there will be a return of the affection. In this method of treating this intoxication one of the most annoying features is the tendency to constipation when the skimmed milk is being replaced with whole milk. At this time the addition of malt to the food frequently brings relief.

Some symptoms may prove troublesome. The vomiting often ceases after the starvation period, especially if a four-hour interval is strictly observed. Sometimes it is necessary to take more active measures, such as stomach washing. The use of such medicaments as bismuth, it seems to me, is limited to such cases as do not respond to the other forms of treatment, and they are not common. The diarrhea will nearly always take care of itself. I sometimes employ colonic flushings, but more with the idea of reducing the temperature than of cleaning out the bowel. The reduction of the temperature can be accomplished usually by the measures previously suggested, but hydrotherapy is often of great advantage and when delirium is present antipyrin acts very favorably, not only in controlling the delirium, but also in reducing the temperature. Another distressing feature is distention. This is present usually only in the more protracted cases and is due to a circulatory disturbance of the intestine whose exact mode of action we do not know. For the temporary relief of this condition the introduction of a tube into the rectum, the other end of which is placed in a vessel containing warm water, frequently brings relief. We may also use colonic flushings and hot external applications to the abdomen even in the form of turpentine stupes. Collapse can best be combated by mustard packs followed by saline infusion or continuous saline enema.

I have purposely made no mention of the use of calomel or intestinal antiseptics. I have always felt that if we can obtain results in these infants without the use of drugs it is well to do so, and the treatment outlined will do what we desire. I feel that the use of calomel has been very much abused. It is conceivable that by further irritating an already irritated bowel it may do distinct harm and its qualities as an intestinal antiseptic are minimum. As to intestinal antiseptics in general, I can not see that their use is in any way indicated.

6118 Prairie Avenue.

Clinical Notes

CALCIUM SALTS IN THE TREATMENT OF EPILEPSY

WITH REPORT OF THE FIRST CASE

A. P. OHLMACHER, M.D.
DETROIT

With a large experience in the study and treatment of epilepsy, such as was afforded by my seven years' sojourn in the laboratory and wards of the Ohio Hospital for Epileptics, it is natural that I should be most conservative in expressing an opinion in favor of a new method of treating this malady. More particularly should I be reluctant about mentioning the seemingly favorable results that accrued with but a small number of cases. It was considerations of this nature that restrained me from putting on record the really extraordinary success that followed my first trial of the remedial effect of a calcium salt in epilepsy, and my avowed policy of postponement for further and more extensive corroboration of that success would not now be broken except for the appearance of an article from a physician in asylum practice,[1] who reports what he believes to be the first instance in which calcium lactate has been used for treating epilepsy. Alike to supplement the favorable record published by Dr. Littlejohn, who shows by tabular exhibits the suppression in two patients of epileptic attacks on the administration of calcium lactate over a period of three or four months, and to claim such credit as may be due from the standpoint of originality and historic priority, I herewith present a narrative of the first case of epilepsy in which I employed a calcium salt, together with the events and experiments which led me to the trial of this particular medication.

HISTORY OF CASE

Patient.—W. T. H., was brought to me for treatment in April, 1906, when he was 4 years and 4 months old.

Family History.—The child's parents were living and in good health; an older brother and a younger sister were free from neurotic disease. There was no record of epilepsy in the family, which, on the mother's side, was prominent in social and financial circles. The father was a well-educated, retired physician.

Personal History.—As an infant the patient was remarkable for his uneventful progress and perfect physical and mental development, which was the particular pride of a well-known pediatrist who supervised this period. A month after his third birthday the first manifestation of nervous disorder was noticed, and after a series of consultations between several general physicians and specialists a diagnosis of *petit mal* was reached and treatment with sodium bromid instituted. Occasional *petit mal* followed, and eight months after the first attack the primary severe *grand mal* occurred.

Frequency of Attacks.—By January, 1906, the epileptic seizures had become fully established, and the nurse, who gave unremitting care to the child, recorded the number and classified them as "light," "hard," and "convulsions," by which were meant *petit mal* (momentary loss of consciousness without fall), *petit mal* (with fall but no marked convulsions), and *grand mal* with all the events of a particularly severe major epileptic attack. In January there was a total of 844 attacks—401 "light," 424 "hard," and 19 "convulsions." For the following months to the time I finally had withdrawn the bromid by gradual reduction the total monthly number of attacks varied from 530 to 1,012, the ratio of the three varieties being about as above indicated. Following the withdrawal of the bromid the usual change from numerous light to fewer severe attacks took place as shown by a monthly total of 35 to 118, and of these *grand mal* seizures numbered 34 to 73 a month. June 3, 1907, the treatment under special consideration was begun, and the record shows 18 attacks, all *grand mal*, for this month, none for July, 72 *grand mal* in August, 6 in September, and from Sept. 7, 1907, to the present writing, June 30, 1909, no further epileptic attacks.

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[1] Littlejohn, A. R.: Calcium Lactate in the Treatment of Epilepsy, The Lancet, May 15, 1909, p. 1382.

Mental Condition.—The normal mental growth at the outset of the epilepsy ceased abruptly, and retrogression began which, when I first saw the patient, had reached the stage of a low-grade epileptic imbecility. After the bromid was stopped the hoped-for mental improvement did not follow, and it was not until after all attacks had ceased with the inauguration of the new treatment that a gradual clearing of the mind was observed, and this unclouding is still going forward to a degre most striking after the apparently hopeless state that once existed. In fact, the child seems to have suffered a mental non-existence for the two years and eight months of the epilepsy, and, with the suppression of the neurosis, to have resumed his mental growth from the time when the attacks began.

Previous Treatment.—The child was placed in the hands of good physicians, to whose aid was brought the advice of several noted specialists from two of our largest metropolitan centers. Aside from such general dietetic and hygienic precautions as are usually advised, bromids were employed, and with the increasing number of seizures, pushed in dosage. An operation on the cranium based on the theory of localized pressure was at one time considered but not undertaken.

Personal Treatment.—When I assumed charge of the case my announced plan was to attempt the withdrawal of bromids and to correct any possible source of reflex irritation. In the course of an examination of the digestive apparatus by a well-known gastroenterologist subnitrate of bismuth was administered preliminary to a skiagraph, and with an apparent reduction in the number of attacks following it, this drug was employed for some months without benefit. Finding that no special attention had been paid to the eyes, I advised the services of an expert refractionist, who found evidence of refractive anomaly and instituted treatment first by atropin-relaxation of the accommodation for a period, after which the compound hyperopic astigmatism was corrected. It was at the same time that the reduction of bromid had reached the end, and the resulting change from very numerous *petit mal* to a lessened total, but an increased number of *grand mal* followed. Some of the *grand mal* now came in series, never, however, reaching a full *status epilepticus*. I was with the patient during one of these series and witnessed *grand mal* as severe as any that had ever come under my notice in a large institutional experience.

Special Treatment.—Such was the condition of the patient when he came to Detroit for another of the several periods to allow of my personal observation. During March, April and May the lad had frequent nose-bleed following the *grand mal* cycles, and the nurse claimed she could detect the odor of blood on the breath during a convulsion and prior to the onset of the visible hemorrhage. I was at this time actively engaged in the practice of therapeutic immunization where the problem of blood coagulability presented itself, and I had employed Wright's method of measuring the time of blood coagulation, as well as his plan of using calcium salts to fortify a defective coagulability. Accordingly, when my attention was arrested by the reports about the epistaxis, I made the first blood-clotting test June 2, 1907, finding that the patient's blood failed to clot in 4 minutes, while a control blood under the same conditions firmly coagulated in 1½ minutes. The following day I began the administration of calcium lactate in doses of 7 to 10 grains dissolved in hot water and added to milk, three times a day. This medication has been continued with no change except occasionally reducing to one or two doses daily, to the present time. There has been no evidence of a harmful effect from the drug during this prolonged administration. Under its influence the blood-clotting time reached 2½ minutes by June 19, 1¾ minutes by July 6, and on numerous tests since, I have not found it to exceed 2 minutes, though rarely attaining the normal minimum of 1½ minutes. Since the cessation of the epilepsy three months after commencing the calcium lactate the child had occasional nasal hemorrhages, apparently related to periods of lowered coagulability not entirely brought to normal by the calcium salt. No lesion or abnormality has been found in the nose to explain the epistaxis.

RATIONALE OF TREATMENT

It was solely on the indication afforded by the hemorrhagic tendency in my first patient that I was led, after verifying by laboratory tests a tardy blood coagulability, to use the calcium salts in epilepsy, with the happy result just described. At the time I administered it MacCallum's observations on calcium metabolism as related to parathyroid intoxication and to tetany had not been published, nor had Carle's paper appeared on calcium chlorid in therapeutics,[2] with its recommendation for the use of the drug to allay nervous irritability in tetany, laryngismus stridulus, and "convulsions."

Incomplete observations on several additional cases of epilepsy treated with calcium lactate tend to confirm the favorable results obtained with my first case, and now that Littlejohn[1] has recorded the beneficial outcome in his early tests I shall be encouraged to prosecute further therapeutic experiments, for which I hope to have the opportunity through the courtesy of the authorities of the Ohio Hospital for Epileptics.

DERMATITIS FROM HAIR DYE

ANOTHER CASE OF POISONING FROM MRS. POTTER'S WALNUT JUICE HAIR STAIN

JOHN G. BURKE, M.D.
PITTSBURG, PA.

History.—On June 23, 1909, I was called to see a woman who gave a history of having an eruption on the face which first appeared four weeks previously, subsided somewhat in two weeks and then recurred. The burning and itching were so intense that the patient could not sleep and nothing prescribed by the two physicians who had her in charge gave her any relief.

Examination.—Her face, neck and part of her shoulders were red and swollen and the area involved covered by numerous minute vesicles all in the same stage of development. While observing the patient I noticed that she had a habit of placing the palms of both hands on her hair and then pulling them down over her face. This suggested the possibility of the irritant being a hair-lotion or dye. Questioning her along this line, I elicited the information that she had been using "Mrs. Potter's Walnut Juice Hair Stain," having made two applications—the first one shortly before the first appearance of the eruption, and the second application two weeks later, as it was not suspected that the hair stain had anything to do with the eruption.

Diagnosis.—This history convinced me that the trouble was a dermatitis due to the use of the hair stain, as I had read the reports of the other cases published in The Journal.[1]

Treatment.—I advised her to keep her hands off her hair and prescribed the liquor alumini acetatis, N.F., diluted one to three with water, applied on compresses, which gave her immediate relief. The itching stopped and the swelling subsided so that three days later her face appeared normal except for a slight desquamation.

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2. Jour. de Méd. de Bordeaux, 1907, xxxvii. 472.

3. This makes the fifth case recorded in The Journal. The other cases appeared in the issues of Feb. 13, 1909; March 6, 1909, and two in the issue of April 3, 1909.

As this stain evidently has a large sale, as it is extensively advertised in the magazines and daily papers, cases of dermatitis from its use must be more frequent than the cases reported show. One fact that is liable to mislead the physician is that on account of the scalp being less sensitive to irritants than the skin of the face the scalp is not involved and the connection between an eruption on the face and the application of a dye to the hair is overlooked. The use of hair dyes and face lotions is becoming so common that we must consider them as possible causative factors in any eruption about the face, neck and scalp that we can not class as one of the recognized diseases.

632 Fulton Building.

AN EPIDEMIC OF EMPYEMA

E. H. MUSSON, M.D.
NORBORNE, MO.

The following experience seems sufficiently remarkable to be worth reporting. The cases mentioned all occurred in my practice during the six months from Dec. 1, 1908, to June 1, 1909, in a rural community having a radius of less than four miles, with the center about seven miles northwest of Norborne, Mo.

I attended in this community six cases of frank lobar pneumonia and eight cases which I diagnosed pleuropneumonia. These latter failed to show clear physical signs of consolidation, the clinical picture being that of a severe pleuritis. All but one, an infant, however, raised a small amount of slightly "rusty" sputum. One of the pneumonia patients and six of the pleuropneumonia patients developed empyema as a sequel. Another pleuropneumonia patient had a large serous effusion, making eight cases of effusion out of the fourteen, seven being purulent and one non-purulent.

The treatment of most of the cases preceding effusion was simple, consisting of good nursing, elimination, very hot applications to the chest for pain, with morphin given in a few instances, and tepid bathing for combating a dangerously high temperature.

The empyema patients ranged from 14 months to 72 years of age. Five were males and two females. In four cases the pus was in the right pleural cavity and in three in the left. I operated twice by incision in an intercostal space and five times by resection of a rib, and all recovered. The gross appearance of the pus was that of a pneumococcus infection. In the case of non-purulent effusion the patient recovered satisfactorily after the withdrawal of nearly a half-gallon of fluid from the pleural cavity.

THE ASSOCIATION OF ENTEROCOLITIS WITH PNEUMONIA

MARK LIEBERT, M.D.
BROOKLYN

The prevailing epidemic of enterocolitis and pneumonia running typical courses side by side will, no doubt, arouse the interest of many practitioners. The field for bacteriologic study should yield much useful information. The two diseases apparently aggravate each other, but the course of either is not otherwise modified. They appear either to arise simultaneously or closely to follow each other. The diarrhea follows the operation of the usual causes, most often occurring in bottle-fed infants or children fed on malted milk, though I have seen a case in an exclusively breast-fed infant.

The simultaneous involvement of the respiratory and gastrointestinal tracts would suggest the presence of a common predisposing cause. In a few cases there was a history of a preceding prolonged bronchitis. The stools are small in amount and occur at great frequency. At first they are greenish, mucoid and very fetid; later they become serous in character. They may be yellowish, showing particles of curdled undigested milk. In one of my cases the stools were blood-streaked. If diarrhea exists before consolidation has taken place in the lungs, there is usually a temperature between 101 F. and 102 F. With consolidation the temperature may be very high, reaching 105.5 F. Prostration is marked. In one of my cases cough was entirely absent, while the lungs gave typical physical signs. These cases usually occur in the second year, although I had one case in a boy of six.

Treatment should be directed chiefly to the diarrhea. In this I follow the teachings of Dr. Joseph E. Winters, of New York. Castor oil at the outset, starvation for from 24 to 36 hours, with plenty of cold water during this period. I have seen fever go down precipitately under this treatment alone. Even drugs are to be excluded. At the end of from 24 to 36 hours feeding is begun according to age. For children less than 10 months old, cow's milk is modified so as to minimize proteids; above 10 months cereals are given and milk avoided. I do not think that the exclusion of milk tends to aggravate the course of the pneumonia. The fever is treated by tepid sponging and the ice-bag to the head. High rectal enemas, as shown by Dr. Winters, may increase the cyanosis and tend to produce collapse.

This is written in the hope that it may interest others whose experience has been extensive in this class of cases. It is a live, timely topic and much may be said that will prove beneficial to all in the treatment of two dangerous affections.

57 Christopher Avenue.

PIN EXTRACTED FROM TRANSVERSE COLON

FRED V. WATSON, M.D.
ANTIGO, WIS.

The cases reported in The Journal, one (April 10, 1909) of a darning needle, extracted from epigastrium of an infant, the other (June 5, 1909) of a scarf pin swallowed by an infant and found protruding from the anus, have prompted me to report a case that occurred in my practice last week.

History.—A young woman, aged 18, with an acute attack of appendicitis second day complained of a sharp sticking pain over the line dividing the right hypochondriac region from the epigastric region. As there was extreme tenderness over McBurney's point with tympanites, colicky pain and vomiting, pulse 120, temperature 102 F., nothing was thought of this pain, but a diagnosis of acute catarrhal appendicitis was made and immediate operation advised.

Operation.—Under ether anesthesia I made my incision directly over McBurney's point, and on searching for the appendix I picked up a part of the transverse colon that contained a pin. This was extracted and the wound closed with a puckering string of Pagenstecher's linen. The appendix was then located and found to be in an acute catarrhal condition, curled on itself, with adhesions from a former attack. It was removed in the usual manner and the patient made a good recovery. The patient has no knowledge of swallowing the pin.

Therapeutics

TAPEWORM

While the eradication of this unwelcome parasite sounds simple enough when the treatment of the condition is read in a text-book, such treatment, and any treatment, is often not successful in obtaining the head of the animal, which is the main object at which the treatment aims. Administration of the oleoresin of male fern is the treatment most generally used, and perhaps has been the one most frequently successful.

Dr. Seymour Spier, of New Haven, Conn., has had almost constant success with pomegranate. An unpublished letter from this physician thus describes his exact method of procedure: He first prepares a decoction from 60 grams of fresh pomegranate bark to 500 c.c. of water, slowly boiling this down to 250 c.c. (2 ounces of the bark to a pint of water, boiled down to half a pint). On the day before the administration of the anthelmintic the patient is given a cathartic, a good dose of compound licorice powder or other efficient purgative, in the morning. He is allowed breakfast and noon meal as usual. The supper, or evening meal, should consist of bread, or crackers, in milk. Before retiring he is given a soap suds enema, and at 6 a. m. the next morning, the morning of treatment, he is given half, viz., 125 c.c. (4 ounces) of the half-pint of the prepared pomegranate decoction. Half an hour later he is given a tablespoonful of castor oil, and in another half hour the patient takes the remainder (125 c.c., or 4 ounces) of the decoction. In thirty minutes this is followed by two tablespoonfuls of castor oil. The oil may be given in lemon juice on cracked ice, or on black coffee. If the oil is positively objectionable, instead of it, forty-five minutes after the administration of the last dose of pomegranate decoction he may be given a dose of salts, or even a bottle of the pleasant tasting effervescing citrate of magnesium. In a few hours the patient almost invariably passes the worm, as a whole with head attached, without any prolonged griping or very frequent movements. The patient is then immediately ready for his breakfast or luncheon.

If previous examination of the segments of the worm has shown it to be of the pork variety (*Tœnia solium*), Spier adds one drop of croton oil to the last portion of the decoction.

As the above decoction is bitter, and sometimes nauseating to the patient, and as a concentrated preparation of the alkaloids of the pomegranate is made especially for the treatment of tapeworm, and can be obtained, it may be ordered. It is much pleasanter to take and as effective as the crude drug. In fact, Spier says he has found it difficult to obtain fresh, active pomegranate bark, and to be successful the drug must be active.

The only disagreeable symptoms that occur from the administration of pomegranate in the above dosage is that there may be dizziness, and sometimes a partial amblyopia, which lasts from five to fifteen minutes. This is never serious, soon passes off, and is generally dispelled by a dose of whiskey or brandy.

Pomegranate (Granatum, U. S. P.) occurs as a bark which contains, besides about 25 per cent. tannic acid, several alkaloids, the most important of which are pelletierin and isopelletierin (sometimes called isopunicin). These alkaloids have some action similar to atropin, hence probably the effect on the eyes. If toxic doses be administered, or if large doses remain long in the gastrointestinal canal without being pushed rapidly along by cathartics, not only would dizziness and amblyopia be caused, but there would be bowel cramps, nausea, vomiting, and there might be muscle cramps, especially in the legs.

If the alkaloids be carefully prepared, the official preparation of pelletierinæ tannas, which is a mixture of the alkaloids of the pomegranate, should be an efficient preparation. The dose listed in the Pharmacopeia is 0.25 gram (4 grains).

Dr. Spier has never seen serious or persistent unpleasant symptoms occur from the administration of pomegranate as he has described it.

New and Nonofficial Remedies

Since the publication of the book "New and Nonofficial Remedies, 1909," the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections to aid in the revision of the matter before publication in the book are asked for.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

(Continued from page 460)

CEPHAELINE—Cephaelina.—An alkaloid, $C_{14}H_{20}NO_2$, obtained from ipecacuanha root.

Cephaelin occurs as snow-white, fine, interlacing needles which readily turn yellow. It is soluble in ether and caustic soda solutions, melts at 96°-102° C (204.8°-215.6° F) and turns brown when heated to 120° C (248° F). With Fröhde's reagent, a freshly prepared solution of 0.1 Gm. sodium molybdate in 10 Cc. concentrated sulphuric acid, it gives a purple color which hydrochloric acid changes to prussian blue.

Action and Uses.—These are identical with those of ipecac. It is relatively more emetic and less nauseant and causes relatively more renal irritation and less cardiac depression. It may be employed as an emetic and expectorant.

Dosage.—0.005 to 0.01 Gm. (1/12 to 1/6 grain) in pills or as a powder triturated with sugar of milk. The hydrochloride is soluble.

HOLADIN AND BILE SALTS, Fairchild.—This preparation is a mixture of Holadin (which see) 5 parts with bile salts, Fairchild (which see) 1 part, put up in 3 grain capsules, containing holadin approximately 0.15 Gm. (2½ grains), and bile salts 0.03 Gm. (½ grain).

Dosage.—One capsule about three hours after meals and one capsule at bedtime.

Prepared by Fairchild Bros. & Foster, New York.

NOVOCAINE NITRATE—Novocainæ Nitras.—Novocaine nitrate, $C_6H_4.NH_2(COO.C_2H_4.N(C_2H_5)_2.HNO_3 = C_{13}H_{21}O_5N_3$, is the nitrate of p—aminobenzoyldiethylaminoethanol, the base contained in novocaine.

Novocaine nitrate occurs in small colorless and odorless crystals, soluble in water and alcohol. The aqueous solution is neutral in reaction. Melting point 100°-102° C. (212°-215° F.).

If 0.1 Gm. novocaine nitrate be dissolved in 1 Cc. concentrated sulphuric acid and a solution of ferrous sulphate carefully floated above it, a brown zone is formed at the surface of contact of the two solutions. 1 part novocaine nitrate dissolved in 10 parts water and acidified with nitric acid, should yield no precipitate upon the addition of silver nitrate solution.

Actions and Uses.—As for novocaine; may be prescribed in combination with silver salts, with which it forms no precipitate..

Dosage.—Used in 3 per cent. solutions.

Manufactured by Farbewerke vorm Meister, Lucius & Bruening, Hoechst A. M. (Victor Koechl & Co., New York).
Patents or trademarks: None.

(To be continued)

MEDICAL COLLEGES OF THE UNITED STATES

Below are given brief descriptions of the medical colleges in the United States that are legally chartered to teach medicine, several of which do not grant degrees. The name, address, year of organization, history and date when first class graduated is given in each instance. Unless otherwise stated, a class graduated each subsequent year. Where official reports have been received from the college, information regarding faculty, entrance requirements, length of term, fees, students, graduates, name of dean and next session is given without discrimination, regardless as to whether the college is sectarian or not. In the few instances where such reports were not received the information published is from other reliable sources. Extracts of rules and the membership of each of the college associations is shown following the list of colleges. Figures showing population of cities and states are taken from the United States Census Bureau's estimates for 1906.

ALABAMA

Alabama, population 2,017,877, has two medical colleges, the Medical Department of the University of Alabama and the Birmingham Medical College, located, respectively, in Mobile and Birmingham. The population of Mobile is 42,903 and of Birmingham 45,869.

Birmingham

Birmingham Medical College. Avenue F and Twentieth Street. —Chartered in 1894. The first class graduated in 1895. There are 22 professors and 10 assistants, total 32. The course of instruction embraces four separate sessions of seven months each. The fees are $75 for each of the first three years and $100 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1908-9, 169, graduates, 28. The sixteenth session begins Sept. 29, 1909, and ends Apr. 28, 1910.

Mobile

Medical Department of the University of Alabama. St. Anthony and Lawrence Sts.—Organized in 1859 as the Medical College of Alabama. Classes were graduated in 1861 and in all subsequent years except 1862 to 1868, inclusive. It was reorganized as the Medical Department of the University of Alabama in 1897. All property was transferred to the University of Alabama and the present title assumed in 1907. The faculty consists of 8 professors and 17 lecturers and assistants, a total of 25. The course of study covers four years of seven months each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. Rhett Goode. The total registration for 1908-9 was 191, graduates, 29. The forty-fourth session begins Sept. 20, 1909, and ends Apr. 18, 1910.

ARKANSAS

Arkansas, population 1,421,574, has two medical colleges, the Medical Department of the University of Arkansas and the College of Physicians and Surgeons, both located in Little Rock, a city of 39,959 people.

University of Arkansas Medical Department, Second and Sherman Streets.—Organized in 1879 as the Arkansas Industrial University. The first class graduated in 1880. It assumed the present title in 1899. The faculty consists of 19 professors and 13 lecturers and assistants, total 32. The course of study covers four years of seven months each. The fees are: Matriculation, $5, paid but once; tuition, per year, $60; graduation fee, $25. The Secretary is Dr. C. E. Witt. Total registration, 1908-9, was 179; graduates, 22. The fourteenth session begins Oct. 1, 1909, and ends Apr. 30, 1910.

College of Physicians and Surgeons. Lincoln Avenue, north of the Union Station.—It was organized in 1906. The first class graduated in 1907. The faculty consists of 30 professors and 12 lecturers and assistants, a total of 42. The course of study covers four years of seven months each. The Dean is Dr. J. P. Runyan. The total registration for 1908-9 was 81, graduates, 14. The third session begins Oct. 1, 1909, and ends May 1, 1910.

CALIFORNIA

California, population 1,648,049, has seven medical colleges. Four are located in San Francisco, a city having, before the earthquake, 355,919 inhabitants. They are Leland Stanford Junior University College of Medicine, Medical Department of the University of California, Hahnemann Medical College of the Pacific and the College of Physicians and Surgeons. The College of Physicians and Surgeons and the California Eclectic Medical College are situated in Los Angeles, population 116.420. The Oakland College of Medicine and Surgery is in Oakland, population 73,812.

Los Angeles

College of Physicians and Surgeons. 516 E. Washington Street.—It was organized in 1903. The first class graduated in 1905. The course covers four years of nine months each. The faculty consists of 29 professors and 13 lecturers and instructors, a total of 42. The fees for the four years respectively are $135, $132. $107 and $132. The Dean is Dr. Charles W. Bryson, Delta Building, Los Angeles. The registration for 1908-9 was 32, graduates 5. The seventh session begins Sept. 5, 1909, and ends June 15, 1910.

California Eclectic Medical College. 846 Lyon Street.—Organized in 1879 at Oakland as the California Medical College. Removed to San Francisco in 1887. Suspended in 1906. Reorganized at Los Angeles with the present title in 1907. Classes were graduated in 1880. and in all subsequent years except 1907. It has a faculty of 27 professors. The Dean is Dr. J. A. Munk. The registration for 1908-9 was 7; graduates 4. The thirtieth session begins Sept. 13, 1909, and ends May 21, 1910.

Oakland

Oakland College of Medicine and Surgery. Thirty-first and Grove streets.—Organized in 1900, opened in 1902. The first class graduated in 1906. The faculty numbers 33. The course covers four years of nine months each, and the classes are limited to ten students each. The total fees for each of the four years respectively are $165, $160, $150 and $175. The Registrar is Dr. Edward N. Ewer. The total registration for 1908-9 was 17; graduates, 4. The eighth session begins Aug. 15, 1909, and ends about May 21, 1910.

San Francisco

Hahnemann Medical College of the Pacific. Homeopathic. Sacramento and Maple streets.—Organized in 1881 as the Hahnemann Medical College. The first class graduated in 1884. In 1888 it became the Hahnemann Hospital College of San Francisco. It assumed the present name in 1902. It has a faculty of 19 professors and 13 lecturers, instructors, etc., a total of 32. The course covers four years of seven months each. Total fees for the first year are $155, and $100 for each of the other three. The Dean is Dr. James W. Ward, 1380 Sutter Street. The total registration for 1908-9 was 23; graduates 6. The 28th session begins Aug. 31, 1909, and ends Apr. 28, 1910.

College of Physicians and Surgeons. 344 Fourteenth Street. —Organized in 1896. The first class graduated in 1897. The faculty numbers 60. The course covers four years of thirty weeks each. The President is Dr. Winslow Anderson. Registration for 1908-9 was 40; graduates 11. The fourteenth session begins Sept. 14, 1909, and ends May 14, 1910.

San Francisco-Palo Alto

Leland Stanford Junior University, College of Medicine. University Campus, Palo Alto, and Sacramento and Webster Streets, San Francisco.—Organized in 1858 as the Medical Department of the University of the Pacific. Discontinued in 1864. Revived in 1870. It became the Medical College of the Pacific, Medical Department of the University College of San Francisco in 1873. Became Cooper Medical College in 1882. United with Leland Stanford Junior University with present title in 1908. Classes were graduated in 1860, and in all subsequent years, except 1865 to 1869, inclusive. Three years of collegiate work are required for admission. The work of the first three semesters will be given at Palo Alto, the last five semesters at San Francisco. The faculty consists of 18 professors and 36 lecturers, instructors, etc., 54 in all. The course covers four years of eight and a half months each. Fees: First year, $175; second and third years, $170 each; fourth year, $195. The secretary is Dr. William Fitch Cheney. Total registration for 1908-9 was 117; graduates, 22. The forty-first session begins Aug. 15, 1909, and ends May 7, 1910.

San Francisco-Berkeley-Los Angeles

University of California, Medical Department. University Campus, Berkeley; Second and Parnassus Avenues, San Francisco and Buena Vista and Alpine Streets, Los Angeles.—Organized in 1863 as the Toland Medical College. The first class graduated in 1865. In 1872 it became the Medical Department of the University of California. In 1909 it absorbed the College of Medicine of the University of Southern California, which became a clinical department at Los Angeles. Two years of collegiate work are required for admission. At the San Francisco Department only the last two or clinical years are taught, the first two being at Berkeley. At the Los Angeles Department during the session of 1909-10 the work of the last three years will be taught, but beginning with the session of 1910-11 and thereafter all the work of the first two years will be at Berkeley and the work of the last two years at either Los Angeles or San Francisco. The faculty is composed of 43 professors and 80 associates and assistants, a total of 123. The course covers four years of nine months each. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean at San Francisco is Dr. Arnold A. D'Ancona; at Los Angeles, Dr. W. Jarvis Barlow. Total registration of the two schools for 1908-9 was 108; graduates, 23. The thirty-seventh session begins Aug. 15, 1909, and ends May 11, 1910.

COLORADO

Colorado, with a population of 615,570, has three medical colleges. Two of these, Denver and Gross College of Medicine and the Denver College of Physicians and Surgeons, are in Denver, which has a population of 151,920, the other, the Colorado School of Medicine, is at Boulder, population 12,000.

Boulder

University of Colorado School of Medicine.—Organized In 1883. Classes were graduated in 1885 and in all subsequent years, except 1898 and 1899. The faculty embraces 25 professors and 22 lecturers and assistants, a total of 47. The work embraces a graded course of four years of nine months each. Beginning with the session of 1910-11 the entrance requirements will be two years of college work counting toward a degree in arts in an accredited college or university. The tuition is $52 per year; there are no other fees. The Dean is Dr. William P. Harlow. The total registration for 1908-9 was 54; graduates, 11. The twenty-eighth session begins Sept. 13, 1909, and ends June 8, 1910.

Denver

The Denver and Gross College of Medicine, 1025 Fourteenth Street.—It is the Medical Department of the University of Denver. Organized in 1902 by the union of the Gross Medical College (organized in 1887) with the Denver College of Medicine (organized in 1880). Classes were graduated in 1903 and in all subsequent years. The faculty is made up of 33 professors, 38 assistants and instructors, a total of 71. The course covers four years of eight months. Fees for each of the four years respectively are $130, $130, $131 and $126. The Dean is Dr. George H. Stover, 1443 Glenarm Pl. The total registration for 1908-9 was 109; graduates, 23. The twenty-eighth session begins Sept. 28, 1909, and ends May 26, 1910.

Denver College of Physicians and Surgeons (Regular and Homeopathic), 1317 Fourteenth Street.—Organized in 1894 as the Denver Homeopathic College. The name was changed in 1907 to the Westminster University College of Medicine and again in 1908 to the present title. Since 1907 it has offered to teach two systems of medicine. Its faculty numbers 46. The Dean is Dr. David A. Strickler. The total registration for 1908-9 was 34; graduates, 7. Next session begins Sept. 6, 1909, and ends May 12, 1910.

CONNECTICUT

Connecticut, with a population of 1,005,716, has only one medical college, located in New Haven, population 121,227.

New Haven

Yale Medical School, York and Chapel Streets.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. The first class graduated in 1814. The faculty consists of 14 professors and 50 lecturers and assistants, a total of 64. The requirements for admission are two full years of collegiate work of fifteen hours per week. The course covers four years of nine months each. The fees are $150 each year; in the first year there are additional fees amounting to $18, and in the second $8, and there is a graduation fee of $10. The Dean is Dr. Herbert E. Smith, New Haven. The total registration for 1908-9 was 141; graduates, 15. The ninety-seventh session begins Sept. 30, 1909, and ends June 22, 1910.

DISTRICT OF COLUMBIA

Washington, population 307,716, has three medical colleges; George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University Medical Department.

Washington

George Washington University, Department of Medicine, 1325 H Street, N.-W.—Organized in 1825 as the National Medical College, Medical Department of Columbian College. Classes were graduated in 1826 and in all subsequent years, except 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1904, by an act of Congress, it received its present title. The faculty is composed of 42 professors and 40 instructors, demonstrators and assistants, a total of 82. The course covers four years of eight months each. The total fees are $150 per year. The Dean is Dr. William C. Borden. The total registration for 1908-9 was 156; graduates, 33. The eighty-eighth session begins Sept. 29, 1909, and ends June 8, 1910.

Georgetown University, School of Medicine, 920 H Street, N.-W.—Organized in 1851. The first class graduated in 1852. The faculty contains 20 professors, 54 instructors and assistants; total 74. The course of study covers four terms of eight and one-half months each. The fees are $150 each year. The Dean is Dr. George M. Kober, 1600 T Street. The registration for 1908-9 was 89; graduates, 15. The fifty-ninth session begins Oct. 1, 1909, and ends June 11, 1910.

Howard University, Medical Department, Fifth and W Streets, N.-W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Colored students compose a majority of those in attendance. The faculty comprises 22 professors and 30 lecturers and assistants, 52 in all. The course covers four years of eight months each. The fees of each session are $100, plus $10 for graduation. The Secretary is Dr. William C. McNeill. Registration for 1908-9 was 205; graduates, 26. The forty-second session begins Oct. 1, 1909, and ends June 1, 1910.

GEORGIA

Georgia, population 2,443,719, has five medical colleges; Medical College of Georgia, located in Augusta, population 43,125; Atlanta College of Physicans and Surgeons, Atlanta School of Medicine, the Georgia College of Eclectic Medicine and Surgery, and the Hospital Medical College are in Atlanta, a city of 104,984 population.

Atlanta

Atlanta College of Physicians and Surgeons, Butler and Armstrong Streets.—Organized in 1898 by union of the Atlanta Medical College, organized In 1855, and Southern Medical College, organized in 1878. The first class graduated in 1899. It has a faculty of 23 professors and 28 assistants, a total of 51. The course of study covers four years of seven months each. Fees: First and second years, $80 each; third and fourth, $100 each. The Dean is Dr. W. S. Elkins, 29 Luckie St. Total registration of students for 1908-9 was 280; graduates, 37. The twelfth session begins Sept. 27, 1909, and ends May 1, 1910.

Atlanta School of Medicine, Luckie, Barton and Cain Streets.—Organized in September, 1905. The first class graduated in 1906. The course covers four years of seven months each. It has a faculty of 13 professors and 27 lecturers and assistants, a total of 40. The fees for each of the first two years are $70; for each of the last two, $80. The Proctor is Dr. Edward G. Jones. The total registration for 1908-9 was 281; graduates, 51. The fifth session begins Oct. 1, 1909, and ends May 1, 1910.

Georgia College of Eclectic Medicine and Surgery, Tanner Street, near Edgewood Avenue.—Organized in 1877 as the Georgia Eclectic Medical College. In 1884 it acquired the charter of the College of American Medicine and Surgery. It assumed its present name in 1886. The first class graduated in 1878. The faculty consists of 14 professors and 6 assistants, a total of 20. Tuition is $80 per year; graduation fee, $25. The Proctor is Dr. E. B. Thomas. Total registration for 1908-9 was 66; graduates, 15. The next session begins Sept. 21, 1909, and ends Apr. 21, 1910.

Hospital Medical College, Eclectic, Capitol Avenue and Richardson Street.—Organized in 1908. The faculty consists of 16 professors, and 8 lecturers and assistants, a total of 24. The tuition fees are $80 each year; graduation fee, $30. The Dean is Dr. William Bernard Lingo. Total registration for 1908-9 was 43; graduates, 17. The next session begins Sept. 15, 1909, and ends April 1, 1910.

Augusta

Medical College of Georgia, Sixth and Telfair Streets.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia. Classes were graduated in 1833 and in all subsequent years, except 1862 and 1863, inclusive. The faculty includes 17 professors and 17 assistants, 34 in all. The course is four years of seven months each. Fees for the four years respectively are $90, $85, $100, $100. The Dean is Dr. Joseph Eve Allen. The total registration for 1908-9 was 99; graduates, 22. The seventy-eighth session begins Oct. 1, 1909, and ends May 1, 1910.

ILLINOIS

Illinois, population 5,418,670, has thirteen medical colleges, four of which are night schools, all located in Chicago, a city of 2,049,185 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, College of Physicians and Surgeons, Hahnemann Medical College, Bennett Medical College, Hering Medical College, Jenner Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, Chicago College of Medicine and Surgery and Reliance Medical College.

Chicago

Rush Medical College.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 until 1898, when it became affiliated with the University of Chicago. The first class graduated in 1844. The faculty is composed of 89 professors, 141 associates, instructors, etc., a total of 230. The requirements for admission are a four-year high school education and, in addition thereto, two years of college work, including courses in college chemistry, physics and biology, and a reading knowledge of German or French. The course covers four years of nine months each. An optional fifth year, consisting of a hospital interneship or of a fellowship in one of the departments is offered.. All freshmen and sophomore studies are given at the University of Chicago. The last two years are given in the clinical buildings at the corner of Wood and Harrison Streets. The total fees are $180 each year. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Dean is Dr. John M. Dodson, 34 Washington Street. Total registration 1908-9 was 488; graduates, 74. The sixty-seventh session begins Oct. 1, 1909, and ends June 18, 1910.

Northwestern University Medical School, Dearborn Street, between Twenty fourth and Twenty-fifth Streets.—Organized in 1859 as the Medical Department of Lind University. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869, but retained the name of Chicago Medical College until 1891, when the present name was taken. The faculty comprises 54 professors and 89 lecturers and assistants, a total of 143. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University plus two years of college work including courses in physics, chemistry, biology and modern languages. The course covers four years of thirty-six weeks each. The fees for the first year are $194; second year, $200; third year, $191.50, and fourth year, $185. The Secretary is Dr. Charles Louis Mix. The total registration for 1908-9 was 621; graduates, 172. The fiftieth session begins Oct. 5, 1909, and ends May 29, 1910.

College of Physicians and Surgeons, Honore and Congress Streets.—Organized in 1882. The first class graduated in 1883. It became the Medical Department of the University of Illinois in 1896. The faculty is composed of 42 professors, 156 assistants and instructors, a total of 198. The fees are $145 each for the first two years, $150 for the third, and $175 for the fourth year. The Dean is Dr. William E. Quine, 103 State Street. Total registration for 1908-9 was 517; graduates, 130. The twenty-eighth session begins Sept. 28, 1909, and ends June 7, 1910.

American Medical Missionary College, 888 Thirty-fifth Place.—Organized in 1895. The first class graduated in 1899. Part of the work is given at Battle Creek, Michigan. The faculty numbers 22 professors and 10 assistants, a total of 32. The course covers four years of nine months each. Total fees for the four years respectively are $83, $82, $75, $75. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1908-9 was 60; graduates, 5. The fifteenth session opens Sept. 14, 1909, and closes June 15, 1910.

Chicago College of Medicine and Surgery, 337 South Lincoln Street.—Organized in 1901 as the American College of Medicine and Surgery (Chicago Eclectic Medical College). The latter part of the name was dropped in 1902 when it became the Medical Department of Valparaiso University. Eclecticism was dropped in 1905. The name was changed to the above in 1907. The course covers four years of eight months each. The faculty consists of 37 professors and 34 lecturers and assistants, a total of 71. The total fees for each of the four years respectively are $120, $115, $100 and $115. The total registration for 1908-9 was 396; graduates, 80. The ninth session begins Sept. 27, 1909, and ends May 16, 1910. The Secretary is Dr. J. N. Roe.

Hahnemann Medical College and Hospital of Chicago, 2811 Cottage Grove Avenue.—Organized in 1859. The first class was graduated in 1861. The faculty includes 38 professors and 46 lecturers, assistants, etc., a total of 84. The tuition fees are $100 each year. The Registrar is Dr. W. Henry Wilson. The total registration for 1908-9 was 132; graduates, 25. The fiftieth session begins Sept. 27, 1909, and ends May 26, 1910.

Hering Medical College, Homeopathic, Wood and York Streets.—Organized in 1892. The first class graduated in 1893. The faculty consists of 26 professors and 24 assistants, instructors, etc., a total of 50. The tuition fees are $100 per year. The Dean is Dr. Robert N. Morris. The total registration for 1908-9 was 40; graduates, 10. The next session begins Sept. 28, 1909, and ends June 2, 1910.

Illinois Medical College, Corner Washington Boulevard and Halsted Street.—It was organized in 1894. Classes were graduated in 1895 and in all subsequent years. The faculty consists of 38 professors and 20 lecturers and assistants, a total of 58. The course covers four years of seven months each. The fees are about $125 each year. The President is Dr. J. F. Burkholder. The total registration for 1908-9 was 62; graduates, 16. The fifteenth session begins Sept. 2, 1909, and ends April 29, 1910.

Bennett Medical College, Fulton and Ada Streets.—Organized in 1868 as the Bennett College of Eclectic Medicine and Surgery. Dropped Eclecticism in 1909. The first class graduated in 1870. The faculty numbers 57. The course covers four years of thirty weeks each. Fees for each year are $100, with a matriculation fee, paid once, of $5. The President is Dr. John D. Robertson. The total registration for the college year 1908-9 was 186; graduates, 39. The next session begins Sept. 21, 1909, and ends May 23, 1910.

College of Medicine and Surgery, Physiomedical, 721-725 South Wood Street.—Organized in 1885 as the Chicago Physio-medical institute. The first class graduated in 1886. In 1891 the name was changed to the Chicago Physiomedical College. In 1899 it took its present name. The faculty numbers 49. The school year has three divisions of 16 weeks each. Attendance on any two will constitute a year's work. Fees for the four years respectively are $115, $110, $110 and $135. The Secretary is Dr. William F. Schaare. The total registration for 1908-9 was 33; graduates, 10. The next session begins Sept. 21, 1909, and ends May 11, 1910.

Jenner Medical College, a night school, located at 196 East Washington Street.—Organized in 1892. Classes were graduated in 1896 and in all subsequent years. The faculty numbers 50. Registrar, Dr. John D. MacKellar. Total registration for 1908-9 was 112; graduates, 12. The next session begins Aug. 30, 1909, and ends July 1, 1910.

National Medical University, a night school located at 531 Wells Street.—Organized in 1891 as the National Homeopathic Medical College. The first class was graduated in 1902. In 1895 the word "Homeopathic" was dropped. It took the above name in 1900. The faculty numbers 36. The total fees are $150 each year. The Dean is Dr. L. D. Rogers. Total registration for 1908-9 was 150; graduates, 12. *Reported to be not in good standing by the Illinois State Board of Health.*

Reliance Medical College. A night school, located at Washington Boulevard and Halsted Street.—Organized in 1907. The faculty numbers 65. The total fees are $130 for each of the first two years and $125 for each of the last two. Registration for 1908-9 was 83; graduates, 18. The President is Dr. J. F. Burkholder. The next session begins Sept. 7, 1909, and ends June 29, 1910.

INDIANA

Indiana, population 2,710,898, has two medical colleges, the Indiana University School of Medicine and the Physio-Medical College of Indiana. Both are located at Indianapolis, a city of 219,154 people, except that the work of the first two years of the Indiana University School of Medicine is offered also at Bloomington, population 5,000, the seat of the University.

Bloomington and Indianapolis

Indiana University School of Medicine.—Organized in 1893, but did not give all of the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1907 by the merger of the Medical College of Indiana (organized in 1879) and the Fort Wayne College of Medicine (organized in 1879) merged into it. The faculty consists of 99 professors and 76 lecturers, associates and assistants, a total of 175. In 1909, besides a four-year high school education, one year, and in 1910 and thereafter, two years of collegiate work will be required for admission. The work of the first two years may be taken either at Bloomington or at Indianapolis. The clinical work is all done at Indianapolis. A fifth optional year leading to the "M.D. *cum laude*" has been added. The Secretary at Bloomington is Dr. B. D. Myers; at Indianapolis, Dr. Edmund D. Clark, Newton-Claypool Bldg. The total registration for 1908-9 was 266; graduates, 64. The next session begins Sept. 21, 1909, and ends June 22, 1910.

Physiomedical College of Indiana. Fourteenth Street and College Avenue.—Organized in 1873. The first class graduated in 1874. The Dean is Dr. C. T. Bedford. The total registration for 1908-9 was 19; graduates, 5.

IOWA

Iowa, population 2,205,690, has four medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 8,497. In Des Moines, population 78,323, is the College of Medicine of Drake University. In Sioux City, population 42,520, is the Sioux City College of Medicine.

Des Moines

Drake University College of Medicine.—First two years given on the University Campus, University Avenue, between Twenty-fifth and Twenty-eighth Streets, the clinical years at Fourth and Center Streets. Organized in 1882 as the Iowa College of Physicians and Surgeons. The first class graduated in 1883. In 1887 it became affiliated with and in 1900 became the Medical Department of Drake University. The faculty consists of 21 professors and 26 assistants, lecturers, etc., a total of 47. Beginning with the session of 1910-11 two years of collegiate work, including courses in physics, chemistry and histology, will be required for admission. The work covers four years of nine months each. The total fees are $75 each year. The Dean is Dr. William Wilson Pearson The total registration for 1908-9 was 130; graduates, 19. The twenty-seventh session begins Sept. 20, 1909, and ends June 15, 1910.

Iowa City

State University of Iowa College of Medicine. University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. The faculty is made up of 20 professors, 20 lecturers, demonstrators and assistants, a total of 32. For the session of 1909-10 one year and for the session of 1910-11 and thereafter two years of collegiate work, including courses in physics, chemistry and biology, will be required for admission. The course of study covers four years of thirty-six weeks each. Total fees for each year are $50 plus a matriculation fee of $10 paid but once and a graduation fee of $10. The Dean is Dr. James R. Guthrie, Dubuque; Vice-Dean, Dr. Walter L. Bierring, Iowa City. Total number of students registered for 1908-9 was 266; graduates, 41. The 40th session begins Sept. 20, 1909, and ends June 15, 1910.

State University of Iowa College of Homeopathic Medicine.—Organized in 1877. The first class graduated in 1878. The faculty is composed of 10 professors and 15 lecturers and assistants, a total of 25. The work of the first two years is taken in classes with the students of the College of Medicine of the State University of Iowa. The fees are $50 each year, plus a matriculation fee of $10, paid but once and a graduation fee of $10. The Dean is Dr. George Royal. Total registration for 1908-9 was 42; graduates, 7. The thirty-second session begins Sept. 20, 1909. and ends June 15, 1910.

Sioux City

Sioux City College of Medicine, corner of Fourteenth and Jones Streets.—Organized in 1891. The first class graduated in 1893. Teaches only the last two or clinical years of the medical course. The total registration for 1908-9 was 20; graduates, 6. The Dean is Dr. F. E. Franchere.

KANSAS

Population 1,612,471, has three medical colleges. Kansas Medical College is in Topeka, population 41,880, and the Western Eclectic College of Medicine and Surgery is at Kansas City. The School of Medicine of the University of Kansas gives its first two years in Lawrence, population 12,123, and the last two years in Rosedale, a suburb of the two Kansas Cities, which together have a population of 260,288.

Kansas City

Western Eclectic College of Medicine and Surgery, Central and Simpson Avenues.—Organized at Kansas City, Mo., in 1898 as the Eclectic Medical University. Moved to Kansas City, Kan., in 1907. Took the present name in 1908. First class graduated in 1900. The faculty numbers 32. Fees for the four years respectively are $90, $95, $100 and $115. Course covers four years of about eight months each. The Secretary is Dr. W. H. Smith. The total registration for 1908-9 was 50; graduates, 7. The twelfth session begins Sept. 6, 1909, and ends April 30, 1910.

Lawrence and Kansas City

University of Kansas School of Medicine.—Organized in 1880. In 1905 it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. The faculty, including lecturers and clinical assistants, numbers 79. The requirements for admission are two years of collegiate work. The course covers four years of about nine months each. The total fees are, for the first two years, $60 per year (and for non-residents of the state $70); for the last two years, $100 per year. The Dean at Lawrence is Dr. Mervin T. Sudler. The Dean at Kansas City is Dr. George Howard Hoxie. The total registration for 1908-9 was 90; graduates, 7. The thirtieth session begins Sept. 15, 1909, and ends June 8, 1910.

Topeka

Kansas Medical College, 521 Quincy Street.—Organized in 1890. The first class graduated in 1892. It has been the Medical Department of Washburn College since 1893. It has a faculty of 31 professors and 16 lecturers and assistants, a total of 47. The course covers four years of thirty weeks each. Fees, $65 yearly. The Dean is Dr. William E. McVey. Total registration for 1908-9 was 68; graduates, 17. The twentieth session begins Sept. 14, 1909, and ends June 8, 1910.

KENTUCKY

Kentucky, population 2,320,298, has three medical colleges. They are all situated in Louisville, a city of 226,129 inhabitants, and are as follows: University of Louisville Medical Department, Southwestern Homeopathic Medical College and Louisville National Medical College.

Louisville

University of Louisville Medical Department, Eighth and Chestnut Streets.—Organized in 1837 as the Louisville Medical Institute. The first class graduated in 1838, and a class graduated in each subsequent year except 1863. In 1846 the present name was assumed. In 1907 it absorbed the Kentucky University Medical Department. In 1908 it absorbed the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. It has a faculty of 28 professors and 27 lecturers and assistants, a total of 55. The course covers four years of thirty weeks each. The fees are $100 each year; graduation fee, $25. The Dean is Dr. T. C. Evans. The total registration for 1908-9 was 706, graduates, 181. The next session begins Nov. 15, 1909, and ends June 30, 1909.

Southwestern Homeopathic Medical College and Hospital, Floyd and Walnut Streets.—Organized in 1892. The first class graduated in 1894. It has a faculty of 13 professors and 10 lecturers and assistants, 23 in all. The curriculum covers four years of seven months each. Total fees: First three years $75 each and $95 for the fourth. The Dean is Dr. George S. Coon. Total number of students for 1908-9 was 13; graduates, 3. The seventeenth session begins Oct. 6, 1909, and ends May 19, 1910.

Louisville National Medical College. Colored. 112 West Green Street.—Organized in 1888. The first class graduated in 1889. The faculty numbers 28. The course covers four years of seven months each. The fees are $60, $55, $55 and $75 for the four years, respectively. The Dean is Dr. E. S. Porter. Total registration for 1908-9 was 40; graduates, 4. The next session begins Oct. 1, 1909, and ends May 18, 1910.

LOUISIANA

Louisiana, having a population of 1,539,449, contains two medical colleges: Medical Department of the Tulane University of Louisiana and Flint Medical College of New Orleans University. They are both situated in New Orleans, a city of 314,146 people.

New Orleans

Medical Department of the Tulane University of Louisiana. University Campus and 1551 Canal Street.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years, except 1863-1865, inclusive. It was transferred to Medical Department of the University of Louisiana in 1847 and became the Medical Department of the Tulane University in 1884. The faculty numbers 73. The course covers four years of seven months each. Total fees are $150 per year. The Dean is Dr. Isadore Dyer. The total registration for 1908-9 was 439; graduates, 103. The seventy-sixth session begins Oct. 1, 1909, and ends May 18, 1910.

Flint Medical College of New Orleans University. Colored. 1566 Canal Street.—Organized in 1889 as the Medical College of New Orleans University. A class was graduated in 1892 and in each subsequent year, except 1896. Took the above name in 1901. The faculty consists of 6 professors, 9 lecturers and instructors, 15 in all. The course covers four years of thirty weeks each. Total fees, $53 each year for the first three years and $60 for the fourth. The Dean is Dr. J. W. Thomas. Total registration for 1908-9 was 24; graduates, 6. The twentieth session begins Sept. 22. 1909, and ends May 12, 1910.

MAINE

Maine, population 714,494, has one medical college, located in Brunswick and Portland, the latter having a population of 55,167.

Brunswick-Portland

Medical School of Maine. The medical department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building located on Chadwick Street.—Organized in 1820. The first class graduated in 1820. The faculty numbers 35. The course covers four years of eight months each. The total fees are $120 for the first year and $110 for each of the other three years. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1908-9 was 81; graduates, 18. The eighty-ninth session begins Oct. 21. 1909. and ends June 22. 1910.

MARYLAND

Maryland, with a population of 1,275,434, contains seven medical colleges, all located in Baltimore, a city with 553,669 inhabitants. They are as follows: Johns Hopkins University Medical Department, School of Medicine of the University of Maryland, College of Physicans and Surgeons, Baltimore Medical College, Woman's Medical College, Atlantic Medical College and Maryland Medical College.

Baltimore

Johns Hopkins University, Medical Department, Washington and Monument Streets.—Organized in 1893. The first class graduated in 1897. The faculty consists of 23 professors and 89 clinical professors, etc., a total of 112. The requirements for admission demand that the applicant either has (a) completed the chemical-biologic course which leads to the A.B. degree in the university or (b) graduated at an approved college or scientific school and has a knowledge of French and German, physics, chemistry and biology, such as may be obtained from a year's course. The course extends over four years of eight and one-half months each. The charge for tuition is $200 per annum. The Dean is Dr. William H. Howell, 232 West Lanvale Street. Total registration for 1908-9 was 297; graduates, 50. The seventeenth session begins Oct. 5, 1909, and ends June 14, 1910.

College of Physicians and Surgeons, Calvert and Saratoga Streets.—Organized in 1872. The first class graduated in 1873. In 1878 it united with Washington University School of Medicine. The faculty numbers 57. The work covers four years of eight months each. Total fees are $155 for each of the first three years and $185 for the fourth year. The Dean is Dr. Charles F. Bevan. The total number of students registered in 1908-9 was 252; graduates, 46. The thirty-eighth session begins Oct. 1, 1909, and ends June 1, 1910.

University of Maryland School of Medicine, Lombard and Greene Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. The faculty numbers 62. The course covers four years of eight months each. The total fees are $155 each year; graduation fee, $30. The Dean is Dr. R. Dorsey Coale. The total number of students registered in 1908-9 was 329; graduates, 89. The 103d session begins Oct. 1, 1909, and ends June 1, 1910.

Baltimore Medical College, Madison Street and Linden Avenue.—Organized in 1881. The first class graduated in 1882. The faculty numbers 69. The course covers four years of eight months each. Total fees are $125 per year. The Dean is Dr. David Streett. The total number of students registered in 1908-9 was 307; graduates, 57. The twenty-eighth session begins Sept. 20, 1909, and ends May 25, 1910.

Woman's Medical College of Baltimore, McCulloch and Hoffman Streets.—Organized in 1882. Classes graduated in 1883 and in each subsequent year, except 1898. The faculty numbers 32. The course covers four years of eight months each. The fees for the first three years are $106 each, and $86 for the last year. The Dean is Dr. John R. Abercrombie, 827 North Eutaw Street. The total registration for 1908-9 was 20; graduates, 5. The twenty-eighth session begins Oct. 1, 1909, and ends May 31, 1910.

Maryland Medical College, 1114 West Baltimore Street.—Organized in 1898. The first class graduated in 1899. The faculty is composed of 13 professors and 28 lecturers and assistants, a total of 41. The course covers four years of eight months each. Matriculation fee, $5; total fees for the first three years, $86 each; fourth year, $110. The Dean is Dr. Harry Gross. The total registration for 1908-9 was 95; graduates 37. The next session begins Sept. 25, 1909, and ends June 1, 1910.

Atlantic Medical College, Mount Street, north of Riggs Avenue.—Organized in 1891 as the Southern Homeopathic Medical College. In 1907 it assumed the above name and became nonsectarian. The Dean is Dr. Eldridge C. Price. The total registration for 1908-9 was 43; graduates, 25.

MASSACHUSETTS

Massachusetts, population 3,043,346, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School. They are all situated in Boston, a city of 602,278.

Boston

Medical School of Harvard University, Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 33 professors and 133 associates, assistants, etc., a total of 166. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons as may be admitted by special vote of the faculty." Fees: Matriculation, $5; tuition, $200 each year. The Dean is Dr. Henry A. Christian . The total registration for 1908-9 was 285; graduates, 55. The 128th session begins Sept. 30, 1909, and ends June 30, 1910.

Boston University School of Medicine, 80 East Concord Street.—Organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class graduated in 1874. The faculty includes 29 professors, 35 associates, etc., a total of 64. The course covers four years of eight months each. Total fees for the first, second and third years, $127 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 302 Beacon Street. Total registration for 1908-9 was 95; graduates, 18. The thirty-seventh session begins Oct. 7, 1909, and ends June 1, 1910.

Tufts College Medical School, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. It has a faculty of 33 professors and 70 assistants, lecturers, etc., a total of 103. The course covers four years of eight months each. The total fees are $155 each year. The Secretary is Dr. Frederic M. Briggs, 31 Massachusetts Avenue. Total number of students for 1908-9 was 384; graduates, 61. The sixteenth session begins Sept. 29, 1909, and ends May 26, 1910.

College of Physicians and Surgeons, 517 Shawmut Avenue.—Organized in 1880. The first class graduated in 1882. The Dean is Dr. C. H. Cobb. The total registration for 1908-9 was 172; graduates, 12. The next session begins Sept. 16, 1909, and ends June 15, 1910.

MICHIGAN

Michigan, population 2,584,533, has four medical colleges. Two of these, the University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 14,645 people. Detroit, a city of 353,535 inhabitants, contains two medical colleges, the Detroit College of Medicine and the Detroit Homeopathic College.

Ann Arbor

University of Michigan Department of Medicine and Surgery.—Organized in 1850. The first class graduated in 1851. It has a faculty composed of 22 professors, 41 associates, instructors, etc., a total of 63. The entrance requirements are two years of college work, including courses in chemistry, physics and biology, with laboratory work, and a reading knowledge of one modern language. The curriculum embraces four years of nine months each. The total fees for Michigan students for the entire course of four years is $350 and for others about $400. The Dean is Dr. Victor C. Vaughan. The total registration for 1908-9 was 404; graduates, 74. The 60th session begins Oct. 5, 1909, and ends June 30, 1910.

University of Michigan Homeopathic College.—Organized in 1875. The first class graduated in 1877. The Dean is Dr. W. B. Hinsdale. The total registration for 1907-8 was 82; graduates, 15.

Detroit

Detroit College of Medicine, St. Antoine, Catherine and Mullett Streets and Gratiot Avenue.—Organized in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. The first class graduated in 1886. The faculty embraces 25 professors, 79 lecturers, instructors, etc., a total of 104. The course covers four years of eight months each. The Registrar is Dr. F. B. Walker. The total registration for 1908-9 was 161; graduates, 38. The twenty-fifth session begins Sept. 22, 1909, and ends May 26, 1910.

Detroit Homeopathic College, Lafayette Avenue and Third Street.—Organized in 1899. A class was graduated in 1900 and in each subsequent year. It has a faculty of 36. The course embraces four years of eight months each. Fees: From $75 to $95 per year. The Dean is Dr. D. A. MacLachlan; Registrar, J. M. Griffin. Total registration for 1908-9 was 34; graduates, 7. The eleventh session begins Sept. 14, 1909, and ends May 19, 1910.

MINNESOTA

Minnesota, population 2,025,615, contains one medical college, the College of Medicine and Surgery of the University of Minnesota, situated in Minneapolis. Minneapolis and St. Paul are practically one city, and have a combined population of 477,640.

Minneapolis

University of Minnesota College of Medicine and Surgery.—Organized in 1883; reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital Medical College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged and provision made for elective chairs in didactic materia medica and therapeutics. Students electing these courses on graduation will receive the degree of Doctor of Medicine in Homeopathy. The faculty includes 49 professors and clinical professors and 71 associate professors, assistants, etc., a total of 120. The curriculum covers four years of nine months each. The entrance requirements are two years of university work which must include one year each of physics, general chemistry, qualitative analysis, zoology or botany, and German or French, all in addition to a four-year high school course including Latin. Total fees for each year, $100; microscope rental, $4 to $7 per annum. The Dean is Dr. F. F. Wesbrook. The total registration for 1908-9 was 245, including 73 Hamline University students; the graduates of 1909 numbered 63, including 16 which were granted degrees by Hamline University. The twenty-second session begins Sept. 14, 1909, and ends June 9, 1910.

MISSISSIPPI

Mississippi, population 1,708,272, has two medical colleges, the Medical Department of the University of Mississippi is located at Oxford, a city of 2,000 inhabitants, and at Vicksburg, population 15,710. The Mississippi Medical College is located at Meridian, population 20,503.

Meridian

Mississippi Medical College, Fifth Street and Twenty-fourth Avenue.—Organized in 1906. The first class graduated in 1907. The faculty numbers 16. The Dean is Dr. T. A. Barber. The total registration for 1908-9 was 102; graduates, 15. The fourth session begins Oct. 1, 1909, and ends April 30, 1910.

Oxford and Vicksburg

University of Mississippi Medical Department.—Organized in 1903 Gave only the first two years of the medical course until 1909, when a clinical department was organized at Vicksburg. The course covers four years of eight and a half months each. The work of the first two years is given at Oxford and the last two at Vicksburg. The faculty numbers 30. The Dean at Oxford is Dr. W. S. Leathers; at Vicksburg, Dr. William Krauss. The total registration for 1908-9 was 27. The seventh session begins Sept. 23, 1909, and ends June 1, 1910.

MISSOURI

Missouri, population 3,363,153, has ten medical colleges. St. Louis, population 649,320, contains six of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, the School of Medicine of St. Louis University, Washington University Medical Department, Barnes Medical College and the Hippocratean College of Medicine. Kansas City, which with Kansas City, Kan., has a total population of 260,288, has two colleges, namely: University Medical College and the Hahnemann Medical College of Kansas City. Ensworth Medical College is located in St. Joseph, population 118,004. The Department of Medicine of the University of Missouri is at Columbia, a town of 8,000 people.

Columbia

University of Missouri School of Medicine.—Organized at St. Louis in 1845; was discontinued in 1859, but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909. The faculty includes 13 professors, 14 assistant professors, lecturers, etc., a total of 27. The course covers two years of nine months each. The candidate for entrance must present, beside the diploma from a recognized four-year high school, credentials of college work as follows: English, 6 hours; German, 6 hours; general zoology, 6 hours; general physics, 6 hours; inorganic chemistry, 6 hours. Beginning in September, 1910, the entrance requirements will be two years of college work, including the subjects specified. Total fees amount to about $70 each year. The Dean is Dr. C. M. Jackson. Total registration of students for 1908-9 was 47; graduates, 5. The next session begins Sept. 23, 1909, and ends June 9, 1910.

Kansas City

University Medical College of Kansas City, 911 East Tenth Street.—Organized in 1881 as the University of Kansas City Medical Department. The first class graduated in 1882. It was reorganized in 1888 under the present title. Its faculty comprises 47 professors and 19 lecturers and assistants, a total of 66. The course of study covers four years of thirty weeks each. The total fees for each year are $100; graduation fee, $25. The Dean is Dr. J. M. Frankenburger. The total registration for 1908-9 was 164; graduates, 47. The twenty-eighth session begins Sept. 8, 1909, and ends May 13, 1910.

Kansas City Hahnemann Medical College, 1020 East Tenth Street.—Organized in 1888 as the Kansas City Homeopathic Medical College. The first class graduated in 1899. In 1902 it united with the Hahnemann Medical College of the Kansas City University, taking the present title. The Dean is Dr. William E. Cramer. Total registration for 1908-9 was 46; graduates, 14.

St. Joseph

The Ensworth Medical College, Seventh and Jule Streets.—Organized in 1876 as the St. Joseph Hospital Medical College. In 1882 it merged with the College of Physicians and Surgeons to form the St. Joseph Medical College. In 1888 changed name to Ensworth Medical College. In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth-Central Medical College. In 1907 the present title was resumed. The faculty numbers 34. The course covers four years of eight months each. The fees for the four years respectively are $90, $95, $75 and $95. The Secretary is Dr. T. E. Potter. Total registration for 1908-9 was 72; graduates, 24. The next session begins Sept. 20, 1909, and ends May 10, 1910.

St. Louis

Washington University Medical Department, 1806 Locust Street.—Organized in 1842 as the Medical Department of St. Louis University. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. The first class graduated in 1843. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. The faculty comprises 48 professors, 51 lecturers and instructors, a total of 99. The course is four years of eight months each. The total fees for the four years are respectively $137.50, $132.25, $117.25 and $101.25. The Dean is William H. Warren, Ph.D. The total registration for 1908-9 was 201; graduates, 48. The next session begins Sept. 21, 1909, and ends June 2, 1910.

St. Louis University School of Medicine, Grand Avenue and Caroline Street.—Organized in 1901 by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. It became the Medical Department of St. Louis University in 1903. The faculty is composed of 39 professors, 82 lecturers and assistants, a total of 121. The curriculum covers four years of eight months each. The total fees are $110 each year. The Dean is Dr. E. P. Lyon. The total registration for 1908-9 was 243; graduates, 47. The next session begins Oct. 1, 1909, and ends May 29, 1910.

St. Louis College of Physicians and Surgeons, Jefferson Avenue and Gamble Street.—Organized in 1869. Classes graduated in 1870 and in each subsequent year until 1873, when it suspended. It was reorganized in 1879. Classes graduated in 1880 and subsequent years. It has a faculty of 25 professors, 24 lecturers, instructors, etc., a total of 49. The course covers four years of seven months each. Total fees for each of the four years respectively are $105, $100, $100 and $105. The Dean is Dr. Waldo Briggs, 2600 Gamble Street. Total registration for 1908-9 was 224; graduates, 66. The next session begins Sept. 15, 1909, and ends May 6, 1910.

Barnes Medical College, Garrison and Lawton Avenues.—Organized in 1892. Classes graduated in 1893 and in all subsequent years, except 1899. The Secretary is Dr. C. M. Ament, 1025 Missouri Trust Building. Total registration for 1908-9 was 124; graduating class, 36.

American Medical College, Eclectic, 407 South Jefferson Avenue.—Organized in 1873. Two classes graduated each year from

1874 to 1883, inclusive. Since then one class has graduated each year. The Dean is Dr. J. J. Link. The total registration for 1908-9 was 28; graduates, 7. The next session begins Sept. 1, 1909, and ends May 4, 1910.

Hippocratean College of Medicine, 3412 Morgan Street. A night school.—Organized in 1907. Its faculty numbers 28. During 1908-9 it had 31 students. The Dean is Dr. Emory Lanphear. The next session begins Sept. 6, 1909, and ends June 15, 1910.

NEBRASKA

Nebraska, population 1,068,484, has three medical colleges: The University of Nebraska College of Medicine and the John A. Creighton Medical College at Omaha, population 124,167, and the Lincoln Medical College at Lincoln, population 48,232.

Lincoln and Omaha

College of Medicine, University of Nebraska, Eleventh and R Streets, Lincoln, and Twelfth and Pacific Streets, Omaha.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. Two years of collegiate work are required for admission. The first two years are given at Lincoln; the last two at Omaha. The faculty is composed of 38 professors and 46 lecturers and instructors, total 84. The fees are approximately $100 per annum. The total registration for 1908-9 was 122; graduates, 9. The next session begins Sept. 21, 1909, and ends May 19, 1910.

Lincoln

Lincoln Medical College. Eclectic. Corner 13th and P Streets. It is the Medical Department of Cotner University.—Organized in 1890. The first class graduated in 1891. The faculty numbers 44. The course of study covers four years of thirty-two weeks each. The total fees for the first year are $80; second and third, $75 each, and $85 for the fourth year, or $250 for all four years together. The Secretary is Dr. R. H. Spradling, 1315 O Street. The total registration for 1908-9 was 42; graduates, 9. The twentieth session begins Sept. 9, 1909, and ends June 9, 1910.

Omaha

John A. Creighton Medical College, Fourteenth and Davenport Streets. It is the Medical Department of Creighton University.—Organized in 1892. The first class graduated in 1895. It has a faculty of 35 professors and 16 associates, lecturers and assistants, a total of 51. Beginning in September, 1910, two years of work in a college of liberal arts will be required for admission. The course of study embraces four years of eight months each. The total fees for the four years respectively are $100, $100, $100 and $105. The Dean is Dr. D. C. Bryant, McCague Building. Total number of students registered in 1908-9 was 177; graduates, 30. The eighteenth session begins Sept. 1, 1909, and ends May 2, 1910.

NEW HAMPSHIRE

New Hampshire, population 432,624, has one medical college, located at Hanover, population 1,797.

Hanover

Dartmouth Medical School.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is the Medical Department of Dartmouth College. The faculty is made up of 17 professors and 6 instructors, a total of 23. Beginning with the session of 1910-11 two years of collegiate work will be required for admission. The course covers four years of eight months each. The fees are $100 each year. The Dean is Dr. William T. Smith. The total registration for 1908-9 was 58; graduates, 14. The work of the first and second years begins with that of the academic department Sept. 24, 1909, and ends June 30, 1910; for the advanced classes the course begins Aug. 4. 1909, and euds March 26, 1910.

NEW YORK

New York State, population 8,226,990, has eleven medical colleges. Eight of these, College of Physicians and Surgeons (Columbia University), Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College, the University and Bellevue Hospital Medical College, and Fordham University School of Medicine, are located in New York City, population 4,113,043. Albany Medical College is located in Albany, a city of 98,537 people. The University of Buffalo Medical Department is situated in Buffalo, population of 381,819. The College of Medicine, Syracuse University, is in Syracuse, a city of 118,880 inhabitants.

Albany

Albany Medical College, Lancaster and Jay Streets.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. The faculty is composed of 17 professors and 48 lecturers, assistants, etc., a total of 65. The curriculum covers four years of eight months each. Fees: First year, $130; second year, $145; third year, $120, and fourth year, $130. The Registrar is Dr. Willis G. Tucker. The total registration for 1908-9 was 180; graduates, 37. The seventy-ninth session begins Sept. 21, 1909, and ends May 17, 1910.

Buffalo

University of Buffalo Medical Department, High Street, near Main.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. The faculty is composed of 38 professors and 59 lecturers, assistants, etc., a total of 97. The course covers four years of eight months each. The total fees for the four years respectively are $185, $180, $140 and $140. The Dean is Dr. Matthew D. Mann, 37 Allen Street. Total registration for 1908-9 was 185; graduates, 34. The sixty-fourth session begins Sept. 27, 1909, and ends May 27, 1910.

New York

College of Physicians and Surgeons in the City of New York, 437 West Fifty-ninth Street.—Organized in 1807 by the regents of the University of the State of New York as their medical department. The first class graduated in 1811. Affiliated with Columbia College in 1814 and was permanently connected in 1860, when it became the Medical Department of Columbia College. That institution became Columbia University in 1891. The faculty is composed of 48 professors and 115 instructors, demonstrators, etc., a total of 163. Beginning in 1910 the entrance requirements will be two years of collegiate work including courses in physics, chemistry and biology. The work covers four years of eight months each. The Dean is Dr. Samuel W. Lambert. The total fees for the first year are $255; for the second and third, $250, and $275 for the fourth year. Total registration for 1908-9 was 312; graduates, 82. The 102d session begins Sept. 22, 1909, and ends June 1, 1910.

Cornell University Medical College, Ithaca, and First Avenue and Twenty-eighth Street, New York.—Organized in 1898. The first class was graduated in 1899. The work of the first two years may be taken either in Ithaca or New York. The faculty is composed of 54 professors and 113 assistants, lecturers, instructors, etc., a total of 167. All candidates for admission must be graduates of approved colleges or scientific schools and in addition must have such knowledge of physics and inorganic chemistry as may be obtained in college by a year's course in these subjects when accompanied by laboratory work; in and after 1910 a similar knowledge of biology will be required. Fees: First year, $190; second and third, $185 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1908-9 was 217; graduates, 54. The twelfth session begins Sept. 29, 1909, and ends June 15, 1910.

Eclectic Medical College of the City of New York, 239 East Fourteenth Street.—Organized in 1865. The first class graduated in 1867. The Dean is Dr. George W. Boskowitz. Total registration for 1908-9 was 96; graduates, 9.

Fordham University School of Medicine, Third and Pelham Avenues.—Organized in 1905. First class graduated in 1909. The faculty consists of 43 professors and 30 lecturers and assistants, a total of 73. The course of instruction covers four years of eight months each. Fees: First year, $195; second and third years, $190 each; fourth year, $180. A year's work in a recognized college of liberal arts is required for admission. The Dean is Dr. James J. Walsh. The total registration for 1908-9 was 43; graduates, 1. The fifth session begins Sept. 30, 1909, and ends May 23, 1910.

Long Island College Hospital, Henry Street, near Atlantic Avenue, Brooklyn.—Organized in 1858. The first class graduated in 1860. It has a faculty of 9 professors and 98 assistants, instructors, etc., a total of 107. The course covers four years of thirty weeks each. Fees: First year, $200; second, $200; third, $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1908-9, was 364; graduates, 75. The fifty-second session begins Sept. 29, 1909, and ends June 1, 1910.

New York Homeopathic Medical College and Hospital, Eastern Boulevard, between Sixty-third and Sixty-fourth Streets.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College for the State of New York. The present title was assumed in 1869. The first class graduated in 1861. The Dean is Dr. Royal S. Copeland. Total registration for 1908-9 was 109; graduates, 16.

New York Medical College and Hospital for Women, 17-19 West One Hundred and First Street.—Organized in 1863. The first class graduated in 1864. The Dean is Dr. Helen Cooley Palmer. The total registration for 1908-9 was 24; graduates, 4.

University and Bellevue Hospital Medical College, First Avenue and Twenty-sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. The faculty is composed of 33 professors and 90 instructors, etc., in all 123. The course covers four years of eight months each. The fees are $200 per year. The Dean is Dr. Egbert Le Fevre. Total registration for 1908-9 was 445; graduates, 74. The twelfth session begins Sept. 29, 1909, and ends June 1, 1910.

Syracuse

Syracuse University College of Medicine, 307-311 Orange Street.—Organized in 1872 as the College of Physicians and Surgeons of Syracuse University. The present title was assumed in 1875. In 1872 Geneva Medical College was merged with it. The first class was graduated in 1873. The faculty is composed of 15 professors and 42 assistant professors, lecturers and instructors, in all 57. The course covers four years of eight months each. The completion of one year in an accredited college of liberal arts is required for admission. Beginning September 1910 two years of such college work will be required for admission. The average total fees for each year are $172.25. The Dean is Dr. John L. Heffron. The total registration for 1908-9 was 149; graduates, 33. The thirty-eighth session begins Oct. 5, 1909, and ends June 8, 1910.

NORTH CAROLINA

North Carolina, population, 2,059,326, has four medical schools, one of which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill, population 1,100, and at Raleigh, population 14,225. The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is at Charlotte, population 22,009. Wake Forest School of Medicine is at Wake Forest, population 823.

Chapel Hill and Raleigh

University of North Carolina Medical Department.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. The faculty is composed of 22 professors and 23 lecturers, assistants, etc., a total of 45. The total fees for the four years respectively are $114, $116, $75 and $80. The Dean of the Department at Chapel Hill is Dr. G. H. Manning; at Raleigh, Dr. H. A. Royster. The total registration for 1908-9 was 113; graduates, 12. The twentieth session begins Sept. 6, 1909, and ends June 1, 1910.

Charlotte

North Carolina Medical College, Church and Sixth Streets.—Organized in 1887 at Davidson as the Davidson School of Medicine. It was a preparatory school only, not granting any degrees until 1893, when it was chartered under its present name. The first class was graduated in 1893. Removed to Charlotte in 1907. The faculty numbers 29. The course covers four years of eight months each. Fees: First three years, $85 each, and $100 for the fourth year. The Dean is Dr. Walter O. Nisbet. The total registration for 1908-9 was 94; graduates, 17. The next session begins Sept. 8, 1909, and ends April 30, 1910.

Raleigh

Leonard Medical School.—Colored. This department of Shaw University was established in 1882. Classes were graduated in 1886, 1888 and in all subsequent years. It has a faculty of 10. The course covers four years of seven months each. The total fees for each year are $15; graduation fee, $10. The Dean is Dr. James McKee. Total registration for 1908-9 was 125; graduates, 22. The 28th session begins Sept. 30, 1909, and ends May 12, 1910.

Wake Forest

Wake Forest College School of Medicine.—This school was organized in 1902. The faculty numbers 10. It only gives the first two years of the medical course, which constitute a part of the course for the B.S. degree. Each annual course extends over nine months. The fees are $100 each year. The Dean is Dr. John Brewer Powers. The total registration for 1908-9 was 53. The eighth session begins Sept. 6, 1909, and ends May 25, 1910.

NORTH DAKOTA

North Dakota, population 383,226, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University near Grand Forks.

University

University of North Dakota College of Medicine.—Organized in 1905. The faculty is composed of 9 professors and 7 instructors, a total of 16. The course consists of two years' academic work and two years of medical college subjects, occupying nine months each year. The total fees for each of the medical years are $50. The Dean is M. A. Brannon, A.M. The total registration for 1908-9 was 22. The fifth session begins Sept. 21, 1909, and ends June 16, 1910.

OHIO

Ohio, population 4,448,677, has eight medical colleges. Three of these, the Ohio-Miami Medical College of the University of Cincinnati, the Eclectic Medical Institute, and Pulte Medical College, are located in Cincinnati, a city of 345,230 inhabitants. Cleveland, population 460,327, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. Columbus, population 145,414, contains one medical college, the Starling-Ohio Medical College. Toledo, with 159,980 people, has one medical school, the Toledo Medical College.

Cincinnati

The Ohio-Miami Medical College of the University of Cincinnati.—Organized in 1909 by the union of the Ohio Medical College (founded in 1819) with the Miami Medical College (founded in 1852). The Ohio Medical College became the Medical Department of the University of Cincinnati, April 26, 1896. Under a similar agreement, March 2, 1909, Miami Medical College also merged into the University when the present title was taken. The agreement gave the university entire control and both colleges turned over all their property to the City of Cincinnati for the University and gave up their own corporate existence. The faculty now consists of 50 professors, 13 associate and assistant professors, and 65 lecturers, instructors, etc., a total of 128. The course covers four years of eight months each. The fees are a tuition fee of $125 a year; a matriculation fee of $5, payable but once, and a graduation fee of $25. The Secretary is Dr. E. Otis Smith. The next session begins Sept. 27, 1909, and ends June 4, 1910.

Eclectic Medical Institute, 1009 Plum Street.—Organized in 1832 at Worthington as the Worthington Medical College. Removed to Cincinnati in 1843. In 1845 it was chartered under its present title. In 1857 the American Medical College, organized in 1839, was merged into it, and in 1859 the Eclectic College of Medicine and Surgery, organized in 1856, merged into it. Classes were graduated in 1833 and in all subsequent years except 1839 to 1843 inclusive. It has a faculty of 19 professors and 6 lecturers and assistants, a total of 25. The course covers four years of thirty weeks each. The fees are $90 for each year. The Dean is Dr. Rolla L. Thomas, 792 East McMillan Street. Total registration for 1908-9 was 81; graduates, 16. The next session begins Sept. 20, 1909, and ends May 4, 1910.

Pulte Medical College. Homeopathic. Mound and Seventh Streets.—Organized in 1872. The first class graduated in 1873. The faculty numbers 37. The fees for each of the four years are respectively $85, $82, $75 and $100. The Dean is Dr. Charles E. Walton. Total enrolment for 1908-9 was 16; graduates, 3. The 38th session begins Sept. 30, 1909, and ends May 25, 1910.

Cleveland

The Cleveland College of Physicians and Surgeons, Central Avenue and East Fourteenth Street.—Organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869 and the Medical Department of the Ohio Wesleyan University in 1896, when it assumed its present title. Classes were graduated in 1865 and in all subsequent years except 1881. The faculty is composed of 33 professors, 28 lecturers, assistants, etc., 61 in all. The total fees for the four years respectively are $130, $130, $117 and $110. The curriculum covers four years of eight months each. The Dean is Dr. R. E. Skeel, 314 The Osborn. Total registration for 1908-9 was 92; graduates, 16. The next session begins Oct. 1, 1909, and ends June 1, 1910.

Cleveland Homeopathic Medical College, Prospect Avenue and Huron Road.—Organized in 1849 as the Western College of Homeopathic Medicine. The first class graduated in 1853. In 1857 it became the Western Homeopathic College and in 1870 it became the Homeopathic Hospital College when the Homeopathic Medical College for Women, organized in 1868, merged into it. In 1894 it became the Cleveland University of Medicine and Surgery, which in 1898 merged with the Cleveland Medical College, organized in 1890, taking the present title. The Dean is Dr. George H. Quay. Total number of students registered in 1908-9 was 41; graduates, 13.

Western Reserve University, Medical Department, St. Clair Avenue and East Ninth Street.—Organized in 1843 as the Cleveland Medical College. The first class graduated in 1845. It assumed the present title in 1881. The faculty includes 24 professors and 74 lecturers, assistants, etc., a total of 98. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission to first year of medical course. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 1110 Euclid Avenue. The total registration for 1908-9 was 98; graduates, 25. The 67th session begins Oct. 1, 1909, and ends June 16, 1910.

Columbus

Starling-Ohio Medical College, Buttles Avenue and Park Street.—Organized in 1907 by the union of Starling Medical College (organized 1834) with the Ohio Medical University (organized 1890). The faculty consists of 35 professors and 22 lecturers, demonstrators, etc., a total of 57. The course covers four years of eight months each. Total fees for the four years respectively are $115, $110, $105 and $125. The Dean is Dr. George M. Waters. The total registration for 1908-9 was 231; graduates, 50. The next session begins Sept. 22, 1909, and ends May 17, 1910.

Toledo

Toledo Medical College, Cherry and Page Streets.—Organized in 1883. The first class graduated in 1883. The faculty numbers 50. The curriculum embraces four years of eight months each. The fees are $100 for each year, with a matriculation fee of $5, payable once. The Dean is Dr. James Donnelly. The total registration for 1908-9 was 38; graduates, 5. The next session begins Oct. 1, 1909, and ends May 26, 1910.

OKLAHOMA

Oklahoma, population 1,109,435, has two medical schools, the School of Medicine of the University of Oklahoma, which is located at Norman, a city of 3,800 inhabitants, and the Epworth College of Medicine, located at Oklahoma City, which has a population of 20,990.

Norman

State University of Oklahoma School of Medicine.—Organized in 1898. Gives only the first two years of the medical course and does not grant degrees. The session extends over a period of nine months. The faculty numbers 9. Students are advised to take two or more years of collegiate premedical studies. The two years of the medical course may be used as the junior and senior years in the college of arts and sciences leading to degree of B.A. or B.S. The Dean is Dr. C. S. Bobo. The total registration for 1908-9 was 10. The next session begins Sept. 14, 1909, and ends June 9, 1910.

Oklahoma City

Epworth College of Medicine.—Organized in 1904. The first class graduated in 1907. The faculty numbers 43. The course of study covers four years of seven and a half months each. The total fees are $100 each year. The Dean is Dr. A. K. West. The registration for 1908-9 was 51; graduates, 6. The sixth session begins Oct. 1, 1909, and ends May 9, 1910.

OREGON

Oregon, population 474,738, has two medical colleges: The Medical Department of Willamette University, located in Salem, a city of 7,287 people, and the University of Oregon Medical Department, in Portland, a city of 109,884 population.

Portland

University of Oregon, Medical Department, Lovejoy and Twenty-third Streets.—Organized in 1887. The first class graduated in 1888. It has a faculty of 14 professors and 27 lecturers, assistants, etc., a total of 41. The course is four years of seven and one-half months each. Fees: First year, $142.50; second, $137.50; third, $107.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Josephi. The total registration for 1908-9 was 74; graduates, 15. The 23d session begins Sept. 13, 1909, and ends May 2, 1910.

Salem

Medical Department Willamette University.—Organized in 1865 at Salem. Classes were graduated in 1867 and in all subsequent years except 1896. It moved to Portland in 1878, but returned to Salem in 1895. The Dean is Dr. W. H. Byrd. The total registration for the college year 1908-9 was 29; graduates, 8. The next sesion begins Oct. 5, 1909, and ends May 29, 1910.

PENNSYLVANIA

Pennsylvania, population 6,928,515, has seven medical colleges. Of these Philadelphia, having a population of 1,441,735, contains six, as follows: University of Pennsylvania, Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple University Department of Medicine. The other school, the Western Pennsylvania Medical College, is situated in Pittsburgh, a city of 375,082 people.

Philadelphia

University of Pennsylvania, Department of Medicine. Thirty-sixth Street and Hamilton Walk.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772-79 inclusive. The original title was the Department of Medicine, College of Philadelphia, which was changed to the present title in 1791. It granted the first medical diploma issued in America. The faculty is made up of 27 professors, 3 associate professors, 4 adjunct professors, 11 assistant professors, 111 demonstrators, lecturers, associates, instructors, etc., a total of 156. The requirements for admission for the session of 1909-10 will be the equivalent of work prescribed for freshmen in recognized colleges, which work must include a knowledge of physics, chemistry and general biology or zoology with laboratory work as specified by the College Entrance Examining Board and, in addition, two foreign languages, one of which must be French or German. The course embraces study of four years of nine months each. The total fees for each year are $200, with a matriculation fee of $5 for the first year. The Dean is Dr. Charles H. Frazier. Total registration for 1908-9 was 544; graduates, 110. The next session begins Sept. 24, 1909, and ends June 15, 1910.

Jefferson Medical College. Tenth and Walnut Streets.—Organized 1825 as the Medical Department of Jefferson College, Cannonsburg. The first class graduated in 1826. The present title was assumed in 1838. It has a faculty of 22 professors and 98 lecturers, demonstrators, etc., a total of 120. The course of study covers graded work of four years of eight months each. An optional fifth year is offered. The tuition is $180 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total registration for 1908-9 was 591; graduates, 139. The 85th session begins Sept. 24, 1909, and ends June 6, 1910.

Medico-Chirurgical College of Philadelphia. Cherry Street, between Seventeenth and Eighteenth Streets.—Organized in 1881. The first class graduated in 1882. The faculty is composed of 31 professors and 64 lecturers, assistants, etc., a total of 95. The work embraces four years of eight months each. An optional preliminary year devoted to physics, chemistry and biology is offered. Fees, $150 per year; matriculation, $5, payable once. The Dean is Dr. Seneca Egbert. The total registration for the college year 1908-9 was 461; graduates, 56. The 29th session begins Sept. 24, 1909, and ends June 6, 1910.

Woman's Medical College of Pennsylvania. Twenty-first and N. College Avenue.—Organized in 1850. Classes were graduated in 1851 and in all subsequent years except 1861 and 1862. It has a faculty of 10 professors and 47 assistants, lecturers, etc., in all 57. The curriculum covers four years of eight months each. Fees, $140 each year. The Dean is Dr. Clara Marshall. The total registration for 1908-9 was 125; graduates, 24. The 60th session begins Sept. 22, 1909, and ends June 1, 1910.

Hahnemann Medical College and Hospital.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the present title. The first class graduated in 1849. It has a faculty of 27 professors and 46 lecturers, instructors, etc., in all 73. The work covers four years of eight months each. Fees: For each year, $150; matriculation, $5. The Dean is Dr. Herbert L. Northrop. The total registration for the college year 1908-9 was 187; graduates, 58. The 62d session begins Sept. 27, 1909, and ends June 1, 1910.

The Temple University, Department of Medicine. Eighteenth and Buttonwood Streets.—Organized in 1901. The first class graduated in 1904. The faculty numbers 75. It gives a four-year day course. The fees are $150 per year. The Dean is Dr. I. Newton Snively. The total registration for 1908-9 was 245; graduates, 18. The 9th session begins Sept. 15, 1909, and ends June 4, 1910.

Pittsburgh

University of Pittsburgh, Medical Department. Brereton Avenue and Thirtieth Street.—Organized in 1886 as the Western Pennsylvania Medical College. Became the Medical Department of the University of Pittsburgh in 1909. The first class graduated in 1887. The faculty is composed of 40 professors and 80 associates, assistants, etc., 120 in all. The course of study embraces four years of nine months each. The total fees are $150 for each year. The Dean is Dr. Thomas S. Arbuthnot. The total registration for 1908-9 was 378; graduates, 56. The 26th session begins Oct. 5, 1909, and ends June 15, 1910.

PHILLIPPINE ISLANDS

Manila

University of St. Thomas, Medical Department.—The University was founded by a papal decree in 1587, and the medical school was added in 1771. The faculty numbers 154. The course extends over a period of six years of nine months each. The first year is a preparatory one, devoted to the teaching of physics, chemistry and biology. The degree of licenciado is conferred at the conclusion of the fifth year, and the degree of doctorado at the end of the sixth year, during which only special work is done. This last year is optional, the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner. The degree is equivalent to the English M.B. The Rector of the university is Dr. Fr. Raymundo Vetasquez; the Secretary of the Medical Department is Lic. Blas C. Alcuaz.

Philippine Medical College.—Organized in 1907 under the support of the Philippine Commission. The faculty numbers 42. The course extends over five years of thirty-five weeks each. The requirements for admission conform to the standards in the United States and Great Britain. The Secretary is Dr. Harry T. Marshall. The total registration for 1908 was 52; graduates, 8. The third session began June 7, 1909, and will end Feb. 26, 1910.

SOUTH CAROLINA

South Carolina, population 1,453,318, has one medical college, situated in Charleston, a city of 56,317 people.

Charleston

The Medical College of the State of South Carolina.—Founded in 1823 as the Medical College of South Carolina. In 1832 it was chartered with the present title. Classes were graduated in 1825 and in all subsequent years except 1861 to 1865 inclusive. It has a faculty of 11 professors and 20 lecturers, instructors, etc., a total of 31. The course covers four years of seven months each. The total fees for each of the first two years are $100, and $75 each for the last two. The Dean is Dr. Robert Wilson. Total enrolment for 1908-9 was 213; graduates, 38. The 87th session begins Oct. 1, 1909, and ends May 4, 1910.

SOUTH DAKOTA

South Dakota, population 465,908, has one medical college, the University of South Dakota, College of Medicine, located at Vermilion, a city of 2,183 people.

Vermilion

University of South Dakota, College of Medicine.—Organized in 1907. Offers only the first two years of the medical course. Two years of work in a college of liberal arts is required for admission. The faculty numbers 8. The Dean is Christian P. Lommen, B. S. The total registration for 1908-9 was 11. The third session begins Sept. 13, 1909, and ends June 9, 1910.

TENNESSEE

Tennessee, population 2,172,476, has nine medical colleges. Of these Vanderbilt University Medical Department, the Medical Department of the Universities of Nashville and Tennessee and Meharry Medical College are situated in Nashville, a city with a population of 84,703. Knoxville, population 36,051, contains two colleges, Tennessee Medical College and Knoxville Medical College. Chattanooga Medical College is situated in Chattanooga, a city of 34,297 people. Memphis Hospital Medical College, the College of Physicians and Surgeons and the University of West Tennessee are located in Memphis, population 125,235.

Chattanooga

Chattanooga Medical College.—McCallie and Baldwin Streets. Organized in 1889. The first class graduated in 1890. It is the Medical Department of the University of Chattanooga. The faculty consists of 11 professors and 13 instructors, demonstrators, etc., total 24. The course covers four years of seven months each. The total fees approximate $75 each session. The Dean is Dr. J. R. Rathmell. The total registration for 1908-9 was 112; graduates, 24. The twenty-first session begins Sept. 22, 1909, and ends May 2, 1910.

Knoxville

Tennessee Medical College, Medical Department of Lincoln Memorial University. Cleveland Street and Dameron Avenue.—Organized in 1889. The first class graduated in 1890. It has a faculty of 20 professors and 7 assistants, a total of 27. The curriculum covers four years of seven months each. Fees: First and second years, $50; third and fourth years, $60; matriculation fee, $5; graduation fee, $25. The Registrar is Dr. E. R. Zemp. The total registration for 1908-9 was 84; graduates, 13. The 20th session begins Oct. 1, 1909, and ends May 1, 1910.

Knoxville Medical College. Colored. Clinton and McGhee Streets. Organized in 1900. Classes were graduated in 1900 and in all subsequent years except 1906 and 1907. The Secretary is Dr. H. M. Green, Famous Building. There were 23 students and 7 graduates for the session of 1908-9.

Memphis

College of Physicians and Surgeons. Opposite City Hospital. Organized in 1906. The first class graduated in 1907. It has a faculty of 45. The course covers four years of seven months each. The Dean is Dr. Heber Jones. The total registration for 1908-9 was 84; graduates, 11. The 4th session begins Sept. 15, 1909, and ends May 1, 1910.

Memphis Hospital Medical College. Marshall Avenue and Myrtle Street.—Organized in 1880. The first class graduated in 1881. It has a faculty of 11 professors and 23 lecturers, instructors, etc., a total of 34. The course covers four years of seven months each. The total fees for the first three years are

$75; for the fourth $100. The Dean is Dr. W. B. Rogers. Total registration for 1908-9 was 442; graduates, 98. The 30th annual session will begin Oct. 1, 1909 and close May 1, 1910.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF WEST TENNESSEE. Colored, 1190 South Phillips Place.—Organized in 1900. It has a faculty of 18. The course is four years of seven months each. The fees are $40 per year; graduation $10 extra. The Dean is Dr. M. V. Lynk. Registration for 1908-9 was 25; graduates, 8. The next session begins Sept. 14, 1909, and ends April 14, 1910.

Nashville

VANDERBILT UNIVERSITY, MEDICAL DEPARTMENT. Elm Street and Fifth Avenue.—This school was founded in 1874. The first class graduated in 1875. The present faculty of 39 consists of 19 professors and 20 lecturers. The course covers four years of seven and a half months each. The total fees for each of the first three years are $130 and for the fourth year $155. The Dean is Dr. William L. Dudley. The total registration for 1908-9 was 209; graduates, 49. The 36th session begins Sept. 16, 1909, and ends May 2, 1910.

UNIVERSITIES OF NASHVILLE AND TENNESSEE, MEDICAL DEPARTMENT.—Organized in 1909 by the union of the University of Nashville, Medical Department (founded in 1850) with the University of Tennessee, Department of Medicine (founded in 1876). The new college has a faculty of 50. The course will cover four years of thirty-two weeks each. The total fees will be $125 for each of the first three years and $150 for the fourth year. The Dean is Dr. R. O. Tucker. The total registration of the two schools for 1908-9 was 347; graduates, 102. The first session of the new school will begin Sept. 8, 1909, and will end May 2, 1910.

MEHARRY MEDICAL COLLEGE. Colored. Maple and Chestnut Streets.—This school was organized in 1876 and is the Medical Department of Walden University. The faculty is made up of 12 professors and 14 instructors, demonstrators, etc., 26 in all. The work embraces four years of seven months each. The total fees are for the first year, $53; second and third years, $55 each, and $60 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1908-9 was 275; graduates, 58. The 34th session begins Sept. 15, 1909, and ends April 14, 1910.

TEXAS

Texas, population 3,536,618, has four medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 34,355 inhabitants. The Medical Department of Fort Worth University is at Fort Worth, population 27,096. The Baylor University College of Medicine and the Medical Department of Southwestern University are situated in Dallas, population 52,793.

Dallas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 435-37 South Ervay Street.—Organized in 1900 as the University of Dallas, Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University at Waco. It acquired the charter of Dallas Medical College in 1904. The first class graduated in 1901. The Dean is Dr. E. H. Cary. Total registration for 1908-9 was 53; graduates, 16. The 10th session begins Oct. 1, 1909, and ends May 1, 1910.

SOUTHWESTERN UNIVERSITY MEDICAL COLLEGE.—Organized in 1903. The first class graduated in 1904. It has a faculty of 17 professors and 15 instructors, total 32. The course of instruction covers four years. The fees for the four years respectively are $110, $105, $100 and $125. The Dean is Dr. John O. McReynolds. Total registration for 1908-9 was 68; graduates, 9. The 7th session begins Sept. 29, 1909, and ends April 29, 1910.

Fort Worth

MEDICAL DEPARTMENT OF FORT WORTH UNIVERSITY. Calhoun and Fifth Streets.—Organized in 1894. The first class graduated in 1895. It has a faculty of 16 professors and 22 lecturers, assistants, etc., in all 38. The course covers four years of seven months each. The total fees for each of the first three years are $105 and $130 for the fourth year. The Dean is Dr. W. R. Thompson. The total registration for the college year 1908-9 was 100; graduates, 19. The sixteenth session begins Sept. 27, 1909, and ends May 13, 1910.

Galveston

UNIVERSITY OF TEXAS, DEPARTMENT OF MEDICINE. Avenue B and Ninth Street.—Organized in 1891. The first class graduated in 1892. It has a faculty of 10 professors and 15 lecturers. The curriculum embraces four years of eight months each. The total fees for the four years respectively are $55, $30, $20 and $5. The Dean is Dr. William S. Carter. Total registration for 1908-9 was 211; graduates, 37. The 19th session begins Oct. 1, 1909, and ends May 31, 1910.

UTAH

Utah, population 316,331, has one medical college, the Medical Department of the University of Utah, situated at Salt Lake City, which has 61,202 people.

Salt Lake City

UNIVERSITY OF UTAH, DEPARTMENT OF MEDICINE.—Organized in 1906. Gives only the first two years of the medical course. Each course covers thirty-six weeks. One year of collegiate work is required for admission. In 1910 and thereafter the requirement will be two years of collegiate work. The medical faculty consists of 6 professors and 15 lecturers and assistants, a total of 21. The fees are $65 each year. The Dean is Byron Cummings, A.M. Total registration for 1908-9 was 18. The third session begins Sept. 16, 1909, and ends June 1, 1910.

VERMONT

Vermont, population 350,373, has one medical school, located at Burlington, a town of 21,070 people.

Burlington

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE. Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty numbers 46. The course of study covers four years of seven months each. The total fees for each of the first three years are $115 and $140 for the fourth year. The Dean is Dr. H. C. Tinkham; Secretary, Dr. James N. Jenne. The total registration for the college year 1908-9 was 166; graduates, 33. The next session begins Nov. 11, 1909, and ends June 24, 1910.

VIRGINIA

Virginia, population 1,973,104, has three medical colleges, one, the Medical Department of the University of Virginia, situated in Charlottesville, population 6,449, and two, the Medical College of Virginia and the University College of Medicine, in Richmond, population 87,246.

Charlottesville

UNIVERSITY OF VIRGINIA, DEPARTMENT OF MEDICINE.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years, except 1865. It has a faculty of 17 professors and 15 lecturers, instructors, assistants, etc., a total of 32. The requirements for admission are the completion of a three years' high school course, or its equivalent, and a year of college work devoted to chemistry, physics and biology. Fees: First year, $150; second year, $140; third year, $120; fourth year, $100. The Dean is Dr. R. H. Whitehead. The total registration for 1908-9 was 88; graduates, 18. The next session begins Sept. 16, 1909, and ends June 15, 1910.

Richmond

MEDICAL COLLEGE OF VIRGINIA. Marshall and College Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. Classes were graduated in 1840 and in all subsequent years. It has a faculty of 16 professors and 32 lecturers, instructors, etc., a total of 48. The requirement for admission is a full four-year high school education. The course embraces four years of eight months each. Fees, $100 each year; graduation fee, $30. The Dean is Dr. Christopher Tompkins. The total registration for the college year 1908-9 was 206; graduates, 35. The 72d session begins Sept. 14, 1909, and ends May 18, 1910.

UNIVERSITY COLLEGE OF MEDICINE. Eleventh and Clay Streets.—Organized in 1893. The first class graduated in 1894. It has a faculty of 23 professors, 52 lecturers, assistants, etc., a total of 75. The curriculum covers four years of eight months each. The total fees are $100 for each year. The President is Dr. Stuart McGuire; the Dean is Dr. A. L. Gray. The total registration for the college year 1908-9 was 140; graduates, 42. The seventeenth session begins Sept. 14, 1909, and ends May 17, 1910.

WEST VIRGINIA

West Virginia, population 1,076,406, has one medical college, College of Medicine of the West Virginia University, located at Morgantown, a city of 3,900 inhabitants.

Morgantown

WEST VIRGINIA UNIVERSITY COLLEGE OF MEDICINE.—Organized in 1902. Gives only the first two years of the medical course. Each college term extends over nine months. The faculty consists of 8 professors and 5 assistants, 13 in all. Tuition to students residing in the state, $25; for others, $50 per year. The Dean is Dr. J. N. Simpson. The total registration for the college year 1908-9 was 40. The eighth session begins Sept. 20, 1909, and ends June 15, 1910.

WISCONSIN

Wisconsin, population 2,260,930, has three medical colleges, the Medical Department of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city having a population of 25,128, and the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons, situated in Milwaukee, a city of 317,903 people.

Madison

UNIVERSITY OF WISCONSIN COLLEGE OF MEDICINE.—Organized in 1907. Gives only the first two years of the medical course. For matriculation a candidate must have had in addition to a four-year high school course at least two years in a college of arts and science or an equivalent training. Two years of Latin, a reading knowledge of French and German, and at least a year's work in physics, chemistry and biology are specifically required. It has a faculty of 25 professors and 20 lecturers, instructors, etc., a total of 45. The Dean is Dr. Charles R. Bardeen. The registration for 1908-9 was 32. The 2d session begins Sept. 27, 1909, and ends June 22, 1910.

Milwaukee

MILWAUKEE MEDICAL COLLEGE. MEDICAL DEPARTMENT OF MARQUETTE UNIVERSITY. Ninth and Wells Streets.—Organized in 1894. The first class graduated in 1895. It became the Medical Department of Marquette University in 1907. It has a faculty of 30 professors and 36 lecturers, instructors, etc., a total of 66. The course covers four years of eight months each. The total fees are $135 each for the first three years and $150 for the fourth year. The Dean is Dr. Warren B. Hill. The total registration for 1908-9 was 166; graduates, 23. The 16th session begins Oct. 5, 1909, and ends May 23, 1910.

Wisconsin College of Physicians and Surgeons. Fourth Street and Reservoir Avenue.—Organized in 1893. The first class graduated in 1894. It has a faculty of 25 professors and 28 lecturers, instructors, etc., a total of 53. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, $5; general ticket, $125. The Dean is Dr. Thomas C. Phillips. The total registration for 1908-9 was 60; graduates, 15. The 18th session begins Oct. 1, 1909, and ends May 27, 1910.

CANADA

Manitoba

Manitoba Medical College, Winnipeg.—It is the Medical Faculty of the University of Manitoba. Organized 1883, first class graduated 1886 and a class graduated each subsequent year. The faculty numbers 40. The fees are $130 for the first year and $125 for each of the other four years. The entire course covers five years. The dean is Dr. H. H. Chown, 263 Broadway, Winnipeg. Total registration for 1908-9 was 115; graduates, 36. The next session begins Sept. 27, 1909, and ends May 1, 1910.

Nova Scotia

Halifax Medical College, Medical Faculty of Dalhousie University, Halifax.—Organized 1867 as Halifax School of Medicine, united same year with Dalhousie University, separately incorporated 1876, affiliated with Dalhousie University 1885, first class graduated 1872 and a class graduated each subsequent year except 1873 and 1886. The course covers four years. The Dean is Dr. George L. Sinclair. The Secretary is Dr. A. W. H. Lindsay. The total registration for 1908-9 was 61; graduates, 8. The next session begins Aug. 26, 1909, and ends April 28, 1910.

Ontario

University of Toronto, Faculty of Medicine, Toronto.—Organized 1843 as the Medical Faculty of King's College. Abolished in 1853. Re-established in 1887. The course of study covers five years of eight months each. In 1902 it absorbed Victoria University and in 1903 it absorbed Trinity Medical College. The Dean is Dr. A. R. Reeve; Secretary, Dr. A. Primrose. The total registration for 1908-9 was 630; graduates, 90. The next session begins Oct. 1, 1909, and ends May 13, 1910.

Medical Faculty of Queen's University, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty was originally a department of the University, but a separation took place in 1866, when the school was conducted under the charter of the Royal College of Physicians and Surgeons at Kingston. In 1897 the school again became an integral part of Queen's University. The fees amount to $100 each year; fee for the M.D., C.M. degrees, $30. A five year medical course is required. The total registration in 1908-9 was 208; graduates, 40. The Dean is Dr. A. R. B. Williamson. The next session begins Sept. 29, 1909, and ends April 27, 1910.

Medical Department of Western University, London.—Organized in 1881, first class graduated in 1883 and a class graduated each year subsequently. The Registrar is Dr. W. E. Waugh. Total registration for 1908-9 was 104; graduates, 27. The next session begins Sept. 21, 1909, and ends May 1, 1910.

Quebec

Medical Faculty of McGill University.—Founded 1824 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No sessions between 1836-39 owing to political troubles. In 1905 absorbed Faculty of Medicine University of Bishop College. The course now extends over five years. The faculty numbers 95. Total registration for 1908-9 was 328; graduates, 71. The Registrar is Dr. John W. Scane. The next session begins Oct. 1, 1909, and ends June 8, 1910.

Laval University, Medical Department, Quebec and Montreal.—The Quebec school of Medicine, organized in 1848, became in 1852 Medical Department of Laval University; first class graduated in 1855, and a class graduated each subsequent year. Department organized in Montreal in 1878. The course extends over five years. The Deans are Dr. Laurent Catellier, Quebec, and Dr. E. P. Lachapelle, Montreal. Total registration at the two departments, 1908-9, was 309; graduates, 55. The next session begins Sept. 15, 1909, and ends June 20, 1910.

FOREIGN MEDICAL COLLEGES

ARGENTINE REPUBLIC

Buenos Ayres.—Universidad Nacional de Buenos Aires.
Cordova.—Universidad Nacional.

AUSTRALIA

Adelaide.—Universidad Nacional.
Melbourne.—University of Melbourne.
Sydney.—University of Sydney.

AUSTRIA

Gratz, Styria.—Kaiserliche Königliche Karl Franzens Universität.
Innsbruck, Tyrol.—Kais. König. Leopold Franzens Universität.
Krakow, Galicia.—Uniwersytet Jagiellonski w Krakowie.
Lemberg, Galicia.—C. K. Uniwersytet Imienia Cesarza Franciska I.
Prague, Bohemia.—K. K. Deutsche Karl-Ferdinand-Universität.
Prague, Bohemia.—C. K. Ceská Universita Karlo-Ferdinandova.
Vienna, Nether Austria.—Kaiserliche Königliche Universität.

BELGIUM

Brussels.—Université Libre de Bruxelles.
Ghent.—Université d l'Etat de Gand.
Liege.—Université de Liège.
Louvain.—Université Catholique.

BRAZIL

Bahia.—Faculdade de Medicina, Cirurgia e Pharmacia.
Rio de Janeiro.—Faculdade de Medicina, Cirurgia e Pharmacia.
Porto Allegre.—Faculdade Livre de Medicina e Pharmacia.

CANADA

Halifax, Nova Scotia.—Dalhousie University (including Halifax Medical College).
Kingston, Ontario.—Queen's University.
London, Ontario.—Western University.
Montreal, Quebec.—McGill University.
Montreal, Quebec.—Université Laval.
Quebec, Quebec.—Université Laval.
Toronto, Ontario.—University of Toronto.
Winnipeg, Manitoba.—University of Manitoba (Manitoba Medical College).

CHILE

Santiago.—Universidad de Chile.

CHINA

Hongkong.—Hongkong College of Medicine.
Pekin.—The Union Medical College.
Shanghai.—Woman's Medical School.

COLOMBIA

Bogota.—Universidad de Bogota.

CUBA

Havana.—Universidad de la Habana.

DENMARK

Copenhagen.—Kjobenhavns Universitet.

EGYPT

Cairo.—Kasr il Aini (School of Medicine).

ENGLAND

Birmingham.—University of Birmingham.
Bristol.—University of Bristol.
Cambridge.—University of Cambridge.
Durham.—Durham University (Durham College of Medicine).
Leeds.—University of Leeds.
Liverpool.—University of Liverpool.
London.—University of London (Including the following Medical Schools: (*a*) St. Bartholomew's Hospital, (*b*) Charing Cross Hospital, (*c*) St. George's Hospital, (*d*) Guy's Hospital, (*e*) King's College, (*f*) London Hospital (*g*) St. Mary's Hospital, (*h*) Middlesex Hospital, (*i*) St. Thomas's Hospital, (*j*) University College (*k*) Westminster Hospital, and (*l*) London (Royal Free Hospital) School of Medicine for Women.
Manchester.—Victoria University (Owen's College, founded in 1851, was merged in Victoria University in 1905).
Oxford.—University of Oxford.
Sheffield.—University of Sheffield.

FRANCE

Faculties of Medicine (to the degree of doctor in medicine, including the five required examinations).
Bordeaux.—Université de Bordeaux.
Lille.—Université de Lille.
Lyons.—Université de Lyon.
Montpellier.—Université de Montpellier.
Nancy.—Université de Nancy.
Paris.—Université de Paris.
Toulouse.—Université de Toulouse.
Preparatory Schools of Medicine.—Graduates of the 16 following schools are allowed to take the first two examinations if they are presided over by some member of a medical faculty:
- (*a*) *"Full Exercise,"* or complete course (covering the work of 16 trimesters).
  - *Algiers (Africa).*—Académie d'Alger.
  - *Marseilles.*—Université d'Aix-Marseille.
  - *Nantes.*—Ecole de Plein Exercice de Médicine et de Pharmacie (part of the University of Rennes).
  - *Rennes.*—Université de Rennes.
- (*b*) *Reorganized Schools.*—(Completing the first 12 trimesters.)
  - *Amiens.*—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Lille).
  - *Angers.*—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Rennes).
  - *Besancon.*—Université de Besancon.
  - *Caen.*—Université de Caen.
  - *Clermont.*—Université de Clermont.
  - *Dijon.*—Université de Dijon.
  - *Grenoble.*—Université de Grenoble.
  - *Limoges.*—Ecole de Médicine et de Pharmacie (part of the University of Poitiers).
  - *Poitiers.*—Université de Poitiers.
  - *Reims.*—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Paris).
  - *Rouen.*—Ecole de Médicine et de Pharmacie (part of the University of Caen).
  - *Tours.*—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Poitiers).

GERMANY

Berlin, Prussia.—Königliche Friedrich-Wilhelm Universität.
Bonn, Prussia.—Rheinische Friedrich-Wilhelms-Universität.
Breslau, Prussia.—Königliche Universität.
Erlangen, Bavaria.—Königl. Friedrich-Alexanders Universität.
Freiberg, Baden.—Grossherzogliche Badische Albert-Ludwigs-Universität.
Giessen, Hesse.—Grossherzogliche Hessische Ludwigs-Universität.
Gottingen, Prussia.—Königliche Georg-August-Universität.
Greifswald, Prussia.—Königliche Universität.
Halle, Prussia.—Vereinigte Friedrichs-Universität Halle-Wittenberg.
Heidelberg, Baden.—Grossherzogliche Ruprecht-Karls-Universität.
Jena, Thuringia.—Grossherzogliche und Herzogliche Sächsische Gesamt-Universität.
Kiel, Prussia.—Königliche Christian-Albrechts-Universität.
Konigsberg, Prussia.—Königliche Albertus-Universität.
Leipzig, Saxony.—Universität.
Marburg, Prussia.—Universität.
Munich, Bavaria.—Königliche Bayr. Ludwig-Maximilians-Universität.
Rostock, Mecklenberg.—Universität.
Strassburg, Alsace-Lorraine.—Kaiser-Wilhelms-Universität.
Tübingen, Wurtemberg.—Königliche Eberhard-Karls-Universität.
Würzburg, Bavaria.—Königliche Julius-Maximilians Universität.

GREECE

Athens.—Τὸ ἐν Ἀθήναις ἐθνικὸν Πανεπιστήμιον. (National University.)

GUATEMALA

Guatemala.—Facultad de Medicina.

HUNGARY

Budapest.—Budapesti Királyi Magyar Tudomány-Egyetem (Royal Hungarian University).
Klausenburg.—Kolozsvári Magyar Királyi Ferencz-Jozsef Tudomány-Egyetem (Royal Hungarian Franz-Joseph University).

ICELAND

Reykjavik.—Loeknaskoli (School of Physicians).

INDIA

Bombay.—University of Bombay (Grant Medical College).
Calcutta.—University of Calcutta (Medical College of Bengal).
Lahore.—Panjab University (Lahore Medical College).
Madras.—University of Madras (Madras Medical College).

IRELAND

Dublin.—Royal University of Ireland (including Queen's College, Belfast; Queen's College, Cork; Queen's College, Galway).
Dublin.—University of Dublin (The School of Physic in Ireland; Trinity College).
Dublin.—Catholic University Medical School.
Dublin.—Royal College of Surgeons, Schools of Surgery (including the Carmichael College of Medicine and the Ledwich School of Medicine).

ITALY

Bologna.—Regia Università degli Studi.
Cagliari, Sardinia.—Università degli Studi.
Camerino.—Libera Università degli Studi.
Catania.—Regia Università degli Studi di Catania.
Ferrara.—Libera Università degli Studi di Ferrara.
Florence.—Regia Instituto di Studi Superiori, Practici e di Perfezionamento.
Genoa.—Regia Università degli Studi.
Messina.—Regia Università degli Studi.
Modena.—Regia Università degli Studi.
Naples.—Regia Università degli Studi.
Padua.—Regia Università degli Studi.
Palermo.—Regia Università degli Studi.
Parma.—Regia Università degli Studi.
Pavia.—Regia Università degli Studi.
Perugia.—Università Libra degli Studi.
Pisa.—Regia Università degli Studi.
Rome.—Regia Università degli Studi.
Sassari.—Regia Università degli Studi.
Siena.—Regia Università degli Studi.
Turin.—Regia Università degli Studi.

JAPAN

Kyoto.—Imperial University (part of medical school is located at Fukuoka).
Tokyo.—Imperial University (Tokio Medical College became Medical Department in 1877).

Medical schools are located also at Chiba, Sendai, Okayama, Kanazawa and Nagasaki.

MEXICO

Mexico.—Escuela de Medicina.

NETHERLANDS

Amsterdam.—Universiteit van Amsterdam.
Groningen.—Rijks-Universiteit te Groningen.
Leyden.—Rijks-Universiteit.
Utrecht.—Rijks-Universiteit.

NEW ZEALAND

Wellington.—University of New Zealand (affiliated with the University of Cambridge, England).

NORWAY

Christiania.—Kongelige Frederiks Universitet.

PERU

Lima.—Universidad Mayor de San Marcos.

PORTUGAL

Coimbra.—Universidade de Coimbra.
Lisbon.—Escola Medico-Cirurgica.

ROUMANIA

Bukharest.—Universitatea din Bucuresti.
Jassy.—Universitatea din Jasi.

RUSSIA

Helsingfors, Finland.—Kejserliga Alexanders Universitet.
Jurjev (formerly Dorpat).—Imperatorskij Jurjevskij Universitet.
Kazan.—Imperatorskij Kasanskij Universitet.
Kharkof.—Imperatorskij Charkovskij Universitet.
Kief.—Imperatorskij Universitet Sv. Vladimira.
Moscow.—Imperatorskij Moskovskij Universitet.
Odessa.—Imperatorskij Novorossijskij Universitet.
St. Petersburg.—Imperatorskij St. Petersbergskij Universitet; Including Vojenno-Medicinskaja Akademija (Military Medical Academy) and Zenskij Medicinskij Institut (Medical High School for Women).
Tomsk, Siberia.—Tomskij Universitet.
Warsaw.—Imperatorskij Varsavskij Universitet.

SCOTLAND

Aberdeen.—University of Aberdeen.
Dundee.—University of St. Andrews (University College).
Edinburgh.—University of Edinburgh.
Edinburgh.—School of Medicine of the Royal Colleges (including the Surgeons' Hall School).
Glasgow.—University of Glasgow (including Queen Margaret College).
Glasgow.—Anderson's College Medical School.
Glasgow.—St. Mungo's College and Glasgow Royal Infirmary.
Glasgow.—Western Medical School.

SPAIN

Barcelona.—Universidad de Barcelona.
Cadiz.—Facultad de Medicina.
Granada.—Universidad de Granada.
Madrid.—Universidad de Central de Espaua.
Santiago.—Universidad.
Saragossa.—Universidad.
Seville.—Universidad de Sevilla. (To this university also belongs the Medical Faculty at Cadiz.)
Valencia.—Universidad Literaria.
Valladolid.—Universidad.

SWEDEN

Lund.—Kungl. Karolinska Universitetet.
Stockholm.—Karolinska Institutet (Medico-Chirurgical Institute). (This institute has the same chancellor as the universities at Lund and Upsala, and is guided by a similar constitution.)
Upsala.—Kungl. Universitetet i Upsala.

SWITZERLAND

Basel.—Universität.
Berne.—Kantonale Universität.
Geneva.—Université de Genève.
Lausanne.—Université.
Zurich.—Universität.

SYRIA

Beirut.—Syrian Protestant College.
Beirut.—Université Saint Joseph de Beyrouth.

URUGUAY

Montevideo.—Universidad.

WALES

Cardiff.—University of Wales (Cardiff School of Medicine).

MEDICAL STANDARDS ABROAD

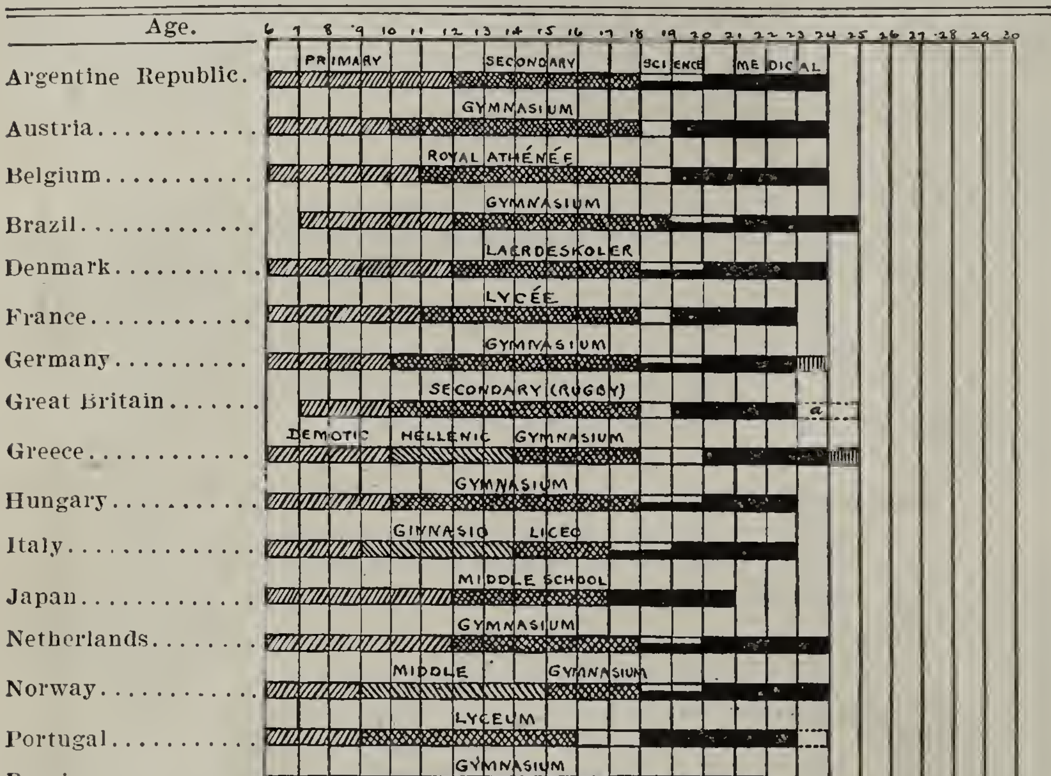
A list of medical colleges of all foreign countries shows a total of 165 such colleges outside the United States, while this country alone has 144. In other words, of the 309 medical colleges in all countries, the United States has 144, or 47 per cent., while the 30 other nations altogether have only 165, or 53 per cent. All European medical schools are medical faculties of universities or are under the direct control of universities, and there are no proprietary schools such as predominate in this country.

The information regarding preliminary education as well as collegiate and medical was obtained from original sources and from foreign publications. The data agree with the reports of the United States Bureau of Education, and in most instances have been confirmed by reports from the American consuls abroad.

The requirements in sixteen countries of Europe, Japan and three countries of South America are graphically presented in a chart, in which each division of education is shown according to the ages at which students are in attendance. The shaded portions of the bands represent primary and secondary education, the black portions the medical, and the white portions represent the requirements of higher preliminary education, including work in physics, chemistry and biology. The chart allows valuable comparisons to be made and, as measured by years, shows more of a uniformity of educational standards than one would expect. It is interesting to note how sharply the line representing the age of 18 separates the secondary from higher education.

The age at the completion of the medical course in each country, as shown in the chart, with one or two exceptions, represents the lowest age at which the student can secure the right to practice medicine, disregarding the rare exceptions when the student graduates at an earlier age. The average age is one or two years higher than is shown in the chart, since the regular course of study between the ages of 6 and 24 is often broken by sickness, failure to receive promotion, or other causes.

Preliminary and Medical Education at Home and Abroad



In the majority of foreign countries secondary education begins from two to five years earlier than in this country and with a few exceptions has no direct connection with the elementary. In fact, in several European countries, in Great Britain and in France, for example, it appears that the majority of students entering the secondary schools secure their elementary instruction from private tutors or in preparatory courses offered by the secondary schools, rather than in the regular elementary schools.

It should be stated that, although the expression of educational requirements in terms of years, or months, or by the ages of students does not actually measure the value of the education obtained, nevertheless a knowledge of the minimum time requirements in other countries is of importance, and a comparison with the minimum time requirements in our own country is of much value. This chart is of peculiar interest. Educators of high repute have stated that the courses of study in the secondary schools of several European countries are the equivalent of a four-year high school course in this country, plus about two years of work in a college of liberal arts. It is, therefore, of some importance for us to know that the secondary schools of Europe may be completed at the age of 18, whereas two years of work in a college of arts in this country can rarely be completed before the age of 20. In other words, taking the above claims for granted, it is important for us to know that the training of 12 years, between the ages of 6 and 18, in Germany and other European countries, is the equivalent of 14 years' training in this country between the ages of 6 and 20.

Of all the countries named in the chart the United States is the only one which does not require preliminary work in physics, chemistry and biology of every medical student. In some of the countries named the work is taken in the first one or two years of the medical course, along with the usual medical studies, while in others, notably in France, Belgium and Sweden, it must be taken in a college of science or philosophy. In still others, as in Austria and in Great Britain, the work may be taken either in a college of liberal arts or in the medical school.

In France this work was given as a part of the regular medical course until in 1893, when it was transferred to the college of science, because the laboratories and trained instructors in those colleges made it certain that the courses would be thoroughly taught.

Only one year devoted to the preliminary scientific studies is required by all but two of the countries named or else the work extends through about two years along with regular medical subjects. In no instance is more than two years of college work devoted entirely to preliminary study.

In six of the countries named, disregarding rare exceptions, the earliest age at which the right to practice medicine can be secured, is 23. In three countries the age limit is 25 or beyond. But in the great majority the age limit is 24, and the entire course of elementary, secondary, college and medical education is completed in 18 years. This agrees with the "ideal standard" adopted at Portland, Ore., in 1905 by the American Medical Association, as well as with the combined course by which the students can secure the degrees of B.S. and M.D. in six years and which has been adopted by a number of colleges.

The well-known diversity of standards of medical education in the United States at the present time is also shown in the chart. Preliminary standards range from a common school education up to the requirement of a college degree. Of the 144 colleges in the United States, 121 require a four-year high school education or less, as shown in Groups 1 to 4, while 24 colleges are now requiring one or more years of work in a college of arts, 14 of these having raised their requirements in the past 3 years. There are now in the United States several medical schools which are probably equal to any found abroad.

The educational standards in the countries regarding which definite information has been obtained are briefly stated as follows:

ARGENTINE REPUBLIC.—Elementary education extends between the ages of 6 and 14, and secondary education between the ages of 12 and 18, thereby overlapping the elementary by two years. Twelve years of study, therefore, lead to the medical course, which covers six years, including preliminary work in physics, chemistry and biology. The complete course requires 18 years and the minimum age at the completion of the course is 24.

AUSTRIA.—Elementary education extends between the ages of 6 and 14, overlapping the gymnasium course by four years, the latter extending between the ages of 10 and 18. Twelve years of study, therefore, admit to medicine. The medical course covers six years and includes preliminary courses in physics, chemistry and biology. The total time required is 18 years and the minimum age at completion is 24.

BELGIUM.—Elementary education extends between the ages of 6 and 14. overlapping the work in the Royal Athénées, the secondary schools, by three years, the latter extending between the ages of 11 and 18. The time spent in the primary and secondary schools is, therefore, 12 years. An additional year devoted to physics, chemistry and biology in a college of science admits to the five-year medical course. The time necessary to complete the work is 18 years and the minimum age at completion is 24.

BRAZIL.—Elementary education extends between the ages of 7 and 15, overlapping the work of the gymnasium by three years, the latter extending between the ages of 12 and 19. Elementary work may be begun at the age of 6 years, and in such cases students may finish the gymnasium at 18. Twelve years of work lead to medicine, where six years of work are required, including preliminary courses in physics, chemistry and biology. The time required to complete the entire course is 18 years and the usual age at completion is 25.

DENMARK.—Elementary education extends between the ages of 6 and 12, leading to the "laerdeskoler," the secondary schools which extend between the ages of 12 and 18, a total of 12 years. The medical course covers six years, including preliminary courses in the natural sciences. Time to complete the work is 18 years and the minimum age at completion is 24.

FRANCE.—Elementary education extends between the ages of 6 and 13 or 14. The majority of students entering the secondary schools, however, obtain their elementary work from tutors or in special preparatory courses connected with the lycées. The secondary school, the lycée, has a nine-year course divided into two cycles of five and four years, respectively, and extends between the ages of 11 and 18. From age 6, therefore, twelve years of training are required to complete the primary and secondary work. An additional year devoted to the natural sciences which must be taken in a college of science admits to the four-year medical course. Entire course therefore, is 17 years and the age at completion is 23.

GERMANY.—Elementary study extends between the ages of 6 and 14, overlapping the gymnasium by four years, the latter extending between the ages of 10 and 18. Then follows a six-year course, which includes preliminary courses in the natural sciences, and the last year must be spent in hospital work. This gives the right to practice, but additional work is required, and a severe examination, the "examen rigorosum," must be passed to secure the degree of doctor. Eighteen years of work lead to medical practice or 19 to the Doctorate, and the age at completion is at least 24 or 25.

GREAT BRITAIN.—There appears to be no connection between elementary and secondary systems of education. Elementary public schools have been provided, extending between the ages of 6 and 12 or 15. Those entering secondary schools usually obtain their elementary instruction from private tutors or in the preparatory courses of the secondary schools. At present there are no public secondary schools in Great Britain, although that country abounds in private secondary schools, having courses varying as to age. Taking Rugby as an example, the course extends from the age of 10 to 17. Others extend from the age of 12 to 19. There are various ages at which the student may enter the medical schools, the minimum age fixed by the General Medical Council being 16. The time spent in elementary and secondary education, therefore, ranges from 10 to 13 years. Work must then be taken in physics, chemistry and biology either in a college of science or in the medical college as a part of the regular five-year medical course. Authorities agree that only a small proportion of students enter the medical school before the 18th year and few graduates in medicine before the age of 23. Since the promotion from one grade to another depends entirely on the passing of an examination, the time to complete the medical course usually requires six or more years.

GREECE.—Elementary education is given in the "demotic" schools between the ages of 6 and 10 and in the "hellenic" schools between the ages of 10 and 14, leading to the secondary schools or gymnasia, which occupy the time between the ages of 14 and 18. Twelve years are occupied, therefore, by elementary and secondary education. Two years of work in the university devoted to botany, chemistry, physics, mineralogy, geology and zoology must be completed in order to begin the four-year medical course for the degree of Doctor. To secure the right to practice, nine months of postgraduate work in a hospital must be completed. The total time requirement is 19 years, and the minimum age at completion of the entire course is 25.

HUNGARY.—Elementary education extends between the ages of 6 and 12 years, overlapping secondary education, which extends between the ages of 10 and 18. The 12 years' work thus completed leads to the five-year medical course, which includes preliminary work in physics, chemistry and biology. The time for the entire course is therefore, 17 years and the minimum age at completion is 23.

ITALY.—Elementary education is divided into lower elementary extending between the ages of 6 and 9 years and higher elementary extending between 9 and 12 years. Secondary education is given in the ginnasio, extending between the ages of 10 and 15 years and in the liceo which extends between the ages of 15 and 18 years. This is followed by a six-year course in medicine which includes work in the natural sciences. The complete course, therefore, is elementary study 4 years, ginnasio 5 years, liceo 3 years and medicine 6 years, a total of 18 years. The minimum age at completion of the course is 24 years.

JAPAN.—Ordinary elementary education extends between the ages of 6 and 10 years and higher elementary education is between the ages of 10 and 14 years, overlapping the work of the "middle school" by two years, the latter extending between the ages of 12 and 17 years. Completing the work of the middle school admits to the four-year medical course in all medical schools, except those at Tokio, Kioto and Fukuoka, which require also the completion of three years of higher preliminary education.

NETHERLANDS.—Elementary education extends between the ages of 6 and 12 years, leading to the gymnasium, which extends from the 12th to the 18th year. Admission is then secured to the six-year medical course, which includes work in the natural sciences. The time to complete the entire course is 18 years and the minimum age is 24.

NORWAY.—Elementary education extends between the ages of 6 and 12 years, overlapping the secondary, which extends between the ages of 9 and 18 years. Secondary education is divided into a six-year middle school and a three-year gymnasium. The completion of the course of the gymnasium admits to the six-year medical course, which includes work in physics, chemistry and biology. The entire time, therefore, is 18 years and the minimum age at completion is 24. This gives the right to practice with the title of physician. The degree of Doctor requires extra work and the passing of special examinations.

PORTUGAL.—Elementary education extends between the ages of 6 and 12 years, thus overlapping the work of the lyceum, which extends between the ages of 9 and 16. This is followed by a course of one or two years in a faculty of philosophy and mathematics and then five years in medicine for the degree of licentiate in medicine and a sixth year for the degree of Doctor. The time for the entire course, therefore, is 18 years and the minimum age at completion is 24.

Russia.—Elementary education extends for 5 years between the ages of 6 and 11. Secondary education, as given in the gymnasium, extends over 7 years between the ages of 11 and 18. Completion of the secondary work admits to the 5-year medical course, which includes preliminary work in the natural sciences extending through the first two years along with other subjects. The total time is 17 years and the minimum age at completion is 23.

Spain.—Elementary education extends between the ages of 6 and 14 years, overlapping the work of the gymnasia, the secondary schools, which conduct work between the ages of 10 and 17. After completing the work of the gymnasium, one year of "preliminary study" must be taken, devoted to chemistry and natural science. Six years more gives the degree of licentiate in medicine and one more that of doctor. The complete course, therefore, requires 18 years of study and the minimum age at completion is 24.

Sweden.—Elementary education extends over 7 years between the ages of 6 and 13. Secondary education consists of a five-year lower modern course and a four-year higher gymnasium, the two courses being attended by students between the ages of 9 and 18. After completing the gymnasium, one year of preliminary work in the natural sciences must be taken in a college of philosophy. Seven years more of study gives the degree of licentiate in medicine, which carries with it the right to practice. To secure the degree of Doctor requires more work and the passing of special examinations. Promotion to each succeeding grade depends on the passing of an examination, and the medical course often extends to 9 or more years. The entire course, therefore, includes: elementary work, 3 years; lower modern school, 5 years; higher gymnasium, 4 years; college of philosophy, 1 year, and medicine, 7 years, a total of 20 years. The age at completion is 26 to 28 years.

Switzerland.—The Cantons differ somewhat in the length of their secondary courses, but all agree in regard to the preliminary work for admission to medicine and the length of the medical course. Taking the Canton of Zürich as an example, the elementary work extends over 6 years between the ages of 6 and 12. The secondary schools, known as gymnasia (realschulen or lycea), have courses covering seven years, students attending between the ages of 11 and 18. Graduation from the gymnasium admits to the five-year medical course, which includes preliminary courses in physics, chemistry and biology. The entire course, therefore, requires: elementary work, 5 years; gymnasium, 7 years, and medicine, 5 years, a total of 17 years. The minimum age at completion is 23. The degree of Doctor is not essential to practice, but may be obtained by writing a special thesis and taking certain courses without necessarily requiring a longer course.

Uruguay.—Elementary education extends between the ages of 6 and 14 years, leading to the secondary, which extends from the 14th to the 18th year. A six-year medical course follows, which includes preliminary work in physics, chemistry and biology. The time to complete the entire work is 18 years, and the minimum age at completion is 24.

THE AMERICAN MEDICAL ASSOCIATION STANDARDS OF MEDICAL EDUCATION

These standards were suggested by the Council on Medical Education and the reports were adopted by the House of Delegates of the American Medical Association.

Standard Now Recommended

The minimum standard now recommended prerequisite to the practice of medicine is as follows:

1. (a) The preliminary requirement to be a four-year high school education or its equivalent, such as would admit the student to one of our recognized universities; (b) and in addition (after Jan. 1, 1910), a year of not less than nine months, devoted to the study of physics, chemistry, biology and one language (preferably German or French), to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned.

2. There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate," which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one, or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.

The Ideal Standard

The ideal standard to be aimed at from the present viewpoint should consist of: (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed upon by the state authorities. (B) A course of at least one year to be devoted to physics, chemistry and biology, such arrangement to be made that this year could be taken either in a college of liberal arts or in the medical school. (C) Four years in pure medical work, the first two of which should be largely spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics, and the specialties. (D) A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work. It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended.

A Medical College in Good Standing

Below is a schedule of the minimum requirements, laboratory equipment and clinical facilities which should obtain in a medical college before it can be considered as giving a satisfactory course or be determined as a medical college in good standing:

I. REQUIREMENTS

1. *Matriculation.*—For matriculation the medical college should require of each student:

(1) A certificate of good moral character, signed by two reputable physicians of the state in which the applicant resides; and,

(2) As evidence of satisfactory preliminary education, a medical student's matriculation certificate, issued by the state board of medical examiners or its authorized agent, this certificate to be issued on (A) acceptable credentials, or (B) on successfully passing a preliminary examination.

A. Acceptable Credentials.—(a) A degree from an accredited university or college of arts or science; or,

(b) A diploma from an accredited four-year high school, normal school or academy which required for admission eight years of study in the primary and intermediate grades and which furnished a preliminary education of at least 15 units (30 points or credits, or 75 counts), as given in the following outline (suggested by Dr. W. J. Means, a member of the Council's committee and also chairman of the Judicial Council of the Association of American Medical Colleges):

REQUIRED BRANCHES.

	Units.	Points.	Counts.
Rhetoric and composition	1	2	5
History of English and American literature	1	2	5
Algebra through graduates	1	2	5
Geometry, plane	1	2	5
Latin, grammar and 4 books of Cæsar or equivalent	2	4	10
U. S. History and Civics	1	2	5
Physics, with laboratory work	1	2	5
Total	8	16	40

ELECTIVE BRANCHES.

Seven units, 14 points or credits, or 35 counts to be selected from the following subjects. Not more than 2 units, 4 points or credits or 10 counts from any one group:

	Units.	Points.	Counts.
Group 1:			
English Classics (College Entrance Examining Board list)	2	4	10
Group 2:			
Geometry, solid	.5	1	2.5
Trigonometry	.5	1	2.5
Group 3:			
Latin, Cicero (7 orations)	1	2	5
Latin, Virgil (6 books)	1	2	5
Group 4:			
German, grammar with 2 years' certified work	2	4	10
French, grammar with 2 years' certified work	2	4	10
Spanish, grammar with 2 years' certified work	2	4	10
Group 5:			
History, Greece and Rome	1	2	5
History, medieval and modern	1	2	5
History, England, half years' work	.5	1	2.5
History, France, half years' work	.5	1	2.5
Group 6:			
Biology, with laboratory work	1	2	5
Botany, with laboratory work	.5	1	2.5
Zoology, with laboratory work	.5	1	2.5
Physiology and Hygiene, with laboratory work	1	2	5
Group 7:			
Chemistry, with laboratory	1	2	5
Total	18	36	90

A *unit* is the credit value of 36 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *point* is the credit value of 18 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *count* is the credit of one recitation period per week of not less than 45 minutes through 36 weeks.

It is urged that within a reasonable time the minimum requirements as given in paragraph (b) will be enlarged to include an additional year or university physics, chemistry, biology and a reading knowledge of German or French.

B. Preliminary Examination.—The preliminary examination should be taken before the board of medical examiners or its authorized agent, and should represent the work of 15 units (30 points or credits or 75 counts) in accordance with the above outline. Under no circumstances must this examination be given by any one connected with the medical college.

Later, when the requirement is considered reasonable, university courses in physics, chemistry, biology and modern languages should be required in this examination.

2. Medical Education.—The medical college should give a strictly graded course covering four years of not less than thirty weeks each year, exclusive of holidays. Each year should cover not less than thirty hours per week of scheduled class room work in lectures, recitations, laboratory and clinical work. At least forty-two calendar months should elapse between the dates of matriculation and graduation. The complete course should approximate 3,600 hours and include:

(a) Two years of study, consisting largely of laboratory work in anatomy, histology, embryology, physiology, chemistry, pharmacology, physiologic chemistry, bacteriology and pathology.

(b) Two years of clinical work largely in hospitals and dispensaries, with thorough courses in internal medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, pharmacology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. There should also be a laboratory course in clinical microscopy, including hematology, and the hospital courses should be accompanied by work in properly equipped clinical laboratories.

3. Advanced Standing.—(a) Advanced standing may be granted to the extent of three years of work taken at other recognized colleges.

(b) In giving advanced standing the college should not discriminate against its own full-course students. It is meant by this that students should not be given full standing when they come from colleges not giving equivalent courses.

(c) Before granting any advanced standing the dean or secretary of the school to which the student seeks admission should obtain from the corresponding officer of the school from which the student comes a full statement of his credentials, so far as preliminary and medical education is concerned, and the standing of the student in each course he has taken.

4. Graduation.—The medical college should require of each student before graduation:

(a) Compliance with the above given requirements of preliminary and medical education.

(b) An attendance of at least 80 per cent. on each course of instruction above mentioned.

(c) The passing of a final examination in each course of instruction above mentioned with a percentage of at least 75.

(d) The individual dissection of at least one lateral half of a human cadaver.

(e) The individual attendance on and management of at least two maternity cases.

(f) The work of at least the fourth or senior year must be taken in the medical college granting the degree.

II. EQUIPMENT AND FACILITIES

1. Buildings.—The medical college buildings should be well lighted, sanitary and commodious, with ample space for laboratories, amphitheaters, examining, lecture, recitation and special research rooms, as well as storage rooms and a suitable place for such animals as are used in experimental work.

2. Laboratories.—There should be well-equipped laboratories for practical anatomy, histology, embryology, physiology, chemistry, physiologic chemistry pharmacology, bacteriology and pathology, and these laboratories should be officered by trained instructors paid to devote their entire time to the preparation of materials used in instruction and to teaching and research. By a well-equipped laboratory is understood a laboratory provided with all the microscopes and other apparatus necessary to enable each student to carry on the work of that department intelligently and successfully.

3. Hospitals, Dispensaries and Clinical Facilities.—(a) The main hospital and dispensary should be in close proximity to the college building, of easy access to the students, and should be under the control of the college at least so far as clinical material is concerned.

(b) The hospital material available for clinical purposes should be in proportion to a daily average of at least 200 patients to 100 students in the senior class.

(c) The dispensary material should be carefully classified and properly used.

4. Library, Museum, Charts, Etc.—(a) Library: The medical college should have a working medical library, including the more recent text and reference books, as well as ten or more of the chief medical periodicals. This library room should be easily accessible, should be provided with suitable tables and chairs, and should have an attendant in charge.

(b) Museum: There should be a medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed in order that any specimen may be easily found and employed for teaching purposes. The value of the pathologic collection could be greatly augmented by having slides showing the microscopic findings in each case carefully prepared, labeled, indexed and kept easily accessible. Clinical records of these cases should also be drawn up, indexed and filed for easy reference.

(c) Charts, Models, Stereopticons, Etc.—The medical college should have a supply of anatomic charts, embryologic models and other apparatus, such as a steropticon or a reflectoscope, as well as microphotographic, Roentgen ray or other apparatus, of service in the teaching of medicine.

(Continued on page 549)

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES

Number.	NAME AND LOCATION OF COLLEGE	Population of city where college is located. (Census Bureau estimate. 1906.)	No. of students registered 1908-9.		Graduates 1909.		Grads. with A.B., or B.S.	No. of teachers.	Weeks in college year.	Total fees. (Dollars.)				Executive Officer.	Session of 1909-10.		Number.
			Men.	Women.	Men.	Women.				1st year.	2nd year.	3rd year.	4th year.		Begins 1909.	Ends 1910.	
	ALABAMA		**360**	.....	**57**	.....	.....										
1	Birmingham Medical College, Birmingham.—R.	45,869	169	.....	28	.....	.....	32	28	75	75	75	100	B. L. Wyman, M.D., Dean	Sept. 29	April 28	1
2	University of Alabama, Medical Dept., Mobile.—	42,903	191	.....	29	.....	.....	25	28	100	100	100	125	Rhett Goode, M.D., Dean	Sept. 20	April 18	2
	ARKANSAS		**257**	**3**	**35**	**1**	**6**										
3	College of Physicians and Surgeons, Little Rock.—R.	39,959	80	1	14	0	4	42	28	75	75	75	100	J. P. Runyan, M.D., Dean	Oct. 1	May 1	3
4	Univ. of Arkansas, Med. Dept., Little Rock.—R.	39,959	177	2	21	1	2	32	28	75	75	75	100	C. E. Witt, M.D., Secretary	Oct. 1	April 30	4
	CALIFORNIA		**314**	**30**	**69**	**6**	**5**										
5	Cooper Medical College, San Francisco.—R. (a)	364,677	116	1	21	1	1	54	35	175	170	170	195	Henry Gibbons, Jr., M.D., Dean	Aug. 15	May 7	5
6	Univ. of California, Med. Dept., San Francisco.—R.	364,677	26	10	4	1	4	62	36	150	150	150	150	Arnold A. D'Ancona, M.D., Dean	Aug. 15	May 11	6
7	Hahn. Med. Coll. of the Pacific, San Francisco.—H.	364,677	19	4	5	1	.....	31	33	155	100	100	100	James W. Ward, M.D., Dean	Aug. 31	April 28	7
8	College of Phys. and Surg., San Francisco.—R.	364,677	40	.....	11	.....	.....	60	32	105	100	100	125	Winslow Anderson, M.D., President	Sept. 14	May 14	8
9	Oakland College of Med. and Surg., Oakland.—R.	73,812	17	.....	4	.....	.....	33	36	165	160	150	175	Edward N. Ewer, M.D., Registrar	Aug. 15	May 21	9
10	Univ. of Southern California, Los Angeles.—R. (b)	102,479	61	11	15	3	.....	61	35	.....	.....	150	150	W. Jarvis Barlow, M.D., Dean	Sept. 15	June 10	10
11	College of Physicians and Surgeons, Los Angeles.—R.	102,479	28	4	5	0	.....	42	36	135	132	107	132	Charles W. Bryson, M.D., Dean	Sept. 15	June 15	11
12	California Eclectic Medical College, Los Angeles.—E.	102,479	7	.....	4	.....	.....	27	32	200	200	200	200	J. A. Munk, M.D., Dean	Sept. 13	May 21	12
	COLORADO		**176**	**21**	**34**	**7**	**12**										
13	Denver and Gross College of Medicine, Denver.—R.	151,920	102	7	22	1	8	71	32	130	131	103	126	Frost C. Buchtel, M.D., Secretary	Sept. 28	May 26	13
14	Denver College of Phys and Surgs., Denver.—P.	151,920	25	9	2	5	1	46	32	125	126	113	126	David A. Strickler, M.D., Dean	Sept. 6	May 12	14
15	University of Colorado School of Med., Boulder.—R.	12,000	49	5	10	1	3	47	35	52	52	52	52	William P. Harlow, M.D., Dean	Sept. 13	June 8	15
	CONNECTICUT		**141**	.....	**15**	.....	**1**										
16	Yale Medical School, New Haven.—R.	121,227	141	.....	15	.....	1	64	35	168	158	150	160	Herbert E. Smith, M.D., Dean	Sept. 30	June 22	16
	DISTRICT OF COLUMBIA		**442**	**8**	**74**	**0**	**17**										
17	George Washington Univ., Dept. of Med. Wash.—R.	307,716	151	5	33	0	7	82	32	150	150	150	150	William C. Borden, M.D., Dean	Sept. 29	June 1	17
18	Georgetown Univ., School of Med., Washington.—R.	370,716	89	.....	15	.....	3	63	33	150	150	150	150	George M. Kober, M.D., Dean	Oct. 1	June 11	18
19	Howard University, Med. Dept., Washington	307,716	202	3	26	0	7	52	32	105	100	100	107	William C. McNeill, M.D., Secretary	Oct. 1	June 1	19
	GEORGIA		**764**	**5**	**141**	**1**	**16**										
20	Atlanta College of Phys and Surg., Atlanta.—R.	104,984	280	.....	37	.....	9	51	28	80	80	100	100	W. S. Elkins, M.D., Dean	Sept. 27	May 1	20
21	Atlanta School of Medicine, Atlanta.—	104,984	281	.....	51	.....	2	40	28	70	70	80	80	Edward G. Jones, M.D., Proctor	Oct. 1	May 1	21
22	Georgia Coll. of Eclectic Med. and Surg., Atlanta.—E	104,984	61	2	14	1	2	20	28	80	80	80	105	Elzie B. Thomas, M.D., Proctor	Sept. 21	April 21	22
23	Hospital Medical College, Atlanta.—E.	104,984	40	3	17	0	1	24	26	80	80	80	110	W. Bernard Lingo, M.D., Dean	Sept. 15	April 1	23
24	Medical College of Georgia, Augusta.—R.	43,125	99	.....	22	.....	2	34	28	90	85	100	100	Joseph Eve Allen, M.D., Dean	Oct. 1	May 1	24
	ILLINOIS		**2597**	**281**	**563**	**40**	**95**										
25	American Medical Missionary College, Chicago.—R.	2,049,185	36	24	1	4	.....	32	35	83	82	75	75	E. L. Eggleston, M.D., Secretary, Battle Creek, Mich.	Sept. 14	June 10	25
26	Bennett Medical College, Chicago.—R.	2,049,185	175	11	34	5	.....	57	32	105	100	100	100	John D. Robertson, M.D., President	Sept. 21	May 23	26
27	Chicago College of Medicine and Surgery.—R.	2,049,185	372	24	73	7	.....	71	30	120	115	100	115	Henry S. Tucker, M.D., Dean	Sept. 28	May 16	27
28	College of Medicine and Surgery, Chicago.—Ph.M.	2,049,185	26	7	9	1	.....	49	30	115	110	110	135	William F. Scharre, M.D., Secretary	Sept. 21	May 12	28
29	College of Physicians and Surgeons, Chicago.—R.	2,049,185	476	41	116	14	.....	198	32	145	145	150	175	William E. Quine, M.D., Dean	Oct. 1	June 8	29
30	Hahnemann Med. College and Hospital, Chicago.—H.	2,049,185	116	14	23	2	.....	86	31	100	100	100	100	W. Henry Wilson, M.D., Registrar	Sept. 21	May 15	30
31	Hering Medical College, Chicago.—H.	2,049,185	33	7	8	2	3	50	32	100	100	100	100	Robert N. Morris, M.D., Dean	Sept. 28	June 2	31
32	Illinois Medical College, Chicago.—R.	2,049,185	58	4	16	0	.....	58	32	130	130	125	125	J. F. Burkholder, M.D., President	Sept. 2	April 29	32
33	Jenner Medical College, Chicago.—R.*	2,049,185	102	10	10	2	.....	50	40	110	110	110	110	John D. MacKellar, M.D., Registrar	Aug. 30	July 1	33
34	National Medical University, Chicago.—P.*	2,049,185	135	15	11	1	3	36	36	150	150	150	150	L. D. Rogers, M.D., Dean	Oct. 1	June 30	34
35	Northwestern University Med. School, Chicago.—R.	2,049,185	537	84	172	0	23	143	31	194	200	191	185	Charles Louis Mix, M.D., Secretary	Oct. 5	May 29	35
36	Reliance Medical College.—R.*	2,049,185	79	4	17	1	4	65	39	130	130	125	125	J. F. Burkholder, M.D., President	Sept. 7	June 29	36
37	Rush Medical College, Chicago.—R.	2,049,185	452	36	73	1	62	230	34	180	180	180	180	John M. Dodson, M.D., Dean	Oct. 1	June 18	37
	INDIANA		**278**	**7**	**68**	**1**	**11**										
38	Indiana University, School of Med., Indianapolis—R.	219,154	**259**	**7**	**63**	**1**	**11**	**182**	**36**	**100**	**100**	**130**	**135**	B. D. Myers, M.D., Sec'y., Bloomington; E. D. Clark, M.D., Sec'y., Indianapolis	Sept. 21	June 22	38
39	Physiomedical Coll. of Indiana, Indianapolis.—Ph.M.	219,154	19	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	C. T. Bedford, M.D., Dean	Sept. 7	May 3	39
	IOWA		**433**	**25**	**69**	**4**	**13**										
40	Drake University College of Med., Des Moines.—R.	78,323	119	11	16	3	2	46	35	75	75	75	75	William W. Pearson, M.D., Dean	Sept. 20	June 15	40
41	Sioux City College of Medicine, Sioux City.—R.	42,520	20	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	F. E. Franchere, M.D., Dean	.....	.....	41
42	State Univ. of Iowa, Coll. of Med., Iowa City.—R.	8,497	254	12	40	1	10	32	35	60	50	50	60	Walter L. Bierring, M.D., Vice-Dean	Sept. 20	June 15	42
43	State University of Iowa, College of Homeopathic Medicine, Iowa City.—H.	8,497	40	2	7	0	1	25	35	60	50	50	60	George Royal, M.D., Dean	Sept. 20	June 15	43
	KANSAS		**200**	**8**	**30**	**1**	**1**										
44	Kansas Medical College, Topeka.—R.	41,886	66	2	17	0	.....	47	35	65	65	65	65	William E. McVey, M.D., Dean	Sept. 14	June 8	44
45	Univ. of Kansas, School of Med., Kansas City.—R (c)	77,912	85	5	7	0	1	79	35	60	60	100	100	Mervin T. Sudler, M.D., Dean, Lawrence; George H. Hoxie. M.D., Dean, Rosedale	Sept. 15	June 8	45
46	Western Eclec. Coll. of Med. and Surg., Kan. Cy.—E	77,912	49	1	6	1	.....	32	30	90	95	100	115	William H. Smith, M.D., Secretary	Sept. 6	April 30	46

	KENTUCKY		**154**	**5**	**186**	**2**	.....										
47	Louisville National Medical College, Louisville.—R..	226,129	38	2	3	1	.....	28	30	60	55	55	75	E. S. Porter, M.D., Dean..............	Oct. 1	May 13	17
48	Southwestern Homeopathic College, Louisville.—H....	226,129	10	3	2	1	.....	23	30	75	75	75	95	George S. Coon, M.D., Dean..............	Oct. 6	May 19	18
49	University of Louisville, Med. Dept., Louisville.—R..	226,129	706	.....	181	.....	.....	90	30	100	100	100	125	Thomas C. Evans, M.D., Dean...........	Nov. 15	June 30	19
	LOUISIANA		**463**	.....	**109**	.....	**30**										
50	Flint Medical College, New Orleans.—R............	314,146	24	0	6	0	.....	15	30	53	53	53	60	J. W. Thomas, M.D., Dean...............	Sept. 22	May 12	50
51	Tulane University Med. Dept., New Orleans.—R......	314,146	439	....	103	.....	30	73	30	150	150	150	150	Isadore Dyer, M.D., Dean...............	Oct. 1	May 18	51
	MAINE		**81**	....	**18**	.....	**8**										
52	Medical School of Maine, Portland.—R................	55,167	81	....	18	...	8	35	32	120	110	110	110	Alfred Mitchell, M.D., Dean, Brunswick.	Oct. 21	June 22	52
	MARYLAND		**1298**	**45**	**301**	**8**	**67**										
52	Atlantic Medical College, Baltimore—R. (d)...........	553,669	43	...	25	....	.....	50	30	95	95	95	105	Eldridge C. Price, M.D., Dean...........	Oct. 1	June 3	53
54	Baltimore Medical College, Baltimore—R..............	553,669	307	...	57	....	.....	71	32	125	125	125	125	David Streett, M.D., Dean...............	Sept. 20	May 25	54
55	College of Physicians and Surgeons, Baltimore.—R..	553,669	252	.....	46	.....	1	57	32	155	155	155	185	Charles F. Bevan, M.D., Dean...........	Oct. 1	June 1	55
56	Johns Hopkins Univ., Med. Dept., Baltimore.—R....	553,669	272	25	47	3	50	112	33	200	200	200	200	William H. Howell, M.D., Dean..........	Oct. 5	June 11	56
57	Maryland Medical College, Baltimore.—R............	553,669	95	....	37	..	...	41	33	86	86	86	110	Harry Gross, M.D., Dean.................	Sept. 15	June 1	57
58	University of Maryland, School of Med., Baltimore..	553,669	329	.....	89	....	16	62	32	155	155	155	185	R. Dorsey Coale, M.D., Dean............	Oct. 1	June 1	58
59	Woman's Medical College of Baltimore.—R...........	553,669	....	20	...	5	....	32	32	106	106	106	86	John R. Abercrombie, M.D., Dean.......	Oct. 1	June 1	59
	MASSACHUSETTS		**857**	**79**	**133**	**11**	**66**										
60	Boston University, School of Medicine.—H...........	602,278	69	26	15	3	8	64	31	127	127	127	155	John P. Sutherland, M.D., Dean.........	Oct. 7	June 1	60
61	College of Physicians and Surgeons, Boston.—R......	602,278	157	15	11	1	.....	30	36	80	105	105	135	Charles H. Cobb, M.D., Dean............	Sept. 16	June 15	61
62	Harvard Medical School, Boston.—R..................	602,278	285	....	55	...	52	166	36	220	200	200	203	Henry A. Christian, M.D., Dean.........	Sept. 30	June 30	62
63	Tufts College Medical School, Boston.—R............	602,278	346	38	52	7	6	103	32	155	155	155	155	Frederic M. Briggs, M.D., Secretary.....	Sept. 29	May 26	63
	MICHIGAN		**651**	**29**	**134**	**6**	**23**										
64	Detroit College of Medicine, Detroit.—R...............	353,535	161	....	38	...	....	104	32	115	120	90	140	F B. Walker, M.D., Registrar............	Sept. 22	May 26	64
65	Detroit Homeopathic College, Detroit.—H.............	353,535	32	2	7	0	....	36	32	95	85	75	95	J. M. Griffin, M.D., Registrar............	Sept. 14	May 1	65
66	Univ. of Michigan, Dept. of Med., Ann Arbor.—R.(e)	14,645	383	21	69	5	21	63	35	105	95	95	55	Victor C. Vaughan, M.D., Dean..........	Oct. 5	June 30	66
67	University of Michigan, Homeo. Coll., Ann Arbor.—H	14,645	75	6	20	1	2	11	35	105	95	95	55	W. B. Hinsdale, M.D., Dean.............	Oct. 5	June 30	67
	MINNESOTA		**238**	**10**	**61**	**3**	**26**										
68	Univ. of Minn., Coll. of Med. and Surg., Minneapolis	273,825	235	10	45	2	26	111	35	104	107	104	102	F. F. Wesbrook, M.D., Dean.............	Sept. 14	June 9	68
69	Univ. of Minn., Coll. of Homeo. Med. and Surg.-H.(f)	273,825	3	....	1	....	.....	.....	..	.....	.....	.....	.....	....	....	....	69
70	Hamline Univ., Med. Dept., Minneapolis.—R. (g)..	273,825	.....	....	15	1	.....	.....	..	.....	.....	.....	.....	....	....	....	70
	MISSISSIPPI		**126**	**3**	**15**	....	....										
71	University of Mississippi, Med. Dept., Vicksburg.—R	15,710	27	....	.....	.....	.....	30	32	75	75	75	75	W. S. Leathers, M.D., Dean, University; Wm. Krauss, M.D., Dean, Vicksburg..	Sept. 23	June 1	71
72	Mississippi Medical College, Meridian—R..............	20,503	99	3	15	0	...	19	28	85	85	75	100	T. A. Barber, M.D., Dean................	Oct. 1	April 30	72
	MISSOURI		**1171**	**34**	**286**	**10**	**22**										
73	University of Missouri, Med. Dept., Columbia.—R.†.	8,000	44	3	5	0	1	27	34	75	70	.....	.....	C. M. Jackson, M.D., Dean..............	Sept. 23	June 9	73
74	Kansas City Hahnemann Med. Coll., Kansas City.—H	182,376	39	7	12	2	....	44	32	105	100	100	100	William E. Cramer, M.D., Dean.........	Sept. 8	May 17	74
75	University Medical College, Kansas City.—R..........	182,376	161	....	47	...	2	6[illegible]	32	100	100	100	185	J. M. Frankenburger, M.D., Dean.......	Sept. 8	May 13	75
76	Ensworth Medical College, St. Joseph.—R............	118,004	72	....	24	...	....	34	31	90	95	75	95	T. E. Potter, M.D., Secretary............	Sept. 20	May 10	76
77	American Medical College, St. Louis.—E..............	649,320	25	3	6	1	.....	28	31	80	80	80	100	J. J. Link, M. D., Dean..................	Sept. 1	May 4	77
78	Barnes Medical College, St. Lonis.—R.................	649,320	117	7	33	3	.....	69	32	100	100	100	100	C.M. Ament, M.D., Secretary...........	Sept. 14	May 14	78
79	Hippocratean College of Medicine, St. Louis.—R.*..	649,320	28	3	0	0	.....	28	38	105	100	100	125	Emory Lanphear, M.D., Dean..........	Sept. 6	June 15	79
80	Homeopathic Med. Coll. of Missouri, St. Louis.—H.(h)	649,320	13	2	2	0	.....	....	...	.....	.....	.....	....	....	....	....	80
81	St. Louis University, School of Medicine.—R.........	619,320	243	....	47	.....	15	121	32	110	110	110	110	E. P. Lyon, M.D., Dean..................	Oct. 1	May 30	81
82	St. Louis College of Physicians and Surgeons.—R....	649,320	226	8	62	4	.....	35	32	80	75	75	85	Waldo Briggs, M.D., Dean...............	Sept. 9	May 7	82
83	Washington University, Med. Dept., St. Louis.—R..	649,320	200	1	48	0	4	99	33	137	133	117	102	William H. Warren, Ph.D., Dean........	Sept. 21	June 2	83
	NEBRASKA		**347**	**20**	**51**	**6**	**13**										
84	Creighton Medical College. Omaha.—R.................	124,167	166	11	27	3	1	51	32	105	100	100	105	D. C. Bryant, M.D., Dean...	Sept. 1	May 2	84
85	Univ. of Nebr., Coll. of Med., Lincoln and Omaha.—R	124,167	117	5	8	1	7	84	32	100	100	100	100	Harold Gifford, M.D., Dean, Omaha.....	Sept. 21	May 19	85
86	Lincoln Medical College, Lincoln.—E..................	48,232	40	2	8	1	4	44	35	80	75	75	85	R. H. Spradling, M.D., Secretary........	Sept. 9	June 5	86
87	Nebraska College of Medicine, Lincoln—R.(h)..........	48,232	24	2	8	1	1	...	...	.....	.....	.....	.....	....	....	....	87
	NEW HAMPSHIRE		**58**	....	**14**	.....	**6**										
88	Dartmouth Medical School, Hanover.—R...............	1,684	58	....	14	.....	6	24	36	100	100	100	100	William T. Smith, M.D., Dean.........	Sept. 24	June 30	88
	NEW YORK		**2048**	**76**	**421**	**8**	**86**										
89	Albany Medical College, Albany.—R....................	98,537	180	....	37	.....	6	65	31	130	145	120	130	Willis G. Tucker, M.D., Registrar.......	Sept. 21	May 17	89
90	Columbia Univ., Coll. of Phys. and Surg., N. Y.—R.	4,113,043	312	....	82	.....	55	163	33	255	250	250	275	Samuel W. Lambert, M.D., Dean.........	Sept. 22	June 1	90
91	Cornell University Medical College, New York.—R..	4,113,043	197	20	52	2	9	167	34	190	185	185	200	W. M. Polk, M.D., Dean................	Sept. 29	June 15	91
92	Eclectic Medical College of the City of New York.—E.	4,113,043	86	10	9	0	....	39	32	125	125	125	155	George W. Boskowitz, M.D., Dean.......	Sept. 15	May 15	92
93	Fordham University School of Med., New York.—R.	4,113,043	43	.....	11	.....	1	73	29	195	190	190	180	James J. Walsh, M.D., Dean.............	Sept. 30	May 23	93
94	Long Island College Hospital, New York.—R.........	4,113,043	364	.....	75	.....	.....	107	32	200	200	160	195	Joseph H. Raymond, M.D., Secretary..	Sept. 27	June 1	94
95	New York Homeopathic Med. Col. and Hospital.—H.	4,113,043	109	.....	16	.....	.....	74	30	130	130	125	155	R. S. Copeland, M.D., Dean.............	Oct. 6	May 12	95
96	New York Med. Coll., and Hosp. for Women.—H....	4,113,043	......	24	.....	4	....	38	30	....	.....	....	....	Helen Cooley Palmer, M.D., Dean......	Oct. 1	May 14	96
97	Univ. and Bellevue Hosp. Med. Col., New York.—R.	4,113,043	445	.....	74	.....	8	123	32	200	200	200	200	Egbert Le Fevre, M.D., Dean............	Sept. 29	June 1	97
98	Syracuse University, College of Med., Syracuse.—R.	118,880	136	13	31	2	5	57	32	181	191	151	166	John L. Heffron, M.D., Dean............	Oct. 5	June 8	98
99	University of Buffalo, Medical Dept., Buffalo.—R....	381,819	176	9	34	0	2	97	32	185	180	140	140	Matthew D. Mann, M.D., Dean..........	Sept. 27	May 27	99
	NORTH CAROLINA		**384**	**1**	**51**	.....	**4**										
100	Leonard Medical School, Raleigh.—R....................	14,225	125	.....	22	.....	2	10	30	15	15	15	25	James McKee, M.D., Dean................	Sept. 30	May 12	100
101	University of N. Carolina, Med. Dept., Raleigh.—R.	14,225	113	.....	12	.....	.....	45	35	114	116	75	80	I. H. Manning, M.D., Dean, Chapel Hill; H. A. Royster, M.D., Dean, Raleigh	Sept. 6	June 1	101
102	North Carolina Medical College, Charlotte.—R........	22,009	93	1	17	0	2	29	30	85	85	85	100	W. O. Nisbet, M.D., Dean................	Sept. 8	April 30	102
103	Wake Forest School of Medicine, Wake Forest.—R.†	823	53	.....	.....	.....	.....	10	31	100	100	.....	.....	John Brewer Powers, M.D., Dean.........	Sept. 6	May 25	'03
	NORTH DAKOTA		**21**	**1**	.....	.....	.....										
104	University of North Dakota, Medical Department, University (Grand Forks)—R.†	10,127	21	1	.....	.....	.....	16	35	50	50	.....	.....	M. A. Brannon, A.M., Dean...	Sept. 21	June 16	104

R, Regular; H, Homeopathic; E, Eclectic; P, Panpathic.

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES—(Continued)

Number.	NAME AND LOCATION OF COLLEGE	Population of city where college is located. (Census Bureau estimate, 1906.)	No. of students registered 1908-9.		Graduates 1909.		Grads. with A.B., or B.S.	No. of teachers.	Weeks in college year.	Total fees. (Dollars.)				Executive Officer.	Session of 1909-10.		Number.
			Men.	Women.	Men.	Women.				1st year.	2nd year.	3rd year.	4th year.		Begins 1909.	Ends 1910.	
	OHIO		**767**	**23**	**169**	**8**	**40**										
105	Cleveland College of Phys. and Surg., Cleveland.—R.	460,327	83	9	15	1	3	61	32	130	130	117	110	R. E. Skeel, M.D., Dean	Oct. 1	June 1	105
106	Cleveland Homeopathic Med. College, Cleveland.—H.	460,327	38	3	11	2	....	57	31	125	125	125	125	George H. Quay, M.D., Dean	Sept. 23	May 14	106
107	Western Reserve Univ., Med. Dept., Cleveland.—R.	460,327	98	....	25	....	22	98	34	125	125	125	125	F. C Waite, M.D., Secretary	Oct. 1	June 16	107
108	Eclectic Medical Institute, Cincinnati.—E.	345,230	81	....	16	....	1	25	31	90	90	90	90	John K. Scudder, M.D., Secretary	Sept. 20	May 4	108
109	Medical College of Ohio, Cincinnati.—R. (l)	345,230	118	2	30	1	7	....	....	....	....	....	....	....	....	....	109
110	Miami Medical College, Cincinnati.—R. (i)	345,230	71	2	16	1	2	....	....	....	....	....	....	....	....	....	110
111	Ohio-Miami Med. Col. of the Univ. of Cincinnati.—R.	345,230	....	....	....	....	....	128	33	130	125	125	150	E. Otis Smith, M.D., Secretary	Sept. 27	June 4	111
112	Pulte Medical College, Cincinnati.—H.	345,230	14	2	3	1	....	32	32	80	75	75	100	C. E. Walton, M.D., Dean	Sept. 30	May 25	112
113	Starling-Ohio Medical College, Columbus.—R.	145,414	228	3	48	2	4	57	31	115	110	105	125	George M. Waters, M.D., Dean	Sept. 22	May 17	113
114	Toledo Medical College, Toledo.—R.	150,980	36	2	5	0	1	50	32	100	100	100	100	James Donnelly, M.D., Dean	Oct. 1	May 26	114
	OKLAHOMA		**57**	**4**	**6**	...	...										
115	Epworth College of Medicine, Oklahoma City.—R.	20,990	48	3	6	0	....	43	29	100	100	75	105	A. K. West, M.D., Dean	Oct. 1	May 9	115
116	Univ. of Oklahoma, School of Med., Norman.—R.†	3,040	9	1	....	...	....	12	35	**	**	....	....	Charles S. Bobo, M.D., Dean	Sept. 14	June 9	116
	OREGON		**100**	**3**	**21**	**2**	**2**										
117	University of Oregon, Med. Dept., Portland.—R.	109,884	72	2	14	1	2	41	31	115	113	107	58	S. E. Josephi, M.D., Dean	Sept. 13	May 2	117
118	Willamette University, Medical Dept., Salem.—R.	7,287	28	1	7	1	....	18	30	132	123	82	58	W. H. Byrd, M.D., Dean	Oct. 5	May 29	118
	PENNSYLVANIA		**2374**	**157**	**432**	**29**	**69**										
119	Hahnemann Med. Coll. and Hosp., Philadelphia.—H.	1,441,735	187	....	58	....	6	73	32	155	150	150	150	Herbert L. Northrop, M.D., Dean	Sept. 27	June 1	119
120	Jefferson Medical College, Philadelphia.—R.	1,441,735	591	....	130	....	12	120	34	180	180	180	180	James W. Holland, M.D., Dean	Sept. 24	June 6	120
121	Medico-Chirurgical College of Philadelphia.—R.	1,441,735	461	....	56	....	....	95	32	150	150	150	150	Seneca Egbert, M.D., Dean	Sept. 24	June 6	121
122	Temple University Med. Dept., Philadelphia.—R.	1,441,735	230	15	16	2	3	70	34	150	150	150	150	I. Newton Snively, M.D., Dean	Sept. 15	June 4	122
123	University of Penn., Dept. of Med., Philadelphia.—R	1,441,735	544	....	110	....	37	156	34	200	200	200	200	Charles H. Frazier, M.D., Dean	Sept. 24	June 15	123
124	Woman's Med. Coll. of Penn., Philadelphia.—R.	1,441,735	....	125	...	24	4	57	33	140	140	140	140	Clara Marshall, M.D., Dean	Sept. 22	June 1	124
125	University of Pittsburg, Med. Dept., Pittsburg.—R.	375,028	361	17	53	3	7	43	33	....	....	....	....	Thomas S. Arbuthnot, M.D., Dean	Oct. 5	June 15	125
	PHILIPPINE ISLANDS		**212**	....	**34**	...	....										
126	Philippine Medical School, Manila.—R. (j)	219,928	52	....	8	...	....	42	35	....	...	....	....	Harry T. Marshall, M.D., Secretary	June 7	Feb. 26	126
127	Univ. of St. Thomas, Faculty of Med., Manila.—R. (k)	219,928	160	....	26	...	....	154	35	....	...	....	....	Blas C. Aleuaz, Lic., Secretary	....	....	127
	SOUTH CAROLINA		**213**	....	**38**	...	...										
128	Medical College of South Dakota, Charlestown.—R.	56,317	213	....	38	....	....	31	28	100	100	75	75	Robert Wilson, Jr., M.D., Dean	Oct. 1	May 4	128
	SOUTH DAKOTA		**9**	**2**	....	...	....										
129	Univ. of So. Dakota, Coll. of Med., Vermilion.—R.	2,183	9	2	....	....	....	8	35	60	60	....	....	C. P. Lommen, B.S., Dean	Sept. 13	June 9	129
	TENNESSEE		**1712**	**14**	**402**	**4**	**42**										
130	Knoxville Medical College, Knoxville.—R.	36,051	22	1	6	1	2	11	26	45	40	45	50	H. M. Green, M.D., Secretary	Nov. 1	May 31	130
131	Tennessee Medical College, Knoxville.—R.	36,051	83	1	13	0	....	27	28	75	75	75	100	E. R. Zemp, M.D., Registrar	Oct. 1	May 1	131
132	Meharry Medical College, Nashville.—R.	84,703	267	8	55	3	8	26	28	53	55	55	60	G. W. Hubbard, M.D., Dean	Sept. 15	April 14	132
133	Univ. of Nashville, Med. Dept., Nashville.—R. (l)	84,703	228	....	61	....	10	....	....	....	....	....	....	....	....	....	133
134	Univ. of Tennessee, Dept. of Med., Nashville.—R. (l)	84,703	119	....	41	....	....	....	....	....	....	....	....	....	....	....	134
135	Universities of Nashville and Tennessee, Department of Medicine, Nashville.—R.	84,703	....	....	....	....	....	44	30	125	125	125	150	R. O. Tucker, M.D., Dean	Sept. 15	May 2	135
136	Vanderbilt University, Med. Dept., Nashville.—R.	84,703	209	....	49	....	....	45	30	130	130	130	155	William L. Dudley, M.D., Dean	Sept. 15	May 1	136
137	College of Physicians and Surgeons, Memphis.—R.	125,235	84	....	11	....	....	45	30	100	100	100	125	Heber Jones, M.D., Dean	Sept. 15	May 1	137
138	Memphis Hospital Medical College, Memphis.—R.	125,235	412	....	98	....	13	34	28	75	75	75	100	W. B. Rogers, M.D., Dean	Oct. 1	May 1	138
139	Univ. of West Tennessee, Med. Dept., Memphis.—R.	125,235	25	....	8	....	....	18	28	40	40	40	50	M. V. Lynk, M.D., Dean	Sept. 14	April 14	139
140	Chattanooga Medical College, Chattanooga.—R.	34,297	108	4	24	0	4	24	29	75	75	75	75	J. R. Rathmell, M.D., Dean	Sept. 22	May 2	140
141	Univ. of the South, Med. Dept., Sewanee.—R. (m)	500	125	....	36	....	5	22	28	....	....	....	....	John S. Cain, M. D., Dean	April 1, '09	Oct. 28, '09	141
	TEXAS		**420**	**12**	**80**	**1**	**2**										
142	Fort Worth University, Med. Dept., Ft. Worth.—R.	27,096	99	1	19	0	1	38	31	105	105	105	130	William R. Thompson, M.D., Dean	Sept. 27	May 13	142
143	University of Texas, Dept. of Med., Galveston.—R.	34,355	203	8	36	1	1	25	32	55	30	20	5	William S. Carter, M.D., Dean	Oct. 1	May 31	143
144	Baylor University, College of Medicine, Dallas.—R.	52,793	50	3	16	0	....	36	28	80	75	75	100	Edward H. Cary, M.D., Dean	Oct. 1	May 1	144
145	Southwestern University Medical College, Dallas.—R.	52,793	68	....	9	....	....	32	28	110	105	100	125	John O. McReynolds, M.D., Dean	Sept. 29	April 29	145
	UTAH		**17**	**1**	....	....	....										
146	Univ. of Utah, Dept. of Med., Salt Lake City.—R.†	61,202	17	1	....	....	....	21	34	65	65	...	....	Byron Cummings, A.M., Dean	Sept. 16	June 1	146
	VERMONT		**166**	....	**33**	....	**4**										
147	University of Vermont, Coll. of Med., Burlington.—R.	21,070	166	....	33	....	4	56	30	130	125	125	150	James N. Jenne, M.D., Secretary	Nov. 10	June 29	147
	VIRGINIA		**434**	....	**95**	....	**8**										
148	Medical College of Virginia, Richmond.—R.	87,246	206	....	35	....	3	48	32	100	100	100	130	Christopher Tompkins, M.D., Dean	Sept. 14	May 18	148
149	University College of Medicine, Richmond.—R.	87,246	140	....	42	....	5	75	32	100	100	100	100	A. L. Gray, M.D., Dean	Sept. 14	May 17	149
150	Univ. of Virginia, Dept. of Med., Charlottesville.—R.	6.449	88	....	18	....	....	42	36	150	140	120	100	Richard H. Whitehead, M.D., Dean	Sept. 16	June 15	150

	WEST VIRGINIA		**40**	.....	.....	.....	.....										
151	West Va. Univ., Coll. of Med., Morgantown.—R (n)	6,000	40	.....	.....	.....	.....	8	36	25	25	.....	.....	John N. Simpson, M.D., Dean...........	Sept. 20	June 15	151
	WISCONSIN		**244**	**14**	**35**	**3**	**5**										
152	Marquette University, Med. Dept., Milwaukee.—R.	317,903	157	9	20	3	3	66	30	135	135	135	150	Warren B. Hill, M.D., Dean.............	Oct. 5	May 23	152
153	Wisconsin Coll. of Phys. and Surg., Milwaukee.—R.	317,903	58	2	15	0	2	53	31	125	125	125	125	Thos. C. Phillips, M.D., Dean...........	Oct. 1	May 28	153
154	Univ. of Wisconsin, Coll. of Med., Madison.—R (o)	25,128	29	3	.....	.....	.....	45	35	60	80	.....	.....	Charles R. Bardeen, M.D., Dean..........	Sept. 27	June 22	154
	CANADA		**1731**	**24**	**352**	**4**	**76**										
155	Dalhousie Univ., Halifax Med. Coll., Halifax, N. S.	50,000	57	4	8	0	.....	27	32	....	...	....	.....	A. W. H. Lindsay, M.D., Secretary......	Aug. 26	April 28	155
156	Queen's Univ., Faculty of Med., Kingston, Ont. (p)	17,961	208	.....	40	.....	7	26	30	100	100	100	130	A. R. B. Williamson, M.D., Secretary....	Sept. 29	April 27	156
157	Western Univ., Faculty of Med., London, Ont.......	48,000	104	.....	25	.....	5	20	30	100	100	100	100	W. E. Waugh, M.D, Registrar...........	Sept. 21	May 1	157
158	McGill University, Med. Faculty, Montreal, Q. (p)..	400,000	328	.....	71	.....	18	95	33	138	148	154	184	John W. Scane, M.D., Registrar.........	Oct. 1	June 8	158
159	Laval University, Med. Faculty, Montreal, Q. (p)..	400,000	214	.....	41	.....	32	50	35	110	118	126	138	E. P. Lachapelle, M.D., Dean...........	Sept. 8	June 10	159
160	Laval University, Med. Faculty, Quebec, Q. (p)....	68,840	95	.....	11	.....	11	17	35	60	60	60	60	Laurent Catellier, M.D., Dean	Sept. 15	June 20	160
161	Univ. of Toronto, Med. Faculty, Toronto, Ont. (p)..	328,911	611	19	89	1	.....	140	30	150	150	150	150	A. Primrose, M.D., Secretary............	Oct. 1	May 13	161
162	University of Manitoba, Manitoba Medical College, Winnepeg. (p)	105,000	114	1	36	0	3	40	29	130	125	125	125	H. H. Chown, M.D., Dean................	Sept. 27	May 1	162

R, Regular; H, Homeopathic; E, Eclectic; Ph.M., Physiomedical; P, Panpathic.

REFERENCES TO TABLE 1

Heavy faced figures show totals by states.

* Night schools. ** No tuition is charged.

† Colleges giving only the first two years of the medical course.

(a) Now the Leland Stanford Junior University College of Medicine.

(b) Now the Los Angeles Medical Department of the University of California.

(c) For non-residents of Kansas the fees for each of the first two years are $70.

(d) The number of graduates given includes eight post-graduates.

(e) For non-residents of Michigan the total fees for each of the four years respectively are $130, $105, $105 and $65.

(f) Closed by the Board of Regents of the University of Minnesota, an elective chair each in materia medica and therapeutics in the College of Medicine and Surgery being substituted.

(g) Classes of 1910, 1911 and possibly 1912 will complete their work in the University of Minnesota College of Medicine and Surgery, but will obtain their degrees from Hamline University.

(h) These colleges have been suspended.

(i) These colleges have merged, forming the Ohio-Miami Medical College of the University of Cincinnati.

(j) The expenses of scholarship students including transportation, tuition and board are borne by the government.

(k) Number of students approximate; graduates given for 1908.

(l) These colleges have just merged, forming the Medical Department of the Universities of Nashville and Tennessee.

(m) Will be suspended after the close of the present session.

(n) Fees for non-residents of West Virginia are $50 per year.

(o) Non-residents of Wisconsin pay an additional fee of $50 per year.

(p) Total fees for the fifth year in the Canadian colleges are the same as for the fourth year.

(Continued from page 545)

III. CONDUCT OF THE COLLEGE.

1. The medical college should literally observe its published requirements for admission, tuition, time of attendance on the session and graduation, which it should definitely set forth, together with complete lists of its matriculates and annual graduates, in regular annual catalogues or announcements.

2. New medical colleges may be recognized on application if on examination they are found to comply with the above requirements.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The requirements for admission to and graduation from colleges holding membership are as follows:

Preliminary Education: (a) A bachelor's degree from an approved college or university. (b) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight-year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of Latin, two years (four points) of mathematics, two years (4 points) of English, one year (2 points) of history, one year (2 points) of physics, and six years (12 points) of further credit in language, literature, history or science. (c) An examination in the following branches totaling 30 points: A. Required (16 points): Mathematics (4 points), English (4 points), History (2 points), Latin (4 points), Physics (2 points).

B. Elective (14 points): English language and literature, 4 points; language, German, French, Spanish or Greek, in each not less than 2 points; solid geometry and trigonometry (½ year each), 2 points; biology (one year) or botany and zoology (½ year each), 2 points; chemistry (1 year), 2 points; physical geography and geology (½ year each), 1 point; physiology and hygiene (½ year each), 1 point; astronomy (½ year), 1 point; drawing (½ year), 1 point. One point in any subject in a high school or academic course demands not less than five periods per week of forty-five minutes each for eighteen weeks. (d) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states having no board of examination, may be accepted in lieu of any part of this examination. (e) This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located as provided for in subsection (d). In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

Advanced Standing: Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course, but no member shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a direct written communication certifying to the applicant's professional and moral qualifications, and to the exact work he had done in said college.

CURRICULUM

	No. of Hours of Lectures.	Hours of Laboratory.	Hours of Clinics.	Total.
Histology	30	60	..	90
Embryology	30	60	..	90
Osteology	30	..	..	30
Anatomy	190	230	..	420
Physiology	180	120	..	300
Chemistry and Toxicology.....	100	200	..	300
Materia Medica	40	20	..	60
Pharmacology	40	20	..	60
Therapeutics	90	..	..	90
Bacteriology	40	100	..	140
Pathology	100	140	..	240
Medical Zoology, Postmortem Work and Clinical Microscopy	30	60	..	90
Physical Diagnosis	20	..	80	100
Practice of Medicine	180	..	360	540
Surgery	180	..	360	540
Obstetrics	100	..	60	160
Gynecology	50	..	110	160
Pediatrics	40	..	60	100
Eye and Ear	30	..	30	60
Nose and Throat	30	..	30	60
Mental and Nervous Diseases..	60	..	60	120
Electro-Therapeutics	20	..	40	60
Genito-Urinary Diseases.......	30	..	30	60
Dermatology and Syphilis.....	20	..	20	40
Hygiene and Public Health....	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4,000

No time credit shall be given to holders of a Bachelor's degree, but subject credit can be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

Medical Education.—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar

(Continued on page 552)

Number.	NAME OF COLLEGE	1 Alabama 687	2 Arizona......12	3 Arkansas 381	4 California 282	5 Colorado 150	6 Connecticut 263	7 Delaware 54	8 Dist. of Col......118	9 Florida 157	10 Georgia 659	11 Idaho 26	12 Illinois 1930	13 Indiana 610	14 Iowa 722	15 Kansas 387	16 Kentucky 497	17 Louisiana. 456	18 Maine 174	19 Maryland 311	20 Massachusetts ...813	Number.
1	Birmingham Medical College.—	153																1				1
2	University of Alabama, Med. Dept.—R.	175	1																			2
3	College of Phys. and Surg., Little Rock.—R.		3	56														6				3
4	University of Arkansas, Med. Dept.—R.	1		143									2	1	1	1	1	7				4
5	Cooper Medical College.—R.				72									2	5	2	1		1		2	5
6	University of California, Med. Dept.—R.				33								2									6
7	Hahnemann Medical College of the Pacific.—H				23																	7
8	College of Phys. and Surg., San Francisco.—R				18	1									3	1						8
9	Oakland College of Medicine and Surgery.—R.				15																	9
10	Univ. of Southern California, Coll. of Med.—I		1		16	2	1				1		5	2	7	3			2		2	10
11	College of Phys. and Surg., Los Angeles.—R.		1		4								1	2	3		1				1	11
12	California Eclec. Med. Coll., Los Angeles.—E				7																	12
13	Denver and Gross College of Medicine.—R.				1	63		1				1	4	2	7	2	1	1			1	13
14	Denver Coll. of Physicians and Surgeons.					27											3					14
15	University of Colorado, Medical Dept.—R.					23						2	2	1	1	1					1	15
16	Yale Medical School, New Haven.—R.			1			101						3			1					6	16
17	George Washington Univ., Dept. of Med.—R.	1			1	1			57	1			3	1	1	2		3		5	3	17
18	Georgetown University, School of Med.—R.	1			3		3	1	23				3							3	3	18
19	Howard University, Medical Department.—R.	1		1			1	3	19	8	9		3	1				5		12	3	19
20	Atlanta Col. of Phys. and Surg., Atlanta.—R	32					1			26	178						1	1				20
21	Atlanta School of Medicine.—R.	26	1							19	189							4			1	21
22	Georgia Coll. of Eclectic Med. and Surg.—E.	9		1						7	47											22
23	Hospital Medical College, Atlanta.—E.			2						5	29											23
24	Medical College of Georgia, Augusta.—R.									2	78											24
25	American Medical Missionary College.—R.	1			1						1		4	3	2	1						25
26	Bennett Medical College.—R.	1				1	2			1			99	7	4	1	4					26
27	Chicago College of Medicine and Surgery.—R.	3			1		1						169	36	14	10	3	1			1	27
28	College of Med. and Surg., Chicago.—Ph.M.												13	4	3	1					1	28
29	College of Phys. and Surg., Chicago.—R.			1	2	2				1		2	306	17	23	6	4					29
30	Hahnemann Med. Coll. and Hosp., Chicago. H												70	11	14	6					2	30
31	Hering Medical College, Chicago.—H.					1				1			13	3	1		1			1	2	31
32	Illinois Medical College, Chicago.—R.†												33	22			1	1				32
33	Jenner Medical College, Chicago.—R.												112									33
34	National Medical University.—P.												150									34
35	Northwestern University Medical School.—R.	1		1	6	7					2	3	268	31	59	20	3	2				35
36	Reliance Medical College.—R.												83									36
37	Rush Medical College.—R.	3		4	9	2			1	1		3	176	25	46	25	2	2				37
38	Indiana University, School of Medicine.—R.												5	250			1				1	38
39	Physiomedical College of Indiana.—Ph.M.													19								39
40	Drake Univ. Coll. of Med., Des Moines.—R.												20	1	75	3						40
41	Sioux City Coll. of Med., Sioux City.—R.														20							41
42	State Univ. of Iowa, Coll. of Med.—R.												10		234		1		1	1		42
43	State Univ. of Iowa, Coll. of Homeo. Med.—H											1	1		34							43
44	Kansas Medical College, Topeka.—R.												1			65						44
45	University of Kansas, School of Medicine.—R.															80						45
46	Western Eclec. Coll. of Med. and Surg.—E.	1		2		1							2		3	10	1					46
47	Louisville Nat. Medical Coll., Louisville.—R.	2								1	1			4			21					47
48	Southwestern Homeopathic Med. College.—H.													3			8					48
49	University of Louisville, Med. Dept.—R.	7	2	17	3		1	1		3	8		24	63	7	5	305	19	1			49
50	Flint Medical College.R.†			1							1							12				50
51	Tulane Univ. of Louisiana, Med. Dept.—R.	55		10			1			6	11							204	1			51
52	Medical School of Maine.—R.				1														69		4	52
53	Atlantic Medical College.—R.†						1	1												30		53
54	Baltimore Medical College.—R.	1		2	3		27		3	1			1		1			1	9	27	37	54
55	College of Phys. and Surg., Baltimore.—R.	1					19	2			2					1				31	18	55
56	Johns Hopkins Med. School, Baltimore.—R.	7		4	11	1	15	1	3	2	10		8	6	4	4	8	4	4	41	6	56
57	Maryland Medical College.—R.						2	2	1		1		1	2			1		1	21	2	57
58	University of Maryland, School of Med.—R.				2		5	9		7	8		1	1	1	2	1		1	116	6	58
59	Woman's Medical College of Baltimore.—R.						1						1		1					3	1	59
60	Boston University, School of Medicine.—H.				1								2		1				5		61	60
61	College of Phys. and Surg., Boston.—R.				2		3			1									7		86	61
62	Harvard Medical School, Boston.—R.			1	10	3	4		1				5	3	3	2	3		13	1	150	62
63	Tufts College Medical School.—R.						6								2				23		306	63
64	Detroit College of Medicine.—R.								1				2	3							1	64
65	Detroit Homeopathic College, Detroit.—H.												2									65
66	University of Michigan, Dept. of Med.—R.	1			6	2			1	1	1	1	18	19	9		4		2		3	66
67	Univ. of Michigan, Homeopathic Coll.—H.								1				1	3	1	1		1				67
68	Univ. of Minn., Coll. of Med. and Surg.—R		1										1		2	1						68
69	Univ. of Minn., Coll. of Homeo. M. and S.—H																					69
70	Univ. of Mississippi, Med. Dept., Oxford.—										1						1	2				70
71	Mississippi Medical College, Meridian.—R.	5								1												71
72	Univ. of Missouri, Med. Dept., Columbia.—I			1									1		1							72
73	Kansas City Hahnemann Med. Coll.—H.†				1								2	1	3	16						73
74	University Medical College, Kansas City.—R.			1									1		3	65	1					74
75	American Medical College, St. Louis.—E.																					75
76	Barnes Medical College, St. Louis.—R.†			4									32	1	1	4	4	1				76
77	Ensworth Medical College, St. Joseph.—R.											1			8	12						77
78	Hippocratean College of Medicine.—R.												4									78
79	Homeopathic Medical College of Missouri.—H.																					79
80	St. Louis University, School of Medicine.—R	1		4		2						3	61	4	13	6	1	2		1		80
81	St. Louis College of Phys. and Surg.—R.	2		6	1								93	3	12	3	4	1				81
82	Washington Univ., Med. Dept., St. Louis.—R.	1		4							1	1	43	2	4	1	2		1	1		82
83	John A. Creighton Medical College.—R.				2							1	1		46	3					1	83
84	University of Nebraska, Coll. of Med.—R.														5	1		1				84
85	Lincoln Medical College, Lincoln.—E.					1								1	1	1						85
86	Nebraska College of Medicine.—R.												1		1							86
87	Dartmouth Medical School.—R.						5						2						4		15	87
88	Albany Medical College.—R.							1													9	88
89	Columbia Univ., Coll. of Phys. and Surg.—R.	4			3	1	10			1	2		3		2	2	2		2		4	89
90	Cornell University Medical College.—R.				1		1						1	1	1			1	1		6	90
91	Eclectic Med. Coll. of the City of New York.—I																					91
92	Fordham University School of Medicine.—R						2														1	92
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Number.	21 Michigan 491	22	23 Mississippi 535	24 Missouri 813	25 Montana 31	26 Nebraska 346	27 New Hampshire..103	28 New Jersey....451	29 New Mexico....8	30 New York....2123	31 Nevada 8	32 North Carolina...511	33 North Dakota....77	34 Ohio 929	35 Oklahoma 186	36 Oregon 116	37 Pennsylvania ...2159	38 Rhode Island....99	39 South Carolina...393	40 South Dakota....87	41 Tennessee 537	42 Texas 751	43 Utah 75	44 Vermont 106	45 Virginia 482	46 Washington 89	47 West Virginia....271	48 Wisconsin 430	49 Wyoming 14	50 Hawaii, P.I., P.R. 83	51 Foreign 539	52 Totals 21,933	Number
1			8									1			1				2			3										169	1
2			14																1													191	2
3			2	4															1		3	5			1							81	3
4				3											13		1				2	2							1			179	4
5		3		1		2				2	3			1		5	1	2					1								11	117	5
6											1																					36	6
7																																23	7
8				1						1												2		1						1	11	40	8
9												1				1																17	9
10	4	3		4		3				1			1	2			5					1		1				3			2	72	10
11				5		1		1	1	1				1		1												1			7	32	11
12																																7	12
13		1			2	2				3				4			4		1			1	2		3			1	1			109	13
14				1						1												1							1			34	14
15	2		1			1				3				5			1					2		2					3		3	54	15
16	1			2				1		12						1	4	2						2							4	141	16
17	2			1		1	1	1		10		5	1	4	4		9	1	4		3	1	1	2	11		5				10	156	17
18			1					2		7		1		2	1		9	5							6	1	2	3			9	89	18
19			4	4	1			5		6		6		6			11	2	7		3	5			28		4			47		205	19
20			4							4		4			2		1		20		1				1							280	20
21			7	1						1		12							13		1	2			1		2				1	281	21
22														1								1										66	22
23												1			1				2		1	2										43	23
24		1																	16			1			1							99	24
25	10		1	1						5				6			2		1		1							1			19	60	25
26	5	2		4		1		1		12		1		3	2		10		1	5						1		15			3	186	26
27	18	12	4	9		3				14			5	17	2		28	1		3		3	3				4	15			16	396	27
28	1	1												3								5									1	33	28
29	17	14		11	2	8				3		1	7	12	1	1				12		2	4			6	1	31		7	13	517	29
30	3	3		1						1				3			2			1					1	1	1	3			7	130	30
31	2		1	2						2							1					1						2	1		5	40	31
32												1		3			1															62	32
33																																112	33
34																																150	34
35	14	27	1	8	6	17				5			10	20	1	2	2			15	4	4	10			8		39	1	3	21	621	35
36																																83	36
37	10	8	4	19	3	12		1		5			7	28	2	9	3	1		4	2	4	10	1	1	5	1	34		3	12	488	37
38	1												1	3							2						1				1	266	38
39																																19	39
40		2		14	1	1				1			2	1	1					3						2		2			1	130	40
41																																20	41
42		3		2	2	2		1					1			1				5								2				266	42
43				1		2														1					1	1						42	43
44				2																												68	44
45				10																												90	45
46				8		4			1					3	8							4				1					1	50	46
47			2	1								1							1		2				1		1				2	40	47
48										1							1															13	48
49	2	8	26	24	1	1		4	1	6		5		7	3	2	13		5		20	29		2	12		61	2			6	706	49
50			8																			2										24	50
51			85									2		2	2				4		6	41			1						8	439	51
52							2			1								1													3	81	52
53										2							8								1							43	53
54						1	7	22		53		2		3			53	5	2		1	1		1	11	1	15				16	307	54
55					1			22		20		3		13			36	17			1		1		6		41				17	252	55
56		1	1	9	1	1	3	6		29		9		14		3	28	1	7		3	10			9	8	4	6	1		4	297	56
57								3		47		1		1			18		1						4		18				8	95	57
58		1		2			1	11		11		33		2	1		26	4	20		1			1	21		9			8	17	329	58
59								1		2		1							1						1		1			5	1	20	59
60							3			4				2		1	2	4						4							5	95	60
61			1				4			8								7				1		1	2		2				47	172	61
62	2	1		1		2	8	2		10		3		6	1	3	5	12	1			1				4			2		13	285	62
63		1					17		1	1				2				17						3							5	384	63
64	112	1								3				3			4											1		1	29	161	64
65	30													1																	1	34	65
66	189	5		4	3	2		1		34	1	2	2	38		2	18	1	3	9		2	1	2	1	4		4		1	7	404	66
67	33	1				1				24				7			3			2	1						1					81	67
68		207								1			14				1			7				1		2		7				245	68
69		3																														3	69
70			23																													27	70
71			96																													102	71
72				40											1	1						1										47	72
73	1			14		1				1							1			1	1					1		1			1	46	73
74				75	1	1			1						10		1									1			1		2	164	74
75				28																												28	75
76				68		1									2							6										124	76
77				48		2									1																	72	77
78				27																												31	78
79				15																												15	79
80	3	2		104		1				3				5	7		1		1			4	2					6			6	243	80
81				81	1	2				2	2		1		8							10						1			1	234	81
82			1	118		1				2				1	5						3					1		3		1	4	201	82
83	4	4		2		94				1			1	2		1	1			6			1			1		5				177	83
84						113																							2			122	84
85						33									1					3	1											42	85
86						23																									1	26	86
87							25	2						1										4								58	87
88							1	2		164							1		1											1		180	88
89		3	1	3	1		1	35		186		4	2	3	1	3	8	1	3			3				2	1	2			13	312	89
90					1	1		22		166				4		1	3					1			1					1	3	217	90
91								13		83																						96	91
92								1		33							1														5	43	92
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

Number.	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Number.
		Alabama 687	Arizona..........12	Arkansas 334	California 282	Colorado 150	Connecticut 263	Delaware 54	Dist. of Col.....118	Florida 157	Georgia 659	Idaho 26	Illinois 1920	Indiana 610	Iowa 722	Kansas 387	Kentucky 497	Louisiana 453	Maine 174	Maryland 311	Massachusetts ...81*	
93	Long Island College Hospital.—R.					1								1						1	364	93
94	New York Homeo. Med. Coll. and Hosp.—H.†						1												1			94
95	New York Med. Coll. and Hosp. for Women.H																					95
96	University and Bellevue Hosp. Med. Coll.—R.				3	2	9			1			3				1			1	5	96
97	Syracuse University, College of Medicine.—R.				1		1									1						97
98	University of Buffalo, Medical Department.—R						1															98
99	Leonard Medical School, Raleigh.—R.	10							2	9	5							1		2	1	99
100	University of North Carolina, Med. Dept.—R.									1												100
101	North Carolina Medical College.—R.								1													101
102	Wake Forest School of Med., Wake Forest.—R									2												102
103	University of North Dakota, Med. Dept.—R.												1		1							103
104	Cleveland College of Phys. and Surg.—R.					1								1								104
105	Cleveland Homeopathic Medical College.—H.†				1																	105
106	Western Reserve University, Med. Dept.—R.												1	9	2							106
107	Eclectic Medical Institute.—E.			2		1	1				1		5	7		1	6					107
108	Medical College of Ohio.—R.													5		1	15					108
109	Miami Medical College.—R.												1	2			7					109
110	Pulte Medical College—H.																					110
111	Starling-Ohio Medical College—R.												1	2	2		1					111
112	Toledo Medical College.—R.													2								112
113	Epworth University, Coll. of Med.—R.															2						113
114	University of Oklahoma, School of Med.—R.																					114
115	University of Oregon, Medical Dept.—R.				2							4			1							115
116	Willamette University, Medical Dept.—R.				1																	116
117	Hahnemann Med. Coll. and Hosp., Phila.—H.				1		3	3					2		4		4		4	2	1	117
118	Jefferson Medical College.—R.	4	1	5	4	1	13	13			8		7	4	7	2	4		1		9	118
119	Medico-Chirurgical Coll. of Philadelphia.—R.†				1		6	8	1			1		2			1	1		2	2	119
120	Temple University, Medical Department.—R.	1					1	2			2		2	1	1					2	2	120
121	University of Pennsylvania, Dept. of Med.—R.	5		3	2		4	5		2	3		3	6	5			2	3	2	10	121
122	Woman's Medical College of Pennsylvania.—R.			1	2	1	2				1			1	1	2	2	1	3		2	122
123	University of Pittsburg, Med. Dept.—R.																					123
124	Medical College of the State of South Carolina									15	1											124
125	University of South Dakota, Coll. of Med.—R.														2							125
126	Knoxville Medical College, Knoxville.—R.	1								1	1					1	1				1	126
127	Tennessee Medical College, Knoxville—R.					1											9					127
128	Meharry Medical College, Nashville.—R.	20		17						2	33		4	3		3	5	10				128
129	Univ. of Nashville, Med. Dept., Nashville.—R.	26		9		1				7	2		4				11	28				129
130	University of Tennessee, Dept. of Med.—R.	12		2	1					2	1		3		1		8	7				130
131	Vanderbilt Univ., Med. Dept., Nashville.—R.	29		7	2					3	2	1	2	2			20	10				131
132	College of Phys. and Surg., Memphis.—R.	2		6		1			1				2					2				132
133	Memphis Hospital Medical College.—R.	16		53						3			2			1	3	93				133
134	University of West Tennessee, Med. Dept.—R.	3		3														2				134
135	Chattanooga Medical College, Chattanooga.—R	30			2					7	8		1	1							1	135
136	University of the South, Med. Dept.—R.	23		7					1	3	5						2	13		3	1	136
137	Fort Worth University, Med. Dept.—R.	1									1					1		1				137
138	University of Texas, Dept. of Med.—R.																					138
139	Baylor University, College of Medicine.—R.																					139
140	Southwestern Univ. Med. Coll., Dallas.—R.																					140
141	University of Utah, Dept. of Medicine.—R.											1										141
142	University of Vermont, College of Med.—R.†						8												13		19	142
143	Medical College of Virginia, Richmond.—R.									1								1				143
144	University College of Medicine, Richmond.—R.	1								1	2						1			1		144
145	University of Virginia, Dept. of Med.—R.	7		2				1	1	1	2					1		1		2	2	145
146	West Virginia University, Coll. of Med.—R.																		1			146
147	Marquette University, Medical Department.—R													1	1		1					147
148	Wisconsin College of Phys. and Surg.—R.														1							148
149	University of Wisconsin, Coll. of Med.—R.												1									149
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

* Figures for 1907-8. † Figures exact; distribution based on that for 1907-8.

(Continued from page 549)

years, each annual course to have been of not less than thirty teaching weeks' duration, and at least ten months shall intervene between the beginning of any course and the beginning of the preceding course. No time credit shall be given to holders of a Bachelor's degree, but subject credit may be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the opposite table, and no college shall be recognized that falls below this standard over 20 per cent. in any one branch or over 10 per cent. in the total. Laboratory or clinic hours may be substituted for didactic hours.

Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent., or its equivalent, in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

A college which gives less than a four years' course of study, but does not graduate students, and is possessed of other required qualifications, may be admitted to membership.

Each medical college in membership in the Association shall print in every annual catalogue or announcement a table of the total number of hours work given in said college, arranged both by subjects and years.

The following colleges are members of the association: College of Physicians and Surgeons, Los Angeles, Cal.; Leland Stanford Junior University College of Medicine, Palo Alto and San Francisco, Cal.; University of California, Medical Department, Berkeley, Los Angeles, and San Francisco, Cal.: University of Colorado, School of Medicine, Boulder, Colo.; Denver and Gross College of Medicine, Denver, Colo.: George Washington University Department of Medcine, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C.: Howard University Medical Department, Washington, D. C.; American Medical Missionary College, Battle Creek, Mich., and Chicago, Ill.; College of Physicians and Surgeons, Chicago, Ill.; Indiana University School of Medicine, Bloomington and Indianapolis, Ind.; Drake University College of Medicine, Des Moines, Iowa.; State University of Iowa, College of Medicine, Iowa City, Iowa; Kansas Medical College, Topeka, Kan.; University of Kansas School of Medicine, Lawrence, Kan.; University of Louisville, Medical Department, Louisville, Ky.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University, Medical Department, Baltimore, Md.: University of Maryland School of Medicine, Baltimore, Md.; Woman's Medical College, Baltimore, Md.; Tufts College Medical School, Boston, Mass.; Detroit College of Medicine, Detroit, Mich.; University of Michigan, Department of Medicine and Surgery, Ann Arbor, Mich.; University of Mississippi Medical Department, Oxford, Miss.; University of Missouri Department of Medicine, Columbia, Mo.; University Medical College, Kansas City, Mo.; St. Louis University Medical Department, St. Louis, Mo.; Washington University Medical Department, St. Louis, Mo.; Washington University Medical Department, St. and Omaha, Neb.; University of Buffalo, Medical Department, Buffalo, N. Y.; University and Bellevue Hospital Medical College, New York, N. Y.; Cornell University Medical College, New York, N. Y.; University of North Carolina Medical Department, Chapel Hill, N. C.; Wake Forest College School of Medicine, Wake Forest, N. C.; University of North Dakota Medical Department, University, N. D.; Cleveland College of Physicians and Surgeons, Cleveland,

(Continued on page 553)

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Number.	Michigan 491	Minnesota 347	Mississippi 593	Missouri 813	Montana 31	Nebraska 346	New Hampshire..103	New Jersey......451	New Mexico........8	New York.........2123	Nevada 8	North Carolina...514	North Dakota.....77	Ohio 929	Oklahoma 186	Oregon 116	Pennsylvania ...2159	Rhode Island......99	South Carolina...393	South Dakota.....87	Tennessee 537	Texas 751	Utah 75	Vermont 106	Virginia 482	Washington 89	West Virginia....271	Wisconsin 430	Wyoming 14	Hawaii, P.I., P.R. 83	Foreign 539	Totals 21,933	Number.
93							2	34		322								2														1	93
94	1							23		75							4					1		1							2	109	94
95										24																						24	95
96							1	69		332				2		1	3	3			1		1	1	1	2					3	445	96
97								2		136				1			2														5	149	97
98										172							9					1									2	185	98
99			1	1						2		41			1		3		12		1	5			19		1				8	125	99
100										4		101					3		3												1	113	100
101										2		81					1		6			1									2	94	101
102												48							3													53	102
103		3											15	1																	1	22	103
104	2													82			3				1										2	92	104
105	1							1		3				26			9															41	105
106	1								1	2				68			11			1							1	1				98	106
107				2		1		1		1				28			7					1				1	15					81	107
108							1			1				93			1						1								2	120	108
109	1													61													1					73	109
110														16																		16	110
111	1					1								216			4							1			1				1	231	111
112	1													33			1														1	38	112
113										1					44							4										51	113
114															10																	10	114
115					1											46										18					2	74	115
116					1											24										3						29	116
117		1		1				26		10				5			112											2			6	187	117
118	2	11	4	1	1	2	1	40		5		31	3	14		3	339	4	3	1	2	4	10	1	2	6	8	2			10	591	118
119	1	1						39	1	9			1	3			335	1					5			1		1			33	461	119
120								14		3		1	1	1			204	1	1				1								4	245	120
121	1	3	2	2			1	32		20		15		17			340	2	3		2	6	3	1	6	3	2	2		1	25	514	121
122	1	1		1				5		11		1		3		2	57	1	1		1	2			1	1					17	125	122
123										1	1			4			368										4					378	123
124								1				2							194													213	124
125						1											1			7												11	125
126		1	3											1	1				1		5	1	1		1	1					1	23	126
127												7									58				7	1	1					84	127
128			37	13								7		1	6		2		15		39	41			2		2				13	275	128
129			27	1						2		10		1	6				9		72	7			3		1				1	228	129
130			7					1				3			2				1		58	9			1							119	130
131	2		18	5						1					4				6		77	17				1						200	131
132			33	1										1	1						33	1										84	132
113			142	2										1	12	1			1		66	45			1							442	133
134			4									1									10	1									1	25	134
135	2		4							1		7			5		1				29	3			6		4					112	135
136			11							1		4			4		1		4		14	15			7		3				3	125	136
137															6						1	89										100	137
138																						210									1	211	138
139															2						1	49										53	139
140																						68										68	140
141																							17									18	141
142							24		1	20				1			1	3						73							3	166	142
143		1						1		2		17					1		6		3	1			60		12					206	143
144								2		1		33					1		2						89		4			2		140	144
145			4							1		4				1	2		3			1			49		3					88	145
146														2			4										33					40	146
147	8	1											2	1														151				166	147
148		5																										51				60	148
149		1			1									1						1								27				32	149
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

(Continued from page 552)

Ohio; Western Reserve University Medical College, Cleveland, Ohio; Starling-Ohio Medical College, Columbus, Ohio; State University of Oklahoma School of Medicine, Norman, Okla.; Meharry Medical College, Nashville, Tenn.; Vanderbilt University, Medical Department, Nashville, Tenn.; Medical College of Virginia, Richmond, Va.; University College of Medicine, Richmond, Va.; University of West Virginia Medical Department, Morgantown, W. Va.; Marquette University Medical Department, Milwaukee, Wis.; University of Wisconsin College of Medicine, Madison, Wis.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 1764 Lexington street, Chicago.

SOUTHERN MEDICAL COLLEGE ASSOCIATION

The following requirements for admission to the freshman year are exacted by the colleges belonging to this Association:

The student must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate that he has passed the entrance examination to a university, or a certificate from some legally constituted high school. The minimum preliminary education required by the Southern Medical College Association is a grammar school education and two years' successful attendance at a recognized preparatory school or a high school, or its equivalent, said equivalent to be determined by a superintendent of public instruction. A student may be given one month from date of his admission to submit his certificate of qualification. And if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates in such cases must have the conditions printed plainly on the face of each. Beginning with the session of 1910-11 nothing less will be accepted than a diploma from an accredited high school as published in the catalogue of each state university, or its equivalent, such equivalent to be determined by the county or state superintendent of public instruction.

Colleges belonging to this Association are not to issue certificates of credit to any student who has not been in actual attendance on at least 80 per cent. of a seven months' medical course, nor to allow advanced standing on credentials representing less than that amount of work. No student is to be allowed to graduate unless he has been in actual attendance on at least 80 per cent of a seven months' session immediately preceding said graduation.

The following colleges are members:

Medical College of Alabama, Mobile, Ala.; Birmingham Medical College, Birmingham, Ala.; Medical Department University of Arkansas, Little Rock, Ark.; College of Physicians and Surgeons, Little Rock, Ark.; Atlanta College of Physicians and Surgeons, Atlanta, Ga.; Medical College of Georgia, Augusta, Ga., Medical Department, University of Mississippi, Oxford, Miss.; Medical Department, Epworth University, Oklahoma, Okla.; Medical Department, University of Tennessee, Nashville, Tenn.; Medical Department, University of Nashville, Nashville, Tenn.; Memphis Hospital Medical College, Memphis, Tenn.; Chattanooga Medical College, Chattanooga, Tenn.; Tennessee Medical College, Knoxville, Tenn.; Medical Department, Fort Worth University, Fort Worth, Texas; Medical Department, Baylor University, Dallas, Texas; Medical Department, Southwestern University, Dallas, Texas.

The secretary-treasurer is Dr. Lewis C. Morris, Birmingham, Ala.

(Continued on page 554)

TABLE 3.—WHERE STUDENTS STUDY MEDICINE

A. Students from the Eastern States

Eastern States.	Year.	Attending Medical Schools in the								Totals.
		East.		Middle States.		West.		South.		
		Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	
Connecticut	1908	264	96.7	6	2.2	0	0.	3	1.1	273
	1999	255	97.0	5	1.9	1	0.4	2	0.7	263
Delaware	1908	52	98.1	1	1.9	0	0.	0	0.	53
	1909	53	98.1	0	0.	1	1.9	0	0.	54
Dist. of Col.....	1908	117	96.0	2	1.6	1	0.8	2	1.6	122
	1909	109	92.4	4	3.4	0	0.	5	4.2	118
Maine	1908	172	94.5	6	3.3	2	1.1	2	1.1	182
	1909	165	94.8	5	2.9	3	1.7	1	0.6	174
Maryland	1908	236	95.5	6	2.4	1	0.5	4	1.6	247
	1909	302	97.1	4	1.3	0	0.	5	1.6	311
Massachusetts .	1908	835	97.4	15	1.7	4	0.5	3	0.4	857
	1909	789	97.0	12	1.5	7	0.9	5	0.6	813
New Hampshire	1908	113	95.0	4	3.4	1	0.8	1	0.8	119
	1909	102	99.0	1	1.0	0	0.	0	0.	103
New Jersey	1908	426	94.2	18	4.0	2	0.5	6	1.3	452
	1909	438	97.1	10	2.2	1	0.3	2	0.4	451
New York	1908	1978	93.5	105	5.0	8	0.4	25	1.1	2116
	1909	1959	92.3	133	6.3	12	0.5	19	0.9	2123
Pennsylvania ...	1908	1920	91.3	155	7.4	4	0.2	25	1.1	2104
	1909	2005	92.9	130	6.0	11	0.5	13	0.6	2159
Rhode Island ...	1908	92	92.9	5	5.1	0	0.	2	2.0	99
	1909	94	94.9	3	3.1	2	2.0	0	0.	99
Vermont	1908	93	87.8	10	9.4	3	2.8	0	0.	106
	1909	95	89.6	7	6.6	4	3.8	0	0.	106
Virginia	1908	448	86.0	14	2.7	0	0.	59	11.3	521
	1909	410	85.1	17	3.5	3	0.6	52	10.8	482
West Virginia ..	1908	190	65.1	89	30.5	0	0.	13	4.4	292
	1909	168	62.0	89	32.8	0	0.	14	5.2	271
Totals	1908	6936	92.0	436	5.8	26	0.3	145	1.9	7543
	1909	6944	92.3	420	5.6	45	0.5	118	1.6	7527

B. Students from the Middle States

Middle States.	Year.	Attending Medical Schools in the								Totals.
		East.		Middle States.		West.		South.		
		Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	
Illinois	1908	55	3.1	1651	94.4	14	0.8	29	1.7	1749
	1909	54	2.8	1832	95.4	14	0.8	20	1.0	1920
Indiana	1908	23	3.2	680	94.6	9	1.2	7	1.0	719
	1909	29	4.8	565	92.6	9	1.5	7	1.1	610
Iowa	1908	26	3.6	676	94.4	8	1.1	6	0.9	716
	1909	35	4.8	658	91.1	27	3.7	2	0.4	722
Kansas	1908	26	5.6	418	89.9	3	0.6	18	3.9	465
	1909	20	5.2	349	90.2	9	2.3	9	2.3	387
Kentucky	1908	33	5.2	541	85.2	0	0.	61	9.6	635
	1909	28	5.6	401	80.7	6	1.2	62	12.5	497
Michigan	1908	24	4.9	457	92.7	4	0.8	8	1.6	493
	1909	11	2.2	470	95.7	6	1.4	4	0.7	491
Minnesota	1908	21	5.7	350	94.3	0	0.	0	0.	371
	1909	25	7.2	313	90.2	7	2.0	2	0.6	347
Missouri	1908	26	2.8	851	92.6	9	1.0	33	3.6	919
	1909	27	3.4	743	91.4	12	1.3	31	3.9	813
Nebraska	1908	12	3.6	317	95.5	2	0.6	1	0.3	332
	1909	8	2.3	329	95.1	9	2.6	0	0.	346
North Dakota..	1908	6	7.9	70	92.1	0	0.	0	0.	76
	1909	8	10.4	68	88.3	1	1.3	0	0.	77
Ohio	1908	140	15.3	756	82.9	5	0.6	11	1.2	912
	1909	116	12.5	792	85.3	13	1.4	8	0.8	929
South Dakota..	1908	3	4.2	66	93.0	0	0.	2	2.8	71
	1909	1	1.1	86	98.9	0	0.	0	0.	87
Wisconsin	1908	22	4.6	450	94.2	2	0.4	4	0.8	478
	1909	18	4.2	407	94.7	5	1.1	0	0.	430
Totals	1908	417	5.3	7283	91.8	56	0.6	180	2.3	7936
	1909	380	5.0	7013	91.6	118	1.5	145	1.9	7656

C. Students from the Western States

Western States.	Year.	Attending Medical Schools in the								Totals.
		East.		Middle States.		West.		South.		
		Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	
Arizona	1908	1	6.7	4	26.7	2	13.3	8	53.3	15
	1909	1	8.3	3	25.0	2	16.7	6	50.0	12
California	1908	55	13.5	39	9.6	306	75.0	8	1.9	408
	1909	52	18.4	33	11.7	192	68.1	5	1.8	282
Colorado	1908	9	5.8	28	17.9	117	75.0	2	1.3	156
	1909	10	6.7	21	14.0	116	77.3	3	2.0	150
Idaho	1908	2	8.3	17	70.9	5	20.8	0	0.	24
	1909	1	3.8	16	61.6	8	30.8	1	3.8	26
Montana	1908	8	18.6	32	74.4	1	2.3	2	4.7	43
	1909	6	19.4	21	67.7	4	12.9	0	0.	31
New Mexico	1908	2	18.2	3	27.3	2	18.2	4	36.3	11
	1909	3	37.5	4	50.0	1	12.5	0	0.	8
Nevada	1908	1	12.5	3	37.5	3	37.5	1	12.5	8
	1909	1	12.5	3	37.5	4	50.0	0	0.	8
Oregon	1908	22	16.8	15	11.5	92	70.2	2	1.5	131
	1909	19	16.4	19	16.4	77	66.3	1	0.9	116
Utah	1908	35	35.4	34	34.3	29	29.3	1	1.0	99
	1909	22	29.3	32	42.7	20	26.7	1	1.3	75
Washington	1908	26	25.2	47	45.7	26	25.2	4	3.9	103
	1999	29	32.6	36	40.4	21	23.6	3	3.4	89
Wyoming	1908	1	16.7	4	66.7	1	16.7	0	0.	6
	1909	3	21.4	5	35.7	5	35.7	1	7.2	14
Totals	1908	162	16.1	226	22.5	584	58.2	32	3.2	1004
	1909	147	18.1	193	23.8	450	55.5	21	2.6	811

D. Students from the Southern States

Southern States.	Year.	Attending Medical Schools in the								Totals.
		East.		Middle States.		West.		South.		
		Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	
Alabama	1908	36	5.3	24	3.5	0	0.	623	91.2	683
	1909	34	5.0	24	3.4	0	0.	629	91.6	687
Arkansas ...	1908	20	4.8	60	14.3	0	0.	339	80.9	419
	1909	20	5.2	47	12.2	0	0.	317	82.6	384
Florida	1908	19	14.4	9	6.8	0	0.	104	78.8	132
	1909	27	17.2	9	5.7	0	0.	121	77.1	157
Georgia	1908	51	7.8	17	2.6	1	0.1	586	89.5	655
	1909	50	7.6	15	2.2	1	0.2	593	90.0	659
Louisiana ...	1908	19	3.9	30	6.2	0	0.	438	89.9	487
	1909	20	4.4	31	6.8	1	0.2	404	88.6	456
Mississippi .	1908	16	2.7	39	6.5	1	0.4	547	90.4	603
	1909	18	3.0	40	6.7	1	0.2	534	90.1	593
No. Carolina	1908	158	31.5	13	2.5	2	0.4	329	65.6	502
	1909	170	33.1	11	2.1	1	0.2	332	64.6	514
Oklahoma ...	1908	8	5.3	41	27.0	1	0.7	102	67.0	152
	1909	8	4.3	55	29.6	0	0.	123	66.1	186
So. Carolina	1908	73	21.3	9	2.6	0	0.	261	76.1	343
	1909	66	16.8	12	3.0	1	0.3	314	79.9	393
Tennessee ..	1908	19	3.1	45	7.3	1	0.1	552	89.5	617
	1909	21	3.9	38	7.1	0	0.	478	89.0	537
Texas	1908	41	4.7	113	12.9	3	0.4	717	82.0	874
	1909	39	5.2	76	10.1	7	0.9	629	83.8	751
Totals	1908	460	8.4	400	7.3	9	0.1	4598	84.2	5467
	1909	473	8.9	358	6.7	12	0.3	4474	84.1	5317
Average	A	6940	92.1	428	5.7	36	0.4	131	1.8	7535
1908	B	398	5.1	7148	91.7	87	1.1	163	2.1	7796
and	C	155	17.1	209	23.0	517	56.9	27	3.0	908
1909	D	466	8.8	379	6.9	11	0.2	4536	84.1	5392
Migrating Students		1019	40.9	1016	40.8	134	5.4	321	12.9	2490

(Continued from page 553)

AMERICAN INSTITUTE OF HOMEOPATHY

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

1. English Composition.—Exercise on assigned theme, not less than 200 words. Exercise in reading. Exercise in correction of ungrammatical sentences.

2. Mathematics.—Arithmetical exercises in (a) vulgar fractions, (b) decimals, (c) percentage, (d) proportion, (e) square and cube root, (f) weights and measures, (g) decimal system. Mensuration—(a) Definition of terms, (b) exercises under the more fundamental rules.

3. Geography.—General facts about North America.

4. History.—General, with particular reference to human progress in art, science and letters. (The examination to avoid exact dates and minor details.)

5. Latin Language.—(a) Grammar, (b) four books of Cæsar or its equivalent.

The colleges recognized as in good standing by this organization are:

Hahnemann Medical College of the Pacific, San Francisco, Cal.; Denver College of Physicians and Surgeons, Denver, Colo.; Hahne-

(Continued on page 555)

mann Medical College, Chicago.; Hering Medical College; Homeopathic Medical Department of the State University of Iowa; Southwestern Homeopathic College, Louisville, Ky.; Boston University School of Medicine; Homeopathic Medical College of University of Michigan; Detroit Homeopathic College; Kansas City Hahnemann Medical College; New York Homeopathic Medical College; New York Medical College for Women; Cleveland Homeopathic Medical College; Pulte Medical College, Cincinnati; Hahnemann Medical College of Philadelphia.

The secretary is Dr. J. Richey Horner, 655 Rose Bldg., Cleveland, Ohio.

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES

The following are the present minimum requirements for admission to colleges members of this Association:

1. A certificate of good moral character.
2. Diploma of graduation from (a) a four years graded high school, or (b) normal school, or (c) seminary, or (d) literary or scientific college, or (e) university, or (f) evidence of having passed the matriculation examination to a recognized literary or scientific college, or (g) a medical student's certificate secured by examination from a state medical board.

The following colleges are members of this Association:

American Medical College, St. Louis, Mo.; California Eclectic Medical College, Los Angeles, Cal.; Eclectic Medical College of the City of New York, New York, N. Y.; Eclectic Medical Institute, Cincinnati, Ohio; Georgia College of Eclectic Medicine and Surgery, Atlanta, Ga.; Lincoln Medical College, Lincoln, Neb.; Western Eclectic College of Medicine and Surgery, Kansas City, Kan.

The secretary-treasurer is John K. Scudder, M.D., 1009 Plum street, Cincinnati, Ohio.

COLLEGE NOTES

New Colleges.—Besides the two new colleges formed by mergers, one new college was organized at Atlanta, Georgia, the Hospital Medical College, Eclectic.

Colleges Discontinued.—Besides the six colleges which have lost their identity through mergers during the past year, four colleges have been suspended. These are the College of Homeopathic Medicine of the University of Minnesota, abolished by the Board of Regents, the Homeopathic Medical College of Missouri of St. Louis, the Nebraska College of Medicine of Lincoln, and the College of Physicians and Surgeons of Dallas, Texas. The Medical Department of the University of the South will be discontinued after Oct. 28, 1909.

Statistics of Canadian Colleges.—Statistics of the eight Canadian medical colleges are given in the last eight lines of Table I. There were 1,755 medical students, including 24 women students and 346 graduates, including 4 women. Seventy-six, or 22 per cent. of all graduates were reported also to hold degrees in arts or science. This percentage is doubtless somewhat low since complete reports were not obtained in this respect from the University of Toronto. All the Canadian schools give courses of five years, this standard now being required for license in some of the Canadian provinces.

Colleges Merged.—During the past year mergers have taken place in four instances. At Cincinnati, the Medical College of Ohio and the Miami Medical College, completed their union, forming the Ohio-Miami Medical College of the University of Cincinnati. At Nashville, the University of Nashville Medical Department and the University of Tennessee Department of Medicine have united, the new school to be known as the Universities of Nashville and Tennessee Medical Department. The Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, was absorbed by Drake University College of Medicine of Des Moines. The University of Southern California College of Medicine of Los Angeles was taken over by the University of California and will be operated as the Los Angeles medical department.

Confusion of Titles.—At the last meeting of the Association of American Universities, an effort was made to bring about a uniformity in the use of the terms "department," "course," "college," and "school" in the titles of educational institutions so as to have a definite meaning for each. The committee which was appointed to take up the matter made the following recommendations:

1. That the term *department* be restricted to the various subjects taught in the university; as, for instance, the department of Latin, department of mathematics, department of physics, etc.

2. That the term *course* be restricted to the subdivisions of a subject; as, for instance, course in English.

3. That the term *college* be restricted to a part of the university the standard of admission to which is the equivalent of that required by the Carnegie Foundation for the Advancement of Teaching and which offers instruction leading to a first degree in arts, letters or sciences.

4. That the term *school* be restricted to a part of the university, the standard of admission to which is not less than the equivalent of two-years' work in the college and which offers instruction of not less than two-years' duration leading to a technical or professional degree.

Higher Preliminary Requirements.—Seventeen medical colleges already require two or more years of collegiate work for admission in addition to a four year high school education. These colleges and the years when such requirement began are as follows:

College	Began
Johns Hopkins University Medical Department	1893
Harvard Medical School	1900
Western Reserve University, Medical Department	1901
University of Chicago, Rush Medical College	1904
University of California, Medical Department	1905
University of Minnesota, Coll. of Med. and Surg.	1907
University of North Dakota, College of Medicine	1907
University of Wisconsin, College of Medicine	1907
Cornell University Medical College	1908
Wake Forest College, School of Medicine	1908
Leland Stanford Junior University, Department of Medicine	1909
Yale Medical School	1909
*Northwestern University Medical School	1909
*University of Kansas, School of Medicine	1909
University of Michigan, College of Medicine	1909
*University of Nebraska, College of Medicine	1909
University of South Dakota, College of Medicine	1909

*One year required for the session of 1908-9.

Eleven other colleges have definitely announced an increase in their entrance requirements to two years of collegiate work. These and the dates when such requirements will become effective are as follows:

College	Begins
University of Colorado, School of Medicine	1910
*Indiana University School of Medicine	1910
*State University of Iowa, College of Medicine	1910
Drake University, College of Medicine	1910
†University of Missouri, Department of Medicine	1910
John A. Creighton Medical College	1910
Dartmouth Medical School	1910
Columbia University, College of Physicians and Surgeons	1910
*Syracuse University, College of Medicine	1910
*University of Pennsylvainia, Medical Department	1910
*University of Utah, Medical Department	1910

*One year required for the session of 1909-10.
†One year has been required since 1906.

The twenty-one following colleges either already require one year of work in a college of liberal arts in addition to a four-year high school course, or have announced their intention to do so on or before the year given:

College	In Force
Fordham University, School of Medicine	1908
University of North Carolina, Medical Department	1909
Oakland College of Medicine and Surgery	1910
Denver and Gross College of Medicine	1910
College of Physicians and Surgeons, Chicago	1910
Hahnemann Medical College, Chicago	1910
Kansas Medical College	1910
Tulane University of Louisiana, Medical Department	1910
St. Louis University School of Medicine	1910
Washington University, Medical Department	1910
University of Cincinnati, Medical Department	1910
Starling-Ohio Medical College	1910
Cleveland College of Physicians and Surgeons	1910
University of Oklahoma School of Medicine	1910
University of Oregon, Medical Department	1910
Vanderbilt University, Medical Department	1910
University of Texas, Medical Department	1910
*University of Virginia, Department of Medicine	1910
West Virginia University, College of Medicine	1910
Marquette University Medical Department	1910
Wisconsin College of Physicians and Surgeons	1910

*Requires a three-year high school course plus one year of college work.

Several other colleges were previously listed as having adopted higher requirements. A few have since rescinded their action, six have merged into other colleges, and others, on inspection, being found unsatisfactory, were omitted from the lists. The schools above named, however, have made definite statements regarding the increase in their entrance requirements and doubtless mean what they say.

18 State Universities require one year

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SATURDAY, AUGUST 14, 1909

MEDICAL EDUCATION IN THE UNITED STATES

STATISTICS FOR THE COLLEGE YEAR 1908-9

The tabulated statistics herewith presented (pages 546 to 554) are for the year ending June 30, 1909, and are based on signed reports received directly from the medical colleges, or from other reliable sources. We wish here to acknowledge the courtesy and cooperation of the officials of the medical colleges which have made the compilation of these complete statistics possible.

STATISTICS OF COLLEGES

On pages 546 to 549 is Table 1, which gives all the colleges in session during 1908-9, the population of the city in which each college is located, the number of students, men and women, registered during the year, the number of 1909 graduates, men and women, the number of graduates holding collegiate degrees, the number of teachers for each college, the number of weeks of actual work in the college year, the total fees for each year, the executive officer of the college and the dates of beginning and ending of the next session. The figures in heavy-faced type show the totals by states. Beginning on page 531 are given essential facts of all medical colleges, arranged by states, and on pages 549 to 555 the requirements and membership of the different college associations.

NUMBER OF MEDICAL STUDENTS

The total number of medical students (matriculants) in the United States for the year ending June 30, 1909, excluding special students, was 22,145, a decrease of 457 below 1908 and a decrease of 2,131 below 1907. It is the lowest number since The Journal began compiling these statistics in 1900. Of the total number of students, 20,554 were in attendance at the regular colleges, 899 at the homeopathic, 413 at the eclectic, 52 at the physiomedical, and 227 at the unclassifiable colleges. The attendance at the regular colleges shows a decrease of 382 below that of last year, of 1,649 below 1907 and of 2,562 below 1906. In the homeopathic colleges there was an increase of 9 over the attendance of 1908, but a decrease of 140 below the attendance of 1907. The eclectic colleges show a decrease of 66 since 1908, of 132 below 1907 and of 231 below 1906. The physiomedical colleges had 52 this year, as compared with 90 in 1908 and 97 in 1907.

TABLE 4.—Medical College Attendance

Year.	Regular.	Homeopathic.	Eclectic.	Physio Med.	Nondescript.	Total.
1880	9,776	1,220	830	....	....	11.826
1890........	13,521	1,164	719	....	....	15,404
1900........	22,710	1,909	522	....	....	25,171
1901	23,846	1,683	664	80	144	26.417
1902........	24,878	1,617	765	91	150	27,501
1903	24,930	1,498	848	149	190	27,615
1904........	23,662	1,309	1,014	123	234	28,142
1905	24,119	1,104	578	114	232	26,147
1906........	23,116	1,085	644	110	249	25,204
1907	22.303	1,039	545	97	292	24,276
1908........	20,936	891	479	90	206	22,602
1909	20,554	899	413	52	227	22,145

GRADUATES

The total number of graduates for the year ending June 30, 1909, was 4,442, a decrease of 299 below 1908, a decrease of 538 below 1907, and of 922 below 1906. The percentage of graduates to matriculants was 20.1, as compared with 21.0 in 1908 and 20.5 in 1907. The number of graduates from the regular colleges was 4,090, or 280 less than in 1908 and 501 less than in 1907. From the homeopathic colleges there were 209 graduates, or 6 less than in 1908 and 16 less than in 1907. The eclectic colleges graduated 84, or 32 less than last year and 37 less than in 1907. The physiomedical colleges had 15 graduates this year, as compared with 12 last year and 11 in 1907.

TABLE 5.—Medical College Graduates

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880	2,673	380	188	....	....	3,241
1890	3,853	380	221	....	....	4,454
1900........	4,715	413	86	....	....	5,214
1901	4,879	387	148	18	12	5.444
1902	4,498	336	138	16	11	4,999
1903	5,088	420	149	24	17	5,698
1904	5,190	371	146	20	20	5,747
1905........	5,126	276	153	22	23	5,600
1906	4,841	286	186	22	29	5,364
1907	4,591	225	121	11	32	4,980
1908	4,370	215	116	12	28	4,741
1909........	4,090	209	84	15	44	4,442

Of the 4.442 medical graduates, 692, or 15.6 per cent., were reported to hold also degrees in arts or science, as compared with 820 (17.3 per cent.) in 1908, and 903 (18 per cent.) in 1907. It is expected that in future the percentage of college graduates will increase rather than decrease, since more medical schools are requiring some college work for admission.

WOMEN IN MEDICINE

During the past year there were 921 women studying medicine, an increase of 86 over 1908, but 7 less than in 1907. The percentage of all medical students was 4.2, as compared with 3.7 per cent. last year. There were 162 women graduates this year, or 3.7 per cent. of all graduates. In 1908 there were 835 women students and 185 graduates, while in 1907 there were 928 women students and 211 graduates. Of all the women matriculants, 169 (18.4 per cent.) were in attendance at the 3 medical colleges for women, as compared with 186 (22.3 per cent.) in 1908 and 210 (22.6 per cent.) in 1907. From the 3 women's colleges, there were 33, or 20.3 per cent., of all women graduates, as compared with 46 (24.9 per cent.) in 1908. The remaining 752 (81.6 per cent.) were matriculated in coeducational colleges.

TABLE 6.—WOMEN IN MEDICINE

Year.	Total women students.	Percent. of all students, both sexes.	Total women graduates.	Percent. of grads., both sexes.	Women's colleges.	Students.	Percent. of all women students.	Graduates.	Percent. of all women graduates.	Co-ed. schools.	Students.	Percent. of women students.	Graduates.	Percent. of all women graduates.
1904	1,129	4.3	244	4.0	3	183	16.2	56	23.0	97	946	83.8	198	77.0
1905	1,073	4.1	219	4.0	3	221	20.6	54	24.5	95	852	79.4	165	75.5
1906	895	3.5	233	4.3	3	189	21.0	33	14.1	90	706	79.0	200	85.9
1907	928	3.8	211	4.2	3	210	22.6	39	18.5	86	718	77.4	172	81.5
1908	835	3.7	185	3.9	3	186	22.3	46	24.9	88	649	77.7	139	75.1
1909	921	4.2	162	3.7	3	169	18.4	33	20.3	91	752	81.6	129	79.7

NUMBER OF COLLEGES

During the past year 11 colleges (mentioned on page 555) have either suspended or have merged into others and 3 new colleges were established, making a net decrease of 8 colleges since last year, the total now being 144. The regular colleges number 117, a decrease of 6 since last year. The homeopathic colleges number 14, a decrease of 2. Of the eclectic colleges, during the year, one changed to regular, but one new college was organized, leaving 8, the same number as last year. There are still 2 physiomedical colleges and 3 schools which are unclassifiable since they offer to teach two or more systems of medicine.

TABLE 7.—MEDICAL COLLEGES

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880	72	12	6	....	....	90
1890	93	14	9	....	....	116
1900	121	22	8	....	....	151
1901	124	21	10	2	2	159
1902	121	20	10	3	1	155
1903	121	19	10	3	1	154
1904	133	19	10	3	1	166
1905	129	18	9	3	1	160
1906	130	18	9	3	1	161
1907	131	17	8	3	2	161
1908	123	16	8	2	3	152
1909	117	14	8	2	3	144

The total number of colleges which have ceased to exist through mergers or otherwise since 1904 is 45. During the same time, however, 23 new colleges have been organized, leaving a net decrease of 22. While the total number of colleges is smaller, the percentage of higher-grade, stronger medical colleges has been considerably increased.

LENGTH OF TERMS

The length of term of each college fluctuates somewhat from year to year, but on the whole during the last six years there has been a decided lengthening of college terms. This has reference to the weeks of actual work, exclusive of holidays. Four colleges this year report sessions shorter than twenty-seven weeks, as compared with 2 last year and 6 in 1907. In 1901 there were 58 which held sessions of less than twenty-seven weeks. Of those having sessions of twenty-seven or twenty-eight weeks, the number is 17 this year, or 4 less than last year and 29 less than in 1903. There are 23 colleges claiming courses of twenty-nine or thirty weeks of actual work and 51 claiming courses of thirty-one or thirty-two weeks. The 3 colleges claiming courses longer than thirty-six weeks are night schools. It would doubtless require twelve or fourteen years of the usual night-school study, however, to secure the equivalent of four years of thirty weeks each in the better day colleges. Ninety-nine, or 68 per cent. of all colleges, require from thirty-one to thirty-six weeks, as compared with 64 per cent. last year.

TABLE 8.—COLLEGE TERMS

Year.	23 to 26 weeks.		27 to 28 weeks.		29 to 30 weeks		31 to 32 weeks.		33 to 34 weeks.		35 to 36 weeks.		Ov. 36 weeks	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1901	58	36.5	42	26.4	8	5.0	26	16.4	4	2.5	18	11.3	3	1.9
1902	44	28.4	44	28.4	11	7.1	33	21.3	3	1.9	18	11.6	2	1.3
1903	33	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	1.3
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	38	23.8	3	1.9
1906	14	8.7	35	21.7	26	16.1	32	19.9	24	14.9	28	17.4	2	1.3
1907	6	3.7	27	16.8	26	16.1	42	26.1	29	18.0	29	18.0	2	1.3
1908	2	1.3	21	13.8	28	18.4	51	33.6	24	15.8	22	14.5	4	2.6
1909	4	2.3	17	11.6	23	16.4	51	34.9	18	12.3	30	20.5		2.0

TUITION AND OTHER FEES

Special attention is called this year in Table 1 to the total amount charged by the various colleges for tuition, matriculation, laboratory and graduation fees *per annum* for each student. For the 139 colleges from which complete information was received regarding fees, various amounts are changed as follows:

Total Fees.	Colleges.
$ 50 or less................................	7
50 to $ 75................................	11
75 to 100................................	37
100 to 125................................	36
125 to 150................................	19
150 to 175................................	17
175 to 200................................	7
200 or above................................	5

Only 18 charge fees less than $75 *per annum*, among these appearing the state universities of Colorado, Iowa, Missouri, North and South Dakota, Oklahoma and Wisconsin, where there is charge only for matriculation and laboratory fees, no tuition being required. The others are schools for colored students. The highest number, 37, is of the colleges charging from $75 to $100, and there are 36 which charge from $100 to $125, making 73 colleges charging fees ranging from $75 to $125 per year. There are 36 colleges having fees of $125 to $175 per year and 12 having fees of $175 or above. The 5 colleges having the highest fees are Johns Hopkins University Medical Department, Harvard Medical School, University and Bellevue Hospital Medical College, Columbia University College of Physicians and Surgeons and the Medical Department of the University of Pennsylvania. The highest fees, ranging from $250 to $275, are charged by Columbia University College of Physicians and Surgeons.

From a knowledge based on an actual inspection of all medical schools, it can be stated that among those colleges charging low fees are to be found a fair number of medical colleges of high grade, while, on the other hand, some colleges of low rank charge high fees. From the monetary standpoint, therefore, there is no reason why a student of limited means should attend a low-grade medical college. The figures here given are particularly interesting in the light of the facts already made known[1] that, in the twenty-five leading medical colleges, to teach each student in the freshman and sophomore years costs the colleges from $250 to $700 or even more each year.

DISTRIBUTION OF MEDICAL STUDENTS

Table 2 on pages 550 to 554 shows from what states the students come who were in attendance at each medical college during the session of 1908-9. The influence of the proximity of the medical school is seen in the fact that states having medical colleges contribute more students in proportion to the population than those which have no colleges. A comparison of this table with the large tables based on state board examinations[2] which show the distribution of the alumni of each college, is interesting. The college whose alumni are widely distributed usually has a student body from an equally large number of states.

Only two states contributed over 2,000 students each this year, these being Pennsylvania with 2,159 and New York with 2,123. Illinois contributed 1,920. The next states in the order of the number of students contributed are Ohio, 929; Massachusetts and Missouri, each, 813; Texas, 751, and Iowa, 722. Four states have less than 20 each, these being Wyoming, 14; Arizona, 12; Nevada, 8, and New Mexico, 8. There were 83 students from Hawaii, Porto Rico and the Philippine Islands and 539 students from foreign countries.

MIGRATION OF MEDICAL STUDENTS

Table 3 has been prepared to show the number of students of each section of the country which attend medical schools of that section and the number which attend medical colleges of other sections. Section A gives the figures for students from the eastern states; Section B, for students from the middle states; Section C, for students from the western states, and Section D, for students from the southern states. Figures are given for the two college years, 1907-8 and 1908-9. The differences in the figures for the two years show the fluctuation due to the exit of the graduating class, to the ingress of the new freshmen and to the comparatively few which during the year left the colleges of one section and went to colleges of another section. At the bottom of Section D the average totals for the two years are given. Percentages are given in order to permit of comparisons. The eastern section has long held the largest place in medical education and, as would be expected, still has the smallest percentage of students leaving to attend colleges of other sections, the percentage of those remaining in the eastern section being 92.1. The middle states are a close second, with 91.7 per cent. of their own resident students studying medicine in that section. The western section, having the smallest number of colleges, naturally has a larger proportion of students attending colleges in other sections. Of the students who migrate from the middle and southern sections, the largest proportions go east, while of those from the western section the largest proportion attends colleges of the middle section. Altogether 2,490 students attended colleges outside of the section in which they lived. Of this number, 1,019, or 40.9 per cent., went to the eastern section; 1,016, or 40.8 per cent., went to the middle section; 321, or 12.5 per cent., went to the southern section, and 134, or 5.4 per cent., went to the western section.

PRESENT STATUS IN MEDICAL EDUCATION

Attention should be drawn to the demoralizing influence of medical sects, particularly osteopathy, which have secured special legislation in a number of states. This is more fully discussed in another column.[3] A careful study of the entire field of medical education, however, shows that marked progress has been made, due chiefly to the action of the medical faculties themselves, which, recognizing the need of higher and better enforced standards, have made great sacrifices and gone to much expense to bring about the desired end. As is noted in another column,[4] there are 24 colleges which after this fall will be requiring one or more years of collegiate work for admission. Numerous mergers have been brought about, better equipped laboratories have been provided, better trained teachers have been employed and increased endowments secured. There is, indeed, a bright outlook for the future of medical education.

THE SCIENCE OF CLINICAL MEDICINE

The development of medicine during the past twenty-five years has resulted in the separation of anatomy, pathologic anatomy, physiology, physiologic chemistry and pharmacology as distinct branches of medicine, which formerly constituted a unit. Each of these subjects is now generally recognized as a pure science and has its quota of able men devoting their best energies to the further advancement of that science.

In this issue of The Journal, Dr. S. J. Meltzer calls attention to the growing demand for the separation of another branch from the mother-stem—the division of the science of clinical medicine from the practice of medicine. Such separation seems necessary, since the two divisions of medicine are necessarily incompatible. Clinical research desires to delve into the unknown to seek for new truths, while practice cares chiefly for things of already proved value in diagnosis or treatment. As Dr. Meltzer points out, for the scientific side of clinical medicine utility only obscures vision and retards progress, while in the practice of medicine utility is of chief consideration. Furthermore, the research side needs scientific men whose time is devoted to the following up of details now seemingly unimportant, and sufficient time is not available for those engaged in active practice.

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[1] The Journal, June 19, 1909, page 2046.

[2] The Journal, May 22, 1909, pages 1698 to 1713.

[3] This issue, page 582.

[4] This issue, page 555.

The responsibility for this work cannot well be left with the anatomist, the physiologist or the pathologist, who with few exceptions have little conception of the clinical problem, for as a rule they are not clinically trained. The longer they work at their special branches and the older they become, the wider as a rule becomes the gap between the hospital wards and their laboratories. The development of the scientific side of clinical medicine, therefore, would tend to lessen the breach between the so-called scientific and so-called practical sides of medicine, and, as Dr. Christian points out,[1] will insure that "the physician of the future is both scientifically and practically trained in laboratory methods, but none the less a keen observer of his patients and so an able clinician in the truest sense."

The proposed separation would be clearly beneficial for both divisions of medicine. The development of the scientific side of clinical medicine would attract men of marked ability whose work would doubtless soon bring out new methods of diagnosis and treatment, thereby adding to the resources of the practitioner. While much has already been done through research in physiology, physiologic chemistry and pharmacology, how much more can be done if able men, trained in scientific methods, devote their lives to the further development of clinical methods! If it is to hold its place in the present rapid progress being made in the sciences of medicine, it is apparent that the scientific side of clinical medicine should be separated from active practice.

THE INFLUENCE OF THE CARNEGIE FOUNDATION ON MEDICAL EDUCATION

Science and higher education in this country have been placed under lasting obligation to Mr. Andrew Carnegie by his endowment of the two great institutions that bear his name—the Carnegie Institution of Washington and the Carnegie Foundation for the Advancement of Teaching. The first is devoted wholly, or practically so, to active investigation in other fields than the purely medical, the founder and his advisers believing that the needs of medical investigation would be well cared for in other ways. The Carnegie Institution, however, supports the *Index Medicus* and thus renders a most important and direct service to medicine of greater influence than is perhaps sufficiently appreciated by many in and out of the medical profession. If that unique publication, which is the only index of the current medical literature of the world that we have, were allowed to go under it would be a most lamentable loss to medicine. The number of periodicals now is so large that without such index it would be utterly impossible for our writers and investigators to keep adequately in touch with the additions constantly made to medical knowledge in all civilized countries. It is hoped that the trustees of the Carnegie Institution may have become so impressed with the great usefulness of the *Index Medicus* in promoting the growth of medical knowledge that no doubt will arise as to the wisdom of its continuance.

The Carnegie Foundation for the Advancement of Teaching, the influence of which on medical education it seems desirable to emphasize at this time, was established in order to provide retiring allowances and pensions for teachers in colleges and universities in this country and Canada. Of course, this does not mean every institution that calls itself college or university. In addition to fulfilling certain more or less obvious requirements, an institution in order to be acceptable must be non-sectarian. At first state universities also were excluded, but a little more than a year ago the endowment was increased by $5,000,000 in order that the benefits of the fund might be extended to state universities. A large proportion of the universities that participate in this pension system maintain medical departments, and members of their medical faculties that follow medical teaching as a career are as fully entitled, and as freely admitted, to pensions as members of other faculties. Already not a few medical teachers have retired on Carnegie allowances. The Carnegie Foundation consequently stands for the advancement of medical teaching to quite the same degree as it stands for the advancement of teaching in other branches.

This provision for pensions for medical teachers will help medical education because the career as medical teacher thereby naturally becomes more attractive to the right sort of men. Relieved in a measure from financial responsibility in case of disability from sickness and old age, the medical scholar will feel himself freer to devote himself unreservedly to his teaching and investigation than otherwise would be the case. As yet only a relatively small part of the total number of our medical schools derive direct benefit from this pension fund, and this number unfortunately can not be expected to be increased speedily by reason of the self-evident limitations of so many of our schools, every one of which we all know should be acceptable to the foundation so far as the character of the work done is concerned. Our efforts to raise the standards must not cease until such is the case.

But the Carnegie Foundation is a factor of great importance to medical education for other reasons, as well. It is evident that the work of the institutions that are admitted to the benefits of a pension system of this kind must be kept up to a reasonable standard. The officers and experts of the foundation must assure themselves that such is the case. By virtue of this fact the foundation not only feels, as it were, a special and direct interest in the work of a number of our medical schools, but must concern itself with the broad subject of medical education in general, as well. We have abundant evidence that this interest is actual.

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[1] Columbia University Quarterly, June, 1909, page 341.

According to current reports, the medical work is investigated with the same thoroughness as other phases of the institutions in which the foundation has become interested, and as a result undesirable conditions and shortcomings have been brought to light which call for change and improvement. Noteworthy forward steps, especially in the line of consolidation of medical schools, have received effective encouragement from the Carnegie Foundation. From time to time we may expect that the foundation will find it expedient also to carry out comprehensive investigations of all the medical schools in the country so as to be able better to judge of the trend of development. If the results of expert work along these lines were given full publicity much good would surely come of it to medical education in general. The actual facts would be more helpful in the end than the poetry of the medical school catalogues and advertisements, especially to state licensing boards, some of which maintain altogether too much indifference in regard to the character of the schools that send them applicants for license. It is evident that on account of its unique relation the Carnegie Foundation, wisely managed, may exert a powerful and growing influence for good on the development of medical education in this country.

OUR COLLEGES AND THE TUBERCULOSIS CAMPAIGN

An unusually interesting and important phase of the tuberculosis campaign, dealing with the work carried on at our colleges and universities against this disease, is presented in a paper by W. H. Norton[1] read before the recent International Congress of Tuberculosis at Washington, D. C. Since the tuberculosis question has resolved itself largely into one of education of the masses our educational institutions necessarily will occupy an important place in its solution. For them to carry on or aid in this fight they need first-hand instruction in questions concerning especially hygiene and sanitation. In many of our higher institutions, courses are now being given in the class-room by competent and trained specialists, amplified by work of a more practical character, such as excursions to large cities to study the social and economic aspects of the question.

At the University of Wisconsin, for instance, classes in the departments of sociology and economics visit Milwaukee to study the disease from their respective viewpoints, and in many colleges investigative work with reference to such problems as the proportion of deaths from tuberculosis, economic losses, recurrence of the disease in infected houses, local conditions and surroundings, etc., is carried on with satisfactory results. Of the higher institutions of learning about one-fifth are engaged in such work of investigation. In addition to this at least 15 colleges and universities in this country offer extension lectures on tuberculosis, and in Wisconsin special lectures on this subject have been given for some years at farmers' institutes and before teachers' meetings in the state.

Another phase of the question concerns the study of tuberculosis among students and the transmission of the disease in the class-room and rooming houses. In some colleges practical illustrations of disinfection of rooms are given and immediate attention is paid to incipient cases of tuberculosis. Rules have been passed, in some instances, which prohibit students living in houses inhabited by tuberculous families, and committees on hygiene are active in obtaining information which can be used for the protection of students and in controlling the disease.

The influence of an army of young minds interested in this question, leaving our higher institutions and destined to become leaders in all phases of life, must sooner or later be of the greatest moment. Such persons, becoming business men and employers, will surely give more attention to the laws of hygiene and sanitation in work shops, factories, business houses, etc. Or, becoming our legislators, they will respect attempts of the medical profession to place on our statute books laws protecting the health of the people, preventing contagion and establishing state sanatoria, hospitals, etc. Or, becoming teachers in our public or private schools, they will influence the hundreds of thousands of boys and girls in a manner which can only be for the enlightenment of the masses of people regarding questions of hygiene.

While much has already been done along the lines indicated above, still more than one-half of the educational institutions of the country have not yet interested themselves in this problem. There is, therefore, much room for improvement, and undoubtedly, as Norton states, those who have not yet become actively engaged in this work are alive to its importance and soon will cooperate and lend a hand.

THE CROWDED MEDICAL CURRICULUM

During the past year one of the most important subjects of discussion has been the crowded medical curriculum. There are so many subjects in the curriculum of medical schools that it is difficult for students to get clear ideas with regard to them. This overcrowding is becoming worse every year in spite of all that has been done. At first, the overcrowding was only in the final years of the medical course and temporary improvement was effected by transferring several subjects to earlier years; but now the overcrowding, involving all years, is worse than ever. Some colleges, by increasing the entrance requirements to one or more years of collegiate work, including physics, inorganic chemistry and biology, thereby relieved the medical curriculum of those branches and secured for the medical course students better prepared to take up the medical subjects. In the Canadian schools, instead of requiring collegiate work for admission, the medical course was extended to five years, the first of which was devoted to physics, chemistry and biology. But, even relieving the medical course of these premedical sciences gives only slight relief, and teachers are justly clamoring for more time. Medical students are being ground through a cramming process with insufficient time to think. An extension of the medical course to five years has been suggested, and this may become necessary before many years. As will be noted in a chart on page 542 showing the length of medical courses at home and abroad, in European countries, Austria, Belgium and Portugal have a five-year course and also require a year of science beyond the secondary school for admission, which is practically the equivalent to the requirements in Denmark, Italy, the Netherlands and Norway, as well as in the South American countries—Argentina, Brazil and Uruguay—where a six-year course, including the premedical sciences, is required. Spain has a seven-year course if we include the year in science, while Sweden has a course of eight or ten years, depending on the student's ability to pass his examination. We are not quite ready, however, for this extension of the medical course. In the meantime it should be the purpose of those interested in medical education to secure, so far as possible, the obliteration of the feeling of hurry and the sense of overcrowding in present-day medical study, both of which are fatal to any real attainment of knowledge.

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[1] Science, 1909, xxx, 6.

The old Greek term which is the root of our word school meant leisure. The Latin expression *vacare rei* meant to be free for a thing and therefore to apply one's self assiduously to a subject. It is only when the mind feels itself free to apply itself that there is real attainment. All agree that at present this state of mind is practically impossible in medical schools. A constant rush and hurry stimulates to cramming and memory work but does not conduce to real education: that is, to the bringing out of mental powers in such a way as to develop the students' mental faculties. The purpose of education is to make men think, supplying them with sufficient facts to illustrate the important principles and trusting to them to accumulate whatever other facts they need to apply those principles.

It is the giving of information that is occupying so much attention in our medical schools as to overcrowd the curriculum. The requirements of medical education are such that a man must take about six hours of class-room work of one kind or another every day for six days in the week. In medical schools, therefore, thirty-five hours a week are almost obligatory, which is much more time than is required in other departments of universities where courses requiring twenty hours of work a week are considered quite enough. It is a well-recognized principle in pedagogics that if a student is to derive the proper amount of benefit from class-room work he must occupy about as much time in private study as he spends in the class room. It is absurd, therefore, to think of medical students spending six hours in study besides their six hours of class-room work. An eight-hour day in the intellectual world is even more important than for the manual workman. A man may do ten hours of work with his mind but it is never well done and some of it were better not done.

Over and over again in recent years attention has been called to the fact that it is the medical school that sets the worst possible example with regard to the hygiene of education. The average medical student loses more weight and takes his final examinations much more to heart than do students in any other department. We should of course be setting an example in this matter in quite another way. There are many who will say that it is only by long hours of classwork that the medical student can be made to learn all that he has to know for examinations. This is unfortunate if true, for on his capacity to study after he has graduated depends his future career. Commencement is literally the beginning of medical education for a physician. It is what he will learn in the next ten years that counts. How well has he been taught to study for himself, to observe for himself, to think for himself? This ability means most for his future. Is it not possible that we are trying to convey too much information and not furnishing real education; that we are not developing the intellectual powers of the student? It would be worth while to have the problem placed squarely before us at the beginning of the new year.

PRESERVATION OF MEDICAL HISTORICAL RECORDS

An immediate lively awakening of interest in the preservation of the records of American medical history is needed if important material is not to be lost forever within the next decade. The men who knew well the second generation of important contributors to medicine in the United States—"and there were giants in those days"—are now passing away, and with them is likely to pass not only the knowledge, but also the documentary evidence for much of the medical history of the early part of the latter half of the nineteenth century. So long as they were alive their affection for their old masters kept together precious material. This now is likely to be lost from sight unless care is exercised during the next few years.

Such an event is, of course, not likely in the larger cities and for the eastern part of the country perhaps. It must not be forgotten that the West and the South, however, contributed very materially to the progress of medical science during the centuries just passed. The

South was, indeed, much more important than any other part of the country for the originality of its medical science, and we owe to it anesthesia, the first gynecologic operations, the manufacture of artificial ice and other important inventions and discoveries. In the early part of the nineteenth century we had more fellows of the Royal Society in this country than we have at the present time, and most of them were from the South. They were men who had made brilliant studies in Europe and who then settled down into what might seem to us a narrow environment and did fine original work of high character, though we are only just beginning to appreciate all the significance of it. As to how much was accomplished in the West, Dr. Juettner's book[1] on "Daniel Drake and His Followers" furnishes abundant evidence and at the same time makes very clear how interesting is the story of American medicine when properly told.

It is perfectly possible for us to miss important records for the history of medicine if we neglect the compilation of documents at the present time. We called attention editorially in The Journal some time ago[2] to the fact that even for so important a phase of medical and surgical history as anesthesia we can learn some facts from non-medical writers that are unobtainable from those who wrote deliberately about medicine. We have been accustomed to think that surgical anesthesia was a new thing in the world, though many of the well-known poets and literary men during the three centuries after the fourteenth draw figures from "the mercies of old surgeons who put their patients to sleep before they cut them." Even for so important a disease as tuberculosis the informal gleanings of medical history to be found in non-medical writers are almost more informing and are more interesting than medical history; the same thing is true regarding leprosy.

We welcome, then, the formation of the "Western Association for the Preservation of Medical Records" which has recently been organized[3] in the middle West. The fact that prominent members of the profession who practice medicine in various phases besides the regular school are connected with it as vice-presidents will surely bring about the preservation of the records of sectarian medicine—a consummation eminently to be wished—for this will be extremely interesting after another generation, when medical differences shall have passed away. It must not be forgotten that every phase of medical history will be of interest. Librarians used to bind magazines without their advertising pages. Now we know that the advertising pages of a magazine of any kind often contain more valuable historical matter than the body of the magazine. Precious documents relating to the practice of medicine in our time are to be found even in the flying leaflets issued for advertising purposes. We know a man who, with the historical instinct, faithfully preserved every document of any kind relating to medicine that came to him in the course of twenty years. No matter how trivial it might seem, it was put away in a large room with the others. When at the end of the time he presented his collection to the College of Physicians in Philadelphia it was unique of its kind and contained material of the greatest value for the future historian of medicine in America.

We commend heartily the effort to seek out and preserve all documents that may have a bearing on medical history. We now have enough medical libraries in this country whose controlling boards are quite willing, even anxious, to guarantee the preservation of such material, therefore there need be no excuses on account of the bother or the space required for such things or any reasonable objection to their preservation. Let us hope that similar associations like that we have mentioned will be formed and that everywhere throughout the country some men at least will take on themselves the duty, for it is a precious duty to the American profession of the future, of encouraging an interest in medical history and doing everything they can to preserve the records of it.

Medical News

ALABAMA

Medical College Increases Capital Stock.—Notice has been filed with the secretary of state that the capital stock of the Birmingham Medical College has been increased from $15,000 to $75,000.

First-Aid Corps to Be Organized.—The Tennessee Company has decided to organize a first-aid corps at six of its mining camps, and if the experiment succeeds, a detachment will be maintained at each of the mining camps of the company. The work is in charge of Dr. Matthew J. Shields.

Antituberculosis League Meeting.—At the annual election of officers of the Montgomery Antituberculosis League, Dr. Frank H. McConnico was elected a vice-president, Dr. Gaston J. Greil, chairman of the executive committee, and Drs. Forney C. Stevenson and Glenn Andrews members of the committee. During the past year the league has established two dispensaries and distributed about 25,000 leaflets and 8,000 booklets setting forth the local health conditions. During the year, 30 cases of tuberculosis were cared for by the league, only 6 of which were in white people.

Personal.—Dr. Frank P. Petty, New Decatur, has been elected health officer of Morgan County, vice Dr. Scott L. Rountree, deceased.——Dr. Miles P. Hughes, Gadsden, has been appointed a member of the board of pension examining surgeons for Etowah county, vice Dr. John C. Slack, resigned.——Dr. Peter Binford, Somerville, suffered a second cerebral hemorrhage recently and is said to be in a precarious condition.——Dr. William D. Fonville, Ensley, has been elected health officer of Birmingham.——Dr. William G. Somerville and family, Tuscaloosa, have sailed for Europe.

ARKANSAS

Sanitarium Incorporates.—Park Springs Sanitarium has been incorporated at Bentonville with a capital stock of $50,000.

Eclectic Medical Board Election.—The Arkansas State Eclectic Medical Board elected the following officers July 14: president, Dr. Claud E. Laws, Fort Smith; secretary, Dr. Andrew J. Widener, Little Rock; and treasurer, Dr. Pearl H. Tatman, Eureka Springs.

CALIFORNIA

Medical Society Incorporates.—The San Joaquin Medical Society has filed a petition for incorporation. The object of the action is declared to be the prevention of illegal, improper and unlicensed medical practice.

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[1] Reviewed in The Journal, June 5, 1909, lii, 1854.

[2] March 22, 1907, lii, 1041.

[3] Dr. Charles A. L. Reed, Cincinnati, president; Dr. Otto Juettner, 628 Elm street, Cincinnati, secretary; Dr. A. G. Drury, 704 West Eighth street, Cincinnati, librarian.

Must Not Distribute Questionable Medical Advertisements.—The police committee of the board of supervisors of San Francisco county have approved an ordinance prohibiting the distribution of advertisements of medical concerns of questionable standing.

Camp of Instruction at the Presidio.—A military camp of instruction for medical officers of the militia opened at Presidio July 15, with Major Albert E. Truby, medical corps, U. S. A., in command. Each state of the Pacific Coast has sent representatives from the medical department of its national guard, in all 25. to take the course.

Tuberculosis in California.—Tuberculosis is a cause of more deaths in cities than in the rural districts in California. Of the deaths recorded 15 per cent. of those in cities in 1908 were from tuberculosis, while 14.1 per cent. of all deaths were from this cause in the remainder of the state. Eight cities show a percentage above the average of 15 and 11 cities have a lower average.

New Hospitals.—The plans for St. Francis Hospital, San Francisco, have been completed, and estimates are now being taken. The building will probably cost about $200,000. Dr. John Gallwey is president, Dr. Walter B. Coffey vice-president, and Dr. John O'Connor secretary of the institution.——A new clinical building is being erected as rapidly as possible by the San Francisco Association for the Study and Prevention of Tuberculosis. It is expected it will be ready to open October 1.——The Southern Pacific Railway Company formally opened its hospital at Baker and Fell streets, San Francisco, July 15. The building and its equipment have cost nearly a million dollars.——The first hydrotherapeutic institution to establish in the west will soon be opened at the Stockton State Hospital.

Personal.—Dr. Weston O. Smith, Alameda, was thrown from a mule on a trail in the Yosemite Valley recently, breaking his left arm near the wrist.——Dr. William H. Davies, Monterey, has lost the sight of his right eye from cataract.——Dr. Mark F. Hopkins has been appointed member of the San Jose Board of Health.——Dr. Rudolph W. Baum has been elected a member of the staff of the German Hospital, San Francisco, vice Dr. Emil O. Jellinek.——Dr. Fred H. Bangs, San Jose, has been elected vice-president of the board of managers of the Agnew State Hospital for the Insane.——Dr. D. C. Strong, San Bernardino, has been re-elected physician and health officer of San Bernardino county, and superintendent of the county hospital.——Dr. C. S. Marvin has resigned as assistant superintendent of the Agnew State Hospital to accept a similar position in the Ukiah State Hospital.——Dr. Gustave Wilson, assistant superintendent of the Southern California State Hospital for the Insane, Patton, has resigned.

COLORADO

Farewell to Physician.—A farewell banquet was tendered to Dr. Sol G. Kahn, Leadville, by his brother physicians of the Lake County Medical Society, on the occasion of Dr. Kahn's departure for Salt Lake City.

Must Stop Practice.—An injunction is said to have been served on Dr. Alfred Freudenthal, Trinidad, restraining him from the practice of medicine during the life of a contract entered into by himself and Dr. John R. Espey, which expires in October, 1911.

Society Meeting.—The Powers County Medical Association held its annual meeting in Lamar July 20. The following officers were elected: president, Dr. Elmer E. Bartelt; secretary and treasurer, Dr. Jirah H. Kellogg, and censors, Drs. William A. Packard and the president.

Personal.—Dr. Samuel D. Hopkins, Denver, is taking a trip to the Orient.——Dr. Thomas E. Carmody, Denver, has been appointed surgeon-general of the National Guard of Colorado.——Dr. George H. Stover, Denver, is reported suffering from *x*-ray cancer and his hands have been operated on recently.——Dr. Francis B. Rothrock, Colorado Springs, has returned from a trip around the world.

The Work of the Tuberculosis Home.—"The Oakes Home," an institution for the tubercular in Denver, now occupies a group of six buildings and has a capacity of 150 patients, and in the fourteen years of its existence has received 8,700 patients. Patients are received in all stages of the disease and at varying charges. Last year a workshop was opened where more than 50 patients have been employed at book binding, china painting, weaving, basketry and metal work. The products are sold at the workshop which is now self-supporting. The funds were obtained by Rev. Frederick Oakes and the property has been deeded by him to the Episcopal diocese to be used in the care of tuberculous sufferers.

CONNECTICUT

Reception to Scotch Obstetrician.—Sir Alexander Russell Simpson, professor of midwifery in the University of Edinburgh, was the guest of honor at a reception at the Hunt Memorial Building, Hartford, June 28.

Commencement at Yale.—At the annual commencement exercises of Yale University Medical Department, New Haven, Dr. William H. Howell, dean of Johns Hopkins Medical School, Baltimore, delivered the doctorate address on "Medicine."

Personal.—Dr. Frank N. Freeman, traveling fellow in philosophy and psychology of Yale University, has been appointed instructor in educational psychology in the University of Chicago.——Dr. Oliver T. Osborne, New Haven, has gone to Europe.

Vasectomy in Connecticut.—The House of Representatives at Hartford passed a bill July 20, establishing in Connecticut the principle of providing against the increase of defectives by performing the operation of vasectomy on criminals and inmates of state institutions for defectives in cases wherein the physicians deem it wise that the breeding of other defectives be not permitted.

DISTRICT OF COLUMBIA

Hospital Officials to Meet.—The eleventh annual conference of the American Hospital Association will be held at Washington, D. C., September 21-24.

Commencement Exercises.—At the annual commencement exercises of the Georgetown University Medical School, held in Washington, a class of 15 was graduated. President Joseph F. Himmell of the university conferred the degrees and the address to the graduates was made by Dr. D. Percy Hickling.——The item in The Journal, June 5, relative to the change in the deanship of the Georgetown University was an error, as the change in deanship occurred in the George Washington University.

Personal.—Dr. Reid Hunt has gone to Europe.——Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, has had conferred on him the Cross of the Legion of Honor by the president of France.——Dr. J. Steele Forsythe has been appointed physician in charge of a hospital of a Brazil railway company.——Dr. G. Lloyd Magruder, Washington, has returned from Europe.——Dr. John S. Fulton has been appointed executive secretary of the International Congress on Hygiene.——Dr. Francis Wilson has succeeded Dr. Joseph S. Wall as a member of the board of fire and police surgeons of Washington.——Dr. Thomas A. Lee has succeeded Dr. H. W. Moffitt, resigned, as superintendent of the Casualty Hospital, Washington.

ILLINOIS

Chicago

Personal.—Dr. Alfred D. Kohn has returned from Europe.——Dr. Joseph P. Smyth has been re-elected high medical examiner of the Catholic Order of Foresters.——Dr. and Mrs. William N. Senn, Dr. and Mrs. George E. Baxter, Dr. and Mrs. George F. Fiske, Dr. Corey H. McKenna, and Dr. and Mrs. Arthur R. Elliott have sailed for Europe.

Out-Door School for Tuberculous Children.—On August 3, the first out-door school for tuberculous children was opened on the grounds of the Harvard School, West Seventy-fifth street and Vincennes road, under the joint management of the Board of Education and the Chicago Tuberculosis Institute. The school at first will have thirty pupils, selected from children attending the public schools who are found physically subnormal, or predisposed to tuberculosis.

Addresses of Chicago Physicians Wanted.—Physicians in Chicago who have not already done so are asked to send to the American Medical Association their new street numbers—for two purposes: that The Journal may be correctly sent and that their addresses may appear correctly in the American Medical Directory which is now being printed. A blank was given on advertising page 40 of The Journal, August 7, and the matter was discussed editorially on page 463 of that issue.

Hospital News.—The board of directors of the Norwegian Lutheran Deaconess' Home, at a meeting, July 13, completed the arrangements for the new $75,000 hospital to be built adjoining the old home at Haddon avenue and Leavitt street.——A donation of $5,000 has been made by the Illinois Steel Company to the South Chicago Hospital, to be applied toward the payment of the indebtedness.——The Gil W. Barnard Hospital Association, organized and incorporated by prominent Masons of this city, is endeavoring to raise $200,000 for the establishment of a hospital.——Construction work has been begun on the new addition to Wesley Hospital which is to cost $125,000, and to accommodate about 180 additional patients. The new wing will be ready for occupancy in February next.——By the will of the late Augusta Mannheimer, widow of Dr. M. Mannheimer, $10,000 is bequeathed to the United Hebrew Charities for the benefit of the Michael Reese Hospital, with the suggestion that a contagious ward for children be maintained; $2,500 is bequeathed to the Alexian Brothers Hospital, and all Dr. Mannheimer's medical books are given to Rush Medical College, together with a bequest of $5,000 for the establishment of a library to be named after the testator's husband.

INDIANA

Refused License.—At a meeting of the State Board of Medical Examination and Registration, July 15, it was agreed by a unanimous vote not to reinstate Dr. Charles L. Landfair, Bluffton, whose license was revoked after the investigation of charges of criminal practice.

Personal.—Dr. Lewis N. Geisinger, Auburn, has been appointed secretary of the DeKalb County Board of Health, vice Dr. Jacob D. Casebeer, deceased.——Dr. Walter Baker, South Bend, has been selected to take charge of the Anti-Tuberculosis Society's fresh-air colony at Pottawattomie Park.——Dr. Minnietta Hervey, physician for the Home for the Friendless, Richmond, has resigned.——Dr. Erastus S. Fisher, Markle, is said to have been declared insane July 8.

IOWA

Physician Pardoned.—Dr. J. W. Crawford, Lamoni, convicted of the murder of Miss Maud Stone 4 years ago by a criminal operation and sentenced to imprisonment for twelve years in the state penitentiary, has been pardoned by the board of control because of evidence presented that the deceased was already suffering from the effects of a criminal operation when she consulted Dr. Crawford.

Personal.—Dr. Albert C. Moerke, Burlington, has been elected president of the State Board of Medical Examiners, vice Dr. Alfred P. Hanchett, Council Bluffs.——Dr. W. J. Neuzil has resigned as assistant surgeon of the Soldiers' Home, Marshalltown, and Dr. H. A. Newell has been appointed his successor.——Dr. William J. Heflin, Nora Springs, suffered a severe scalp wound in a collision between his automobile and a telephone pole July 24.——Dr. Edgar B. Henderson, Marengo, dislocated his knee by a fall, July 10.——Dr. Dill N. Pattison, Oelwein, has resigned as local surgeon of the Chicago Great Western Railway.——Dr. Charles S. Grant, Iowa City, has been detailed as surgeon of the Fifty-fourth Infantry, I. N. G., during its encampment this month.

KANSAS

College Wants Medical Department.—Midland College, Atchison, it is announced, will open a medical department by affiliating with Ensworth Medical College of St. Joseph, Mo.

Large Proportion of Convicts Tubercular.—The State Board of Health has just completed its tests among the 812 convicts in the state penitentiary, Lansing, and finds that 160, of whom 88 are white and 72 colored, show signs of tuberculosis.

Election.—At a meeting of the Jefferson County Medical Association held in Valley Falls, June 30, the following officers were elected: president, Albert D. Lowry, Valley Falls; secretary and treasurer, Frederick P. Mann, Valley Falls; censors, Drs. Edgar C. Rankin, McLouth, and Millard F. Marks, Valley Falls, and delegate to the state association, Dr. David D. Wilson, Nortonville.

The Antituberculosis Fight.—Dr. C. S. Emley, state lecturer, started on his tour against tuberculosis August 1. He is traveling over the state in a car specially equipped for the work, expects to visit every town in Kansas, and will remain in the larger towns for a few days, giving lectures and teaching the people what the state is endeavoring to do in its fight against tuberculosis.

Personal.—Dr. Valentine V. Adamson, Holton, has been elected assistant surgeon of the Fort Dodge (Iowa) Soldiers' Home.——Dr. John C. Lardner has been appointed city physician of Chanute, vice Dr. Fred R. Hickey.——Dr. Walter C. Palmer, Kansas City, has been appointed superintendent and physician-in-charge of the hospital at Hiawatha.——Dr. Henry M. Stewart, Hutchinson, has won a suit in which he was sued for $5,000 damages for malpractice.

KENTUCKY

No More Corner Pumps.—A resolution has been introduced in the general council of Louisville calling on the Board of Public Works to draw up an ordinance doing away with the town pumps and to substitute hydrants.

Personal.—Dr. W. H. Nuttall, superintendent of the Feeble-Minded Institute, Frankfort, has resigned, and has been selected by Dr. A. C. Nevitt as physician of the Eastern Kentucky Hospital, Lexington.——The names of Dr. John R. Wathen and Dr. MacCracken, were omitted from the list of the faculty of the University of Louisville, Medical Department.——Dr. William B. Doherty has been appointed a trustee of the Louisville Public Library.——Drs. W. Horace Witherspoon and Carroll P. Price have been elected members of the board of health of Harrodsburg.——Dr. George W. F. Rembert, superintendent of the sanatorium of the Kentucky Antituberculosis Association, has resigned.——Dr. William P. Drake, Rockfield, has succeeded Dr. Eldon N. Hall, Woodburn, as physician of Warren county.——Dr. Philip H. Stewart, Paducah, has been elected president of the board of health of McCracken county, and Dr. Horace Rivers, Paducah, health officer.

LOUISIANA

New Sanitaria.—The new Fenwick Sanitarium for mental and nervous diseases and drug and liquor addictions has been opened at Abbeville under the directions of Frank F. and W. G. Young.——Dr. E. Y. Ames has leased the Mulberry Grove Hotel from Dr. M. G. Marrero, Covington, and will convert the building into a sanatorium for tuberculosis.

Personal.—Dr. Ada Schwing Kiplinger will open a free clinic at St. Mark's Hall, New Orleans, in September.——Dr. C. Milo Brady, New Orleans, special medical inspector of the State Board of Health, has resigned.——Dr. Lester J. Williams has been elected mayor of Melville.——Dr. Yves R. LeMonnier has been elected surgeon of the Soldiers' Home of Louisiana, vice Dr. William P. Brewer, deceased.

MAINE

Graduation Exercises.—The graduating exercises of the Medical School of Maine, Brunswick, were held June 23, and a class of 18 was graduated. The oration was delivered by Hon. DeAlva S. Alexander, Buffalo, N. Y.——The senior class of the school has presented to the school an oil painting of Dr. Edward J. McDonough, professor of obstetrics.

Personal.—Dr. John G. Towne, Waterville, has been appointed junior assistant surgeon of the Second Infantry, Maine N. G., vice Dr. Frederick A. Chandler, Addison, promoted to captain.——Dr. Thomas U. Coe, Bangor, has tendered to the University of Maine a site for the proposed home for its college of law, and in addition offers to give $1,000 toward the building.——Dr. John M. Eager has succeeded Dr. Parker C. Kalloch as quarantine officer at Portland.

MARYLAND

Personal.—The residence of Dr. Mylar P. Sutliff, Somerset Heights, was destroyed by fire July 27, with a loss of $5,000.——Dr. William S. Welch has been appointed health officer of Annapolis.

Outbreak of Typhoid Fever.—An appeal has been received by the State Board of Health to aid in the eradication of an outbreak of typhoid fever in Kent county. The investigation of the board shows that 26 cases have occurred the cause of which has not yet been determined.

New Health Plans.—Dr. Marshall L. Price, the new secretary of the State Board of Health, proposes to ask the legislature for an additional appropriation of $25,000, to be used in overcoming the loss to the state from disease. Among the improvements proposed are the wholesale purchase of nitrate of silver, to be put up in especially prepared packages, and sold or given to nurses and physicians, to be used in cleansing the eyes of the newborn, and the purchase of large numbers of standard disinfectant cards with instructions how to disinfect houses where there have been infectious or contagious diseases.

Baltimore

Change in Editorship.—The *Bulletin of the Medical and Chirurgical Faculty of Maryland*, with the close of Volume I, changes its editor, Dr. Henry O. Reik retiring, and being succeeded by Dr. Emil Novak. The *Bulletin* is strictly a society organ, devoted to the interests of the state society and its component county and local societies.

Illegal Practitioner Sentenced.—Robert H. Darrah, convicted in March last for the alleged practice of medicine without a license, is said to have been sentenced by Judge Gorter to imprisonment for thirty days in jail and to pay a fine and costs amounting to $32.25. An appeal was ordered, and the defendant was released on bail of $1,000.

President Remsen Goes to California.—President Ira Remsen of the Johns Hopkins University started for California August 1, with the referee board of consulting scientific experts, to obtain information regarding the methods used in drying fruits, in order to decide the question whether or not the so-called "sulphuring" process renders fruit unwholesome.

Personal.—Drs. Harvey W. Cushing, Frank Martin, Thomas B. Futcher and J. George Schmelzer have sailed for Europe.——Dr. St. Clair Spruill has been appointed associate surgeon to St. Agnes' Hospital, and Dr. J. F. O'Mara assistant.——Dr. J. Mason Hundley has been appointed visiting gynecologist to St. Agnes' Hospital.——Drs. Edward L. Mellus and William S. Baer have returned from Europe.

MASSACHUSETTS

Personal.—Dr. Freeman A. Tower, recently superintendent of the State Insane Hospital, Worcester, assumed charge of the Burbank Hospital, Fitchburg, July 19.——Dr. Arthur T. Schoonmaker has been elected town physician of Westfield.

Medical Examiner Wins Case.—In the case brought against medical examiner Andrew H. Hodgdon, Dedham, by Elizabeth Morton, in which $50,000 damages were asked on the claim that the medical examiner was negligent in not ascertaining that the plaintiff was unable to leave her home, the jury decided in favor of the defendant.

MICHIGAN

County Hospital for Tuberculosis.—At the recent meeting of the Board of Supervisors of Marquette county, $15,000 was appropriated for a hospital for tuberculosis, to be erected on the county house farm.

Jury Disagrees.—In the case of Dr. G. K. Boyajian, Detroit, who shot and killed his nephew, April 30, the jury disagreed, four voting for acquittal and eight favoring a compromise verdict convicting the defendant, but asking the governor to pardon him and to provide adequate punishment for home despoilers.

Personal.—Dr. Simon M. Yutzy, instructor in osteology and demonstrator of anatomy in the University of Michigan, Ann Arbor, has resigned to take effect in September.——The new city physicians of Detroit are Dr. George F. Lavin, George H. Voelkner, Joshua Hanser, W. G. Kanter, Philander B. Taylor and Edmund Quandt.

Communicable Diseases.—During June there were reported in the state 97 cases of pneumonia, 216 of tuberculosis, 67 of typhoid fever, 177 of diphtheria, 35 of meningitis, 110 of whooping cough, 213 of scarlet fever, 841 of measles and 64 of smallpox. This shows a decrease in typhoid fever, meningitis and smallpox, and an increase in pneumonia, tuberculosis, diphtheria, whooping cough, scarlet fever and measles.

June Mortality.—During June, 2,608 deaths were reported, equivalent to an annual death rate of 11.9 per 1,000. Of the number, 408 were infants under 1 year of age, 159 children from 1 to 4 years of age, and 826 individuals aged 65 years and over. Among the important causes of death were tuberculosis, 222; violence, 186; cancer, 145; pneumonia, 94; meningitis, 45; diarrhea and enteritis of infants, 39; measles, 25; scarlet fever, 19; diphtheria, 16, and whooping cough and typhoid fever, each 15. As compared with May, a slight decrease is noted in the deaths from tuberculosis, diphtheria, scarlet fever, measles, whooping cough, pneumonia and enteritis, and a slight increase in the deaths from pneumonia, cancer and violence. There were 7 deaths reported during the month from tetanus.

MISSISSIPPI

Cocain Seller Fined.—Dr. Sherrod, Meridian, a colored druggist, is said to have been fined $100 and to have been sentenced to imprisonment for sixty days, on the charge of the unlawful sale of cocain.

The State Medical School.—The Medical Department of the University of Mississippi will open for its first session in October. Prospects point to a large initial attendance. The faculty has been selected with the exception of a demonstrator of physical diagnosis.

New Hospitals.—The King's Daughters' Hospital, Grenada, has been incorporated for $10,000. The organization is supported by the local branch of the King's Daughters. A tract of 20 acres near Laurel has been purchased for $3,000, and will be used as a site for a new hospital.

Do Not Want Names Used.—Hinds County Medical Society, at its recent meeting, adopted resolutions declaring it unprofessional to use physicians' names in connection with illnesses, accidents, operations, etc., and requesting the papers of Jackson not to mention names of physicians in connection with the treatment of any case.

Personal.—Drs. William R. Card and Stevens have been reelected associate physicians of the Mississippi Insane Hospital, Meridian.——Dr. Orson M. Turner, Jackson, has been appointed local surgeon of the New Orleans Great Northern Railway.——Dr. Nolen Stewart, Meridian, has been appointed professor of nervous and mental diseases in the Medical Department of the University of Mississippi, and Dr. William Krauss, Memphis, Tenn., has been appointed dean and professor of pathology.——Dr. Harvey F. Garrison, Seminary, has been reappointed health officer of Covington county.

MISSOURI

New Hospital.—A permit was issued July 28 for the erection of the St. Louis Skin and Cancer Hospital, a four-story, fireproof structure, to cost $85,000.

College Will Not Reopen.—It is reported that the Homeopathic Medical College of Missouri, St. Louis, has temporarily suspended and will not reopen for the fall session.

Personal.—Dr. Louis E. Bunte, St. Louis, has been appointed a member of the State Board of Health, succeeding Dr. John T. Thatcher, Oregon, term expired.——Dr. G. Wilse Robinson, Kansas City, has been appointed superintendent of the Kansas City General Hospital.——Dr. George W. Davis, St. Louis, has been appointed first assistant surgeon of the Freedmen's Hospital, Washington, D. C.

Declares Cars Insanitary.—In an official letter, July 28, the governor calls on the State Board of Health to make an investigation of the sanitary conditions of sleeping cars and coaches operated on the railroads of the state. He calls especial attention to the insanitary conditions of closets and washrooms, both in ordinary cars and sleeping cars, and also to the fact of the promiscuous expectoration in cars.

NEBRASKA

New College Buildings.—The John A. Creighton Medical College has commenced the erection of a new laboratory building adjoining the college building proper, to cost $60,000. The building will be four stories in height, will have a frontage of 72 feet on Fourteenth street, and will contain nine general and private laboratories, besides clinic and lecture rooms, etc.——Plans have been accepted for the proposed group of buildings of the College of Medicine of the University of Nebraska, Omaha. The estimated cost of the group is $1,500,000, which provides for nine buildings built about a quadrangle, with a hospital in the middle. The $1,000 prize offered for the accepted plans was awarded to Shipley, Rutan and Coolidge, Boston.

NEW HAMPSHIRE

Personal.—Dr. Gardner C. Hill, Keene, has resigned from the staff of the Elliot City Hospital, and Dr. Arthur A. Pratte has been appointed to fill the vacancy.——Dr. Servule St. Pierre, McGregorville, has been declared insane, and committed to the state hospital.

Society Meetings.—The Manchester Medical Society, at its annual meeting, held June 13, elected the following officers: President, Dr. Walter T. Crosby; vice-president, Dr. Noel E. Guillet; secretary-treasurer, Dr. Clarence O. Coburn, and censors, Drs. Gustavus B. Morey, Wellington A. Thompson, Zatae L. Straw, Clarence O. Coburn and Clarence W. Milliken. Votes of thanks were passed to the retiring president and secretary-treasurer.——Dr. Frank Blaisdell, Goffstown, president of the New Hampshire Medical Society, was the guest of honor at the sixth semi-annual meeting of the Grafton County Medical Society held at the Mary Hitchcock Hospital, Hanover, June 1.

NEW MEXICO

State Society Meeting.—The first meeting of the New Mexico Medical Society to be held in the southeastern part of the territory, will be held in Roswell, September 15 and 16.

County Society Organized.—Physicians of Santa Fe county met at Santa Fe, recently, and organized a county medical society to be affiliated with the state and national organizations. Dr. William S. Harroun, Santa Fe, was elected president; Dr. Frank A. Yoakum, Cerrillos, vice-president, and Dr. James A. Rolls, Santa Fe, secretary and treasurer.

NEW YORK

County Laboratory Wanted.—Physicians of Nassau county have filed a petition with the board of supervisors, asking that a county laboratory be established and a county bacteriologist appointed.

District Society Meeting.—At the annual meeting of the Fourth District Medical Society, held in Plattsburg, July 8, Dr. Dayton L. Kathan, Schenectady, was elected president;

Dr. Grant C. Madill, Ogdensburg, vice-president; Dr. Frederick K. Resseguie, Saratoga Springs, secretary (re-elected); and Dr. George H. Oliver, Malone, treasurer.

Personal.—Dr. J. Walter Wood, Port Richmond, was attacked and assaulted near his home, August 6.——Drs. Francesco G. Rossi, Utica, and George W. Miles, Oneida, have been appointed lecturers of the State Board of Health, and Dr. Martin Cavana has been designated as medical expert.——Dr. Fred D. Andrew, Rochester, has been designated as medical expert and Drs. George W. Goler and Montgomery E. Leary, Rochester, as lecturers of the State Department of Health.——Dr. George H. Beers, Ticonderoga, was thrown from his automobile recently, breaking three ribs.

New York City

Italians Organize Society.—The New York Italian Medical Society has been incorporated with Drs. Antonio Stello, Vincenzo Sellaro, Antonio Scaturro, Giuseppe Tomasulo and Antonio Tarditi as directors.

Building for Physicians.—A 12-story office building is to be erected at 124 Joralemon street, Brooklyn, to be known as Galen Hall and to contain 45 suites of offices for the exclusive use of physicians and dentists.

Personal.—Dr. Thomas Addis Emmet will be one of the speakers at the exercises commemorative of the Battle of Yellow Ford, in Chicago, August 15.——Dr. Morgan G. Cutler was seriously injured in an automobile accident in Council Bluffs, August 1.——Dr. William H. Nammack, Far Rockaway, has been reinstated as coroner's physician of Queen's Borough.——By the will of Mrs. Marie H. Crawford, Pittsfield, Mass., $50,000 and the estate in Sheffield, Mass., is bequeathed to Dr. Thomas H. Allen.

Buffalo

Personal.—Dr. Robert F. Sheehan, Jr., has been appointed professor of hygiene at the University of Buffalo, vice Dr. Henry R. Hopkins, appointed emeritus professor.——Dr. Herbert Hill has resigned as professor of chemistry, toxicology and physics.——Drs. Jane W. Carroll, Regina Flood-Keys and Amelia Earle Trant are spending the summer abroad.——Dr. Albert P. Sy has been appointed associate professor of chemistry and toxicology in the University.——Dr. John H. Pryor has been placed in charge of the dispensary of the Buffalo Association for the Relief and Control of Tuberculosis.——Dr. Ernest Wende, health commissioner, has recovered from his recent illness and resumed his duties.

OHIO

Personal.—Dr. Adolphus W. Foertmeyer has resigned as receiving physician to the Cincinnati Hospital, and Dr. Adam E. Schlanse has been elected his successor.——Dr. George A. Fackler has been made vice-president of the new health board of Cincinnati, Dr. Mark A. Brown, health officer, and Drs. Edward W. Walker and John H. Landis have been appointed members.——Dr. James W. Miller has left for Europe.

Additions to the Faculty.—The trustees of the University of Cincinnati have made the following additional nominations in the medical department: Dr. Shaler Berry, lecturer on medical jurisprudence; Dr. Marion Whitacre clinical instructor in medicine; Dr. John A. Caldwell, clinical instructor in surgery; Dr. Clifford Sater, clinical instructor in diseases of the chest; and Dr. Albert H. Freiberg, professor of orthopedic surgery and supervisor of clinics.

OREGON

State Tuberculosis Board Organized.—The State Board of Tuberculosis Commissioners, created by act of the last legislature, met in Salem June 9, and decided to utilize the present building of the Deaf Mute School, east of Salem, as a temporary sanatorium for tuberculosis.

Hospital Notes.—Two of the older hospitals of Portland are completing large annexes. By the first of the year the annex of St. Vincent's Hospital will be ready, and the annex of the Good Samaritan Hospital, including a roof garden, is almost completed.——The new Sellwood Hospital was opened July 2. The building has been erected at a cost of $15,000.——Dr. John F. Calbreath, Salem, formerly superintendent of the Oregon State Insane Hospital, has purchased the interest of Dr. Wilson D. McNary, in the Mount View Sanitarium, Portland, and the Glencoe Sanitarium.

Personal.—Dr. Ferdinand H. Dammasch has been elected assistant health officer of Portland, vice Dr. Parker, resigned. ——Drs. Allan Welch Smith, George B. Story and Rupert J. Chipman have been appointed members of the board of health of Portland, vice Drs. Andrew J. Giesy, Robert C. Yenney and George F. Wilson, resigned.——Dr. Charles A. Ault, Enterprise, was seriously burned by an explosion of spirits on a train, July 7.——Dr. Calvin S. White, Portland, is reported to be critically ill in St. Vincent's Hospital.——Dr. Cortez H. Wheeler has been elected health officer of Portland, vice Dr. E. C. Pohl, resigned.

SOUTH CAROLINA

Pellagra.—At the August 6 meeting of the Abbeville County Medical Society, held in Abbeville, pellagra was studied. Several patients with the disease were presented, and Dr. James W. Babcock, Columbia, and Surgeon C. H. Lavinder, U. S. P. H. and M.-H. Service, presented papers.

Infirmary Opens.—Fennell Infirmary, Rock Hill, was formally opened July 21. The institution contains 18 rooms for patients, together with the necessary operating, sterilizing and other rooms, and in the basement there are two commodious wards for colored patients. The infirmary is the result of years of work of Dr. William W. Fennell, who is surgeon in charge.

GENERAL NEWS AND COMMENT

Personal.—Dr. Milton J. Rosenau, director of the Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service, has been appointed head of the newly established department of hygiene and preventive medicine in Harvard Medical School, Boston.

Railway Surgeons Meet.—The Buffalo, Rochester and Pittsburg Railways Surgeons' Association met for organization in Rochester, July 20, and elected the following officers: President, Dr. A. Miner Straight, Bradford, Pa.; vice-president, Dr. William B. Johnston, Ellicottville, N. Y., and secretary, Dr. Spencer M. Free, Du Bois, Pa.——At the twenty-ninth annual meeting of the Lehigh Medical Association held at Delaware Water Gap, Pa., July 22, the annual address was delivered by Dr. William L. Rodman, Philadelphia, on the treatment of hernia, and the following officers were elected: President, Dr. Obediah H. Sproul, Flemington, N. J.; vice-presidents, Drs. Jonathan M. Wainwright, Scranton, William E. Gregory, Stroudsburg, H. Herbst, Reading, and Henry A. Grim, Allentown; secretary, Dr. Clinton J. Kistler, Leighton, and treasurer, Dr. Albert A. Seem, Bangor.

Medical Colleges and University Connection.—Several medical colleges have become more closely connected with colleges of liberal arts during the past two years and are more completely under the control of universities, which doubtless means better laboratories, better teachers, and the adoption and enforcement of higher standards. In some of these sweeping changes have been made. (1) The Medical College of Alabama is now the organic Medical Department of the University of Alabama. (2) The University of Southern California College of Medicine is now the Los Angeles Clinical Department of the University of California. (3) Tulane University Medical Department has formed closer connection with the University and now has the buildings for the first two years of the medical course on the university campus. (4) The new Ohio-Miami Medical College of the University of Cincinnati will be under the direct control of the university. (5) Toledo Medical College is now the Medical Department of the newly established Toledo University, the development of which will be watched with much interest. (6) Tennessee Medical College has become the organic medical department of the Lincoln Memorial University. (7) It is stated that the new Medical Department of the Universities of Nashville and Tennessee will receive strong support from the University of Tennessee.

CANADA

Council Election.—The elections for the council of the College of Physicians and Surgeons of Saskatchewan, which recently took place, resulted as follows: Dr. Stanley Millar, Battleford; Dr. A. McG. Young, Saskatoon; Dr. James T. Irving, Yorkton; Dr. A. E. Kelly, Swift Current; Dr. W. A. Thomson, Regina; Dr. Hugh E. Eaglesham, Weybourne; and Dr. Andrew W. Argue, Grenfell.

University-Hospital Agreement.—A new agreement has been entered into between the trustees of the University of Toronto and the board of governors of the Toronto General Hospital. The university has added the sum of $400,000 to the $300,000 contributed a few years ago, on the understanding that the hospital will build on the site now being prepared a new pathologic building for the uses of the medical faculty of the university, and grant certain rights as to the appointments of heads of services. The subscriptions for the new hospital now amount to $1,300,000, the university debentures to another $300,000, and the value of the site of the old hospital is placed at $300,000. The cost of the new hospital is put down at $2,200,000, which still leaves $300,000 which the trustees of the hospital have undertaken to raise, as a part of the bargain with the university. The chief professors or other heads in the faculty of medicine of the university are to be ex-officio heads of services in the hospital. Other appointments are to be made to the hospital staff only on the recommendation of a joint committee composed of eight members, four each from the hospital and university. In a few weeks the ground for the new building will be prepared. It will be thoroughly ploughed, disinfected and then left until the spring, when excavations will be commenced.

FOREIGN

To Warn Students Against Exploitation of Physicians.—The profession in Belgium held a congress recently to discuss merely practical questions connected with medical practice—the fifth annual congress of the kind. Van Pée urged the necessity for instructing newly graduated physicians as to the various traps set for exploitation of the medical profession, into which they are liable to stray in their ignorance. He suggested instruction during the medical course, but others advocated a warning pamphlet for graduates, setting forth the rights and duties of the medical profession and the dangers that threaten the young physician. The importance of cooperation between the organized charities and physicians, in order to restrict free medical care to those actually unable to pay for it, was emphasized anew and a number of methods discussed how to render this more practicable. The *Gazette Médicale Belge*, July 15, contains the discussions in full.

New Insane Asylum at Naples.—One of the largest insane asylums in Europe has just been inaugurated in the vicinity of Naples. Twenty-seven buildings in large grounds form this city for the insane on the Capodichino hills; it has accommodations for 2,000 inmates and the new asylum at Rome for 1,063. Professor L. Bianchi is in charge of the Naples asylum.

Epidemic of Psittacosis.—A correspondent of the *Gazzetta degli Ospedali*, July 25, states that twenty-three scattered cases of an atypical pneumonia have been observed at Zülpich, near Cologne, with four deaths to date. The infection has been traced to two small parrots, recently purchased, in the house of the person first affected. The other cases developed among friends and relatives from a distance who had attended her funeral. The streptococcus cultivated from the cases was apparently identical with a streptococcus found in all the organs of one of the parrots. A vaccine was made with the streptococcus which seems to have aided in the recovery of some of the later patients.

Jubilee Anniversaries in the Profession Abroad.—A number of well-known physicians in Germany have celebrated their fiftieth professional anniversary this summer, including B. Fränkel, the editor of the *Archiv für Laryngologie*, who has taken such a prominent part in the campaign against tuberculosis. The Journal described, Nov. 17, 1906, page 1664, the international historical laryngologic exhibition held at Berlin that month in honor of his seventieth birthday. Another prominent laryngologist also celebrated his jubilee anniversary last month, A. Lucae, of Berlin, the author of the vibratory sound treatment of sclerosis of the ossicles. The honors paid to Sir Felix Semon on his retirement were mentioned in The Journal recently, page 308. The list of *Jubilars* includes further W. Ebstein, the clinician of Göttingen, who seeks his recreation in the study of the history of medicine. The July number of *Janus* publishes a two-page bibliography of his important contributions to the history of medicine alone. Other celebrants are the surgeon, B. Bardenheuer, of Cologne, one of the leaders in treatment of fractures by extension; the physiologist and hygienist, J. Rosenthal, of Erlangen; K. Eberth, professor of pathologic anatomy at Halle; L. Hermann, whose "Physiology" is in its thirteenth edition, and A. Bilharz, brother of the discoverer of the distomum. Bilharz practiced in this country from 1865 to 1878. In Spain, the eminent professors and clinicians, J. Calleja, dean of the medical faculty, F. de Cortejarena and M. Iglesias, were presented with souvenir medals by the Academy of Medicine at Madrid; other medals were given five other members whose professional career has also passed the fiftieth milestone.

Eighth International Tuberculosis Conference.—This conference was held at Stockholm, Sweden, July 8, with the attendance large and the discussions fruitful. A *Festschrift* presented to the conference gives a résumé of what Sweden has accomplished in the campaign against tuberculosis, containing many of the articles read by Swedish authorities. Buhre reported the growth of the Swedish National Association against Tuberculosis which now has over 22,000 members to a total population of 5,250,000. It maintains a tuberculosis exhibition and has had 976 public lectures delivered at various points since the organization of the association five years ago. Pamphlets for school children and for recruits have been issued and distributed by the thousands as also a special pamphlet warning against undue dread of the disease. Stipends for postgraduate courses at tuberculosis sanatoria for physicians and nurses are provided, and special study made of inexpensive sanatoria and a number of such erected. A special tenement house was also built with flats of one or two rooms and kitchen, rented at reduced rates to working-men's families in which one or both of the parents are tuberculous. The tenants are given extra fuel to compensate for the heat lost by the required ventilation, and the children are given their dinners. Facilities for bathing are also provided free. The tenement in Stockholm proved such a success that a similar one has been erected in a country district. The healthy children of tuberculous parents are boarded out in the country, 246 having been thus provided for by the association and 87 by the poor authorities, while a special asylum has been erected for such children whose parents prefer institutional rather than foster family care for them. The sale of the special tuberculosis stamps has realized $71,000 to date.

LONDON LETTER

(From Our Regular Correspondent)

London, July 31, 1909.

Radium in Diseases of the Eye

As stated in previous letters considerable attention is being devoted to radium in the treatment of disease. The latest development is its application to diseases of the eye. At the Moorfield's Hospital (the principal eye hospital in this country) Mr. Arnold Lawson, an ophthalmic surgeon and Dr. Mackenzie Davidson, a radiographic expert, have tried it in diseases which usually proved obstinate or improved slowly under ordinary treatment, or else were of a virulent nature requiring drastic measures. So far only 17 cases have been treated, but the results are most encouraging. Most of the lesions were corneal ulcers, 4 were non-ulcerative affections of the cornea and one was episcleritis. After one application for 5 minutes to a hypopyon there was distinct benefit. The patient was a man aged 35, who gave a history of injury to the right eye. There was a deep ulcer and a gray infiltrated area 4 mm. in diameter and a large hypopyon. Twenty-nine milligrammes of radium were applied for five minutes and five days later the congestion was subsiding and the hypopyon had disappeared. Two days after a second application he was discharged practically cured. All the other cases did very well. Some punctate erosions gave equally encouraging results, as also did old cases of trachomatous pannus, except in one case in which increased vascularity followed the treatment.

The Imperial Cancer Research Fund

The seventh annual report of the Imperial Cancer Research Fund has been presented by Dr. Bashford, general superintendent, at a meeting of the general committee presided over by the Prince of Wales. Dr. Bashford claimed that the arduous work done by the fund in the past seven years had effected a revolution in the cancer problem. Seven years ago no one conceived it possible that portions of the mammalian organism could be kept growing for a period four times the length of life of the animal. The number of different tissues now being propagated separately made it possible that the majority of tissues might be so grown and segregated. In other words a living animal could be analyzed into many of its living component tissues.

Annual Meeting of the British Medical Association

The annual meeting of the British Medical Association was held at Belfast on July 23 to 31. Though the number of members who attended (about 700) was not large, the meeting from every point of view—scientific and social—was a great success. The comparative smallness of the attendance compared with that of the previous meetings was no doubt due to the fact that the meeting was held in Ireland at a city not very acceptable to the great English centers of population from which it must be reached by a sea voyage. The meeting took place in the University of Belfast, the spacious class rooms and halls of which provided ample accommodations for all the sections. At the meeting of the representatives of the various divisions of the association, many medico-political and medico-ethical topics were discussed. One, to which allusion has already been made in The Journal, is of particular interest. Dr. Kirby of Birmingham moved "that the advertisement of patent foods, proprietary remedies and the like in the *British Medical Journal* is calculated to authenticate in the eyes both of the medical profession and of the public, the preposterous and often mendacious claims of the vendors, and that present condition of the advertisement pages is, in this respect, not creditable to the association." Dr. Kirby denounced many of the remedies advertised in the *British Medical Journal* as almost quack remedies, defining these as remedies of which the exact composition is not declared and which are widely advertised in the lay press. He held that the fact of such advertisements appearing seemed to the public to authenticate all that was said about them. The discussion revealed some divergence of opinion. While some members warmly supported the resolution and protested against the "prostitution of the pages of the *Journal*" by such advertisements, others held that the association could not give assurance of the veracity of every line that appeared in the advertising pages and that the fact of an advertisement appearing did not carry any sanction. Then the question was raised what would the carrying out of the proposal cost the association? The treasurer said that the *Journal* already refused many advertisements and that this cost them about $5,000 a year. He held that there was very little in the advertisements to complain of. Finally as compromise a motion was carried that the council instruct the *Journal* and finance committee to appoint annually a subcommittee for the revision of advertisements; that no advertisements be accepted until they have been approved by the subcommittee; and that the subcommittee shall not allow any advertisement to appear which contains misleading or exaggerated statements, nor any advertisement of any preparation which is advertised elsewhere than in the medical press as a remedy for any morbid condition, and is of such a character that its use demands medical supervision or which is advertised anywhere in misleading or exaggerated terms.

The president, Sir William Whitla, paid a tribute to the first occupant of the chair of medicine in the University of Belfast, created in 1836, Dr. Henry Macormac, father of Sir William Macormac, and "the father of the open-air treatment of consumption." In his works on "Consumption" published in 1855 he insisted on the influence of impure or rebreathed air as a cause of tuberculosis. But no one believed him; the discovery of his genius required half a century for its acceptance. Sir William criticized severely the present system of medical education. The number and extent of the subjects now placed in the medical curriculum were so great that the brain of the student failed to expand in assimilative power with the growth of advancing science.

Action Against a Hospital for Injury During Operation

In The Journal of May 15, page 1592, has been reported an extraordinary action by a physician against the governors of St. Bartholomew's Hospital. He alleged that while being examined under anesthesia his arms were allowed to hang over the sides of the table; that one was bruised by being pressed upon by the operator or some other person and that the other was burned by a hot water bottle; that the result was traumatic neuritis of both arms which paralyzed him and prevented him from following his profession. As he produced no evidence showing that he was injured in this way the judge refused to put the question of negligence to the jury and also held that even if there was evidence of negligence the governors were not liable for the action of their staff. The case then came before the court of appeals and was again dismissed.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 29, 1909.

Preservation of Medicinal Plants

The Academy of Medicine heard a report by M. Guignard, director of the Superior School of Pharmacy, on a work by MM. Perrot and Goris in regard to the sterilization of medicinal plants. It is well known that most plants lose a great part of their properties along with their freshness through chemical action. It is of importance then to arrest this chemical action as soon as the plants are gathered. Perrot and Goris treat the plants in an autoclave in the presence of alcohol vapors, after which the dry leaves preserve without modification the physiologic properties that they have in the fresh state. Experiments have been made chiefly on digitalis leaves.

The Instruction of Abnormal Children

The question of the instruction of abnormal and backward children, which for some years has been occupying physicians and educators, has just been brought before the Superior Council of Public Instruction. The latter has decided that in order to obtain certificate of fitness to teach backward children candidates will have to undergo a year's probation in a special establishment, designated by the Minister of Public Instruction, and affording opportunity to study at first hand the best means for attracting the attention of backward children and of drawing out their intelligence.

Prescription Clerks

An energetic campaign is now being carried on by the association of prescription clerks against the too long hours of work. Compelled to work fourteen to sixteen hours consecutively, often without a night service to assure them an opportunity to rest, the prescription clerks maintain that the situation is dangerous for the public itself, prescriptions put up under such conditions being liable to accident. The association has passed a resolution demanding a better regulation of their work by the closing of the laboratories at 8 p. m. and the creation of night municipal pharmacies.

Monument to Professor Liégeois

The tragic death of Professor Liégeois, who with Liebeault, Bernheim and Beaunis, founded the famous "school of Nancy," and who was the first jurisconsult to study the application of hypnotism and suggestion to criminal law and to legal medicine, was mentioned about one year ago (The Journal, Sept. 12, 1908, li, 929). A committee composed of the colleagues, friends and pupils of Liégeois has just been formed to erect to his memory a monument at Bains-les-Bains (department of the Vosges) at the spot where the scientist was killed by an automobile.

The Potain Prize

The Academy of Medicine has just been authorized to accept a legacy of $5,000 (25,000 francs), the accumulated interest of which for the three past years will serve to found a perpetual triennial prize in honor of the illustrious clinician who died a few years ago and which will be awarded to the author of the best work on clinical medicine which has appeared during each triennial period.

Election of Two Foreign Associates of the Academy of Medicine

In its session of July 27 the Academy of Medicine chose Drs. Hansen of Bergen and Morisani of Naples as foreign associates.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 22, 1909.

Cultivation of Spirochæta Pallida

The attempt to cultivate the *Spirochæta pallida* so as to demonstrate its etiologic importance by artificial infection of animals is continually being made and more favorable results appear to have been obtained. In the last number of the *Deutsche medizinische Wochenschrift*, Schereschewsky reports the continuation of his culture experiments in Neisser's clinic. He has succeeded in obtaining cultures of the spirochete, on horse serum, from primary affections of the fetal syphilitic spleen and blood and has been able to continue the cultivation to any desired number of generations. In the original cultures of the first few days the type of *Spirochæta refringens* is found almost without exception, but in the later generations and in the older original cultures the forms correspond to *Spirochæta pallida*. Animal experiments have, however, remained unsuccessful. Professor Mühlens has reached the same results and his work has been confirmed in the institute for infectious diseases. In the latter institute animal experiments with the pure culture of the spirochete are being carried on.

Personal

Professor Steyrer, first assistant of Professor Kraus in Berlin, has been chosen as the successor of Professor Minkowski for the position of director of the medical clinic at Greifswald.

The director of the medical clinic at Freiburg, Professor Bäumler, has resigned on account of age. He is succeeded by the previous director of the medical policlinic, Professor de la Camp. Professor Bäumler received the freedom of the city of Freiburg on the occasion of his resignation.

Professor Czerny of Breslau has received a call to the newly established chair of children's diseases in Strasburg. Professor Garré of Bonn has been given an honorary doctor's degree by the University of Geneva. Garré was born in Switzerland.

Physical Character of Recruits for One-Year Volunteer Service in the German Army

To obtain some statistical data with reference to the influence which the higher schools exercise on the physical development of the pupils, the military authorities determined in 1904 that, for every young man who appeared for enlistment in the one-year voluntary service (generally at the age of 19 to 24), a card should be filled out in which a number of questions regarding the condition of the volunteer's health should be answered. In this way, data were obtained regarding 80,454 recruits, from 1904 to 1906. Schwining and Nicolai, two military physicians, have published an article based on this material, giving very interesting results. The applicants for the one-year volunteer service as a rule show a somewhat higher degree of fitness than the other military recruits. The most unfavorable physical condition is presented by the pupils of the gymnasia, then follow the pupils of the technical gymnasia, technical schools and upper technical schools (*Realgymnasiasten, Realschüler, Oberrealschüler*).

If we take into consideration the time that passes between leaving school and enlistment, it appears that those who have had the shortest term of schooling show the greatest fitness and their number diminishes constantly the longer the school term; and, moreover, the number of suitable recruits diminishes in a still greater degree the longer the time that has elapsed since leaving school till the time of examination. While without doubt the latter fact is partly accounted for by the circumstance that weakly individuals, or those affected with other bodily defects, wait longer for volunteering for service than strong and sound men, still, in the opinion of the authors, the time since school of itself must exercise an especially unfavorable influence on physical development. The proportion of the more serious degree of unfitness increases with the length of the school period. Likewise, the gymnasia and technical gymnasia are distinguished from the other classes of schools by the higher degree of unfitness of their pupils. There are proportionally more tall individuals among the one-year volunteers than among the other recruits. The general degree of fitness increases on the average with increasing height. In general, the degree of fitness is lower among short recruits; but in four Bavarian provinces the conditions are exactly reversed. Among former pupils of the gymnasia, 47.8 per cent. had defects of vision; 36.9 per cent. were myopic. The number of those with defects of vision increase in the gymnasium pupils with the duration of their attendance at school. In general, 44.1 per cent. of the one-year volunteer recruits have defects of vision; 33.5 per cent. are shortsighted.

The Leipsic League

A report of the activity of the Leipsic League for the last year was made at the general meeting held in Lübeck, which gives a satisfactory account of the work accomplished by the executive committee. The league has now 22,440 members; nearly 2,000 members have joined within the last year; certainly a remarkable success when it is considered that the yearly dues are $5 (20 marks), times are hard for our profession, and the social relations of our profession are in general unfavorable. The various items of mail matter in the course of a year amount to more than half a million. Membership on the executive committee in general is honorary; only the two secretaries receive a salary, as they must naturally devote their entire attention to the league. The league includes 10 national or provincial leagues, 128 sections, 10 auxiliary groups. These leagues are directed by 1,100 superintendents. For purposes of agitation and at times of economic struggles, speakers are sent by the committee to the place affected. The committee maintains a bureau for legal information and a bureau to secure places for assistants, substitutes and ship's surgeons. Last year 2,227 places of the first two classes were provided and 244 of the latter. The league also carries on its own book business, retails books and publishes a physician's calendar. The committee also maintains a correspondence department in which communications to the political medical press are reprinted, and a bureau, sustained by the voluntary contributions of physicians, for the assistance of the needy widows of physicians. The receipts for the last year amounted to $4,440 (18,500 marks); the resources on hand amount to $3,600 (15,000 marks); the expenditures were $4,560 (19,000 marks). The largest pecuniary transactions of the committee were necessitated by the conflicts with the *Krankenkassen;* in this work sometimes physicians who threatened to appear as strike-breakers were dissuaded by money contributions and in other cases members who were compelled to give up their positions with the *Krankenkassen* in consequence of the strike were assisted pecuniarily until the end of the struggle. In this way large sums were expended which were secured not only by the yearly dues of the members, but also by voluntary contributions from German physicians.

VIENNA LETTER

(From our Regular Correspondent)

Vienna, July 28, 1909.

The Antimalaria Campaign in Austria

In southern Austria malaria was until recently so prevalent that energetic measures had finally to be adopted. In 1907 and 1908 the sanitation of the entire province of Dalmatia was effected. In the first year 212 towns and villages, with 89,000 inhabitants, were dealt with. Twenty-three physicians and 359 attendants were engaged all the year round. All suspected ponds and cisterns were filled up and a thorough examination of all affected persons with a routine treatment instituted. There were 3,400 persons with chronic malaria and 6,417 fresh cases, or 43 per cent. of the entire population, to be treated. In only 5,750 cases no swelling of the spleen could be discovered. Quinin and iron were given for fifteen days in full doses in chronic cases, and quinin alone in acute cases. No after-treatment was adopted. In 20 per cent. there was recurrence; this was treated by the same method. No prophylactic doses were distributed.

Altogether, 630 kilos (about 1,700 pounds) of quinin were used, or about 15 gm. (half an ounce) *per capita*. A rapid diminution of serious cases was noted; while formerly more than 10 per cent. of all patients had spleens reaching 4 inches or more below the costal arch the number soon fell to 3 per cent. The expense was very low, $50,000. In 1908, of 113,000 new subjects, only 4,350 were found without swellings of the spleen. In 18 per cent. there was recurrence after treatment. The amount of quinin distributed was 725 kilos, or over 1,900 pounds, an average of 14 gm. per person, as 39 per cent. of the population were affected. In 1909, the remaining district, with a population of 220,000, will be dealt with, and thus the whole country will be rid of the disease.

Pharmacology

PAPAYANS BELL

Report of the Council on Pharmacy and Chemistry

The following report of a subcommittee was submitted to, and adopted by, the Council and its publication directed.

W. A. Puckner, Secretary.

Papayans (Bell) made by Bell & Co., Orangeburg, N. Y., is said to consist of the "digestive principle obtained by our own exclusive process from the fruit of *Carica papaya,* combined with willow charcoal, chemically pure sodium bicarbonate and aromatics." The following statement appears on the package: "For the treatment of dyspepsia, flatulence, nausea, vertigo, hyperacidity, palpitation and other symptoms of indigestion and the vomiting of pregnancy. Peritonitis, cholera morbus, alcoholism and seasickness." "Digests every variety of food, removes every symptom of indigestion, restores the entire digestive tract to a normal condition." The dosage is recommended as follows: "From one to three tablets before meals, or two hours after eating. In severe cases, three tablets dissolved in hot water and repeated as necessary."

A circular which accompanies the package details the therapeutic virtues of the preparation and contains what purports to be extracts from medical journals, in which Papayans is recommended.

Examination of specimens purchased in the open market showed them to contain the following ingredients: Charcoal, sodium bicarbonate, ginger, saccharin and oil of gaultheria. As the product is said to contain papain, the presence of enzymes was tested for, with the result that it was found to possess neither proteolytic nor amylolytic properties. The results of our examination are in accord with the results obtained by a member of the Council, who examined the product independently, and who writes:

"We have made some extended tests with Papayans Bell, and find that the tablets consist essentially of sodium bicarbonate and charcoal, with a little flavoring matter. We find no digesting power for starch or egg albumin. At any rate, no appreciable change follows in the albumin in three hours, and no conversion to sugar in the same time, or change of starch to a point where the iodin reaction is weakened. The product seems to be practically inert."

It is recommended that Papayans Bell be refused recognition, and that publication of this report be authorized.

Comment: It will be remembered that two other products of Messrs. Bell & Company have been discussed in this department: Salacetin (Bell)[1] and Sal-Codeia (Bell)[2]. Salacetin was examined with several "synthetics" which all turned out to be mere acetanilid mixtures. Salacetin, advertised as "a combination, with heat, of Salicylic and Glacial Acetic Acids and Phenylamine" when examined "was found to be a mixture and to contain the following ingredients approximately in the proportion given: Acetanilid, 43; sodium bicarbonate, 21; and ammonium carbonate, 20." Sal-Codeia (Salacetin-Codein) therefore, would be the same with codein added.

Papayans (Bell) seems to be consistently fulfilling the life-history of the average nostrum. Made of well-known drugs and invested by its manufacturers—or exploiters—with virtues absurdly disproportionate to the known properties of the alleged constituents of the nostrum, the preparation was introduced to the world *via* the medical profession. With the help of thoughtless physicians, aided by a skillful and aggressive advertising campaign and augmented by the "free sample" device, the business grew and prospered. The bottles with the name and address of the company blown in the glass and with the varied therapeutic indications for the nostrum printed both on the label and on a circular in which the bottle is wrapped, have carried the manufacturer's message to the drug-taking public.

Apropos of this point, the recent "literature" contains what purports to be endorsements of the nostrum by medical journals. Thus there is quoted from the *New York Medical Journal*, Jan. 2, 1909, in part, the following recommendation: ". . . we venture to suggest to our readers who have not tried this remedy that they prescribe one *original sealed package* of Papayans (Bell) and that they carefully note the results from its use." [Italics ours.—Ed.] Having seen an "original sealed package" we believe that we can predict the "results from its use." On any patient not mentally unbalanced, the result would be that the next dose of Papayans (Bell) he thought that he needed would be purchased from the druggist direct.

That such results are not hypothetical is evidenced by the statements of the exploiters of Papayans (Bell) that "the annual sale now exceeds four hundred million tablets." Assuming this statement to be true, it would be necessary for every physician in the United States to prescribe over three thousand of these tablets every year—if they reached patients only through the physician! The company's own figures indicate that the time is about ripe to take care of this vast army of self-drugging laymen and recent circular letters seem to recognize it. The physician is notified that druggists are now furnished with Papayans (Bell) "in sealed packages of thirty and one hundred tablets." The medical man is told that the firm has "not forgotten the days when physicians' orders made our success possible" and it says it is "sincerely grateful to the doctors who gave us orders in the days when we were struggling for recognition." This tacit admission of the value of the physician as an unpaid agent for nostrum houses should be given thought by those physicians who prescribe such preparations.

While, so far as we know, Bell & Co. have not yet advertised in the daily press, they are not averse to furnishing the laity with samples when requested. An Ohio physician sent us the following letter received by a young woman who had written asking for samples:

> Miss X—— Y——,
> Z——.
>
> Dear Madam: As requested, we are mailing you sample of our Papayans (Bell) for Indigestion
>
> If a sufferer from Indigestion, we want you to give it a thorough trial as directed and note remarkable results that we believe you will get from its use.
>
> Kindly write us if you are unable to obtain it from your local druggist, as it is stocked by nearly every good drugstore in the United States.
> Yours truly,
> Bell & Co.

Evidently Bell & Co., while admitting that their financial success is largely due to the kindly, though misguided, efforts of physicians, are not going to let a little thing like loyalty to the medical profession interfere with a possible sale of their tablets.

THE L. D. JOHNS COMPANY

A discussion of the methods of Bell & Company would not be complete without reference to a concern which seems to be closely connected with it: the L. D. Johns Company, whose "only product" is a sugar-coated laxative tablet. Regarding the "sugar coated" tablet, a visitor at the place of business of Bell & Company and the L. D. Johns Company, wrote: "These companies apparently are not in possession of any tablet coating machines and in questioning on this point stated that some of their tablets were sent out to be coated." There is a sameness regarding the claims for the laxative tablets of the two companies that might lead one to suspect that the same individual prepared both. For instance:

Cascarans (Bell)	Dr. John's Tablets
"Taken as directed, it permanently removes the great majority of cases of habitual constipation."	"Taken as directed . . . permanently remove the great majority of cases of habitual constipation, torpid liver and sick headache."
" . . . a harmless vegetable preparation."	"A harmless vegetable remedy."
" . . . for the removal of pimples, yellowness and greasiness of the skin . . ."	" . . . removes pimples, blotches, sallowness and greasiness of the skin . . "
" . . . one tablet at night, one night and morning, or, in severe cases, one three times a day, gradually decreasing the frequency of the dose as improvement permits."	"One at night, one night and morning, or, in severe cases, one three times a day. Gradually decrease the frequency of the dose as improvement permits."

According to a leaflet sent out with samples by the L. D. Johns Company, the company is capitalized for $500,000, divided into 50,000 shares at $10.00 each; these shares are sold to those physicians who will agree "to prescribe the tablets at every suitable opportunity, to introduce them to other physicians" and "to promote their sale in every ethical way"! If the list of physicians' names and addresses which the company sends out as comprising the eastern stockholders is to be relied on, it would seem that many medical men are promoting their sale. In prescribing it is, of course, "necessary to specify 'Dr. Johns' Tablets No. XXX (*Original bottle*).'" As the name is on the bottle, it is not unbelievable that, as the company says in its prospectus, because of "our method of advertising, a large and very profitable business is being created." That the L. D. Johns Company expects to profit by the self-drugging which this method of prescribing fosters is evident:

> "Physicians not stockholders in this company suffer from the continual refilling of their prescriptions and from the recommendation of the *preparation prescribed by patients* to others. [Italics ours.—Ed.] Our stockholders *benefit* by the refilling of their prescriptions and by these recommendations."

Put baldly the case amounts to this: Physicians who prescribe "Dr. Johns' Tablets" not only are likely to foster self-drugging, but they will reap dividends therefrom. Truly a nice business to be in!

While Bell & Company and the L. D. Johns Company are said to be entirely distinct, they are to be found at the same address at Orangeburg, New York, and as will be seen, the officers of the two companies are more or less related.

BELL & CO.		L. D. JOHN CO.
President - -	John L. Dodge -	President
Secretary - -	Geo. C. Tennant	Vice-president
Vice-president -	Chas. B. Smith -	Sec'y & Treasurer

EXPLOITING THE PROFESSION

Nostrum promoters have two simple ways of "working" the medical profession. The first—and the more profitable—is, by lavish distribution of free samples, to get physicians to prescribe the blown-in-the-glass "original package" with the inevitable result of large sales direct to the laity. By the second method, which is merely a modification of the first, the physician furnishes the capital for floating the nostrum and then takes his share of the resulting profits. There may not be quite as much money in the second method for the promoter, but then the risks are correspondingly less. If the firm fails, the stockholders are the losers; the promoter is not necessarily "out" anything. From a commercial standpoint, a combination of the two methods is, of course, ideal.

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[1] The Journal, June 3, 1905 and July 1, 1905; reprinted in the "Propaganda for Reform in Proprietary Medicines."

[2] The Journal, Nov. 4, 1905; reprinted in the "Propaganda for Reform in Proprietary Medicines.".

MADAME YALE'S PREPARATIONS

The Latest Series of Nostrums Officially Demonstrated to be Humbugs

A few of the convictions under the Food and Drugs Act have been noted in The Journal, April 24, 1909. One of the latest "notices of judgment" emanating from the Board of Food and Drug Inspection at Washington refers to the misbranding of a number of preparations marketed by one Maude Yale Bishop Wilson, of New York City, who rejoices in the euphonious trade name of "Mme. Yale."

MME. YALE'S EXCELSIOR SKIN FOOD

One of the preparations was known as "Mme. Yale's Excelsior Skin Food" and was advertised as "a marvelous nourishing product that feeds through the pores of the skin. . . . Can not be duplicated as it is compounded by Madam Yale personally and protected by a chemical secret. . . . The only genuine skin food in the world. It is absolutely guaranteed to remove wrinkles and every trace of age from the face of all who use it."

The government chemist analyzed this "marvelous" product and found that "it consisted of 76.5 per cent. of vaselin which was mixed with fixed oil or fat and zinc oxid, colored with a pink dye and perfumed."

MME. YALE'S EXCELSIOR FRUITCURA

Mme. Yale's Excelsior Fruitcura is, according to madam, herself, "primarily 'Woman's Tonic,' a cure for every ill to which she is sexually heir from Infancy to Old Age. It is Nature's prompt omnipotent Restorative—a Specific for the Generative Organs—Fruitcura cures the so-called 'Incurable.' It is an Elixir of Life—It prevents and cures Prolapsus or Falling of the Womb and all Displacements of Womb or Ovaries."

This also was analyzed and found to consist "of 76.97 per cent. of volatile matter (largely water with 16.66 per cent. of alcohol by volume), 29.71 per cent. of sugar and small quantities of plant drugs."

MME. YALE'S FERTILIZER TABLETS

Still another preparation was "Mme. Yale's Fertilizer Tablets," which were recommended as "A Cure for Obesity" and "A specific for curing . . . all Gastric troubles." The government chemist said that "the tablets were very largely composed of charcoal compounded with potassium bitartrate and sugar."

MME. YALE'S EXCELSIOR HAIR TONIC

"Mme. Yale's Excelsior Hair Tonic" was found to consist "of 15.56 per cent. of alcohol by weight, 82 per cent. of water and small amounts of glycerin, perfumed with bergamot oil." If "Mme. Yale" is to be believed, this mixture of alcohol and glycerin "stops hair falling, cures and prevents Dandruff and all Scalp Diseases and overcomes any hereditary tendency to Baldness or Grayness."

MME. YALE'S EXCELSIOR COMPLEXION BLEACH

Another of the Madam's preparations was claimed to "remove moth patches and all skin discoloration" and in addition "creates natural beauty." But that is not all: "It purifies the entire skin, penetrating its remotest recesses—invigorates nerves, muscles and ligaments—makes the flesh firm and searches out and expels every impurity. Its compound is a chemical secret known only to Madam Yale."

No longer is it a secret for we read "the analysis of the . . . Complexion Bleach, disclosed that it was mainly a saturated solution of borax in orange flower water."

MME. YALE'S ANTISEPTIC

"Mme. Yale's Antiseptic" was also alleged to possess remarkable properties. "Used in the bath is a sure cure and preventive of . . . all diseases of the skin and scalp. It is a perfect Disinfectant, Deodorant, Germicide, Prophylactic and Antiseptic, destructive of all disease germs, bacilli and all bacteria of micro-organisms [*sic*] yet it is 'non-toxic.'" In addition it was a "Sure preventive of typhoid fever."

This destroyer of "all bacteria of micro-organisms" was analyzed by the Bureau of Chemistry and found to consist "of 97.6 per cent. of volatile matter (16.96 per cent. of alcohol by weight, 4 per cent. of formaldehyd, and water), 2.37 per cent. of boracic acid and aromatics."

MME. YALE'S BLUSH OF YOUTH

"Blush of youth is refreshing as concentrated dew, pure as purity—It overcomes all inactivity and imperfection of the skin and underlying structure; spiritualizes the expression and gives the countenance the glow, luster and beauty of Childhood and preserves the morning of life indefinitely." "Blush of Youth" it should be explained is but one more of Mme. Yale's marvelous preparations.

For those who, like Ponce de Leon of old, are looking for something in this line, the analysis of the government chemist may prove interesting: "Mme. Yale's Blush of Youth . . . consisted of 56.15 per cent. of volatile matter (6.30 per cent. of alcohol by weight and 49.85 per cent. of water, colored with a co l tar dye and perfumed), and about 43.85 per cent. of glycerin." This would seem to show that the long-sought fountain of eternal youth consists essentially of a mixture of water and glycerin, with a dash of alcohol.

These various preparations, comprising in all over eighty dozen packages, had been shipped to S. Kann Sons & Co., Washington, D. C., by "Mme. Yale." They were seized by the government and samples of the various preparations were subjected to analyses in the Bureau of Chemistry of the Department of Agriculture. By comparing the analyses with the statements on the labels and circulars enclosed with the several preparations "it was apparent that these statements were false, misleading and deceptive and the preparations misbranded within the meaning of Section 8 of the Food and Drugs Act of June 30, 1906." These preparations of "Madam Yale's" thus furnish the latest addition to the government's galaxy of officially demonstrated humbugs.

Sanitariums and the Acetanilid Habit

To the Editor:—I enclose herewith a "form" letter and question blank which I received recently from St. Louis. I may be entirely too wary but I am suspicious that this is a collection of "statistics" to combat the work of the medical profession in educating the physician and the laity in the harmfulness of acetanilid and similar preparations.

G. H. Benton, M.D., Chester, W. Va.
Sterling-Worth Sanitarium.

Comment: The letter which Dr. Benton encloses is in facsimile form and purports to come from Uriel S. Boone, M.D., of St. Louis, who states that he is "preparing an exhaustive article for publication in a leading medical journal" on the question, "Is acetanilid a habit-forming drug?" To obtain the necessary data Dr. Boone is "writing to every hospital and sanitarium in the United States." Examination of the question blank which accompanies the form letter discloses the fact that information is wanted regarding not acetanilid alone, but also antipyrin and acetphenetidin (phenacetin). The last question asked runs as follows:

> "If your records [of cases of habitual use of these drugs] are incomplete, would you allow a reputable physician to investigate the above mentioned cases so that he could write with positiveness about them, and, if necessary, *make oath to the truth of his report?*" [Italics ours.—Ed.]

Dr. Boone opines that the recipients of his queries "may hesitate to answer" the question just quoted, but he trusts that its importance will be evident when he explains that "it is currently reported that the manufacturers of acetanilid, phenacetin, etc., *have decided to prosecute all libelers of these drugs*" [Italics again ours.—Ed.] and he wishes to make no statement that he "can not substantiate under oath." Surely the life of the collector of medical statistics is unusuallly hazardous.

For the purpose of aiding Dr. Boone in his arduous search for truth on the "much mooted question, 'Is acetanilid a habit-forming drug?'" we direct his attention to a work that should prove of invaluable assistance. We refer to Bulletin 126 of the Bureau of Chemistry, entitled "The Harmful Effects of Acetanilid, Antipyrin and Phenacetin." This interesting study to which we have previously (The Journal, July 24, 1909, p. 303) called attention, records 112 cases of the acetanilid-habit. Of this number, at least 50, or 44.6 per cent. of the cases were those of patients who took proprietary preparations of the drug. From this we would not wish to give any bias to Dr. Boone's statistics. We hardly expect, however, that such will be the case. Dr. Boone's name appears as the author of an article entitled "A Therapeutic Study of Antikamnia and Heroin Tablets"—an article that has been very extensively "quoted" and has been sent out in its entirety by the Antikamnia Chemical Company. Under these circumstances we may be forgiven if we venture the opinion that Dr. Boone is not likely to be unduly prejudiced against "headache tablets" in general and fake "synthetic" coal-tar mixtures in particular. We await with breathless interest the appearance of Dr. Boone's "exhaustive article" and we must confess to some degree of curiosity regarding the name of the "leading medical journal" in which these invaluable data will appear.

Correspondence

The Teaching of Obstetrics

To the Editor:—Interest in the plan which has been advocated for so many years by the American Academy of Medicine looking to a higher standard of medical education is now being intensified by the report of the Carnegie Foundation concerning various schools throughout the country. The requirements of our state boards of health must appeal to the graduate himself. Dr. Arthur D. Bevan's splendid work in the Council on Medical Education and the rapid advance in the requirements of the Association of American Medical Colleges are hopeful signs of the times. All these efforts, it is to be hoped, will soon be focused in a uniform course of study in the various colleges which will harmonize the various teaching faculties to the benefit of the student.

No phase of the very intricate question of division of time in the curriculum of the medical school of to-day is of more interest to the student nor more likely to be unappreciated by the faculty than that pertaining to the relative value of obstetrics as compared with gynecology and surgery. A knowledge gained by correspondence with a number of the eminent teachers of obstetrics and gynecology shows a remarkable unanimity of opinion among them that obstetrics in our colleges does not cover the ground it does abroad nor what it should to give the student a real *Frauen Klinik* instruction; but at present the trend of the average student in the clinical years is to over-emphasize the more spectacular surgical clinic and to minimize research work and clinical diagnosis which must be the foundation of basic principles for the subsequent results in actual bedside practice.

At the recent conference of the subcommittee on curriculum of the clinical years of the Association of American Medical Colleges, held in Atlantic City, the importance of a just distribution of the 2,000 hours of the clinical years was made clear. Professor Reuben Peterson, of Ann Arbor, and I, to whom the subject of obstetrics and gynecology was assigned by President Hoxie, are trying to obtain an expression from the heads of the departments of surgery, gynecology and obstetrics, relative to the proper place of each in the curriculum, and the line of demarcation between them on hazy subjects, as a basis for our report to the next annual meeting of the association, in Baltimore, next March.

When the student is taught principles of diagnosis, and operative surgery is made a postgraduate subject, the young practitioner will more nearly appreciate his instruction. A physician of ten years' experience, a graduate of an Eastern college, came into my office to-day who had never been taught forceps, nor version, nor manikin work while in college, and has always been so honest that he has invariably called on a neighboring friendly consultant to deliver his difficult cases for him. He has now resolved to take a clinical course in obstetrics to prepare himself for his work.

Every student when he graduates and goes out into the world on his own resources realizes his handicap of lack of accurate diagnosis. He does not need a vast demonstration of heroic surgery; he will call a competent surgical expert for that part of his work. What he needs is diagnostic ability in internal medicine and surgery and skill to manage his obstetric patients so that his care of them will not be a reproach to him, nor to the school from which he has graduated.

George Clark Mosher, Kansas City, Mo.

Contagion and Consistency—A Rejoinder

To the Editor:—I note in The Journal, July 24, a communication from Dr. Emil Roy on "Contagion and Consistency." It is not improper to remark that the writer would do well to show in his statements some consistency with the real facts which are being brought out in investigations of infections diseases. Such statements as: "Clothing and other fomites are great carriers of infection," and "infected clothing that has been unused for years has been the cause of epidemics," are admitted by authorities, well able to judge, to be made entirely without sufficient grounds, and there is yet to be recorded a single satisfactory substantiated instance that shows such to be the case.

As stated recently by Dr. A. H. Doty, health officer of the Port of New York, in the *American Journal of Medical Sciences,* the old custom of attributing every obscure source of infection to fomites, has too long been in use by the medical profession and has proved a hindrance to the real solution of the problem of infectious diseases.

The work of Kayser, Drigalski, Lentz and Conradi on typhoid; that of von Lingelsheim, Osterman, Flügge, Kolle and Wassermann, Elser and Huntoon and others in cerebrospinal meningitis, and the investigations of the various boards of health, notably Massachusetts and New York, on scarlet fever and diphtheria, indicate in no uncertain manner that the time is passed when but a minor number of infections can be promiscuously laid to clothing, books and what not, and that the greater portion of infections with so-called contagious diseases, can be definitely traced to direct contact of uninfected persons with individuals who either in health or ill with the disease, are harboring and excreting the specific organism.

In place of Dr. Roy's statement that "we understand the germ theory and how diseases are disseminated," it would be well to substitute: "We are beginning to understand the real manner in which diseases are disseminated," and that the theory of fomites in this connection is largely exhausted.

H. S. Hammond, M.D., Trenton, N. J.

"Data is"—A Protest

To the Editor:—Correct—not to say elegant—English is most desirable in medical literature as in all other publications. The erroneous use of "data" with a verb in the singular is becoming deplorably frequent. I have seen it lately in no fewer than four instances: in a recent number of The Journal, by a well-known surgeon; in a medical paper, by a promising young investigator; in a scientific report on the Panama Canal; and in an editorial in one of our best weeklies.

"Data" is of course the plural of "datum," as "strata" is the plural of "stratum." Its use with a verb in the singular, as acknowledged by the editor of the paper alluded to, is due to haste and carelessness. It can hardly be attributed to ignorance in any of the four instances cited. But it ought never to occur.

Is not this one of the cases in which the editor or the proofreader should correct so evident a slip and not allow the error to become habitual? "Where am I at," from being a joke, is in danger of becoming a common locution. The same possibility exists in "data is" unless checked at the beginning.

W. W. Keen, Philadelphia.

Miscellany

Epidemic of Urticarioid Dermatitis from a Mite in Straw Mattresses

In a preliminary report to the Surgeon-General of the Public Health and Marine-Hospital Service, Drs. Joseph Goldberger and Jay F. Schamberg call attention (Public Health Reports, July 9, 1909, page 973) to an epidemic of urticarioid dermatitis due to a small mite (*Pediculoides ventricosus*) in the straw of mattresses. The epidemic had prevailed in Philadelphia and vicinity since the early part of May, 1909, though the authors state that the disease probably occurs more or less in various parts of the United States. This eruptive disease was first noted among a crew on a private yacht docked in the Delaware river; at about the same time more cases appeared among the crew of other boats and also various private residences and boarding houses in Philadelphia and vicinity.

In nearly every case it was determined that the patients had either recently slept on new straw mattresses or had freely handled the same. The various mattresses had come from one of four different manufacturers, all of whom obtained their straw from the same source. In order to establish experimentally the etiologic rôle of the straw, one of the authors exposed a bare arm and shoulder for one hour between two straw mattresses. Sixteen hours later the characteristic itching eruption occurred. Later three people voluntarily slept on some of the mattresses for one night and each developed the eruption. Untreated siftings from the straw when applied to the axillæ produced the eruption; siftings that had been exposed under a bell jar for one hour to the fumes of chloroform, when similarly applied, proved innocuous. Careful scrutiny of some of the fresh siftings disclosed the presence of a very small mite which, when applied to the axilla, produced the characteristic eruption. The mite was identified by Mr. Nathan Banks of the United States Bureau of Entomology as being "very close to, if not identical with, *Pediculoides ventricosus*."

The eruption consists of wheals, nearly all of which are surmounted by a central vesicle which becomes pustular. The primary efflorescences may be erythemato-urticarial spots or papulo-urticarial lesions, varying in size from that of a lentil seed to that of a finger nail, and are rounded, oval or irregular in shape. The lesions but rarely show the pinkish-white anemic area of ordinary "hives," being usually of a warm rose color. The eruption extends over the neck, chest, abdomen and back, and in a lesser degree over the arms and thighs. Scattered lesions may appear on the face, but the hands and feet are usually free. Some patients exhibit systemic symptoms; malaise, anorexia and sometimes an elevation of temperature of from 99 F. to 102 F. There may be a moderate enlargement of the subcutaneous lymph glands and a transient albuminuria. The condition is likely to be confounded with urticaria, chickenpox or scabies.

Prophylaxis consists in exposing the mattress to the fumes of sulphur or formaldehyd in a vacuum chamber. For the relief of itching and the cure of the cutaneous condition, the authors recommend the following:

℞.	gm.		
Betanaphtolis	2		gr. xxx
Sulphuris præcipitati	4	or	ʒi
Adipis benzoinati	31		℥i

Accidents in Obstetric Operations and Their Forensic Aspect.

—O. von Franqué calls attention to the excellent provision adopted in Austria in 1903 for all charges of malpractice against physicians. When a suit is to be brought against a physician for alleged malpractice, the prosecuting attorney must first obtain a certificate on the affair from the faculty of the university, signed by at least nine members of the faculty after two or three have studied the matter thoroughly and made out the certificate. If this certificate testifies that there has been no criminal malpractice, the affair ends there so far as the prosecuting attorney is concerned, and it does not become public, although the injured parties may still bring a civil suit, but they generally realize the hopelessness of their case and desist. By this means physicians are protected against heedless bringing of suits which tarnish their professional reputation even if terminating in acquittal. Franqué contributes an article on the subject to the *Sammlung klinischer Vorträge*, No. 524, reviewing a number of experiences in this line to which he had to testify while in the medical faculty at Prague. In one case the obstetrician mistook a breech for a frontal presentation in a difficult labor and attempted to perforate, supposing the child was dead. It proved to be alive and was born with a wound in the thigh and transient peroneus paralysis, but no other injury either to mother or child. The parents sent a lawyer to the physician to demand damages, but he threatened a counter suit for blackmail and the matter was dropped. In another case the obstetrician drew out the entire uterus and adnexa, his hand entering through the posterior vault of the vagina and a long rent in the uterus, when he supposed he was merely releasing the placenta. In another case of laceration of the uterus the obstetrician left the patient before delivery of the placenta, saying that nothing more could be done at present. In a fourth case, a vesicovaginal fistula following a forceps delivery was ascribed to the physician's carelessness. The faculty certificates in all these cases stated the grounds why the physician was not responsible for the fatality. The public never learned of the affair in some cases. Franqué urges all obstetricians to make an unfailing practice of writing out in detail the next day the complete history of the case when an accident of this kind has occurred. Such a candid, objective history, made out before there is any question of legal proceedings, has great influence on the authorities and experts, and will often turn the scale against any assumption of negligence. The favorable outcome in the first of the above cases was evidently due to this history of the case written spontaneously and objectively while the data were fresh.

Problem of the State in the Care of the Insane.—The task which a state must face in the care of its insane is outlined by Adolph Meyer in the *American Journal of Insanity*, April, 1909, follows: 1. The care of the insane is to be organized so that care is given at as early a date as possible, that is, before the time when commitment is now thought necessary. 2. A system of notification of a mental health board is to make organized activity possible; and adequate provisions with hospital nurses, not policemen and jails, must be available, pending the transfer to the specially organized hospitals. 3. The special hospital must have adequate treatment divisions where it is possible to become thoroughly acquainted with all the facts about the patient before his transfer into the ordinary observation wards for a more lasting stay. 4. Even in the wards for the supposedly more chronic cases, standards must be maintained that provide for the 25 per cent. or more of recoverable cases in which illness lasts more than a year. 5. Adequate provisions must be made to become thoroughly acquainted with the outside conditions under which the disorder developed, and with the possibilities of an adjustment before the patient returns, so that such help or guidance as may be advantageous to the patient and to his friends on his return from the hospital may be extended. 6. General organizations of work must be carried out in the locality, according to its needs, among the various types of the community, not only with regard to checking alcoholism and the spread of syphilis, but also with regard to hygienic methods of living generally; emphasis must be laid on keeping the minds balanced with a due share of recreation and rest, and satisfaction with the returns of every-day toil.

Ocular Manifestations of Hysteria.—C. E. Finlay of Havana contributes an article to the *Revista de Med. y Cirugia*, May 10, protesting against the prevalent disregard of the ocular manifestations of hysteria. It is probably, he says, the reaction from the excessive importance ascribed to the ocular manifestations by the clinicians of the Paris Salpêtrière school. He states that he has encountered six typical cases among 13,000 patients, and describes these six cases in detail. In none were there any pupil phenomena. The first patient was a man of 33 with amblyopia without ocular lesions, concentric contraction of the visual field and incomplete color blindness. He had had a similar attack of amblyopia a year before. The functioning of the eye soon returned to normal under a course of tonics, except that the contracted visual field and dyschromatopsia persisted for several months. The second patient was a boy of 12 presenting concentric contraction of the visual field and other signs of hysterotraumatism following a severe blow in the left temple. The third patient was a young physician with diplopia; powerful iodid treatment had been pushed on the assumption of possible syphilis. Paralysis of both internal recti seemed the only diagnosis until the concentric contraction of the visual field and partial color blindness revealed the hysteric origin of the trouble. The patient refused to accept this diagnosis but suspended treatment and recovery soon followed. Another patient was a young man with one useless eye. The other eye was normal except for hypermetropia, but it was hit with a snowball and he had to stay in his room for two months, after which vision in this eye was much reduced. The visual field was concentrically contracted and there was partial color blindness, but the amblyopia rapidly subsided under rest, bromids and tonics. His two other patients were a woman of 27 and a girl of 11, both with the bilateral concentrically contracted visual field; the girl presented also monocular polyopia and nystagmus.

Maydl's Operation for Exstrophy of the Bladder.—J. Jellinek of Brünn, Austria, reviews the experiences of the last fifteen years with Maydl's operation for exstrophy of the bladder. He tabulates the details of 177 cases as reported by 92 different surgeons—including a number of Americans—and answers the objections that have been made to the Maydl technic. None of them has any weight, he shows, except the possibility of ascending infection, and this is counterbalanced by the superior functional results, the high mortality of the non-operated from pyelonephritis or malignant tumors which seem to display a predilection for the exposed bladder mucosa, and by the large number of permanently cured patients. The records show 17 cured for over 2 years; 13 for over 3; 7 for over 4; 25 for from 5 to 9 years, and 1 each for 10, 11 and 12 years. The age at which the operation is performed is an important factor in the outcome; the mortality under 5 was 41 per cent.; between 6 and 10, 18 per cent.; between 11 and 20, 32:5 per cent.: between 21 and 25, 50 per cent., and above this age, 72 per cent. The mortality from pyelonephritis also increased with age, from 3 and 9 per cent. under 15 to 54 per cent. after the age of 25. Sooner or later, 25 per cent. of the patients who had been operated on succumbed to this. Careful selection of the cases for operative treatment and improved technic in means to keep the urine and stools separate will make the outcome still better. The illustrated monograph appeared originally in the *Casopis lekaru ceskych* not long ago. The various other methods for treatment of exstrophy of the bladder and the ultimate outcome are described and compared with the Maydl "derivation" technic. Only four of all the patients operated on were women, and none of the women operated on for exstrophy of the bladder conceived later, although in one case the Maydl operation had been done for a tuberculous bladder affection and the girl married and bore a child later. There are 10 cases on record, he says, of pregnancy in women with exstrophy of the bladder, unoperated; as a rule, there are usually other malformations which interfere with conception.

Changes in the Duodenal Glands of the Rabbit After Ligation of the Duct of Wirsung.—A Marassini, in his reported experiments (*Arch. ital. de biol.*, 1909, xlix, 1) paid particular attention to those glands of the normal duodenum which bear a resemblance to the acini of the pancreas and which are known as the pancreas duodenalis. Marassini observed that within fifteen days after ligature of the pancreatic duct, there appeared in the submucosa of the duodenum a definite layer of tubuli. These tubuli in the main were composed of cells with intensive staining protoplasm. The remaining tubuli with bright transparent elements were now comparatively few in number. In the normal animal the tubuli with clear transparent cells greatly preponderate over the tubuli with intensively staining cells. After ligation of the duct, however, the proportion of the two kinds of tubuli are just reversed. With high magnification the intensively staining pancreas-like tubuli are seen to be made up of pear-shaped cells which bear a remarkable resemblance to the cells of the pancreatic acini. The similarity is further made evident by the presence in the cells of the deeply staining tubuli of a great many fuchsin-staining granules. These granules are homologous to the zymogen granules (i. e., granules from which the various ferments of the pancreatic juice are directly formed) of the acinous cells of the pancreas, and in the experimental animals their number was very greatly increased in the cells of the pancreas duodenalis. It is believed that these tubules with deeply staining cells represent structures of a nature similar to that of the acini of the normal pancreas and that after ligation of the pancreatic duct they greatly increase in number and take over the function of secreting pancreatic ferments to such an extent that they entirely compensate for the loss of the pancreatic secretion by ligation.

Orthodontia.—The opinion that a revolution in dentistry is taking place with the development of orthodontia is expresssed by Dr. Richard Cole Newton in the *Popular Science Monthly*, July, 1909. He describes the results obtained by straightening teeth and securing their proper arrangement in the jaw as adding greatly to human beauty, health and efficiency. The position of the teeth is held to determine the shape of the jaws, so that a jaw ordinarily held to be indicative of degeneracy assumes a form characteristic of the highest human type if the teeth are properly manipulated at the proper time. The opinion that man is gradually evolving into a toothless animal is given little support by results secured by these modern artists of the human face. The evidence presented by Dr. Newton, especially that in pictorial form is very convincing and serves to emphasize the fact that dentistry is a specialty of medicine with which every physician should be more familiar. The family physician should recognize the importance of the preservation of the teeth and should extract one only for very good reasons. The relations of the teeth to good digestion are properly emphasized by Dr. Newton, but it may be well to suggest that as the majority of digestive complaints are of functional and even of psychic character it is not safe to conclude without sufficient investigation that a particular case of gastric trouble owes its origin to poor teeth. On the other hand, there is reason for the view that both the poor teeth and the dyspepsia depend on an underlying fault of the nervous system. This view is supported by the frequent presence of the changes in the skeleton which constitute the signs of Stiller's asthenia congenita. Orthodontia may restore the teeth and jaws to proper form, but it is hardly likely to remove the congenital degenerative tendencies which form the basis of modern neurasthenia.

The Pressor Principles of Placental Extracts.—An examination of the alcoholic extracts of the human placenta was undertaken by Otto Rosenheim (*Jour. Physiol.*, 1909, xxxviii, 339) with the view of isolating the active principles observed by Dixon and Taylor (*Brit. Med. Jour.*, 1907, ii, 1150) to produce on intravenous injection a rise of blood pressure and a contraction of the pregnant uterus, and to establish the identity or otherwise of the active principles of placental extract with those of adrenalin or similar substances. By none of the well-known methods used in isolating adrenalin was a product obtained which gave any of the reactions of adrenalin. Furthermore, when care was taken to prevent bacterial putrefaction, the pressor principles were absent from extracts of placentaa prepared by any one of half a dozen methods, including the method of Dixon and Taylor. Under all conditions which freely permit autolytic processes to go on, with precautions against bacterial infection, the active principles are not produced. The method of Dixon and Taylor permits of bacterial infection in which case the active pressor principles are present. Rosenheim concludes: "Fresh human placenta does not contain any pressor principle. The pressor principles of placental extracts, prepared according to Dixon and Taylor, are products of initial putrefaction. The autolytic enzymes of the placenta, without the help of micro-organisms, are unable to produce pressor substances. Several pressor bases were isolated from putrefying placenta, the most active of which was identified as p-hydroxyphenylethylamin, while the identity of another with isoamylamin is most probable. These are identical with those found by Barger and Walpole in putrid meat."

The Ideal Fly Killer.—Now that so much is being said about the necessity of extirpating house flies, a communication to *Nature* of May 13 is of interest. Dr. Alexander Hill, writing from Mentone, says that the most efficient fly destroyer with which he is acquainted is a dilute solution of formaldehyd. If two teaspoonfuls of formalin (40 per cent. formaldehyd) be added to a soup-plate filled with water, the flies go to it to drink, especially in the early afternoon. Some die in the water, others fall in the neighborhood of the plate, and others elsewhere in the room. With a single plate of the solution on the kitchen table, he says, hundreds of dead flies are daily swept up from the floor. He is writing from the south of France where screening does not seem to be so universal, or flies are especially abundant. It is somewhat strange, as he says, that so small a dose should prove fatal when taken into the fly's alimentary canal. To free a room of flies by vaporizing formalin the air would have to be rendered irrespirable by a human being. Formaldehyd in very dilute solution has no particular odor and he gives this fact of its deadliness to flies as an evidence that their olfactory sense must be very similar in this respect to our own. The solution neither attracts nor repels flies, for a similar plate containing only pure water will be equally visited by them. The formalin may be added to a dish of water containing flowers, if equally accessible to the flies, with the same result as far as fly killing is concerned; the plants are not affected other than as slightly in regard to their tints by the formalin. Though not specially intended as such the communication is very apropos as a sanitary item at the present time.

Tabes and Pregnancy.—MM. H. Dufour and Cottinot report (*Bull. et mém. Soc. méd. d. hôp. de Paris*, Feb. 5, 1909, p. 211) the case of a woman, aged 29, secundipara, and three months pregnant, who had never shown any signs of tabes (unless we consider excessive vomiting during her first pregnancy and on one other occasion to be of that nature), but who was suddenly taken with uncontrollable emesis. Examination revealed a number of tabetic symptoms, occurring all at once at this time. Previously the patient had considered herself in perfect health and had done her work. She was temperate and there had been no history or signs that could be referred to syphilitic infection. Neither she nor her husband could give any history of the pre-existence of the inco-ordination or other tabetic symptoms. One fact, however, that was learned is significant. In January, 1908, she had severe attacks of vomiting and a laparotomy was performed in the left iliac fossa, apparently on a diagnosis of bowel obstruction, which was not found and the wound was closed and she recovered. It is more than probable that this was a simple gastric crisis of tabes, but it suggests an important practical point in the diagnosis. The excessive reaction of pregnancy on tabes is, however, the chief thing of interest in the case. Another similar case is briefly mentioned and reference is made to still others reported by Heitz and others in which the symptoms of tabes were aggravated by pregnancy. Mercurial injections brought the first patient reported by the authors to term.

Fixation Abscesses in Treatment of Lead Poisoning.—J. Carles of Bordeaux has been conducting experimental research, the results being confirmed by clinical experience, which reaffirms the way in which metallic salts circulating in the organism are attracted to an inflammatory focus and are eliminated in the pus. In some of the dogs injected with turpentine after chronic lead poisoning to cause the "fixation abscess," the pus contained a larger proportion of lead than could be found in equal weights of brain or liver tissue. The turpentine was not injected until after the lead had been deposited in the viscera, the experiences showing that the leucocytes were able to recapture the lead and transport it to the fixation abscess; the kidneys and blood contained only traces, while 25 gm. of pus contained 0.003 gm. of lead sulphid. In the two clinical cases related in his communication in the *Bull. Gén. de Thérapeutique*, Feb. 8, 1909, the pus did not contain a very large proportion of lead, but every little may help in the serious cases, he says.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF LEAD POISONING

To the Editor:—I wish to know the best treatment for plumbism, such as is found around a lead smelter and in lead mines; especially for a patient who has gone from 3 to 6 days without a bowel movement. I have a smelter company's practice, and have from 10 to 100 cases a month. I have never been able to find any work on it in English.

J. M. SPAULDING, M.D., Silver City, Utah.

ANSWER.—The treatment of lead poisoning includes the prevention of further poisoning by removal of the cause; especial care should be taken to secure cleanliness and especially to prevent eating with soiled hands. The elimination of the poison is favored by copious ingestion of water, warm baths, and the administration of potassium iodid in doses of 0.3 gm. (5 grains) three times a day.

The symptoms must be treated as they arise. Constipation should be relieved by the milder laxatives, such as magnesium sulphate, senna, etc., if possible. Sometimes more active cathartics must be given. For paralysis full doses of strychnin simultaneously with large doses of potassium iodid must be given. The faradic current is useful in paralysis of the extremities. Colic should be relieved by morphin hypodermically. This sometimes relieves the constipation at the same time.

In the report of the Committee on Social Betterment of the President's Homes Commission, Dr. William J. Manning's article on "Plumbism" is reproduced. In this article Dr. Manning says: "In acute cases of lead poisoning the treatment consists in the administration of alkaline carbonates, soap, soluble sulphates, sodium chlorid, etc., washing out the stomach with large drafts of water, etc. Alum has been given, and at one time was considered almost a specific. Sweet oil and castor oil will be found useful. Milk should be taken in large quantities. The idea is first to combat the symptoms and then to eliminate the lead. Opium can be given for pain. Warm sulphureted baths are very beneficial. They can be made by dissolving 4 ounces of potassium sulphid in 30 gallons of water in a wooden tub. These baths discolor the skin from the formation of lead sulphid, and should be repeated every few days until this effect ceases. During each bath the patient should be well washed with soap and water to remove discoloration."

In Great Britain dangerous trades are regulated by special provisions in the factory and workshop act. Under the head of "Lead Smelting Works," the following duties of employers are prescribed:

"*Duties of Occupiers:* (1) They shall provide respirators and overall suits for the use of all persons employed in cleaning the flues, and take means to see that the same are used. (2) They shall arrange that no person be allowed to remain at work more than two hours at a time in a flue—a rest of half an hour before re-entering will be deemed sufficient. (3) They shall provide sufficient bath accommodation for all persons employed in cleaning the flues, and every one so employed shall take a bath before leaving the works. (4) They shall provide washing conveniences, with sufficient supply of hot and cold water, soap, nail-brushes and towels."

To insure the carrying out of these rules, the workmen are held liable should they fail to comply with them, a fine not exceeding two pounds ($10) being imposed. Since the enforcement of these preventive measures there has been in England a most marked reduction in the morbidity and mortality from lead poisoning.

A work that might be of interest to our correspondent is "Lead Poisoning," by Thomas Oliver, published by Young J. Pentland, Edinburgh.

SHAMPOO FORMULAS

To the Editor:—Will you kindly tell me what is a good formula for a shampoo, and what other soft soap besides green soap is on the market? How are these liquid soaps made? Are they merely boiled, dilute green or soft soap? ENQUIRER, Chicago.

ANSWER.—While many proprietary soft soaps and prepared shampoos are for sale, none is superior to the official soft soap (Sapo Mollis U. S. P.) in convenience or effectiveness. This may be found stronger than is desired and will be too harsh on the hair in some cases. A good castile soap may be made soft by being cut up and boiled with a little water. For convenience a solution of soft soap in alcohol to which a little oil of bergamot or other essential oil has been added is often used. The National

Formulary contains a Compound Tincture of Green Soap, which consists of soft soap 150 gm., oil of cade 20 c.c. and alcohol enough to make 1,000 c.c. The official soft soap is made by treating linseed oil with an excess of potassium hydroxid and small quantities of alcohol and water are added to aid in the saponification. The various preparations of liquid soap which are found on the market differ chiefly from the official soft soap in that other oils than linseed oil may have been used in their preparation and also in the varying alcohol and water content.

The following formulas of liquid egg shampoos were given in the Therapeutic Department of The Journal March 14, 1908; they are both from the *Druggists Circular:*

Soft soap	2 ounces
Whites of	4 eggs
Potassium carbonate	1 ounce
Tar water	1 pint
Glycerin	2 ounces
Orange flower water, enough to make	2 ounces

Beat the whites of the eggs into a froth while gradually adding the tar water. Dissolve the soap in a mixture of glycerin and six ounces of orange flower water. Mix the two solutions and make up to two pints with orange flower water.

Also:

Transparent soap	4 ounces
Glycerin	2 ounces
Whites of	3 eggs
Tincture of green soap	1 ounce.
Oil of rosemary	45 minims
Oil of rose geranium	30 minims
Water, enough to make	2 pints

Melt the soap in twelve ounces of water, add the glycerin and stir until cool; then add the green soap and the oils. Mix the whites of the eggs with eight ounces of water and stir into the soap mixture. Shake well, let stand for twenty-four hours, and strain through flannel.

BUTTERMILK THERAPY AND MILKS AS FOOD

To the Editor:—In your excellent editorial on buttermilk therapy occurs the sentence, "it is not likely that any one would live on such a diet except for experimental purposes." Now so far as I know every pastoral people compelled to use milk largely as a diet does ferment its milk by some complicated process. This is so unlikely to happen that it demands consideration. I would be glad to know if there is any exception to it, or if you can suggest any explanation other than the evolutionary one, i. e., that every race that has tried to live on sweet milk has died out. Clinical experience has inclined me to the theory that intestinal toxemia is more likely to occur from sweet milk than from sour. I make my sour milk, by the way, with hydrochloric acid rather than with a ferment. I am of course aware of the unreliability of clinical impression and agree that the theory should be tested in every way before it is stated as a fact. But the extensive use of ferments among semicivilized people seems to me an item of evidence which should be considered.

John W. Boyce, M.D., Pittsburg.

Answer.—To the great majority of adults, sweet milk becomes peculiarly, often unbearably, distasteful when taken in amounts that anywhere nearly represent a sufficient exclusive diet. It hardly seems probable that any race has even "tried to live on sweet milk" alone, or even approximately so. Furthermore, milk of any kind or any preparation of it is at best a poor food as an exclusive diet for anything but an infant. We know very well, clinically, that babies a year or more old will become pale and flabby when fed on milk alone, possibly largely because, as Bunge has pointed out, milk in itself contains too little iron. There are other familiar objections to a sole milk diet.

Some of the fermented milks, notably koumiss, contain considerable quantities of alcohol and all of them have a decided taste. It would seem more probable that the reason fermented milks are used so freely among pastoral peoples would be that they have an acquired taste for it as a beverage, as some persons have for coffee, tea or beer, rather than that they ascribe superior nutritive or life-prolonging virtues to it as compared with sweet milk. There is a good deal of attractive theory but not a great amount of well-established fact concerning the effect of fermented milk in "intestinal toxemias," prolongation of life, etc. It has, for example, by no means been established that the striking results of buttermilk feeding in infancy are due to the presence of either the germs or the lactic acid, and not to the fact that a fat-free milk is being used.

TREATMENT OF COATED TONGUE

To the Editor:—What will clean up a persistently furred or coated tongue, one that stays coated all the time, is broad, flabby and moist, with a bad taste in the mouth every day in the year? What is the cause of this? Hepatic stimulants, tincture of nux vomica, hydrochloric acid and Canadian hemp do very little good. I should like to hear from some who have had success in such cases.

S. A. C., Virginia.

Answer.—Without more particulars it is hard to suggest a diagnosis, but some general rules may be given. Various explanations have been given of the coating on the tongue. The chief are: 1. The tongue is a part of the cutaneous system and is affected like the skin by general diseases, so that the coating is similar to an eruption of the skin. In such cases the eruption often persists after the disease which caused it has passed away. 2. The coating on the tongue may be due to local disorders of the teeth, oral mucous membrane, throat or nose. 3. The coating may rarely be due to some disease of the stomach but as a rule there is no direct relation between disease of the stomach and the fur on the tongue. 4. The coating on the tongue seems frequently to be related to the condition of the bowels, being probably the expression of a general poisoning resulting from the absorption of products of putrefaction by the intestinal mucous membrane.

In our correspondent's case he will need to seek out the cause. An examination of the stomach contents should be made, as the cause may lie in the stomach. If local disease is present it should be treated. Intestinal putrefaction should be prevented by the reduction or removal of protein, especially meat, from the diet, by the use of carbohydrate food, such as bread, corn-starch, cereals, etc., and by the use of laxatives, buttermilk, and if necessary intestinal antiseptics (phenylis salicylas). Locally the tongue should be cleaned with the tooth brush, and the use of an alkaline liquid like the liquor antisepticus alkalinus will facilitate the removal of mucus.

CUMULATIVE EFFECTS OF SUPRARENAL EXTRACT

In The Journal for July 31, 1909, a query was answered regarding the "Cumulative Effects of Suprarenal Extract." Further investigation of the subject has furnished the following additional data: Bouchard and Claude, 1902, experimented with a small number of rabbits, finding that they usually died from injections of 1 to 2 mg. per kilo, but if sublethal doses were first injected, as much as 4 mg. per kilo could be withstood by the animal. Abderhalden and Thies injected white mice with dextrosynthetic adrenalin, finding that it produced a resistance to doses of l-adrenalin 4 to 6 times that of the dose usually lethal.

Schultz of the Hygienic Laboratory of the Public Health and Marine-Hospital Service gives data in a bulletin entitled "Quantitative Pharmacological Studies. Adrenalin and Adrenalin-like Bodies," which indicate that small doses increase the animal's tolerance for subsequent doses of adrenalin. It is well known that small quantities of adrenalin sufficient to cause a rise in blood pressure have but a transient effect and do not influence the effect of subsequent doses if the latter are injected a few minutes after the return of the blood pressure to normal. It would seem from such data that initial injections of adrenalin either do not influence the effects of subsequent injections, or when they do so they render the animal more tolerant to its toxic action.

The Public Service

Medical Corps of the Navy

Changes for the week ended Aug. 7, 1909:

Minter, J. M., asst.-surgeon, ordered to the Naval Recruiting Station, Pittsburg, Pa.

Harlan, T., asst.-surgeon, detached from the Naval Recruiting Station, Pittsburg, Pa., and ordered to the Naval Hospital, Mare Island, Cal.

Harlan, T., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Asiatic Station, via the Naval Recruiting Station, Oklahoma City, Okla., and ordered home to wait orders.

Donelson, M., asst.-surgeon, detached from temporary duty in the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Recruiting Station, Oklahoma City, Okla.

McMullin, J. J., acting asst.-surgeon, ordered to the Naval Hospital, Narragansett Bay, R. I.

Murphy, J. F., P. A. surgeon, ordered to the Naval Hospital, Las Animas, Colo.

Wilson, H. D., surgeon, detached from the *Kentucky* and ordered to resume other duties.

Shaw, H., P. A. surgeon, detached from the Naval Station, Culebra, W. I., and ordered to the Navy Yard, Washington, D. C.

Rodman, S. S., P. A. surgeon, orders of July 27, detaching from the Naval Recruiting Station, Indianapolis, and ordering to the Naval Recruiting Station, Boston, *revoked.*

Stalnaker, P. R., P. A. surgeon, detached from the Navy Yard, Washington, D. C., August 10, and ordered to the Naval Station, Culebra, W. I.

Curtis, L. W., medical inspector, commissioned medical inspector from July 1, 1909.

Rodman, S. S., P. A. surgeon, detached from the Naval Recruiting Station, Indianapolis, and granted leave until September 25.

Eytinge, E. O. J., P. A. surgeon, commissioned passed assistant surgeon from May 24, 1908.

Munger, C. B., P. A. surgeon, commissioned passed assistant surgeon from July 7, 1908.

Medical Department of the Army

Changes for the week ended Aug. 7, 1909:

Connor, Clarence H., capt., granted leave of absence for four months, when relieved from duty in the Philippine Division; may return to the United States via Europe.

Miller, Edgar W., capt., granted leave of absence for 7 days.

Nichols, Henry J., 1st lieut., ordered to report at San Francisco, for examination for promotion, on completion and expiration of leave of absence, will proceed to New York City for duty as Attending Surgeon.

Persons, Elbert E., major, in addition to present duties, temporarily assigned as assistant to Chief Surgeon, Department of the East, and attending surgeon, headquarters, Department of the East.

Collins, Christopher C., major, granted leave of absence for four months.

Barber, John R., 1st lieut., relieved from duty at the Army Medical Museum, Washington, D. C., in time to proceed to San Francisco, and sail Oct. 5 for Philippines service; granted leave of absence for one month.

Purviance, William E., major, granted leave of absence for 25 days.

Woolley, Herbert C., 1st lieut., M. R. C., relieved from duty at Fort Davis, Alaska; will proceed home and then stand relieved from active duty in the Medical Reserve Corps.

Buchsbaum, Maurice, 1st lieut., M. R. C., relieved from duty at Fort D. A. Russell, Wyo., in time to proceed to San Francisco, and sail Sept. 5 for Philippine service.

Coffin, Harold L., 1st lieut., M. R. C., granted an extension of one month to his leave of absence.

Ware, William H., dental surgeon, ordered to Vancouver Barracks, Wash., for duty, at the expiration of his present leave of absence.

Boak, S. Davis, dental surgeon, relieved from duty at Vancouver Barracks, Wash., and ordered to Fort McDowell, Cal., for duty.

Lauderdale, Clarence E., dental surgeon, ordered to visit in succession for temporary duty, Fort Huachuca, Ariz., Whipple Barracks, Ariz., Fort Apache, Ariz., and Fort Wingate, N. M., returning then to Fort Logan, Colo.

Casaday, George H., dental surgeon, ordered from Fort Shafter, H. T., to the Presidio of Monterey, Cal., for temporary duty.

Public Health and Marine-Hospital Service

List of changes for the seven days ended August 4, 1909:

Bailhache, Preston H., surgeon, placed on "waiting orders" from November 1, 1909.

Banks, Charles E., surgeon, on being relieved by Surgeon E. K. Sprague, directed to proceed to Portland, Me., and assume command.

Kalloch, P. C., surgeon, on being relieved by Surgeon Charles E. Banks, directed to proceed to Memphis, Tenn., and assume command.

Wasdin, Eugene, surgeon, on arrival of Surgeon P. C. Kalloch, relieved from duty at Memphis, Tenn.

Brown, B. W., surgeon, granted a five days' leave of absence from July 29, 1909.

Brown, B. W., surgeon, on being relieved by P. A. Surgeon R. H. Creel, directed to proceed to Vineyard Haven, Mass., and assume command.

Sprague, E. K., surgeon, on being relieved by Asst.-Surgeon W. M. Bryan, directed to proceed to Key West, Fla., and assume command.

Lavinder, C. H., P. A. surgeon, granted 14 days' leave of absence from August 1, 1909.

Foster, M. H., P. A. surgeon, granted 1 day's leave of absence, July 27, 1909, on account of sickness.

Warren, B. S., P. A. surgeon, granted 14 days' leave of absence from August 1, 1909.

Creel, R. H., P. A. surgeon, on the arrival of Asst.-Surgeon James P. Leake, directed to proceed to Louisville, Ky., and assume temporary command.

Ashford, F. A., asst.-surgeon, directed to proceed to Washington, D. C., and report to chairman of board of medical examiners to determine his fitness for promotion to the grade of Passed Assistant Surgeon.

Herring, R. A., asst.-surgeon, leave of absence granted May 20, 1909, for 1 month and 4 days from June 5, 1909, amended to read 1 month and 6 days from June 5, 1909.

Bryan, William M., asst.-surgeon, relieved from duty at South Atlantic Quarantine Station, and directed to proceed to Southport, N. C., and assume command of the Cape Fear Quarantine Station.

Hasseltine, Hermon E., asst.-surgeon, directed to proceed to Buffalo, N. Y., and report to the medical officer in charge for duty.

Hunter, W. R., acting asst.-surgeon, granted 2 days' leave of absence from August 5, 1909.

Knight, Carlisle P., acting asst.-surgeon, granted 30 days' leave of absence from October 1, 1909.

Porter, Joseph Y., Jr., acting asst.-surgeon, granted 30 days' leave of absence from August 4, 1909, without pay.

Richter, H. C., acting asst.-surgeon, granted 15 days' leave of absence from July 29, 1909.

Story, H. C., acting asst.-surgeon, granted 30 days' leave of absence from September 1, 1909.

Weeks, Alanson, acting asst.-surgeon, leave of absence granted July 9, 1909, for 30 days from July 10, 1909, amended to read 30 days from July 19, 1909.

BOARD CONVENED

Board of medical officers convened to meet at the Bureau, August 5, 1909, for the examination of Asst.-Surgeon F. A. Ashford to determine his fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Asst.-Surgeon-General J. W. Kerr, chairman; Surgeon W. P. McIntosh; P. A. Surgeon J. F. Anderson, recorder.

Health Reports

The following cases and deaths of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 6, 1909:

SMALLPOX—UNITED STATES

Illinois: Danville, July 18-25, 2 cases.
Indiana: Fort Wayne, July 10-17, 3 cases.
Kansas: Kansas City, July 10-17, 1 case.
Kentucky: Lexington, July 17-24, 1 case; Newport, July 18-25, 1 case.
Louisiana: New Orleans, July 17-24, 1 case.
Michigan: Detroit, July 17-24, 1 case; Kalamazoo, 1 case.
Minnesota: Duluth, July 17-23, 3 case.
Missouri: St. Louis, July 17-24, 1 case.
Montana: Butte, July 15-22, 3 cases.
Ohio: Dayton, July 17-24, 1 case.

SMALLPOX—INSULAR

Philippine Islands: Manila, July 5-12, 1 case, 1 death.

SMALLPOX—FOREIGN

Algeria: Algiers, June 1-30, 2 deaths.
Brazil: Rio de Janeiro, June 13-27, 3 cases, 5 deaths.
Canada: Halifax, July 10-17, 2 cases.
China: Amoy, June 12-26, 19 deaths.
Egypt: Cairo, June 10-24, 3 cases, 1 death.
India: Calcutta, June 12-19, 7 deaths; Madras, June 19-25, 1 death; Rangoon, June 12-19, 3 deaths.
Indo-China: Saigon, May 29-June 12, 4 cases, 3 deaths.
Italy: Naples, June 4-11, 29 cases, 8 deaths.
Java: Batavia, June 5-19, 3 cases.
Mexico: Mexico City, May 29-June 26, 43 deaths; Monterey, June 11-18, 3 deaths.
Portugal: Lisbon, July 4-18, 22 cases.
Russia: Libau, July 3-10, 1 case, 1 death; Riga, 6 deaths; St. Petersburg, May 8-15, 20 cases, 5 deaths, June 19-July 3, 34 cases, 8 deaths.
Spain: Barcelona, July 5-12, 4 deaths; Vigo, July 3-10, 1 death.
Turkey: Constantinople, June 27-July 4, 1 case; Smyrna, May 27-July 1, 13 deaths.

YELLOW FEVER

Ecuador: Guayaquil, June 12-26, 9 deaths.

CHOLERA—INSULAR

Philippine Islands: Provinces, June 5-12, 77 cases, 52 deaths.

CHOLERA—FOREIGN

China: Amoy and vicinity, June 12-26, 3 cases, 7 deaths.
India: Calcutta, June 12-19, 23 cases; Madras, June 19-25, 1 death; Rangoon, June 12-19, 3 deaths.
Indo-China: Saigon, May 29-June 12, 5 cases, 2 deaths.
Russia: July 10-17, 1,020 cases, 421 deaths; St. Petersburg, 844 cases, 341 deaths.

PLAGUE—UNITED STATES

California: Alameda County, Sunol, Aug. 2, 1 case.

PLAGUE—FOREIGN

Chile: Antofagasta, June 26, 2 cases in lazaretto; Iquique, June 30, 2 cases in lazaretto.
China: Amoy, June 12-26, 210 deaths; Canton, July 5-19, 30 deaths.
Ecuador: Guayaquil, June 12-26, 9 deaths.
India: General, June 12-19, 885 cases, 766 deaths; Calcutta, 67 deaths; Rangoon, 36 deaths.
Indo-China: Saigon, May 29-June 12, 5 cases, 5 deaths.
Japan: Kobe, June 26-July 3, 1 case, 1 death; Yokahama, 5 cases, 1 death.
Peru: June 26-July 3, 26 cases, 12 deaths.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of July, 1909:

ALABAMA

Farish, L. B., Atmore.

ARIZONA

Sloane, H. F., Courtland.
Troutman, G. D., Tucson.

ARKANSAS

Blue, Julian B., Parkin.
Thiolliere, A. C., Pleasant Plains.

CALIFORNIA

Chambers, W. E., Oakland.
Compton, G. W., San Diego.
Deininger, Marguerite, Pt. Richmond.
Haworth, M. W., Sacramento.
Montgomery, C. H., Los Angeles.
Rees, Rees Bynon, Bakersfield.
Shaw, F. E., Sacramento.
Welsh, Prudence M., Long Beach.
Williams, Edith H., San Francisco.
Wood, E. H., Riverside.

COLORADO

Adkinson, R. C., Florence.
Bowie, M. R., Paonia.
Burkhard, E. D., Ludlow.
Driscoll, W. E., Cripple Creek.
Hayes, A. L., Victor.
Krohn, M. J., Denver.
Van Norman, H. C., Denver.
Wallace, F. E., Pueblo.

CONNECTICUT

Bissell, Wm., Lakeville.
Bissell, Wm. B., Lakeville.
Bodley, G. H., New Britain.
Kingsbury, Wm. S., Glastonbury.
Noxon, G. H., Darien.
Patterson, D. C., Bridgeport.
Tracey, W. J., Norwalk.

FLORIDA

Newsom, Wm. V., Ocala.

GEORGIA

Dentou, J. F., Atlanta.
Ellis, J. N., Atlanta.
Hurt, J .S., Atlanta.
White, J. C., Atlanta.

ILLINOIS

Aiken, A. W., Chicago.
Braude, Morris, Chicago.
Brewster, B. M., Fieldon.
Buckmaster, Frank, Effingham.
Burry, Jas., Chicago.
Diddy, L. C., Oswego.
Everett, E. A., Grantfork.
Gauss, J. H. P., Chicago.
Goldstine, Mark T., Chicago.
Harris, C. E., Chicago.
Howard, G. H., Chicago.
Jackson, Harry, Chicago.
Johnston, F., Milton.
Knox, O. M., Chicago.
Lewis, D. D., Chicago.
Lewis, E. J., Chicago.
Martin, F. H., Libertyville.
Matter, C. M., Chicago.
Metcalf, W. B., Chicago.
Ostling, C. A., Chicago.
Russell, S. J., Chicago.
Silcox, J. E. D., Rio.
Swift, G. W., Chicago.

INDIANA

McKee, H. N., Covington.
Molloy, W. J., Muncie.

IOWA

Agan, G. M., Silver City.
Alliband, G. A., Elliott.
Arent, Asaph, Humboldt.
Baker, L. J., Ottumwa.

Brothers, H. N., Sioux City.
Brown, J. W., Clearfield.
Campbell, H. E., Anita.
Carpenter, Frank, Reasnor.
Cretzmeyer, O. H., Algona.
Gulde, W. C., Bancroft.
Hibbs, F. V., Lohrville.
Hillweg, C. H., Corning.
Hoover, C. E., Hamburg.
Jones, C. R., Lewis.
Kahler, H. V., Reinbeck.
Keoper, Paul, Baxter.
Lane, J. P., Cascade.
Leson, C. T., Mt. Ayr.
Lyon, W. E., Gardner Grove.
Maulsby, E. P., Casey.
McCue, J. G., Silver City.
Moon, Roy, Clarinda.
Moore, R. A., Silver City.
Parriott, C. C., Essex.
Piper, H. J., Randolph.
Reed, G. P., Davis City.
Reed, M. B., Cromwell.
Seales, H. W., Yorktown.
Scott, J. R., Malvern.
Stanley, H. M., Prescott.

KANSAS

Lockwood, C. H., Towanda.
Montzingo, E. R., Rock.

KENTUCKY

Roberts, J. D., Stanley.
Williamson, H. F., Paducah.

LOUISIANA

Daniel, A. A., Pitkin.

MAINE

Gould, A. L., Freeport.

MARYLAND

Higdon, T. L., Wayside.
Shipley, A. M., Baltimore.
Stubenrauch, C. H., Baltimore.

MASSACHUSETTS

Baker, L. F., Fitchburg.
Bergin, S. A., Worcester.
Burbeck, E. K., Salem.
Donnell, H. A., Medford.
Field, M. T., Salem.
Gahan, P. F., Medford.
Liverpool, C. H., Somerville.
Marshall, W. R., Lynn.

MICHIGAN

Bell, G. A., Saginaw.
Bower, C. T., Ransom.
Burns, G. G., Fremont.
Howland, F. A., Adrian.
Kloppenstein, W. A., Manchester.
Loranger, Philip, Detroit.
Mack, C. W., Pontiac.
Morey, C. W., Pt. Huron.
Van Camp, E., Athens.
Watkins, J. T., Detroit.
Webber, E. E., Marlette.

MINNESOTA

Buser, J. R., Mesaba.
Johnson, Julius, Minneapolis.
Kalinoff, Demeter, Stillwater.
Warren, J. W., Faribault.
Wilcox, A. E., Minneapolis.
Smith, N. M., Minneapolis.

MISSOURI

Dod, F. L., Kansas City.
Graul, J. D., St. Louis.
Kearney, E. F., New Point.
Robinson, E. E., Adrian.
Scott, C. D., St. Louis.
Hanna, M. A., Kansas City.

NEBRASKA

Baldwin, F. J., Merriman.
Dunn, Mabel, Lincoln.
Egloff, G. E., Saronville.
Hedlund, A. E., Oakland.
Johnson, Alfred, Hebron.
Kimball, A. P., Creston.

NEW HAMPSHIRE

Mitchell, E. S., Concord.
Foss, G. H., Hinsdale.

NEW JERSEY

Flynn, J. J., Mount Holly.
Iszard, W. H., Camden.
La Motte, W. O., Riverside.
Lippincott, L. Y., Metuchen.
Lowrey, J. H., Newark.
Spalding, H. J., Union Hill.
Swayze, A. A., Hackensack.

NEW YORK

Adler, S. H., New York City.
Bartlett, E. A., Albany.
Bates, J. B., Gloversville.
Bauer, J. L., Brooklyn.
Buck, T. D., Rochester.
Bumsted, C. Van R., Lake Placid.
Burgess, H. C., Canandaigua.
Church, F. H., Utica.
Fowler, R. H., New York City.
Hall, J. S. K., New York City.
Hamlin, Cyrus, Brooklyn.
Hubbard, F. E., Keene Valley.
Jacobs, W. F., Buffalo.
Jankiewicz, L. P., Utica.
Leiter, J. G., Brooklyn.
Maynard, A. W., New York City.
Moroney, J., Oswego.
Pashayan, N. A., Schenectady.
Pray, S. B., New Rochelle.
Reed, J. E., Jr., Schenectady.
Stechmann, F. W., New York City.
van Riempst, T. S., New York City.
Singleton, B. J., Glens Falls.
Wright, H. J., Schoharie.

NORTH CAROLINA

Adams, C. E., Gastonia.
Alexander, Annie L., Charlotte.
Costner, T. F., Charlotte.
Cranmer, J. B., Wilmington.
Faison, W. W., Goldsboro.
Felts, R. L., Durham.
Hiehs, C. S., Durham.
Hicks, W. N., Durham.
McGee, J. W., Jr., Raleigh.
Montgomery, H. M., Burlington.
Morse, L. B., Chimney Rock.
Moseley, C. W., Greensboro.
Robinson, Chas., Greensboro.
Rogers, J. R., Raleigh.
Williams, A. F., Wilson.
Woodley, C. B., Kinston.

NORTH DAKOTA

Williams, R. P., Gwinner.

OHIO

Cummins, G. M., Hamilton.
Davis, H. L., Cleveland.
George, J. C., Dayton.
Kelker, H. C., Cleveland.
Logan, G. M., Akron.
Pauli, W. O., Cincinnati.
Poling, J. B., Lima.

OKLAHOMA

Andrews, Leilia E., Oklahoma City.
Blackburn, J. H., Frisco.
Dever, H. A., El Reno.
Smith, J. H., Healdton.
Welch, W. T., Pike.

OREGON

Irvine, Lloyd, Portland.
Kiehle, F. A., Portland.
Parrish, Geo., Portland.
Smith, L. A., Roseburg.

PENNSYLVANIA

Bixler, L. C., Pittsburg.
Boughton, G. C., Erie.
Drozeski, E. H., Erie.
Eisaman, O. N., Pittsburg.
Ellis, W. T., Philadelphia.
Frishmuth, J. P., Philadelphia.
Grim, W. S., Beaver Falls.
Hearst, J. A., Philadelphia.
Hermance, W. O., Philadelphia.
Lauffer, C. A., Wilkinsburg.
Laurent, F. V., Pittsburg.
McKinnon, M. J., York.
Oberholtzer, M. B., Souderton.
Reidt, U. H., Jeannette.
Shimer, W. S., Philadelphia.
Siekler, P. C., Wilkes-Barre.
Sommerkamp, R. F., Philadelphia.
Stanton, J. N., Pittsburg.
Truckenmiller, Roy, Freeland.
West, C. W., Philadelphia.
Yoder, M. H., Lititz.

RHODE ISLAND

Hagennow, L. K., Hill Grove.
Turner, C. S., Providence.
White, C. F., Pontiac.

SOUTH CAROLINA

Maybank, Jos., Charleston.
Mood, G. McF., Charleston.
Speissegger, C. A., Jr., Charleston.
Watson, J. J., Columbia.

TENESSEE

Battle, W. B., Gallaway.
Donaldson, Sam, Dayton.
Forbes, E. C., Howell.
Johnson, T. L., Greenbrier.
McBride, J. W., Covington.
McCown, R. M., Knoxville.
Pride, W. T., Memphis.

TEXAS

Burk, W. E., Galveston.
Burns, E. J., Temple.
Eckhardt, J. C. A., Houston.
Gilbert, Jos., Austin.
Griffin, S. R., Canyon City.
Heaney, H. G., Corpus Christi.
Holland, B. P., Del Rio.
Holland, M. E., Houston.
Jones, R. L., Houston.
Lane, W. J., Marshall.
McGehee, J. L., Burkburnett.
Murphy, J. H., Powell.
Pearson, O. G., Seguin.
Pyburn, J. M., Coolidge.
Rawlinson, W. P., Sansom.
Sherrin, Jennie A., Galveston.
Talley, L. R., Temple.

UTAH

Gardner, W. L., Salt Lake City.
Lund, H. Z., Salt Lake City.

VIRGINIA

Archer, W. C., Blackstone.
Botts, W. N., Blackwood.
Buckner, Leigh, Roanoke.
Burks, J. C., Roanoke.
Carter, D. D., Woodstock.
Dew, H. W., Lynchburg.
Early, L. S., Petersburg.
Estill, A. D., Lexington.
Gill, S. J., Roanoke.
Ingram, Lawrence, Manchester.
Herbert, E. M., Roanoke.
Parkins, T. M., Staunton.
Peirce, C. T., Litwalton.
Vaughan, J. E., Lynchburg.
Wiley, G. S., Roanoke.

WASHINGTON

Brush, F. H., No. Yakima.
Ely, W. M., Walla Walla.
Fursey, F. R., Spokane.
Irwin, Lilian C., Seattle.
Keene, R. K., Spokane.
Wright, Louisa V., Camas.

WEST VIRGINIA

Bosworth, Perry, Huttonsville.
Fisher, Mark O., Parkersburg
Price, S. A., Weston.

WISCONSIN

Borchardt, A. C., New London.
Brehm, T. G., Racine.
Devine, C. B., Marshall.
Reeves, S. T., Tomah.

Deaths

Charles F. Warner, M.D. Jefferson Medical College, Philadelphia, 1854; formerly president of the Minnesota Valley Medical Association; a member of the International Association of Railway Surgeons; assistant surgeon of the One Hundred and Thirty-sixth and surgeon of the Forty-eighth New York Volunteer Infantry during the Civil War; alderman of Mankato, Minn., and president of the council; for twelve years city health officer, and for two terms physician of Blue Earth county; local surgeon for the Northwestern and St. Paul systems, died at his home in Mankato, July 24, from senile debility, aged 76.

Albert H. Marvin, M.D. Western Reserve University, Cleveland, 1891; University of Pennsylvania, Philadelphia, 1892; of Cleveland; a member of the American Medical Association, American Academy of Ophthalmology and Oto-laryngology and Cleveland Academy of Medicine; lecturer on rhinology in the Cleveland College of Physicians and Surgeons, and surgeon to the Throat and Ear Dispensary of the Cleveland General Hospital; died at Chautauqua, N. Y., July 29, from nephritis, aged 42.

Robert J. Christie, M.D. University of Pennsylvania, Philadelphia, 1856; a member of the Illinois State Medical Society; formerly dean and professor of medicine in the Chaddock School of Medicine, Quincy, Ill.; local surgeon of the Hannibal and St. Joseph and St. Louis, Keokuk and Northwestern railways; consulting surgeon of the Blessing Hospital, Quincy; one of the best-known practitioners of western Illinois, died at his home in Quincy, July 27, from cholelithiasis, aged 78.

Victor J. Baccus, M.D. Northwestern University Medical School, Chicago, 1898; a member of the American Medical Association; professor of gynecology in Reliance Medical College, Chicago; formerly professor of surgery and head of the surgical department of the American College of Medicine and Surgery; surgeon to Frances Willard Hospital; died at the Policlinic Hospital, Chicago, August 10, after a long illness, aged 38.

George D. Dowkontt, M.D. Jefferson Medical College, Philadelphia, 1881; formerly editor and publisher of the *Double Cross* and *Medical Missionary Record*, and medical director of the International Medical Missionary Society; who is said to have established the first free dispensary in New York City; died at the home of his son in Brooklyn, July 31, from chronic bronchitis, aged 66.

Robert Masters Wilson, M.D. Long Island College Hospital, Brooklyn, N. Y., 1873; of Lincoln, Ill.; a veteran of the Civil War; president of the Brainerd District Medical Society in 1897; a member of the Illinois State Medical Society and surgeon to St. Clara's Hospital, Lincoln; died in that institution July 27, from cholelithiasis, aged 52.

Frank R. Hansen, M.D. Hospital College of Medicine, Louisville, 1898; formerly local surgeon to the Chicago, St. Paul, Minneapolis and Omaha Railway at Heron Lake, Minn.; secretary of the board of education of Lakefield, Minn.; is reported to have died in the Jackson county jail, Lakefield, July 29, aged 37.

Augustus Lewis, M.D. University of Tennessee, Nashville, 1879; a member of the Kentucky State Medical Association; for many years a U. S. pension examining surgeon at Central City, Ky.; a veteran of the Civil War; died at his home in Greenville, July 27, from lung disease, aged 70.

Ralph B. Hanahan, M.D. Medical College of South Carolina, Charleston, 1886; of Winnsboro, S. C.; a member of the American Medical Association; for whose services during the Charleston earthquake, a medal was awarded by the city of Charleston; died at his home, July 30, from heart disease, aged 48.

Markwell Seward Curdy, M.D. Chicago Homeopathic Medical College, 1884; in 1893 and 1902, health officer of Corning, N. Y.; formerly attending physician to Corning Hospital and for many years proprietor of the Highland Pines Sanitarium, died at his home in Ithaca, N. Y., July 25, from paralysis, aged 50.

Thaddeus Donahue, M.D. Kentucky School of Medicine, Louisville, 1867; a member of the Tennessee State Medical Association; major and surgeon during the Civil War; for several years a member of the local board of U. S. pension examining surgeons; died at his home in Memphis, July 25, aged 74.

Henry Gordon Forbes, M.D. New York University, New York City, 1866; a contract surgeon in the Army during the Civil War; for three terms a member of the board of aldermen of Chicopee Falls, Mass.; died at his home in that city, July 30, from cirrhosis of the liver, aged 69.

Harvey Monroe Young, M.D. University of Alabama, Mobile, 1893; a member of the Medical Association of the State of Alabama; formerly health officer of Dothan, Ala., and physician to Houston county; died suddenly at his home in Dothan, July 27, from dengue fever.

Charles S. Morton, M.D. University of Virginia, Charlottesville, 1854; for many years a practitioner of Pamplin City, Va.; surgeon of the Tenth Georgia Infantry, C. S. A., during the Civil War; was killed by a railway train, near Lynchburg, Va., July 28, aged 77.

Percy Stansbury, M.D. Baltimore University, 1894; formerly of Baltimore; a surgeon in the volunteer service during the Spanish-American War, with service in Cuba; died suddenly at his home at Wingate's Point, Md., July 26, from heart disease, aged 42.

J. L. Johnston, M.D. Physio-Medical College of Indiana, Indianapolis, 1898; of Los Angeles, Cal.; died in the Mine Operators' Hospital at Searchlight, Nev., July 23, from the effects of a fall into the shaft of the Duplex Extension mine, aged 65.

Albert M. Curry, M.D. University of Pennsylvania, Philadelphia, 1875; of Brooklyn, N. Y.; a member of the Medical Society of the State of New York; died suddenly on the beach at Atlantic City, N. J., July 26, from heart disease, aged 59.

George C. Burton, M.D. Louisville, (Ky.) Medical College, 1881, Washington, D. C.; a member of the Medical Association of the District of Columbia; died at his old home in Mitchell, Ind., July 22, from cerebral hemorrhage, aged 52.

Wilbert G. McIntyre, M.D. Trinity Medical College, Toronto, 1901; M. C. P. and S., Ont., 1892; member of parliament for Strathcona, Alberta; died in the Strathcona Hospital, July 21, after an operation for disease of the kidney.

Grant Cullimore, M.D. Rush Medical College, Chicago, 1885; an oculist and aurist; at one time secretary of the Oklahoma Territorial Board of Health; died at his home in Oklahoma City, July 29, from typhoid fever, aged 47.

Yewell Dalton Scales, M.D. (license, Ill., 1878); of Springfield, Ill., assistant surgeon in a Tennessee regiment, C. S. A., during the Civil War; died in St. John's Hospital, Springfield, July 21, from cerebral hemorrhage, aged 65.

Archibald G. Kinkhead (license, Ill., years of practice, 1878); a member of the Illinois State Medical Society; a surgeon at Camp Yates, Springfield, Ill., during the Civil War; died at his home in Greenfield, Ill., July 23, aged 76.

Oliver H. Buford, M.D. Medical College of Georgia, Augusta, 1889; formerly an acting assistant surgeon, U. S. Army; a member of the Medical Association of Georgia; died at his home in Cartersville, July 30, aged 51.

George Heywood, M.D. Harvard Medical School, Boston, 1887; a member of the Medical Society of the State of New York; died suddenly at his home in New York City, July 30, from cerebral hemorrhage, aged 47.

Samuel Robert Dunlop, M.D. College of Physicians and Surgeons, New York City, 1890; of Trenton, N. J.; died in the Hudson Street Hospital, New York City, January 29, from morphin poisoning, aged 42.

Henry Hull, M.D. University of Michigan, Ann Arbor, 1872; a veteran of the Civil War; for eleven years postmaster of Ravenna, Mich.; died at his home, July 28, from cerebral hemorrhage, aged 62.

James A. Diddle (license, W. Va., years of practice), formerly of Winifrede, W. Va.; physician for the Coke-Coal company near Meadowbrook, W. Va., died recently at East Bank, W. Va., aged 66.

Julius Nelson Fraser, M.D. Laval University, Montreal, 1874; of Kankakee, Ill.; died at the West Side Hospital, Chicago, July 27, from tuberculosis, after a surgical operation, aged 67.

Joseph H. Price, M.D. Jefferson Medical College, Philadelphia, 1877; a member of the Medical Society of the State of Pennsylvania; died at his home in DeHaven, July 27, aged 56.

George Paul Guilford, M.D. St. Louis (Mo.) Medical College, 1870; a veteran of the Civil War; died at his home in Owosso township, Mich., July 25, from cerebral hemorrhage, aged 68.

John W. Miller, M.D. American Medical College (Eclectic), St. Louis, 1897; (license, Ill., years of practice, 1888); of Madison, Ill.; died in Edwardsville, Ill., recently, aged 71.

George W. Briggs, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1876; formerly of Chapin, Ill.; died at his home near St. James, Mo., July 25, from nephritis.

Edwin C. Hunt, M.D. Tulane University, New Orleans, 1891; a member of the Mississippi State Medical Association; died at his home in Vicksburg, July 24, aged 42.

Will L. Chester, M.D. University of Louisville (Ky.), 1879; of Jackson, Tenn.; died in a hospital in Memphis, Tenn., July 26, from disease of the stomach, aged 50.

Charles Dustin Hunking, M.D. Harvard Medical School, Boston, 1877; of Haverhill, Mass.; died at his summer home at Hampton Beach, N. H., July 23, aged 59.

Robert C. Carter, M.D. Missouri Medical College, St. Louis, 1868; a member of the Missouri State Medical Association; died at his home in Higginsville, July 5.

Andrew Jackson Swaney, M.D. New York University, New York City, 1851; died at his home in Gallatin, Tenn., July 20, from heart disease, aged 77.

Samuel E. Dyke, M.D. Louisville (Ky.) Medical College, 1875; died at his home in Spring Valley, Ohio, July 27, from heart disease, aged 62.

Melvin H. Fitts, M.D. Eclectic Medical Institute, Cincinnati, 1873; died at his home in Martin, Tenn., July 21, from cerebral hemorrhage, aged 67.

William Conner, M.D. Jefferson Medical College, Philadelphia, 1892; died at his home in Philadelphia, July 19, from paralysis, aged 59.

John M. Griffin, M.D. Tulane University, New Orleans; died at his home in Hillsboro, Tex., February 13, from nephritis, aged 77.

John McArthur Dunsmore, M.D. McGill University, Montreal, 1870; died recently at his home in Stratford, Ont., aged 77.

Marriages

Ira C. Bowman, M.D., to Miss Helen H. Ogden, both of Philadelphia, July 29.

Galen K. Hassenplug, M.D., to Miss Helen A. Sarconi, both of Denver, July 26.

Ira G. Gasser, M.D., to Miss Lillian H. Ryan, both of Philadelphia, July 29.

Helen McNichol, M.D., and Edward A. English, both of Philadelphia, July 26.

Walter F. Rochelle, M.D., Jackson, Tenn., to Miss Kathleen McCorry, June 30.

Carl Ludwig Larson, M.D., to Miss Mary Alice Prosser, both of Butte, Mont., July 19.

Ralph S. Chamberlain, M.D., Denver, to Miss Mollie J. Dorsey, at York, Pa., July 27.

George E. Parsons, M.D., Elk River, Minn., to Miss Jessie Helen Horn, of St. Paul, July 26.

Francis Schill, Jr., M.D., to Miss Olive Virginia Shaffer, both of Johnstown, Pa., June 30.

Donald Ross McIntyre, M.D., Gwinn, Mich., to Miss Carolyn Merritt King of Milwaukee, August 3.

John Wilson MacConnell, M.D., Davidson, N. C., to Miss Agnes H. Doyle, at Baltimore, July 28.

Thomas Victor Batchelor, M.D., Bovina, Miss., to Miss Maria Louise Young of Vicksburg, Miss., July 20.

Evahn Russell Walker, M.D., Marshalltown, Iowa, to Miss Mae Bower, at West Union, Iowa, recently.

D. Ashley Turner, M.D., Goldfield, Nev., to Miss Charlotte Schultz, of Walla Walla, Wash., at Los Angeles, Cal., July 19.

Medical Education and State Boards of Registration

Reciprocity with Vermont

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, states that Vermont now has reciprocal relations with District of Columbia, Illinois, Indiana, Maine, Maryland, Michigan, New Hampshire, New Jersey, New York, North Dakota, Ohio, Texas, Wisconsin and Wyoming.

Present Status of State Board Requirements

Elsewhere in this issue it will be noted that 50 medical colleges have adopted requirements of preliminary education beyond a four-year high-school education. It will be particularly interesting, therefore, to note advances in requirements made recently by state medical examining boards. Some of these requirements are graphically presented by the accompanying charts and the essential features of the various practice acts are shown in Table A.

Table B shows what states have established reciprocal relations with other states.

TABLE A

Essential Features of State Laws and Conditions Surrounding Medical Licensure

State.	Examinations only—Graduation not essential	Diploma and Examination.	Preliminary Education.				Medical Education.						Has Reciprocity with Other States.	Examining Boards Separate.	Exam. Board Nomt'd or App'd by State Med. Soc.	Examination Fee.	Certificate and Recording Fee.
			Law Provides For.	All Credentials Inspected by Boards.*	Years in High School Required.	Years in a College of Arts.	Advanced Standing for A.B., B.S.	Required Years of Medical Study.	Minimum Hours per Week.	Minimum Weeks per Year.	Required Months per Year.	Minimum Total Hours of Course.					
Alabama	....	Yes	....	....	....	....	....	....	....	....	....	....	Yes	....	Yes	$10	$1.00
Arizona	....	Yes	....	....	....	....	....	....	....	....	....	....	No	....	....	10	2.00
Arkansas	....	Yes	Yes	....	3	....	....	....	....	....	....	....	Yes	Yes	Yes	15	None
California	....	Yes	Yes	....	4	....	....	4	30	30	7½	3600	No	....	Yes	25	None
Colorado	....	Yes	Yes	....	4	1	....	4	....	....	9	3600	Yes	....	....	25	None
Connecticut	....	Yes	Yes	....	4	1	....	4	36	26	6½	3744	Yes	Yes	Yes	15	2.00
Delaware	....	Yes	Yes	....	4	....	....	4	....	....	7	....	Yes	Yes	Yes	10	None
Dist. of Col.	....	Yes	....	....	....	....	....	4	....	....	....	....	Yes	Yes	....	10	.50
Florida	....	Yes	....	....	....	....	....	....	....	....	....	....	No	Yes	Yes	15	None
Georgia	....	Yes	....	....	....	....	....	3	....	....	6	....	Yes	Yes	....	10	.50
Hawaii	....	Yes	....	....	....	....	....	4	....	....	....	....	No	....	....	10	None
Idaho	....	Yes	Yes	....	....	....	....	....	....	....	....	....	No	....	....	25	None
Illinois	....	Yes	Yes	....	4	....	...	4	....	30	7½	3200	Yes	....	....	10	5.00
Indiana	....	Yes	Yes	Yes	4	....	....	4	36	30	7½	4320	Yes	....	....	25	.50
Iowa	....	Yes	Yes	....	4	....	No	4	....	26	7	4180	Yes	....	....	10	.50
Kansas	....	Yes	Yes	....	4	...	....	4	....	....	6	....	Yes	....	....	15	3.00
Kentucky	....	Yes	Yes	Yes	4	....	No	4	....	30	7½	....	Yes	....	....	10	.50
Louisiana	....	Yes	....	....	....	....	....	4	....	....	....	....	Yes	Yes	Yes	10	2.00
Maine	....	Yes	Yes	....	4	....	....	4	....	....	....	....	Yes	....	....	10	2.00
Maryland	....	Yes	Yes	....	....	....	....	4	....	....	....	....	Yes	Yes	Yes	20	None
Massachusetts	Yes	....	....	....	....	....	....	....	....	....	....	....	No	....	....	20	None
Michigan	....	Yes	Yes	Yes	4	....	No	4	36	34½	8½	3600	Yes	....	Yes	25	None
Minnesota	....	Yes	Yes	....	4	2	No	4	....	26	6½	....	Yes	....	....	10	None
Mississippi	Yes	....	....	....	....	....	....	....	....	....	....	....	No	....	....	10	.25
Missouri	....	Yes	Yes	....	4	....	....	4	....	....	7	....	Yes	....	....	15	1.00
Montana	....	Yes	Yes	....	....	....	....	4	....	....	6	....	No	....	....	25	None
Nebraska	....	Yes	Yes	....	4	....	....	4	....	....	6	....	Yes	....	....	25	None
Nevada	....	Yes	Yes	....	4	....	....	4	....	....	....	....	Yes	....	....	25	None
New Hamp.	....	Yes	Yes	....	4	....	....	4	....	....	9	....	Yes	Yes	Yes	10	None
New Jersey	....	Yes	Yes	....	4	....	....	4	....	....	7	....	Yes	....	....	25	2.00
New Mexico	....	†	Yes	....	4	....	....	4	30	30	7½	3600	Yes	....	....	25	None
New York	....	Yes	Yes	Yes	4	....	No	4	....	....	7	....	Yes	....	Yes	25	1.00
No. Carolina	....	Yes	Yes	....	....	....	....	3	....	....	....	....	Yes	....	Yes	10	.25
No. Dakota	....	Yes	Yes	....	4	2	....	4	30	30	8	3600	Yes	....	....	20	None
Ohio	....	Yes	Yes	Yes	4	....	....	4	....	30	....	....	Yes	....	....	25	.50
Oklahoma	....	Yes	Yes	....	2	.. .	....	4	....	....	....	....	Yes	....	....	15	None
Oregon	....	Yes	....	....	....	....	....	....	....	....	....	....	No	....	....	10	None
Pennsylvania	....	Yes	Yes	....	4	....	....	4	....	....	....	....	Yes	Yes	Yes	25	1.00
Philippine Is.	....	Yes	Yes	....	....	....	....	....	....	....	....	....	No	....	....	15	None
Porto Rico	....	Yes	....	....	....	....	....	....	....	....	....	....	Yes	....	....	10	5.00
Rhode Island	....	Yes	Yes	....	4	....	....	....	....	....	....	....	No	....	....	10	2.50
So. Carolina	....	Yes	Yes	....	....	....	....	4	....	26	6½	....	Yes	....	Yes	10	.25
So. Dakota	....	Yes	Yes	....	....	1	....	4	....	26	6½	....	No	....	....	20	None
Tennessee	Yes	....	....	....	....	....	....	....	....	....	....	....	Yes	....	....	10	5.50
Texas	....	Yes	Yes	....	3	....	....	4	....	....	....	600	Yes	....	Yes	15	1.00
Utah	....	Yes	Yes	....	4	....	....	4	....	....	....	....	Yes	....	....	15	None
Vermont	....	Yes	Yes	....	4	....	....	4	....	....	....	3600	Yes	....	Yes	20	.25
Virginia	....	Yes	....	....	....	....	....	....	....	....	....	....	Yes	....	Yes	10	None
Washington	....	Yes	....	....	....	....	....	3	....	....	....	.. .	No	....	....	25	1.00
West Virginia	....	Yes	Yes	....	4	....	....	....	....	....	....	....	Yes	....	....	10	None
Wisconsin	....	Yes	Yes	Yes	4	....	....	4	....	....	7	....	Yes	....	Yes	20	.50
Wyoming	....	Yes	....	....	....	....	....	....	....	....	....	....	Yes	....	....	25	None

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* Previous to or at the time of matriculation.

† Will accept a diploma without examination if from a recognized college.

PRELIMINARY EDUCATION

Chart 1 shows the provision made by the various states in regard to the preliminary education of applicants. Six states have adopted preliminary requirements equal to one or two years of work in a college of liberal arts in addition to a four-year high school education, thereby supporting the better class colleges with similar requirements. These are:

State Examining Board of	No. of Years Required	Affects Students matriculating	Affects all Applicants after
North Dakota	2	1907-08	1911
South Dakota	1	1907-08	1911
Minnesota	2	1908-09	1912
Colorado	1	1908-09	1912
Connecticut	1	1910-11	1914
Kansas	1	1910-11	1914

There are twenty-two states having preliminary requirements stated as a four-year high school education or its "equivalent," which is intended to mean a four-year high school course which has been preceded by eight years in the elementary grades. These states are:

California
Delaware
Illinois
Indiana
Iowa
Kentucky
Maine
Michigan
Missouri
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
Ohio
Pennsylvania
Texas
Utah
Vermont
West Virginia
Wisconsin

In five states preliminary standards are provided for but which are less than a four-year high school education, these states being:

Arkansas
Maryland
Oklahoma
South Carolina
Texas

In three states, Idaho, Montana and North Carolina, no standards have been fixed, although the boards have authority to establish the standard. In North Carolina an amendment to make the preliminary requirement a four-year high school education was recently defeated by a plea "for the poor boy who wants to study medicine."

There still remain thirteen states having no provision in the law for preliminary education. These states are:

Alabama
Arizona
District of Columbia
Florida
Georgia
Louisiana
Massachusetts
Mississippi
Oregon
Tennessee
Virginia
Washington
Wyoming

In the fourth column of Table A it will be noted that in six states the examining boards pass on all the entrance credentials of medical students previous to, or at the time of matriculation, and conduct all entrance examinations. These states are:

Indiana
Kentucky
Michigan
New York
Ohio
Wisconsin

The weakest point in the American system of medical education still remains the low requirements of preliminary education and, speaking generally, no requirement is so poorly enforced by our examining boards, chiefly because of the difficulty of giving fair value to the credentials from our endless variety of secondary schools. Investigation reveals that the "equivalent" of a four-year high school education in several states may mean almost anything from the fair equivalent down to a 20-week course in a night school or less.

Five years ago fourteen states were allowing non-graduates to take examinations and secure licenses to practice medicine. Now all states require that candidates must be graduates of medical schools except three, these, as shown in Chart 2, being Massachusetts, Mississippi and Tennessee.

RECOGNITION OF MEDICAL COLLEGES

Chart 3 shows what state boards have been given authority to withhold recognition from low grade medical colleges. Some laws give authority but at the same time provide educational standards so low as to make the authority ineffective. Others merely provide that the college must be "legally chartered" which is of little effect since even a number of notorious diploma mills were "legally chartered." There are twenty-seven states, however, which have apparently given their boards unhampered authority to refuse recognition to medical schools not doing satisfactory work. These states are:

Colorado
Connecticut
Delaware
Idaho
Illinois
Iowa
Indiana
Kansas
Kentucky
Maine
Michigan
Minnesota
Missouri
Montana
Nebraska
New Hampshire
New Mexico
New York
North Dakota
Ohio
Rhode Island
South Carolina
South Dakota
Texas
Vermont
West Virginia
Wisconsin

Fourteen states are given authority which for various reasons is more or less limited. These states are:

Arizona
Arkansas
California
District of Columbia
Georgia
Louisiana
Nevada
New Mexico
North Carolina
Oklahoma
Oregon
Utah
Washington
Wyoming

There still remain eight states where the examining boards are not given legal authority to protect the people of their states from graduates of diploma mills or low grade medical colleges. These states are:

Alabama
Florida
Maryland
Massachusetts
Mississippi
Pennsylvania
Tennessee
Virginia

RECIPROCITY

Chart 4 shows that only thirteen states remain which have not entered into reciprocal relations with others. These states are:

Alabama
Arizona
Connecticut
California
Florida
Idaho
Massachusetts
Mississippi
Montana
Oregon
South Dakota
Rhode Island
Washington

Alabama and South Dakota have legislation providing for reciprocity but as yet no reciprocal relations with other states have been reported.

Table B shows which states have reciprocal relations and the basis on which such reciprocity has been established. During 1908, 1,092 licenses were granted through reciprocity as compared with 989 in 1907 and 685 in 1906. The figure "1" indicates that reciprocity is on the basis only of a written examination while the figure "2" indicates that reciprocity is on the basis of either a written examination or of a diploma without examination. If the applicant was originally registered without examination prior to the date when the state in which he desires re-registration began requiring examination of all applicants, he is eligible in states with the figure 2. The dates in the second column show when the states began requiring examinations of all applicants.

MULTIPLE BOARDS

The number of states having more than one board of medical examiners has been gradually reduced until now only

TABLE B.—RECIPROCITY.

The Examining Board of	Required examination of all applicants since	Reciprocates with, or recognizes certificates granted by																																																
		Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	Dist. of Col.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Mass.	Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hamp.	New Jersey.	New Mexico.	New York.	No. Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	So. Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.
Alabama	1903	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Arizona	1897	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Arkansas	1903	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
California	1901	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Colorado	1906	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	1	1	1	..	..	1	1	..	1	..	1	1	..	1	..	..	..	..	1	..	..	..	..	..	..	1	1	1	..	..	..	..	1	..
Connecticut	1897	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	1895	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
District of Columbia	1896	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	1	..	1	1	..	..	..	2	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	1	..	1	1	..	2	2	..
Florida	1889	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Georgia	1895	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	2	..	..	2	..	2	..	..	..	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	2	..
Idaho	1899	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Illinois	1899	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	1	1	..	1	1	..	..	..	1	1	..	1	..	..	..	1	1	..	..	..	..	1	..	1	1	1	1	..	..	1	1	1
Indiana	1901	..	..	..	..	1	..	..	1	..	1	..	1	..	2	2	2	..	2	2	..	2	2	..	2	..	2	2	1	..	..	..	..	..	2	2	..	..	..	..	..	2	1	2	2	2	..	2	2	1
Iowa	1899	..	..	..	..	1	..	..	..	..	2	..	1	2	..	2	2	..	2	2	..	2	2	..	2	..	2	2	1	1	..	..	2	1	2	..	..	..	..	2	..	..	1	2	..	1	..	2	2	1
Kansas	1902	..	..	..	..	1	..	..	..	..	..	..	1	2	2	..	2	..	..	2	..	2	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	2	2	..
Kentucky	1907	..	..	..	..	1	..	..	1	..	2	..	..	2	2	2	..	..	2	2	..	2	2	..	2	..	2	2	1	1	1	..	..	1	..	..	..	..	..	2	..	2	1	2	..	1	..	2	2	..
Louisiana	1894	..	..	..	..	1	..	1	1	..	2	..	1	1	1	1	1	..	1	1	..	1	1	..	1	..	1	1	1	1	1	1	..	1	1	..	..	..	..	1	..	..	1	1	1	1	..	..	1	..
Maine	1901	..	..	..	..	1	..	1	1	..	2	..	1	2	2	2	2	1	..	2	..	2	2	..	2	..	2	2	..	1	..	..	..	1	2	2	..	..	..	2	..	2	1	2	2	..	..	2	2	1
Maryland	1892	..	..	..	..	..	..	1	1	..	2	..	1	2	2	2	2	..	2	..	..	2	2	..	2	..	2	2	1	..	..	..	..	..	2	2	..	..	..	2	..	..	1	..	2	1	..	2	2	..
Massachusetts	1895	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Michigan	1899	..	..	..	..	1	..	..	1	..	2	..	1	2	2	2	2	1	2	2	..	..	2	..	2	..	2	2	2	1	..	1	..	1	2	1	..	..	..	1	..	..	1	2	2	1	..	2	2	1
Minnesota	1887	..	..	..	..	1	..	..	1	..	..	..	1	2	2	2	2	1	2	2	..	2	..	..	2	..	2	1	1	2	..	..	..	1	2	2	..	..	..	2	..	2	1	2	..	1	..	..	2	1
Mississippi	1882	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	1901	..	..	..	..	1	..	..	..	..	..	..	..	2	2	..	2	..	1	..	..	2	1	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	1
Montana	1889	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nebraska	1903	..	..	..	..	1	..	..	2	..	2	..	1	2	2	2	2	1	2	2	..	2	2	..	2	..	..	2	2	1	..	..	..	..	2	1	..	..	..	..	..	2	1	2	..	1	..	2	2	1
Nevada	1907	..	..	..	..	1	..	..	..	..	2	..	1	2	2	..	2	1	2	2	..	1	1	..	2	..	2	..	2	..	..	..	..	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	2	..
New Hampshire	1897	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	2	..
New Jersey	1890	..	..	..	..	1	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..
New Mexico	1907	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New York	1890	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
North Carolina	1885	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Dakota	1890	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	1
Ohio	1904	..	..	..	..	1	..	..	2	..	..	..	1	2	2	..	..	..	2	2	..	2	2	..	..	..	2	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	2	2	..
Oklahoma	1903	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Oregon	1895	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pennsylvania	1894	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rhode Island	1902	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Carolina	1904	..	..	..	..	..	..	..	..	..	..	..	1	..	2	2	2	..	2	2	..	1	2	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	2	2	1
South Dakota	1903	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tennessee	1901	..	..	..	..	1	..	..	..	..	..	..	1	2	..	..	2	..	..	..	..	..	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Texas	1901	..	..	..	..	1	..	..	1	..	..	..	1	1	1	..	1	..	1	1	..	1	1	..	1	..	1	1	..	1	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1	1	..	1	1	..
Utah	1898	..	..	..	..	1	..	..	..	..	..	..	1	2	2	..	2	..	..	..	..	2	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	2	..
Vermont	1904	..	..	..	..	..	..	..	1	..	..	..	1	2	..	..	..	..	2	2	..	2	..	..	..	..	..	..	2	1	..	1	..	1	2	..	..	..	..	..	..	..	1	..	..	..	..	..	2	1
Virginia	1885	..	..	..	..	..	..	1	1	..	2	..	..	2	1	..	1	1	..	1	..	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	2	2	..
Washington	1890	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
West Virginia	1895	..	..	..	..	..	..	..	2	..	2	..	1	2	2	2	2	..	..	2	..	2	..	..	2	..	2	..	2	1	..	..	..	1	..	..	..	..	..	2	..	..	1	..	..	2	..	..	2	1
Wisconsin	1901	..	..	..	..	1	..	..	2	..	2	..	1	2	2	2	2	1	2	2	..	2	2	..	2	..	2	2	2	1	..	..	..	1	2	..	..	..	..	2	..	2	1	2	2	2	..	2	..	..
Wyoming	1901	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	1	..	1	1	..	1	..	1	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	1	..	..

Key: 1, Reciprocates on the basis of an examination only. 2, Reciprocates on the basis either of a diploma or of an examination.

ten remain. These states and the number of boards in each are as follows:

Arkansas, 3.
Connecticut, 3.
Delaware, 2.
District of Columbia, 3.
Florida, 3.
Georgia, 3.
Louisiana, 2.
Maryland, 2.
New Hampshire, 3.
Pennsylvania, 3.

The division of the responsibility for the safeguarding of public interests always leads to confusion and adds to the difficulty of upholding any fair standard of licensure.

OSTEOPATHY

Every new school of medicine which tries to secure the right to practice medicine invariably holds standards of preliminary and medical education lower than those already in the field. That is the chief argument against them. So the new sect, osteopathy, which, under the pretext that its followers were "not practicing medicine," has secured favorable legislation in a considerable number of states (Chart 6), upholds practically no standards for admission and gives at most only a three-year course in medicine. The legal status is discussed more in detail below:

ONE STANDARD NECESSARY

One thing should be clearly borne in mind in all discussions of medical sects, namely: Regardless of the methods or limitations of treatment employed, practitioners are alike in that they must make diagnoses—must differentiate between health and disease. To treat a disease without knowing what it is, is merely guesswork, is unscientific, is a dangerous procedure and is an imposition on the patient. For these reasons there should be one standard set for all practitioners of medicine regardless of the methods of treatment, and this standard should be sufficiently high to guarantee that the practitioner is able to properly diagnose diseases. If he can comply with that standard he should be granted a license and allowed to practice by whatever method he chooses. If he can not comply with that standard he is a menace to the lives of any who would be unfortunate enough to be his patients, and for that reason should not be allowed to practice.

Present Legal Status of Osteopathy

Closely allied to the regulation of the practice of medicine is the problem of the regulation of the various sects and fads which are constantly arising. The most conspicuous one just at present is the so-called "school of osteopathy," the peculiar teachings of which are too well known to require discussion. With the scientific fallacies of this cult we are not at present concerned, but simply with the present legal status of the followers of this school in the various states.

Examination of the existing laws shows an interestingly contradictory and peculiarly characteristic condition. In some states, the practice of osteopathy has been legally decided to be the practice of medicine, while in other states it has been decided by equally weighty and learned authorities that it is not the practice of medicine. Naturally, in most of those states in which a separate board of osteopathic examiners has been created, the courts have held that osteopathy was something separate and distinct from the practice of medicine, while in those states in which osteopaths have been added to the existing boards, the courts have held that osteopathy was simply one form of the practice of medicine.

In seventeen states, the existing laws authorize a separate board, to examine and license practitioners of osteopathy. These states, with the year of the adoption of the law, are as follows: Arkansas, 1903; Connecticut, 1901; Florida, 1909; Idaho, 1907; Louisiana, 1908; Michigan, 1903; Minnesota, 1903; Missouri, 1907; Montana, 1905; Nebraska, 1909; New Mexico, 1905; North Carolina, 1907; North Dakota, 1909; Pennsylvania, 1909; South Dakota, 1907; Tennessee, 1905; Vermont, 1904.

In eleven states, the law authorizes the appointment of an osteopath on the state board. These states, with the date of the passage of the law, are: California, 1907; Indiana, 1905; Iowa, 1902; Kentucky, 1904; New York, 1907; Oklahoma, 1907; Oregon, 1907; Texas, 1907; Utah, 1907; Washington,

CHART 1.—STATE BOARD REQUIREMENTS OF PRELIMINARY EDUCATION

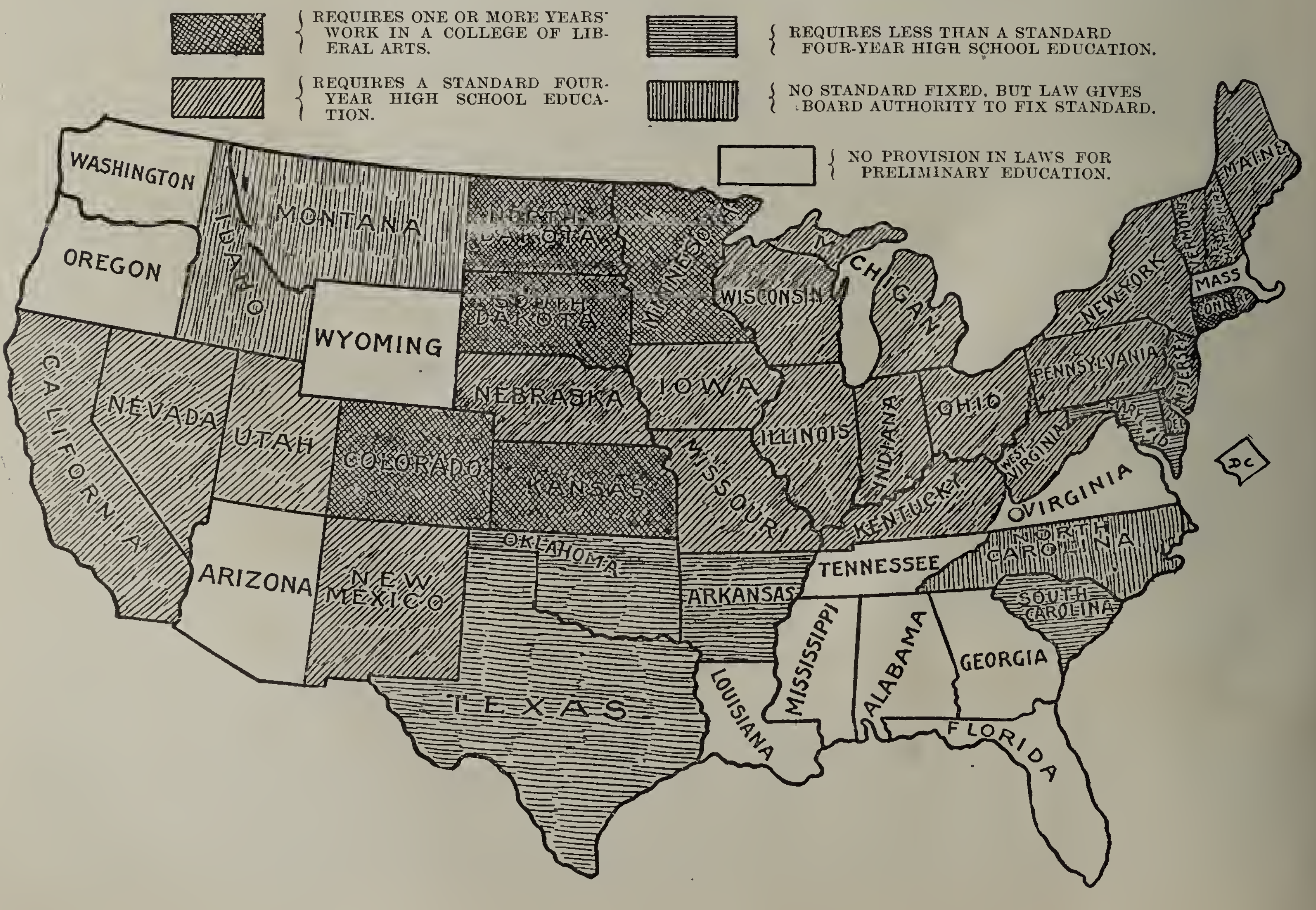


CHART 2.—STATES REQUIRING GRADUATION FROM A MEDICAL COLLEGE

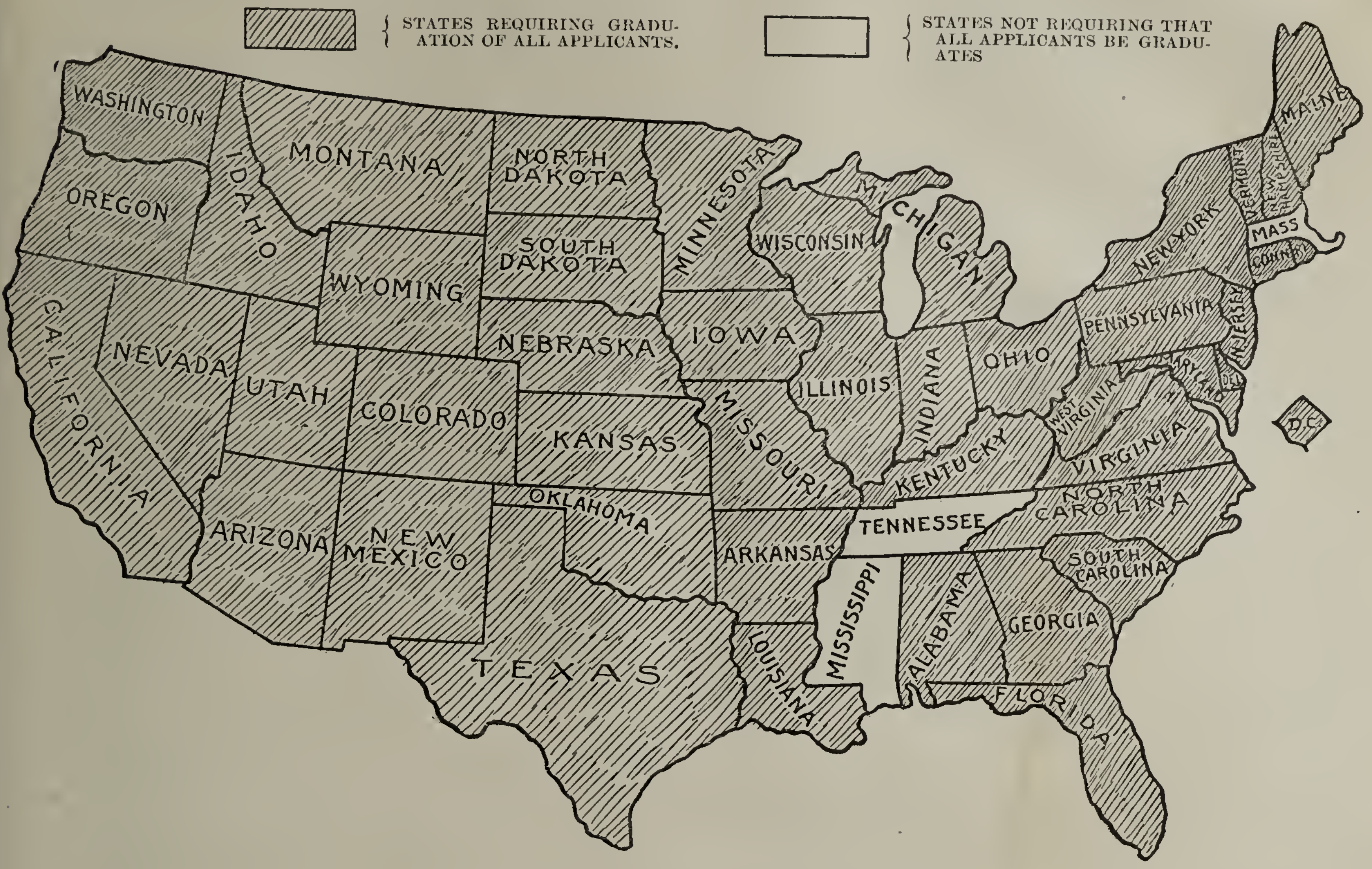
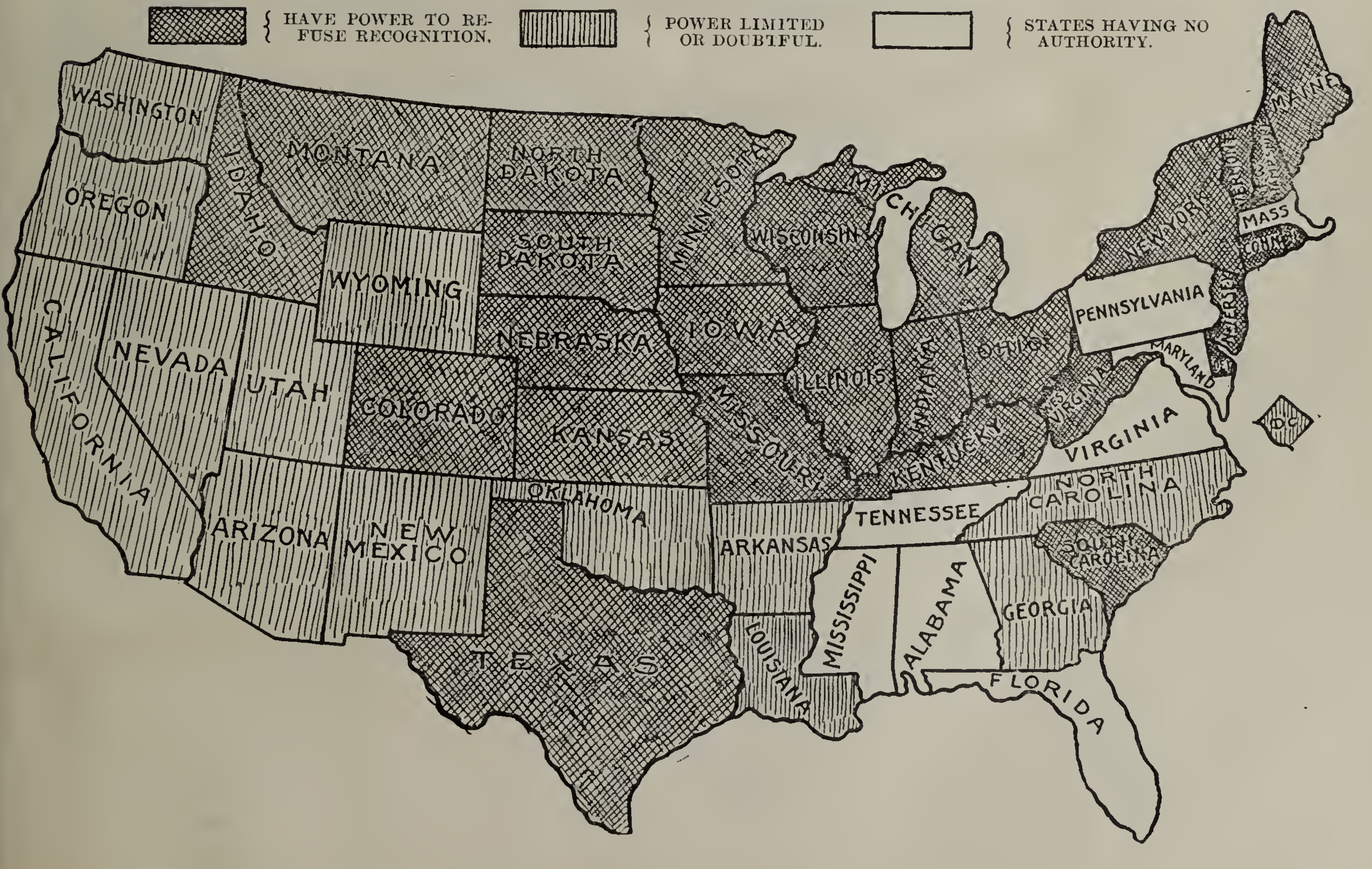


CHART 3.—STATE BOARDS HAVING AUTHORITY TO REFUSE RECOGNITION TO LOW GRADE MEDICAL COLLEGES



1909; Wisconsin, 1903. In Iowa, while authorized, the governor has not yet appointed an osteopathic member.

In two states, Colorado and Maryland, osteopaths are exempt from the operation of the medical practice act. In nine states, the examining board is authorized to examine and register them as osteopaths. These states are: Delaware, 1907; Kansas, 1901; Massachusetts, 1909; Nebraska, 1905; Ohio, 1906; South Carolina, 1904; Washington, 1903; West Virginia, 1907; Wyoming, 1905. In Delaware, Nebraska and Ohio the board is authorized to call on an osteopath to assist in the examinations. In nine states there is no existing regulation regarding this sect. These states are: Alabama, Arizona, District of Columbia, Georgia, Maine, Mississippi, New Hampshire, Nevada and Rhode Island. In Alabama and Arizona, osteopaths can secure licenses on taking the same examination as other applicants.

Regarding the legal status of osteopathy as a system, in the following states it has been declared to be the practice of medicine, either by statutory enactment or by decision of the courts: Alabama, Arizona, California, Delaware, Indiana, Iowa, Kentucky, New York, Ohio, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming. In the following states it has been declared not to be the practice of medicine: Arkansas, Colorado, Connecticut, Georgia, Idaho, Illinois, Kansas, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, North Carolina, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee and Vermont, making fifteen states in which the osteopath is a practitioner of medicine and twenty states in which he is not.

The absurdity and utter inconsistency of such a situation is apparent, the entire fallacy, from a scientific standpoint, lying in the confusion by courts, lawyers, and legislators of therapeutic measures and systems of practice with so-called "schools of medicine," as well as the equally common absurdity of restricting one's conception of the meaning of the term "practice of medicine"—which has been adopted as a convenient phrase to describe the work of those who care for the sick—as being limited to the administration or use of drugs. This fallacy arises from the fact that, in the popular mind, the most obvious means used for treating diseases has gradually come to stand for not only the entire system of treatment but also for the entire mass of scientific knowledge.

From a legal point of view, the absurdity of sectarian legislation lies in the establishment of two standards of requirements for the same privilege. The state, in the exercise of its police power to regulate or restrict occupations, professions and trades, requires that each individual desiring to engage in the work of treating the sick, must present certain qualifications and must satisfactorily pass an examination test of a certain standard. Such a standard of qualification having been established, it is plainly inequitable for the state to adopt a law admitting individuals to the same privileges on a lower basis of qualification, since such favoritism constitutes class legislation and is clearly unconstitutional. In other words, there is no more legal justification for two standards for the practice of medicine in any state than there is for two standards for the practice of law, nor has a state any more right to recognize sectarianism in medicine than it has to recognize sectarianism in the legal profession, or in religious matters. We can easily conceive of the reception which would be afforded an individual who would present a bill in any of our state legislatures asking that a certain sect or class of men, unlearned in the law and unrecognized in legal circles, be authorized to practice law, to appear before the courts and to exercise the rights and privileges of attorneys with one-half or two-thirds of the intellectual and technical training required by the bar association of the state. Such a bill would be laughed out of the legislature, even if any member had the temerity to present it. Yet this is exactly the situation which sectarian medical laws create, so far as state recognition of medicine is concerned. The reason why state legislatures have committed absurdities along medical lines which they would not tolerate for a moment on legal subjects, is that the majority of the members of the legislature are informed on legal questions and consequently can legislate intelligently, while on medical subjects they are entirely uninformed and are consequently more easily influenced by their prejudices and personal relations.

CHART 4.—INTERSTATE RECIPROCITY IN MEDICAL LICENSURE

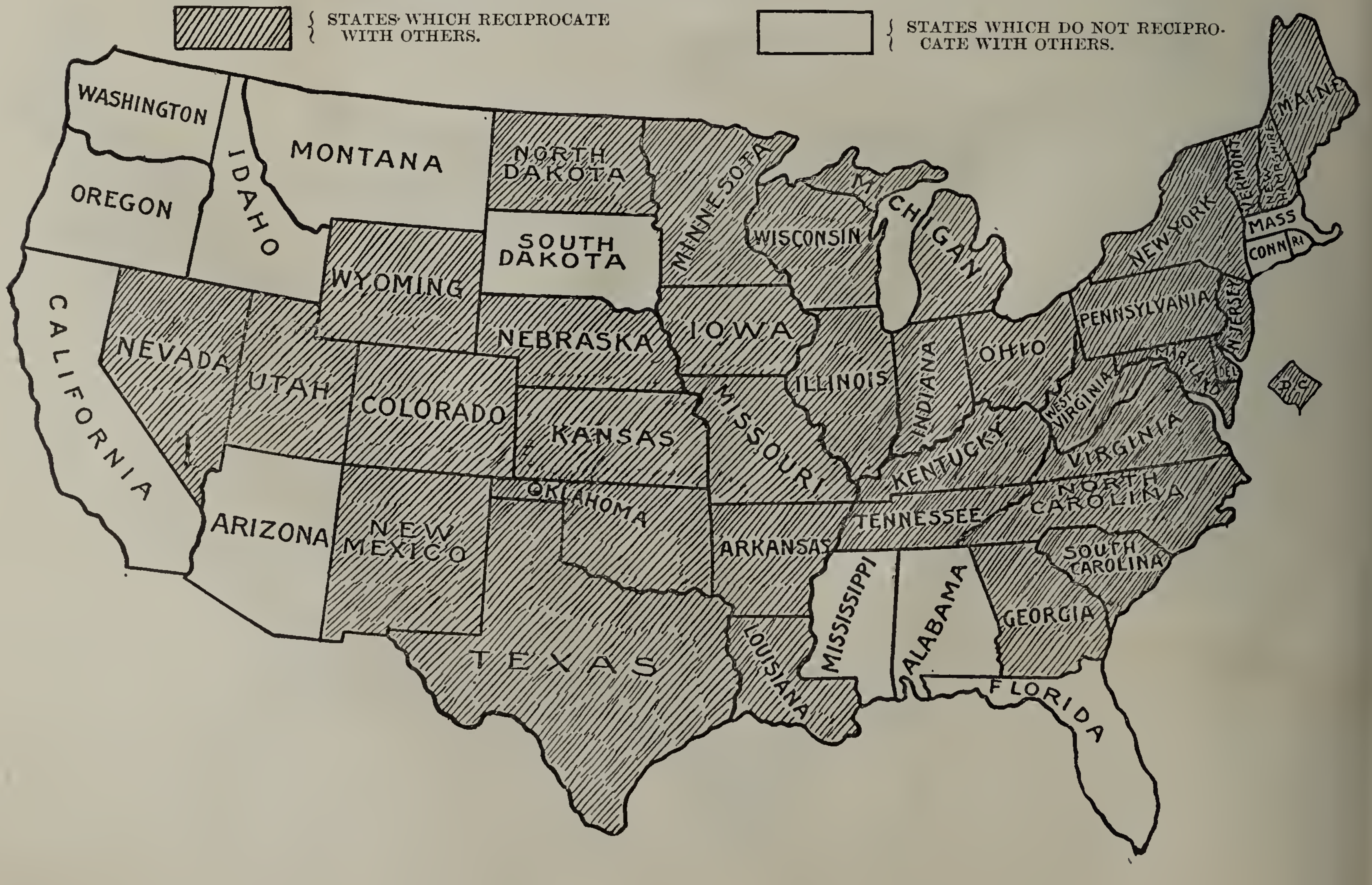


CHART 5.—STATES HAVING SECTARIAN BOARDS

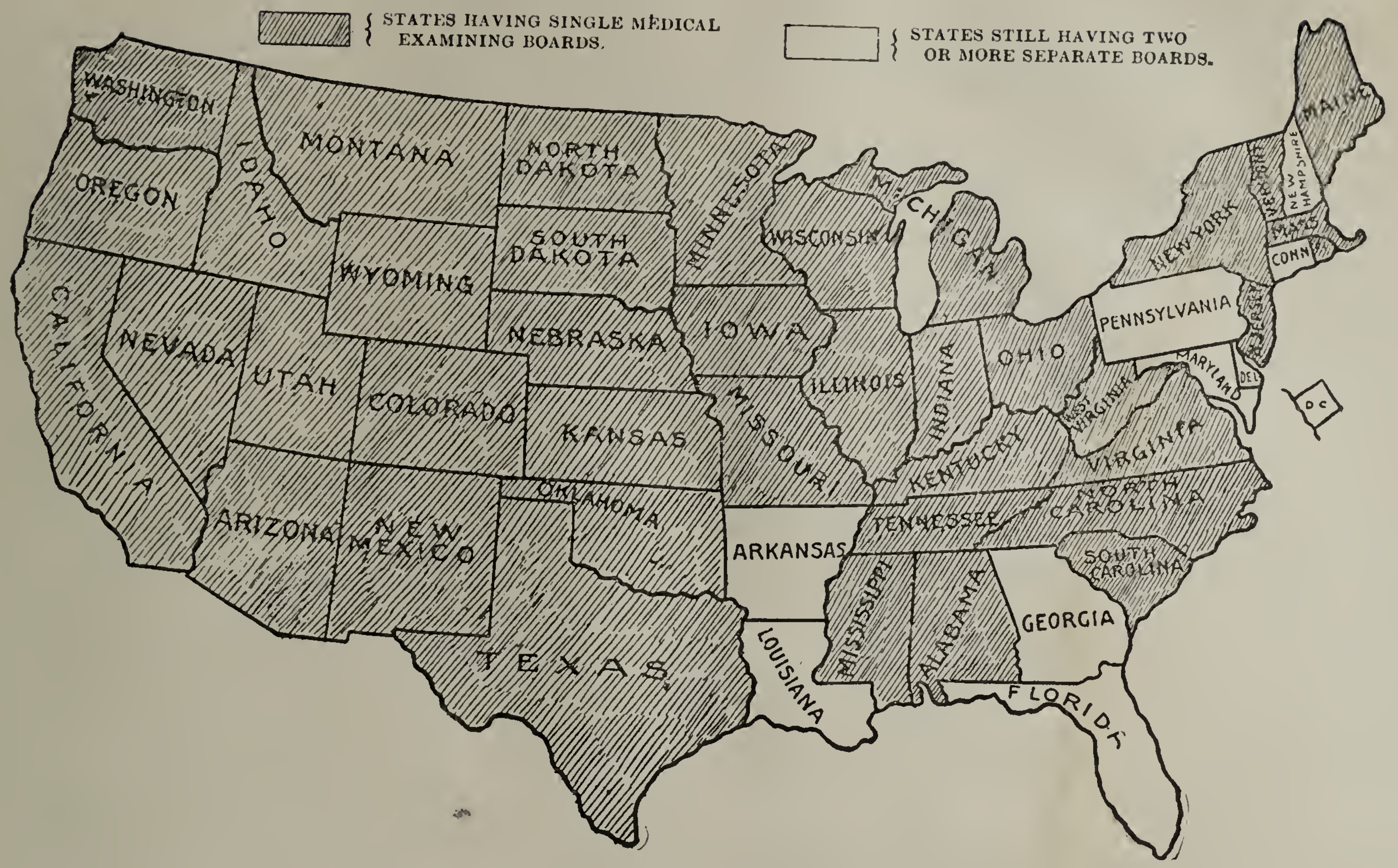
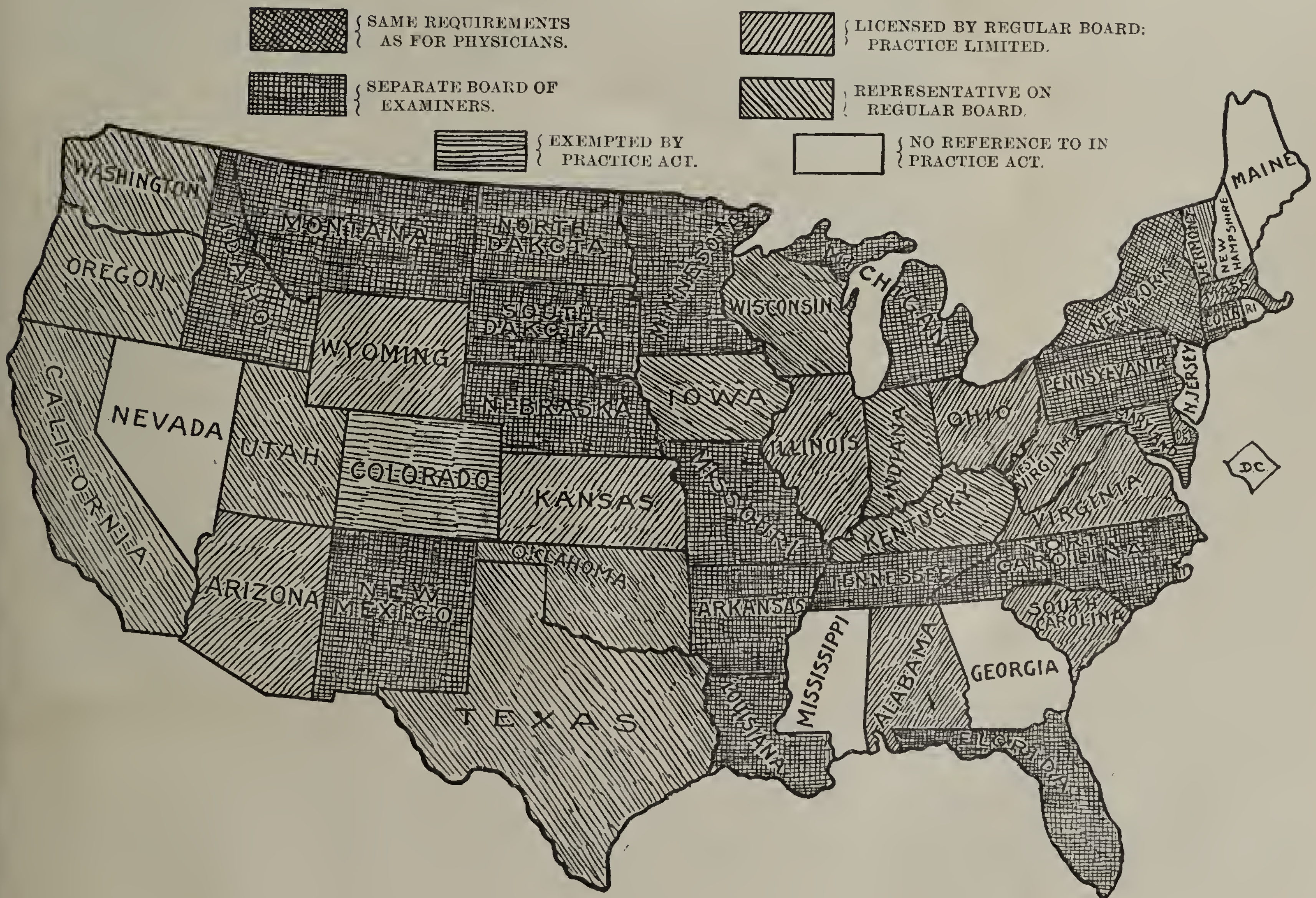


CHART 6.—OSTEOPATHY



Book Notices

Text-Book of Embryology. By Frederick Randolph Bailey, A.M., M.D., Adjunct Professor of Histology and Embryology, College of Physicians and Surgeons (Med. Dept. Columbia Univ.) and Adam Marion Miller, A.M., Instructor in Histology and Embryology, College of Physicians and Surgeons (Med. Dept. Columbia Univ.). Cloth. Pp. 672, with illustrations. Price, $4.50. New York: William Wood & Co., 1909.

This book, while including subjects of interest to the general student of embryology, is primarily intended "to present to the student of medicine the most important facts of development, at the same time emphasizing those features which bear directly on other branches of medicine." It is accordingly divided into two parts and an appendix. Part I deals with general development. Part II with the development of the adult tissues and organs. To each chapter there is appended a good bibliography and "practical suggestions" for laboratory work, embracing the subjects dealt with in that chapter. In each chapter of Part II there is added under "anomalies" an embryologic consideration of malformations peculiar to the structures taken up in the respective chapter. There is also a special chapter on teratogenesis in which are discussed duplicity of structures and fetus, defects in fetus and the causes underlying the origin of monsters.

Part I includes a discussion of the cell, mitosis, the male and female, sex cells, maturation, fertilization, cleavage, the germ layers, the fetal membranes and the development of the external form of the body. While this is primarily a text-book of human embryology, yet, owing to the scarcity of early human embryonic material, early development as seen in the lower forms is of necessity resorted to. The simpler types of development, such as that of the Amphioxus, the chick and the frog constitute the basis for the consideration of the development of the germ layers. It is to be regretted that Chapter V (cleavage) and Chapter VI (the germ layers) do not compare favorably with the remainder of the book. These subjects form almost the entire basis for the field of embryology, and any inadequacy or errors in this part of a text-book are particularly serious.

Part II embraces the development of the connective tissue, the skeletal, muscular, vascular, respiratory, circulatory, urogenital, integumentary, and nervous systems, the alimentary tube and appended organs, the organs of special sense, and teratogenesis, and is a decided improvement over Part I. This is especially true of Chapter XVII (the nervous system), which is the best part of the book. Here a very difficult subject is treated in a comprehensive yet lucid manner, which places it easily within the grasp of the average medical student. One would naturally expect to find the name of the author of this chapter (Dr. Oliver S. Strong) on the title-page. The nervous system covers practically one-fifth of the book, yet Dr. Strong is only slightly mentioned in the preface. The development of the vascular system (Chapter X) is also well brought out.

There are 515 illustrations in the text. In Part II they are in the main good, well selected, and compare favorably with those of the best English text-books of embryology. The general plan of the book is an excellent one, but is perhaps better suited to a more extensive work on the subject. It is doubted if sufficient time can be spared from an already well-crowded curriculum to cover the subject of embryology as outlined in this text. One would think that the authors, in writing a general text for medical students, had shown a slight tendency to place it beyond their grasp; since an adequate knowledge of the great variety of subjects dealt with and of such subjects as teratogenesis and the causes underlying the origin of monsters, can not be obtained from so brief a text. A great deal of supplementing by lectures and original articles would be required, which would require more time than can be ordinarily devoted to the subject. The book is well printed. Several technical errors (due probably to oversight) and apparent contradictions in Part I will doubtless be corrected in the first revision of the book.

The Errors of Mind-Healing. By Reinhold Willman, M.D., St. Joseph, Mo. Cloth. Pp. 179. Price, $1. St. Joseph, Mo.: The Advocate Publishing Co.

Dr. Willman, with the praiseworthy intention of setting forth, as he says, the view that the physician can and must take of the Scriptural records of miracles, argues to show that there is nothing in common between those miracles and the modern use of hypnotism, suggestion, faith healing, etc. Accepting the accuracy of the records, which a believer in Christianity is obliged to do, he seems to us to be on the right track. There are some clergymen and critics who attempt to reconcile the New Testament miracles with modern science and account for them as far as they can by known phenomena. Dr. Willman shows the fallacy of this and makes it clear that their only alternative to accepting the Biblical statements is to doubt the records. In the latter part of his book he takes up modern faith healing, Eddyism, Dowieism, etc., and shows up the commercial spirit that underlies nearly all of them. We wish he could have had his book revised to free it from certain slips in the author's English as well as numerous typographical errors. His quotations from Mrs. Eddy's "Science and Health" and the text-books of Emmanuelism are rather apt in support of his argument.

The Greatest Good of Mankind: Physical or Spiritual Life. By William Wenzlick, LL.B., M.D. Cloth. Pp. 374. Price, $1.50 net. Chicago: Published by the Author, 1206 Lawrence Ave.

This book is made up of alternate opposed views in regard to questions of sociology, religion, etc., by two supposed writers, Dr. Fact and the Reverend Faith. Dr. Fact, the materialist, critic of the Bible after Tom Paine, and opponent of prohibition, represents Dr. Wenzlick's sentiments, while the Reverend Faith is a severe specimen of the cloth and not at all such a lovable representative of religion as its friends would prefer to have speak in refutation of the scoffer's sophistries. This method of setting up a man of straw or arguing with a dummy is a convenient one because the disputant has in it altogether his own way. We very much doubt its effectiveness in argument, however. Dr. Wenzlick has evidently done a large amount of reading of the Scriptures, but in a very critical and hostile spirit, which would probably give offense to a large majority of the reading public if his book were so fortunate as to come under their notice. In fact, a large proportion, we believe, of those who agree with him more or less in his ideas of personal liberty, so-called, would take offense at his sentiments in some other lines. His estimate of the value of alcohol and the blessing of the saloon will not be shared by the majority of conservative physicians.

Society Proceedings

ASSOCIATION OF AMERICAN TEACHERS OF THE DISEASES OF CHILDREN

Third Annual Meeting, held at Atlantic City, June 7, 1909

(Concluded from page 477)

Personal Relations of Teacher and Student

Dr. Edward J. Wynkoop, Syracuse, N. Y.: In many colleges, pediatrics is taught only in the fourth year. It is a most important subject for the young practitioner, inasmuch as two-thirds of his practice during the first few years will consist of accidents and diseases occurring among children. Only by the institution of more clinical work in the college can we hope to come in more personal contact with the student. The identity of the individual student is not always known. A personal knowledge of each man should be insisted on. The classes should be divided into sections of ten men each so as to establish personal relationship with each man. Teachers in medical colleges should take more interest in the social side of the student's life, and teachers should likewise bear in mind that they owe the student something more than merely classroom instruction.

DISCUSSION

Dr. A. C. Cotton, Chicago: The tendency to-day is toward larger teaching faculties so as to bring the students in touch with the subject in smaller classes. The teacher has an opportunity, therefore, of studying the actual needs of the individual student. The large staffs of the hospitals connected with our colleges enable the assistants to report to the chief of the staff the needs of the various students. Frequent quizzes, and the visiting of the staff by the students, partly fills the void created by the departed preceptor who was so valuable in olden times.

DR. A. JACOBI, New York City: The only place to teach medicine is at the bedside of the patient, or, if the college has a hospital connection, from material secured from the outpatient department. Unfortunately, most of our medical schools have no hospitals. We have too many students, or, perhaps, we have too many colleges. Large schools with large hospitals require a large teaching staff, and the aim of the teacher should be first, to secure suitable material for instructing the students, and, second, to divide the classes into sections of ten or twelve men each, so as to impart almost individual instruction.

Report of the Committee on the Teaching of Pediatrics

DR. S. W. KELLEY, Cleveland: Each college should have a chair of pediatrics with full professorship. Pediatrics should be studied in the junior and senior years. The course should be graded and include the anatomy and physiology of infancy and all the affections of childhood both medical and surgical. The surgical side of pediatrics may be taught in the chair of surgery. A large part of the teaching should be clinical. The classes should be divided into sections of ten or twelve men. No college without a hospital or dispensary for children is prepared to successfully teach diseases of children.

How Should the Percentage Method of Milk Modification be Taught?

DR. J. FINLEY BELL, Englewood, N. J.: The chemical and physical constituents of cow's milk as compared to those of mother's milk are so different that the percentage method as taught to-day does not solve the problem of milk modification. The proteid and fat percentages are at fault. The student in college should be taught how to examine specimens of milk. We should teach general principles only, permitting the student to form his own conclusions. The universal adoption of the metric system will simplify the matter and render the results more accurate. In preparing the formulas a knowledge of the physiologic needs of the infant is necessary.

What Should Be Taught Concerning Proprietary Foods and Condensed Milk?

DR. I. L. POLOSKE, Detroit: The students in our colleges should be taught the difference between cow's milk and proprietary foods. Proprietary foods are deficient in fat and have an excess of carbohydrates. Condensed milk and proprietary foods predispose the baby to scurvy, rickets, constipation and the various infectious diseases. All proprietary foods are rich in flour and dextrin. The physician must know the value of the food he prescribes and with patented foods this is impossible. Condensed milk should be used in catarrhal diseases where cow's milk can not be used. The enormous number of proprietary foods on the market is due to the large number of physicians who prescribe them.

DISCUSSION

DR. H. M. MCCLANAHAN, Omaha: There are two reasons why proprietary foods are used: 1. They are advertised directly in the home. 2. A large percentage of the profession is indifferent as to the methods of milk modification. It is a very good plan to warn students regarding the harmful effect of these patented foods.

What Should Be Taught About Mixed Feeding?

DR. H. M. MCCLANAHAN, Omaha: Science and art can not prepare a food equal to breast milk. Mothers should nurse their babies for at least six months. Many mothers wean babies early on the advice of careless physicians. By mixed feeding is meant the substitution of one or more breast feedings daily by some other food. There are two reasons for mixed feeding: 1. When the mother's health is impaired, or she is suffering from loss of weight or anemia. 2. When the baby fails to thrive, does not sleep well, or has indigestion frequently. Mixed feeding is better and safer than artificial feeding. Teachers should instruct students as to the importance of mixed feeding. Careless weaning often means loss of life, while a combination of bottle and breast feeding in many cases will save the baby's life. The laity should be educated on the subject of mixed feeding.

What Shall We Teach Concerning the Feeding of Difficult Cases?

DR. G. R. PISEK, New York: We meet with two classes of difficult cases: 1. Infants that are healthy at birth but that develop digestive disturbances after being breast fed. 2. Babies that do not thrive from the first. Teach the student the value of foods and the physical and chemical properties of milk. The student should be taught how to prepare the milk formulæ and he should likewise be taught the elementary laws of biology. Any form of food that agrees may be used as a starting point. Study the individual needs of the infant and gradually work up to a formula that will meet the particular requirements.

Discussion on Infant Feeding

DR. J. W. VAN DERSLICE, Chicago: As soon as we eliminate methods so soon will we get results in these feeding cases. We must stop teaching methods and teach infant feeding. This ought to be our next step. In regard to mixed feeding, I prefer the admixture of cow's milk and mother's milk to giving the child table foods.

DR. A. C. COTTON, Chicago: Mixed feeding does good when mother's milk fails. It is a mistake to recommend the bottle in all cases except where there is a contraindication to breast feeding. Breast-fed babies have dyspepsia which is not always due to improper feeding but rather due to bad mother's milk.

DR. I. L. POLOSKE, Detroit: Teach the obstetrician not to recommend early weaning and early recourse to the bottle. He is usually in charge of the case for the first few weeks and can be a power for much good in this direction. As soon as you advocate bottle feeding as a substitute for breast feeding you lessen stimulation to the breast and hence there is less breast milk.

AMERICAN ORTHOPEDIC ASSOCIATION

Twenty-second Annual Meeting, held at Hartford, Conn., June 14-16, 1909

(Continued from page 479)

Method of Anchoring Transplanted Tendons

DR. S. L. MCCURDY, Pittsburg, described his method as consisting in wrapping the tendon entirely around the bone, passing it through the ligament, or securing it to some dense or firm tissue, rather than in simply suturing it to the periosteum, thus guaranteeing a firm anchorage after union.

DISCUSSION

DR. RUGH: I can testify to the value of this method. I think that the less one disturbs the bone from its position the less one will interfere with nutrition and the more quickly there will be union. Formerly I sawed off the ends of the bone squarely, but now I simply saw one side, and then go in through the other way. I have also used the method of having a hole through the end of the drill, as well as the wooden screws. I have never had any harm result from using silver wire.

DR. WILSON: I think that many of the objections to silver wire lie in the quality of the metal used. Iron always produces irritation by corroding and requires removal in a few weeks.

DR. MCCURDY: I have been taking x-ray pictures from time to time, and I find that the shadow cast by the wire is growing less, showing that it is being disintegrated and will gradually disappear.

Unusual Cases of Caries of the Spine in Adults

DR. E. G. BRACKETT, Boston, considered some of the special features of this condition and the etiology of some of the spinal symptoms. He also made an attempt to classify them into various types for the purpose of study, with reference to a possibly more accurate diagnosis of the location of the part of the vertebra affected.

DISCUSSION

Dr. Clarence L. Starr, Toronto: The picture representing the vertebræ broken down brings to my mind the case of a child that I had under treatment for three years on a Whitman frame in hyperextension. She died of miliary tuberculosis, and the specimen showed no attempt at fusion. This impressed on me that by continued hyperextension we may prevent the fusion of the bones, and that if we succeed it must be by a prolonged treatment with apparatus.

Dr. A. Thorndike: These studies bring out the fact that the process of bony union takes place late in Pott's disease. Until the tuberculous process dies out the bony process will not begin.

Dr. H. L. Taylor: We should be careful about diagnosing spinal neurasthenia until we have excluded with certainty caries of the vertebræ.

Dr. C. Riely: I think that the long duration of the disease in adults without deformity is due to the great amount of mineral salts in them as compared with children.

An Operation for Infantile Cerebral Hemiplegia, With Reports of Two Cases

Dr. Joseph John Nutt, New York, had devised this operation to give prolonged rest to the lower neurons and thereby rest the upper neurons on the hypothesis that the destruction of cerebral tissue due directly to the original lesion was small in comparison with the total area involved. The rest and repair of certain cells directly by the operation should influence indirectly the rest and repair of others.

DISCUSSION

Dr. Cook: How long do you think the interval would be before the nerve grew together again?

Dr. J. J. Nutt: I did not find much information about this in the literature. In one case it was about nine months.

Dr. Rugh: Have there been any beneficial effects in cases of paraplegia or in the diplegic forms of spastic paralysis, and was sensation entirely done away with when motion was arrested?

Dr. J. J. Nutt: Sensation in the small sciatic was entirely paralyzed. A great many cases of diplegia were reported in which more improvement was noted than one would expect from simple tenotomy.

Dr. Baer: In cases of anterior poliomyelitis, in which I tried nerve severing, the effort was to see whether division of the sciatic nerve and the twisting of the nerve on itself would let the neurons spread out and go down the bad paths into the distal portion of the nerve, as well as the good, but the neuron selected the path it had originally gone down.

Dr. Myers: When did the lesion occur?

Dr. J. J. Nutt: The patient was three years old when it occurred and is now thirteen.

Dr. Blodgett: Has the mentality improved?

Dr. Nutt: The nurse tells me she has noticed some.

Dr. E. R. Fisher, New York: In this class of cases we have a condition that can be relieved, but not cured. There is no inflammatory condition, but an irregular cell action, or overaction. By the removal of this sensory irritation the cortex is given a chance to rest. For the time being the muscle is paralyzed, and this gives an opportunity to apply treatment to the opposing muscle, which is weaker than the contracted or spastic muscle. I do not believe that we can expect a return of mental power except in young cases.

Dr. E. Ryerson, Chicago: I have obtained good results by transplanting the hamstrings forward into the patella, the children learning to walk in a year and a half. For the children who are entirely idiotic nothing can be done mentally; for the others a great deal can.

Dr. Bradford: I should like to know whether the injection of curare has been tried to paralyze the nerve.

Dr. Fisher: I have a faint recollection that this was alluded to in a discussion at the last meeting of the American Neurological Association, but that it was not successful.

(*To be continued*)

Medicolegal

Physicians as Witnesses When They Have Not Treated Injured Parties

The Supreme Court of Illinois says, in the personal injury case of Fuhry vs. Chicago City Railway Co., that a physician who has not treated the injured person, but has made an examination to enable him to testify on a trial as to his condition, must base his opinion on objective, and not subjective conditions. He can not relate nor take into consideration the self-serving statements of the injured person made to him, not with reference to his treatment, but with reference to his trial.

With regard to a question asked a physician the object of which was to obtain his opinion as to whether a certain condition could, would, or did result from certain injuries, the court says that the question whether it did so result was for the jury to determine, but, being one not within the knowledge of men of ordinary experience, the opinions of physicians having knowledge of that subject were proper to be considered and did not invade the province of the jury. It was immaterial whether the witness testified that the injury might or could cause the condition or that it did cause it. In any event the testimony was merely the opinion of the witness based on the facts he had testified to. It was still for the jury to determine the truth in regard to those assumed facts, as well as any others which might tend to confirm or modify their reliance on the opinion given.

Life Tables with Reference to Person Engaged in Hazardous Business

The Court of Appeals of Kentucky says, in Louisville & Nashville Railroad Co. vs. McMillen, a personal injury case brought by the latter party, that life tables were properly allowed to be given in evidence to show the plaintiff's expectancy of life. The fact that he was in a hazardous business, and that the tables were based on the expectancy of life of persons in ordinary occupations, should be taken into consideration by the jury; but, after all, the tables were some evidence of the probable duration of life, and perhaps the best evidence that could be obtained on the subject. There was no presumption that he would continue in a dangerous business. His employment might be ended at any time, and so this was only a circumstance to be considered by the jury in determining what weight to give to the life tables.

Cross-Examination as to Frequency of Experts Appearing as Witnesses

The Supreme Court of Illinois says, in the case of McMahon vs. Chicago City Railway Co., where a physician was cross-examined as to how many cases he had testified in as an expert for the street car lines of Chicago, that the extent of an examination along this line is largely within the discretion of the trial court. No definite limit can be prescribed as a rule of law. The weight to be accorded to the opinion of an expert witness depends largely on his means of information and knowledge, as well as his bias and inclination or relation to the parties. It is always competent to show the interest of the witness. The court thinks, however, that the question should have been limited to the number of times the witness had testified for the defendant company.

Alcoholic Medicinal Preparations

Robert Williams, Jr., acting commissioner, states that it is the practice of the office of commissioner of internal revenue, where preparations examined by it are found to be clearly and unmistakably fakes, being chiefly composed of whisky with little or no medication, and where the character of the preparation must be known to the druggist handling same, either by reason of its appearance or by the nature of the demand for it, to require special tax for its sale without any previous notice being given.

This office holds that in a genuine medicine the alcohol should not be more than is necessary for the legitimate purposes of extraction, solution, or preservation, and that the preparation should contain approximately a U. S. P. dose of some medicinal ingredient of recognized value, either alone or in combination with other compatible drugs. Where a substantial effort has been made to introduce medication, without, however, coming up to the standard set by this office, it is the practice to notify the manufacturers and give them an opportunity to change their formulas; and in such cases, while the manufacturer is required to pay special tax on account of the manufacture and sale by himself of such preparations, special tax is not required of retail druggists on account of the sale of the same in good faith for medicinal use only, if the formula is changed, or until after public notice has been given, if the manufacturer declines to make such change.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

July 31

1 *Parasitism and Natural Selection. R. G. Eccles, Brooklyn.
2 Renal Tuberculosis and Its Surgical Treatment. C. G. Cumston, Boston.
3 Etiology and Treatment of Intestinal Hemorrhage. G. M. Niles, Atlanta, Ga.
4 *An American School of Tropical Medicine. I. W. Brewer, Fort Warren, Mass.
5 Case of Parenchymatous Keratitis in Acquired Syphilis. B. Chance, Philadelphia.
6 The General Practitioner as a Dermatologist. B. F. Ochs, New York.

1. **Parasitism and Natural Selection.**—Eccles says that when we study the distribution of parasites in time and place, we find them such as would be a source of stimulation of germ-plasm, such as is required in a world that is biologically what we live in. Disease may thus yet prove to be a blessing instead of a curse. Ineffective disease in vertebrate and invertebrate animals is a contest of cells with cells, protozoan and protophyton against metazoon for food. Many of the pathogenic micro-organisms discovered infest insects, molluses, fishes and amphibians.

Parasitism is as old as the world, and is found in fossil remains millions of years old; it is hereditary. The sporozoa are entirely parasitic, one form inhabiting the spleen, another the liver and gall-bladder, etc. These parasites have become so specialized that some of them can live only in certain structures and higher forms of animal life. Parasite and host have learned how to repel each other's attacks, the one by secreting special enzymes to dissolve envelopes, the other by the formation of antibodies to hold poisons in abeyance. Immunity is a gaining of structural and poisonous protection through generations of struggle. Disease is an important part of the biotic fight for food and an essential part of the theory of natural selection. Survival and fitness are due to a triumph over disease. There is no other factor so universally present. The first requisite in this struggle is health, and this is possible only among organisms whose progenitors have triumphed over disease, the weaklings having all been destroyed. Climate and isolation predispose to disease, to variation, but neither alone is an efficient cause of variation. Evolution is brought about by the introduction of the abnormal. The nearer we get to the germ-plasm the easier it is to produce changes in adult forms. All organic changes are the result of stimuli, and disease is the greatest form of stimulus.

4. **American School of Tropical Medicine.**—Brewer says that the sanitary administration of our new tropical possessions demand medical officers acquainted with the diseases peculiar to the tropics. The teaching in medical schools gives no knowledge of tropical diseases, and even if such were given there would be no clinical material. There should be established in this country a school of tropical medicine and attached to it should be a hospital in which the needed clinical material should be collected.

Boston Medical and Surgical Journal

July 29

7 Histologic Classification of Tumors. F. B. Mallory, Boston.
8 *Injections of Sea Water in Skin Diseases. C. J. White, Boston.
9 *Psychoses Beginning in the Puerperal States. C. Ricksher, Hathorne, Mass.
10 Education of the Child's Nervous System. A. C. Eastman, Springfield, Mass.
11 Vestibular Nystagmus and Its Relation to the Sound Perceiving Apparatus. H. F. Byrnes, Springfield, Mass.
12 Isolation of the Bacillus of Typhoid from the Breast Milk of a Woman Ill with the Disease. C. H. Lawrence, Boston.

8. **Injections of Sea Water in Skin Disease.**—Sea water contains the chlorids of sodium, magnesium, calcium and potassium, and the sulphate of magnesium. These salts have different and opposite effects, i. e., sodium chlorid is a stimulant to nerves and muscles, while the magnesium, calcium and potassium salts are inhibitory in their actions. Mayer describes these opposing forces in the case of one of the medusæ whose pulsations are produced by the electrical (?) energy generated, as in a battery, by the action of these various salts.

With this phenomenon as a basis for the possible therapeutic power of sea water the following experiments were undertaken by White: The water was obtained from the ocean about thirty miles south of Woods Hole, Mass., and from a depth of thirty feet, thus insuring a pure, uncontaminated supply. This water was placed in sterile jars and brought to Boston, where it was purified by passing through a Chamberland filter and rendered isotonic with blood serum by the addition of sterile tap water in the proportion of ten parts of the former to twenty-three of the latter. This product was placed in sterile glass ampullæ holding 200 c.c. One end of these receptacles was bent in the form of a hook and the other drawn out into a straight line, and both extremities were sealed.

The injections were made three times a week deep into the buttocks of the patient, who lay on his side and allowed the fluid to run into the tissues by the force of gravity, the ampulla being suspended about three feet above the body and the water passing through a sterile rubber tube and long irido-platinum needle. The rapidity of the injections varied a great deal in the different patients, some requiring at least a half hour to take in 150 c.c. The pain and discomfort attending this maneuver was usually very slight and the only immediate effect was the desire to urinate; while the general after-effects were practically *nil*, although one patient was obliged to take to her bed for twenty-four hours twice on account of chills, fever, lassitude and nausea.

The following cases were so treated: Pemphigus foliaceus; scrofuloderma; psoriasis; eczema seborrhoicum; malingering, varicose ulcers and general fibromatosis; lupus vulgaris (two cases); erythema induration and psoriasis; chronic eczema (three cases); lupus vulgaris and scrofuloderma; scrofuloderma and xeroderma. From the study of these fifteen cases treated by the injections of isotonic sea water, certain conclusions may be drawn:

1. This unusual therapeutic measure produces a certain amelioration of symptoms in widely various dermatoses. 2. This improved condition is most conspicuous in tuberculous processes, especially in tuberculous ulcers. 3. As a whole, this therapeutic agent is a great disappointment. 4. Sea water can be injected in surprisingly large amounts, even into children, without causing much pain or other untoward symptoms. 5. Sea water injected into the buttocks causes immediate desire to micturate, a continued easy and sometimes increased number of daily movements of the bowels, as a rule a slight tendency toward increase of bodily weight, and at times a distinct improvement in the well-being of the recipient.

9. **Psychoses in Puerperal State.**—Ricksher says that there is no psychosis which can be strictly called a puerperal psychosis, but there is no doubt that the puerperal states can act as an exciting cause of a psychosis in certain women under certain conditions, which conditions are at present unknown. The mortality of children born of mothers who become insane during pregnancy is very great. The puerperal states may be exciting causes of attacks of manic-depressive insanity in women who have never before been insane, and in women who have had previous attacks of this disease, childbearing is apt to be the exciting cause of another attack. In women suffering from dementia præcox the puerperal states cause an exacerbation of the acute symptoms and cause the psychosis to become more active.

Homicide is comparatively rare among women becoming insane during this period and is more liable to occur in patients suffering from dementia præcox than any other psychosis, while attempts at suicide are less numerous in these cases but are more liable to occur in patients suffering from the depressed form of manic-depressive insanity. Eclampsia and the toxic infections are not more frequent in women who become insane than in women who are normal mentally and these factors are of little moment in any but the toxic deliria. Illegitimate children are not given as the cause of insanity as frequently in this country as in Europe. The reason for this is not determined. Comparatively few women who later become insane show abnormalities in pregnancy, and one can not tell from the character of the pregnancy whether a woman will become insane after labor or during lactation.

New York Medical Journal

July 31

13 Compressed Air Disease from a Clinical Aspect. L. M. Ryan, Brooklyn, N. Y.
14 Erythema Nodosum. H. Fox, Bath, Maine.
15 *Prognostic and Diagnostic Value of the Leucocytes and Differential Count in Acute Abdominal Infection. J. J. Coons and H. O. Bratton, Columbus, Ohio.
16 Frequency of Cancer of the Cervix Uteri. J. A. McGlinn, Philadelphia.
17 *Common American Foods. H. S. Greenbaum, Baltimore.
18 *Treatment of Epistaxis. B. Robinson, New York.
19 A Criticism of the Usual Surgical Treatment of Varicocele of the Broad Ligament. S. E. Tracy, Philadelphia.
20 Notes on Rhus Toxicodendron. W. W. Ford, Baltimore.

15. **Leucocytes and Differential Count.**—Coons and Bratton report 184 cases of acute appendicitis in which the blood examination was made a few hours previous to operation, except in a few instances in which the patient died before operation or there was a delay for some reason. Following a scheme of Noehren, of New York, the cases were divided into five groups: 1, acute suppurative appendicitis, inflammation confined to appendix; 2, gangrene; 3, abscess; 4, perforation, local peritonitis; 5, spreading peritonitis—the infection not confined by adhesions; 6, general peritonitis. Of the cases of acute suppurative appendicitis, twenty-six out of forty-one had a polynuclear count between 80 and 90; in one instance the polynuclears were 91 per cent. The leucocytes varied between 10,000 and 20,000 in thirty-four of the forty-one cases. In cases with abscess, thirty out of the sixty-two cases had polynuclears from 80 to 85 per cent. There were seventeen cases below 80 per cent.; thirteen, from 85 to 90 per cent.; two, above 90 per cent.

Of twenty-two cases of gangrene, ten had from 85 to 90 per cent. polynuclears. The leucocytes in no instance ran above 25,000; in four cases the white cells were not increased. Of the cases of perforation with local peritonitis, and spreading peritonitis, thirty-six out of forty-five cases showed polynuclears between 85 and 95 per cent. The leucocytes ranged, irregularly, from 10,000 to 49,000. Four cases with very high total leucocyte counts were found. One case with perforation, 40.000 and 91 per cent. The second, an abscess, with 40,300 and 89.3 per cent. The third, a case with free pus in the abdomen, not walled off by adhesions, 40,000 leucocytes, 89.9 per cent. polynuclears. The fourth, a case of spreading peritonitis, with 49,000 leucocytes and 85.6 per cent. polynuclears. The body resistance in these cases, as indicated by the high total leucocyte count, was unusually good, while the degree of infection, revealed by the percentage of polynuclears, was rather mild. These patients had a plus resistance or a falling line. They make good recoveries. The authors summarize their findings as follows:

> Polynuclears below 75 per cent.: If there is a leucocytosis, one may look for an old infection, well walled off, may be an acute exacerbation. Usually there is a mild secondary anemia.
>
> Polynuclears, from 75 to 80 per cent.: Indefinite; the history of the case and the patient should be considered. In our series of 184, 32 had polynuclears from 75 to 80 per cent.; 15 were abscesses; 11 acute suppurative appendicitis.
>
> Polynuclears, from 80 to 85 per cent.: The patient is in no immediate danger unless the total leucocyte count is low, suggesting a poor resistance. If the leucocytes are increasing, an immediate operation should be advised if the relation of the polynuclears to the total leucocyte count indicates a good resistance. If the leucocytes remain stationary or decline, the surgeon should rely on the physical signs in making up his mind when to operate.
>
> Polynuclears, from 85 to 90 per cent.: Look for a severe infection. If there is a proper leucocytosis, according to the chart, an immediate operation is indicated.
>
> Polynuclears, above 90 per cent.: Virulent infection, grave prognosis. Twenty-five of our 31 cases above 90 per cent. had some form of peritonitis. Where there is no increase in the leucocytes, and the polynuclears high, little hope can be entertained for the patient from an operation.

17. **Common American Foods.**—Greenbaum has calculated the fuel value (calories) of a certain number of American foods per ounce (avoirdupois), utilizing almost entirely the results obtained by the United States Department of Agriculture, and in particular Bulletin No. 28 (revised edition), by W. O. Atwater and A. P. Bryant. He also submitted a few sample diets for patients suffering from obesity, which can easily be modified to the individual needs by utilizing his table. Personally, he prefers to use six meals a day, the usual breakfast, luncheon and dinner, with three small feedings between them. This has the advantage of preventing undue weakness and excessive desire for food at the main meals.

18. **Treatment of Epistaxis.**—Robinson favors plugging the nasal passages by taking a strip of aseptic, absorbent cotton, and twisting it round and round, so that it becomes about the size of the little finger, and then with a good light, a nasal speculum, and a director or stiff probe, fill the lower and middle meatus as far back as the posterior pharynx. After twenty-four or forty-eight hours the plug or plugs begin to loosen by reason of the nasal secretions produced and absorbed, and they should be carefully withdrawn and fresh ones substituted, if necessary.

Lancet-Clinic, Cincinnati

July 31

21 Obstetric Indications for, and Methods of, Artificial Dilatation of the Cervix. W. D. Porter, Cincinnati.
22 School Hygiene of the Eye. J. Wyler, Cincinnati.
23 Flexner's Antimeningitis Serum in the Treatment of Epidemic Cerebrospinal Meningitis. H. Woolerey, Indianapolis, Ind.

American Journal of Medical Sciences, Philadelphia

July

24 *Therapeutic Value of Calcium Salts in Gastric Tetany. F. P. Kinnicutt, New York.
25 *Common Modification of the First Sound of the Normal Heart Simulating that Heard with Mitral Stenosis. H. Sewall, Denver, Colo.
26 Gastrointestinal Autointoxication. J. Kaufmann, New York.
27 Acquired Chronic Acholuric Jaundice, with a Blood Picture at One Time Resembling that of Pernicious Anemia. F. P. Weber, London.
28 *Means by Which Infectious Diseases are Transmitted. A. H. Doty, New York.
29 Uncinariasis in Panama. G. H. Whipple, Baltimore.
30 Malignant New Growth in Childhood. W. A. Edwards, Philadelphia.
31 Viperine Snake Bite (of Undetermined Kind) Treated with Calmette's Sérum Antivénimeux (or Antivenim). W. F. Arnold, U. S. Navy.
32 Solitary Tuberculosis of the Breast. E. M. von Eberts, Montreal.
33 *Tuberculous Pulmonary Cavities in Infants. C. Y. White and H. C. Carpenter, Philadelphia.
34 Two Cases of Myxedema. R. L. Pitfield, Philadelphia.
35 *Fatal Anemia of Unknown Cause in a Child of Five Years, with Unusual Cells in the Blood. W. W. Barker, Dorchester, Mass.
36 Ocular Complications of Nasal Sinus Disease. A. Knapp, New York.
37 *Cammidge Reaction in Experimental Lesions of the Pancreas. J. Speese and E. H. Goodman, Philadelphia.
38 The Tonsils as Eliminative Organs. W. S. Ashhurst, Chihuahua, Mexico.

24. **Calcium Salts in Gastric Tetany.**—The case reported by Kinnicutt is of interest in view of the rarity of that form of gastric tetany associated with dilatation of the stomach and stagnation of its contents, of which it is an example; in the severity of the tetanic symptoms, and in the prompt inhibitory effect on the spasms of the calcium salts artificially introduced directly into the blood stream. It was found impossible to nourish the patient by means of the stomach. Vomiting was frequent on each attempt, in spite of copious and frequent lavage. Nutriment introduced after lavage by means of the stomach tube, although sometimes retained, was recovered later by the tube in like amounts, showing no signs of gastric digestion—only decomposition processes. Nutrient enemas were retained only exceptionally. There was almost complete anuria for the first twenty-four hours and until abundant subcutaneous clyses of salt solution had been given. Later the urine either was voided involuntarily or was recovered by catheterization. The scanty fluid stools were mostly involuntary. Although the tetanic symptoms obviously could be con-

trolled by the continued administration of the calcium salts, it was equally apparent that the patient would slowly die of inanition unless the evident gastric stenosis could be relieved by operation. Surgical intervention was decided against on the ground that any operation would be immediately fatal. The patient died suddenly.

Certain facts stand out prominently in the clinical study of the case: 1. The rapid and controlling effect of the soluble calcium salts on the tetanic symptoms. 2. The maintenance of this effect only by their continued use. 3. The comparatively slight effect of large infusions of salt solution, used alone. 4. The slight influence, if any, of parathyroid preparations (nucleoproteid) given by the mouth in controlling the hyperexcitability of the nervous system. The demonstration of the controlling influence of the soluble calcium on the characteristic symptoms of at least one important variety of human spontaneous tetany—the tetany of gastrectasis, with stagnating stomach contents—suggests a probable similar therapeutic value of these salts in other forms of the disease in human beings. The occurrence of typical tetanic spasm in a case of gastrectasis with parathyroid bodies of normal anatomic structure—and presumably—of normal functioning power.

25. **First Sound of Normal Heart.**—Sewall directs attention to a modification of the first sound of the heart which allies it qualitatively to the first sound as heard in mitral stenosis, but which predicates no organic lesion. In the structurally normal heart, especially in conditions of circulation excitement, the first sound frequently begins with the crescendo tone, simulating closely the faint and brief presystolic murmur or acute accent initiating the first sound in certain stages of organic mitral stenosis. The modification of the first sound may be pronounced either in the tricuspid or the mitral area, or both.

28. This will be abstracted later in the Department of Therapeutics.

33. **Tuberculous Pulmonary Cavities.**—White and Carpenter claim that cavity formation does not occur with the same frequency in infants as in older children. In their own autopsies, 16 per cent. of the infants dead from tuberculosis showed cavity formation; a far lower percentage than is reported by other observers. The infants usually succumb to the widespread process before the larger lesions have time to soften and their contents to be thrown off. In the author's cases tuberculous cavities in infants occurred most often at the root of the lungs, in the middle and lower lobes.

35. **Fatal Anemia of Unknown Cause.**—The cells described by Barker are large, rounded, or oval, with from one to three vesicular neutrophilic nuclei and pale basophilic protoplasm; in the protoplasm there is more or less coarse granular material staining a deep red; in some of the cells this material takes the shape of straight or slightly curved rods, some of them beaded. That these rods were not artefacts was proved by their appearance in many smears. They are similar to rods seen in the protoplasm of lymphocytes in a case of acute lymphatic leukemia reported by Auer, but the cells are not lymphocytes, nor prelymphocytes. They are obviously young cells, many of them in active division, but none of them show evidence of phagocytic activity. Barker's case is reported partly because of the rarity of fatal anemia in early childhood similar to the "pernicious" anemia of adult life, and partly to place on record the appearance of the cells described.

37. Abstracted in THE JOURNAL, June 15, 1909, p. 2017.

Journal of Experimental Medicine, Lancaster, Pa.

July 17

39 Morphology of the Parasite (*Histoplasma capsulatum*) and the Lesions of Histoplasmosis. A Fatal Disease of Tropical America. S. T. Darling, Ancon, Canal Zone.
40 An Experimental Glomerular Lesion Caused by Venom (*Crc talus adamanateus*). R. M. Pearce, New York.
41 *Blood-Platelet and Megalokaryocyte Reactions in the Rabbit. C. H. Bunting, Madison, Wis.
42 Experimental Lipemia in Rabbits. T. R. Boggs and R. S. Morris, Baltimore.
43 *Etiology and Pathology of Hemorrhagic Necrosis of the Pancreas (Acute Hemorrhagic Pancreatitis). E. L. Opie and J. C. Meakins, New York.
44 *A Comparative Study of the Diplococci Occurring in Epidemic Cerebrospinal Meningitis and Posterior Basic Meningitis. M. Wollstein, New York.
45 Influence of Temperature on Hemolysis in Hypotonic Solutions. P. A. Lewis.
46 *The Butyric Acid Test for Syphilis in the Diagnosis of Metasyphilitic and Other Nervous Disorders. H. Noguchi and J. W. Moore, New York.
47 *Standardization of the Antimeningitis Serum. J. W. Jobling, New York.
48 Continuous Respiration Without Respiratory Movements. S. J. Meltzer and J. Auer, New York.

41. **Blood Platelet and Megalokaryocyte Reactions.**—The platelets in the circulating blood are of uniform structure and of common origin. The curve of regeneration after destruction or loss is independent of those of regeneration of red corpuscles and of leucocytes, but at the same time as or preceding the increase in the number of platelets in the blood stream the megalokaryocytes of the bone marrow are increased in number. Bunting corroborates the discovery of J. H. Wright that the blood platelets are formed by segmentation of portions of pseudopodia separating from the megalokaryocytes.

43. **Hemorrhagic Necrosis of Pancreas.**—Hemorrhagic pancreatitis, so-called, is in reality primarily a necrosis of the parenchyma of the pancreas and should be called hemorrhagic necrosis, the inflammatory changes present being secondary to the necrosis or subsequent to infection. The so-called pancreatic apoplexy is the result of acute necrosis of the pancreas. In some cases necrosis may lead to little or no hemorrhage. "Gangrenous pancreatitis" is a late stage of hemorrhagic necrosis, a most frequent cause of which, in man, is the entrance of irritating material into the ducts of the pancreas, such as bile diverted by a gallstone lodged at the duodenal orifice of the common duct. Duodenal contents entering the duct may have the same effect, and in a small proportion of cases necrosis may follow injury of the pancreas, being in this case probably in part referable to simultaneous thrombosis. Anatomic peculiarities or anomalies of the pancreatic ducts may predispose to hemorrhagic necrosis.

44. **Strains of Diplococci in Meningitis.**—No reliable points of difference were found between strains of *Diplococcus intracellularis* from typical cases of epidemic meningitis, and several strains of cocci obtained from cases of posterior basic meningitis. With diplococci obtained from posterior basic meningitis acutely fatal meningitis was produced in monkeys. Consequently antimeningitis serum should be used in case of posterior basic meningitis.

46. **Butyric Acid Test in Syphilis.**—The cerebrospinal fluid in syphilitic individuals, like the blood serum, contains more globulin, and especially euglobulin, than normally. By virtue of this increase the following butyric acid reaction is applicable to the diagnosis of syphilis: One or two parts of spinal fluid are mixed with five parts of 10 per cent. butyric acid solution and heated over a flame to a brief boiling. One part of normal solution of sodium hydroxid is then added quickly to the heated mixture and the whole is boiled once more for a few seconds. The presence of an increased content of protein in the spinal fluid is indicated by the appearance of a granular or flocculent precipitate which gradually settles under a clear supernatant liquid. The granular appearance of the precipitate is held to be a positive reaction for syphilis or parasyphilitic affections. It was found that in the second or third stages of syphilis without direct involvement of the nervous system the cerebrospinal fluid gave the butyric reaction feebly and under these conditions the fluid did not give the Wassermann test nor a positive cell count according to the method of Rabaut; in hereditary syphilis a positive butyric reaction was obtained in 90 per cent. and a positive Wassermann in about 80 per cent of the cases examined; in the cases of cerebral and spinal syphilis examined every one gave the butyric reaction and the cell count, the Wassermann reaction being obtained in from 50 per cent. to 75 per cent.; the cases of general paralysis gave positive butyric reaction in 90 per cent., positive cell counts in 91 per cent., and positive Wassermann in 73 per cent.; in cases of tabes, the cerebrospinal fluid gave a positive butyric reaction and cell count in 100 per cent., and a positive Wassermann in 53 per cent. From these and other facts it is concluded that the butyric

acid reaction may be a ready means of distinguishing normal from pathologic cerebrospinal fluid and that it will prove useful as a routine method especially in detecting syphilitic and metasyphilitic lesions of the central nervous system, being a valuable addition to the Wassermann test.

47. **Standardization of Antimeningitis Serum.**—It is proposed to employ the specific opsonin present in antimeningitis serum as a measure of the therapeutic power of the serum; for the present a definite and suitable strength in opsonins should be adopted as a standard for antimeningitis serum and a minimum dilution activity of a 1 to 5,000 dilution of the serum is proposed as such. The specific meningococco-opsonin appears to be stable under proper refrigeration of the serum, so that the test may prove applicable also for commercial antimeningitis serum.

Journal of the Indiana State Medical Association, Fort Wayne

July

49 National Department of Public Health from an Indiana Viewpoint. C. A. L. Reed, Cincinnati, Ohio.
50 The Physician and His Avocation. F. R. Charlton, Indianapolis.
51 Acute and Chronic Gonorrheas Treated with Gonococcic Vaccine as an Adjunct to Routine Treatment. F. S. Crockett, Lafayette.
52 Mastoiditis Complicated with Acute Circumscribed Extradural Abscess. J. J. Kyle, Indianapolis.
53 Sketches of the Medical History of Indiana. G. W. H. Kemper, Muncie.
54 Appendicitis. B. Van Sweringen, Fort Wayne.
55 Tuberculosis of the Kidney. W. S. Ehrich, Evansville.

Memphis Medical Monthly

June

56 Résumé of the Progress Toward a "No Mortality Appendicitis." J. A. Crisler, Memphis.
57 Head Injuries. A. G. Payne, Greenville, Miss.
58 Dysentery in Infants and Children. A. G. Jacobs, Memphis.
59 The "Simple" Mastoid Operation. R. McKinney, Memphis.
60 How Are We Responsible for the Transmission and Dissemination of Typhoid Infection? J. R. Nelson, Whiteville.

Journal of Medical Research, Boston, Mass.

July

61 *Further Studies on the Phenomenon of Anaphylaxis. J. F. Anderson and M. J. Rosenau, Washington, D. C.
62 Neurophysiologic Effects of Anaphylactic Intoxication. F. P. Gay, E. E. Southard, Danvers, Mass., and J. G. FitzGerald, Boston.
63 An Attempt to Show Specific Racial Differences in Human Blood by Means of the Reaction of Fixation. J. G. FitzGerald, Boston.
64 The Mechanism of the Neutralization of Cobra Venom by Its Antitoxin. A. Calmette, Lille, France.
65 Agglutination of Human and Rabbit Blood Corpuscles by Crotalus Venom. J. McFarland and P. G. Weston, Philadelphia.
66 Gas Production of Bacillus Coli. F. G. Keyes.
67 *Bacteriology of the Blood in Convalescence from Typhoid, with a Theory of the Pathogenesis of the Disease. W. Coleman and B. H. Buxton, New York City.
68 Morphologic Changes in Nerve Cells Resulting from Overwork in Relation with Experimental Anemia and Shock. D. H. Dolley.
69 Further Studies on Fatal Septicemia in Young Chickens, or "White Diarrhea." L. F. Rettger.
70 Ligation of the Parathyroid Artery in the Dog. R. L. Thompson, W. E. Leighton and J. L. Swarts, St. Louis, Mo.
71 Transplantation of the Parathyroid Glandules, with Special Reference to the Result of Bone Operation on Tetany Parathyreopriva. R. L. Thompson, W. E. Leighton and J. L. Swarts, St. Louis.

61. See editorial, The Journal, July 31, 1909, p. 34.

67. **Typhoid.**—The results of this investigation support the view that the bacillemia of typhoid, as a rule, disappears at or about the time that convalescence begins. The theory of the authors in regard to the genesis of typhoid is briefly as follows: The entrance point is the lymphatic structures of the intestines, from which the bacilli enter the general lymphatic system and spleen, where they grow, and only relatively few are destroyed. During the incubation a limited number of bacilli may enter the blood but when the development of the bacilli reaches a certain point they enter the blood in large numbers and are then destroyed with liberation of endotoxins, the symptoms representing the reaction on the part of the host. As the disease advances in the typical case of typhoid progressing to recovery, the growth of bacilli in the organs is greatly arrested by the reactive processes of the host, fewer bacilli enter the blood, the symptoms diminish in severity. In fatal cases the growth of bacilli proceeds unchecked and the symptoms are not restrained, becoming perhaps even more intense. At or about the time of defervescence in the attack of typhoid, the bacilli practically disappear from the blood; the symptoms now come to an end and the convalescence proceeds nicely. In instances in which there is an intermittent fever not due to complication it is probable that the growth of bacilli in organs has not been checked and a limited number continue to enter the blood.

Journal of the South Carolina Medical Association, Florence

June

72 Urogenital Tuberculosis. B. Lewis, St. Louis.
73 Intraperitoneal Infusion of Normal Salt Solution. A. B. Knowlton, Columbia.
74 Things Doctors Should Know About Milk. F. A. Coward, Columbia.
75 Diuresis Dependent on Circulatory Changes. J. Forrest, Charleston.
76 Some Modifications of the Clinical Course of Acute Lobar Pneumonia. R. Wilson, Jr., Charleston, S. C.

Ohio State Medical Journal, Columbus

July 15

77 The Law and the Prophets. C. Pope, Louisville, Ky.
78 The Technic of the Modern Radical Mastoid Operation, with Sinus Thrombosis Complication. F. Allport, Chicago.
79 Diagnosis of Syphilis. M. L. Heidingsfeld, Cincinnati.
80 Binding of the Complement in the Diagnosis and Therapy of Syphilis. C. W. McGavran, Columbus.
81 Brown-Séquard Syndrome and Its Present Status. D. I. Wolfstein, Cincinnati.
82 A Plea for Higher Ethical Standards. A. S. Barnes, Columbus.

Journal of the Kansas Medical Society, Kansas City

July

83 Treatment of Fractures of Patella. G. M. Gray, Kansas City.
84 Cancer of the Female Breast. J. N. Jackson, Kansas City, Mo.
85 A Clinical and Bacteriologic Study of 41 Consecutive Cases of Diphtheria. E. E. Wuttke, Halsted, Kan.

Ophthalmic Record, Chicago

July

86 Roentgen Ray Flashes or Intermittent X-Rays in Treatment of Eye Diseases, with Report of Cases. D. H. Coover, Denver.
87 *An Analytic Criticism on the Cardinal Lid Symptoms in Exophthalmic Goiter (Basedow's Disease). G. F. Suker, Chicago.
88 Injury to the Cornea from Broken Spectacle Lens. S. G. Higgins, Milwaukee.
89 Gonorrheal Ocular Metastases. E. Stieren, Pittsburg.
90 Standard Test-Object for Determining the Near Point and the Range of Accommodation. A. Duane, New York.

87. **Exophthalmic Goiter.**—A new lid sign has been observed by Suker. It consists in this manifestation: While on downward rotation of the globe the lower lid is gently fixed the patient is then requested to rotate the globe rapidly upward while gentle retraction is made on the lower lid; the globe now ascends in an unsteady manner—much in the same way as the upper lid does in the von Graefe's sign. It is markedly accentuated in the presence of an exophthalmos, but is just as variable in its appearance as any of the other symptoms and no more value is to be attached to it than to any of the preceding ones. It has been found more often in the absence of exophthalmos than with it—however, most often in conjunction with a von Graefe or Gifford sign.

American Journal of Urology, New York

July

91 Rupture of the Bladder and Its Treatment. O. Pachmayer, Munich, Germany.
92 How to Open a Bladder. F. Cathelin, Paris, France.
93 Prostatic Abscess of Probable Diabetic Origin. L. Gross, San Francisco.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 17

1 *Function of the So-Called Motor Area of the Brain. V. Horsley.
2 The Extremes in Mutability of Symptoms in Disseminate Sclerosis. J. D. Mann.
3 A Case of Convulsive Tic. T. W. E. Ross.
4 *Relative Advantages of Catheterization and Operation in the Treatment of Prostatic Enlargement. H. T. Herring.
5 Home Conditions and Eyesight. K. Pearson.
6 Medicine or Surgery in Early Cases of Cancer. S. Keith.
7 *Case of Landry's Palsy. F. N. Kapadia.
8 *An Easy Method of Removing the Nail of the Great Toe by Compression. P. Tytler

1. **Motor Area of the Brain.**—Horsley believes that the so-called motor area of the human cortex cerebri is really sensori-motor. The gyrus pre-centralis is in man the seat of representation of (1) slight tactility, (2) topognosis, (3) muscular sense, (4) arthric sense, (5) stereognosis, (6) pain, (7) movement. The gyrus post-centralis is in man part of the arm area in which the sensori-motor representation is of the same kind as that in the gyrus pre-centralis, but in it probably provision for sensorial co-ordination is greater, and that for efferent impulses less. The giant pyramids or Betz cells are not essential for the performance of purposive or voluntary movements. Purposive or voluntary movements can be performed after complete removal of the corresponding part of the gyrus pre-centralis.

4. **Treatment of Enlarged Prostate.**—Herring says that prostatectomy should not be undertaken unless the symptoms present are definitely ascertained to arise from that organ, and from nothing else. Prostatectomy should be deferred until after treatment by catheter has been tried. No harm can come of a delay of a month or more, and in septic cases much good will result, for the patient will improve and be in a better condition to bear the operation. Afterward, if the catheter fails or is found too irksome, recourse can be had to operation. When the patient is comparatively young, in good health, and has many years of life before him, operation is very rightly advocated as soon as it is proved that catheter treatment will not cure. The same may be said of those who, owing to their position in life, calling, or lack of funds, are unable to carry out the few simple details necessary in sterile catheterization. Prostatectomy undoubtedly is the best treatment when the prostate, by its mere size, has largely encroached on the bladder space, and there is no residuum. The urine is clear and free from all signs of sepsis, yet the patient has constant and urgent calls to pass water both by day and night. Finally, the operation may be necessary in certain cases in which the prostate is constantly bleeding and filling the bladder with clots which interfere with instrumentation and endanger the patient's life.

7. **Case of Landry's Palsy.**—The points of interest in Kapadia's case were: (1) Landry's palsy generally occurs between the ages of 20 and 30, but the patient under his observation was 60 years of age; (2) at first the case was difficult to diagnose, but later on, when the paralysis spread with such uniformity, as was noted, it was easy to diagnose.

8. **Easy Method of Removing the Nail.**—First of all, Tytler applies a compress of lead and opium for twenty-four hours. Then a tape is tied round the root of the toe till it produces intense congestion. Then he takes a large Pean's forceps with long parallel blades, and compresses the nail in the middle of the inner half with moderate firmness. A check as to the amount of compression can be introduced between the handles so as to prevent excessive pressure. Much less force is required than would be supposed. Then the toe is again wrapped in lead and opium lotion for three days. Then the inner part of the nail is found discolored and loose, so that it is easily removed with the scissors without any bleeding save a few drops from the root of the nail.

Lancet, London

July 17

9 Methods of Cataract Extraction. J. H. Parsons.
10 Senile Epilepsy, and the Vertiginous Attacks which Supervene for the First Time in Advanced Life, Illustrated by a Case of Cardioarterial Hypermyotrophy. T. D. Savill.
11 The Rôle of the Perineal Body During Labor and the Conduction of Delivery in Relation Thereto. R. H. Paramore.
12 A Case of Endothelioma Myxomatodes of the Maxillary Antrum. H. Tilley.
13 Fate of Damaged Joints. R. Warren.
14 *Pulmonary Tuberculosis Treated by Deep Muscular Injection of Mercuric Succinimid. J. E. Squire and J. A. Kilpatrick.
15 The Use of X-Rays in the Treatment of Malignant Disease. C. E. Iredell.
16 A Case of Severe Facial Carbuncle, with Ludwig's Angina and Parotitis. H. B. Walters, R. Coombe and R. V. Solly.
17 Case of Retinal Detachment in Pregnancy Associated with Nephritis. T. Wilson and R. B. Hird.
18 Case of Acute Lupus Erythematosus. J. E. R. McDonagh.

14. **Pulmonary Tuberculosis Treated by Mercuric Succinimid.**—Of the 13 patients who were treated, some, for various reasons, were not able to remain as long in the hospital as one could have wished in order to give the method a fair trial. The buttock was chosen as the most convenient place for injection, and every precaution was taken to sterilize both the needle and the part injected. For each injection 1/5 grain of mercuric succinimid was dissolved in 10 minims of distilled water; this was injected into the buttocks alternately every second day, Sunday being excluded. In the case of the females no injection was given during the menstrual period. In all cases careful attention was paid to the teeth and a mouth wash was used after each meal.

While none of the patients objected to the form of treatment, it can not be said that any of them liked it. With few exceptions there was always a brawny lump, varying from the size of the tip of one's little finger to the size of one's thumb or a little larger at the seat of injection for about 48 hours.

All the patients complained of a slight burning or pricking pain at the seat of injection for a time, varying from 6 to 12 hours. Three of the patients felt faint after the injection on three or four occasions, and one of them had a slight vomiting attack immediately after. The female patients complained less of pain than the males. This may be explained by the fact that Nature has provided them with more adipose tissue in that region and therefore sitting down would cause less discomfort.

The patients treated—six females and seven males—varied in age from 15 to 51 years; all, with one exception, were more or less advanced cases, three having cavities and all had tubercle bacilli in the sputum. In one case it was noticed that the sputum was swarming with bacilli on the first examination. About ten days later they were decreased by half, and in another week one had to look carefully for them, there were so few. In another case, though the physical signs decreased in severity, the bacilli increased in number. In most of the remaining cases the bacilli decreased in number and in one case none could be found after a couple of week's treatment.

A remarkable fact which applied to most of the cases was the rapidity with which the physical signs decreased. This continued for the first four or five weeks. Then, with two exceptions, most of the patients arrived at a stage where no further change could be made out, and some of them even returned to their former condition. In two cases the physical signs disappeared altogether.

Journal of Tropical Medicine and Hygiene, London

July 1

19 The Black Vomit ("Vómito Negro") of Iquitos (Peru). E. A. Vigil.
20 Case of Elephantiasis. J. C. Murphy.
21 Malaria and Kala-Azar. C. Donovan.

The Medical Press and Circular, London

July 7

22 *Recent Experiences with the Schäfer Method of Artificial Respiration. C. T. Dent.
23 A Clinical Inquiry into the Use of "Vacca" Milk for Bottle-Fed Infants and for Sick Children. W. Ewart and C. M. Guest.
24 *Spinal Anesthesia in Surgery. V. Orr.

July 14

25 Digitalis and Digitaline; with Special Reference to Their Uses and Modes of Administration. H. Huchard.
26 Myotonia Associated with Muscular Atrophy and Myasthenia. Professor Chvostek.
27 Prevention and Treatment of Malaria in Tropical Countries. R. Ross.
28 The Poisons and Pharmacy Act, 1908, in Relation to Public Health and Safety. H. W. Gadd.
29. Puerperal Fever and Gonorrhea. A. S. Dutton.

22. **Schäfer Method of Artificial Respiration.**—Dent's experience so far shows that Schäfer's method of artificial respiration is applicable in every sort of case; to the young and the old, to both sexes, and that the method fulfills all that Schäfer claims for it.

24. **Spinal Anesthesia in Surgery.**—In Orr's opinion, the statistics are not complete enough, nor are the indications or technic sufficiently clearly defined to enable one to assign to spinal anesthesia its proper place in surgery.

Clinical Journal, London

July 7

30 *Ectopic Pregnancy from the Practitioner's Standpoint. G. Herman.
31 Spinal Analgesia. E. C. Ryall.

July 14

32 Diagnosis and Treatment of Tuberculous Glands. A. Latham.
33 Trauma in Relation to Malignant Tumors. J. Bland-Sutton
34 Some Points in the Surgical Treatment of Fracture of the Base of the Skull. L. B. Rawling.

30. **Ectopic Pregnancy.**—Herman claims that the diagnosis of tubal pregnancy before hemorrhage has occurred is impossible. The diagnosis of a tubal mole from some other conditions is difficult, but nearly all the conditions which may reasonably be mistaken for a tubal mole equally require prompt operation. Slight hemorrhage from perforation of a pregnant tube is often accompanied by death of the fetus and rapid absorption of the effused blood. When great intraperitoneal hemorrhage has taken place from perforation of a pregnant tube operation is urgent and simple. The danger from delay in operating is greater than that coming from the inexperience of the operator, if only he be one who understands antisepsis. After perforation of a pregnant tube the amnion may protrude into the peritoneal cavity, and the child grow free among the bowels, covered only by its amnion. In that case the placenta, as it grows, may become implanted on almost any abdominal viscus, and cover a large area. In such cases it is probable that after the primary preparation the mother runs hardly any risk until after the death of the child. In such cases, operation while the child is viable is an extremely dangerous one, and is more dangerous the more advanced the pregnancy. The danger is from hemorrhage resulting from separation of the placenta. The experience of more recent operators shows that it is nevertheless safer to remove the placenta than to leave it to come away. The methods of preventing such hemorrhage which have proved successful are: (a) the removal when possible of the viscera to which the placenta is attached; and (b) extensive prophylactic ligature of the arteries supplying the placental site. If the operation is postponed until after the death of the child, some time afterward (unfortunately we know not exactly how long) the circulation through the placenta ceases, and it becomes thrombosed. If an operation is now done the placenta can be peeled off without hemorrhage, and the operation is simple and safe. When the pregnancy is underneath the peritoneum there is danger of rupture at any period of the pregnancy. Therefore in this case the sooner operation is done the better.

Archives de Médecine des Enfants, Paris

July, XII, No. 7, pp. 481-560

35 Portals of Entry for Tuberculosis in Infants. (Portes d'entrée de la tuberculose chez les nourrissons.) V. Hutinel.
36 Anatomic Study of Mongolian Idiots. (Etude anatomique de l'idiotie mongolienne.) L. Babonneix.
37 Constipation in Children from Various Causes. (Classification étiopathogénique des constipations chez l'enfant.) E. Gaujoux.

Presse Médicale, Paris

July 10, XVII, No. 55, pp. 489-496

38 *Diagnosis and Treatment of Insufficiency of the Suprarenals. (Insuffisance surrénale.) E. Sergent.
39 *The Surgical Profession in America. S. Pozzi.

38. **Suprarenal Insufficiency.**—Sergent analyzes the symptoms of suprarenal insufficiency affecting the circulation, the digestion, the nervous system and the general metabolism. The syndrome of suprarenal insufficiency may be slow or acute. In the chronic form, of which Addison's disease is the extreme type, if there is no bronzing, it can be rendered manifest by applying a mustard plaster which draws the pigment to the surface. The tuberculous process in the suprarenals in this disease is almost always primary, and these glands are rarely affected even with advanced tuberculosis in other organs. Without the bronzing, the syndrome suggests pernicious anemia, leukemia or latent cancer, especially the weakness, the low blood pressure, the loss of appetite, the constipation, vomiting, anemia and progressive emaciation. The acute form may simulate a fulminating poisoning, peritonitis, meningitis, apoplectiform coma, etc., and it may be suspected when the febrile and other phenomena of an infectious disease are suddenly supplanted by signs of depression, small, unstable pulse, subnormal temperature and arterial tension. He is convinced that the "white line" is pathognomonic of suprarenal insufficiency and it may prove very instructive in cases of sudden death from this cause in which circumstances indicate possible poisoning or violence. Besides trauma, an operation or even a pregnancy may bring on this acute insufficiency on the part of the suprarenals. Treatment should aim to prevent the development of the acute phase or exacerbations in persons already affected with the chronic form. They should avoid exertions and contact with persons suffering from infectious diseases and should refrain from toxic drugs, especially from arsenic, which is a violent poison in case of suprarenal insufficiency, and they should not permit any surgical operations unless for vital necessity. On the other hand, they will derive benefit from phosphates and especially from lecithin. Antisyphilitic treatment should be instituted if there is a possibility of a syphilitic origin, but the mercury and iodid must be managed with great care as they are liable to prove poisonous for the suprarenal capsule. Suprarenal organotherapy is useful both for differentiation and cure, and he has witnessed the entire subsidence of the Addison syndrome, including the disappearance of the "white line" under the influence of suprarenal medication. Fresh glands from young calves may be used, the patient ingesting from 1.5 to 2 gm. a day up to 5 gm., or the dry extract can be taken. This is kept up for ten or twelve days, then suspended for two or three, and then recommenced. As a rule, he prefers the extract of the whole gland, but he sometimes uses adrenalin. He has found this particularly useful in infectious diseases when he suspected suprarenal involvement. Signs of cardiovascular weakness subside under the influence of the adrenalin, and the white line vanishes and reappears parallel with the fluctuations of the pulse, which he regards as substantial proof of its pathognomonic character. The usual dose is 0.001 gm. a day, but up to 0.006 may be given fractioned in 6 doses, and this, he says, may be kept up for two months. The white line is the opposite of the "red line" of meningitis. The finger is drawn lightly along the skin of the abdomen; in a few seconds the path of the finger shows up as a white stripe, growing more and more distinct and remaining stationary for three or four minutes and then disappearing.

39. See Paris Letter, page 216.

Semaine Médicale, Paris

July 7, XXIX, No. 27, pp. 313-324

40 *Surgical Treatment of Spastic Paralysis. (Traitement chirurgical de la paraplégie spasmodique: l'opération de Foerster.) F. Rose.

July 14, No. 28, pp. 325-336

41 Proper Technic for Pubiotomy; Its Present Status. (Comment exécuter une pubiotomie?) R. de Bovis.

40. **Surgical Treatment of Spasmodic Paraplegia.**—Rose reviews the fifteen cases on record in which resection of the nerve roots has been attempted in the treatment of this affection, according to Foerster's technic. Two of the patients died, both adults, one from infection of the wound from a preexisting eschar and the other from operative shock. The other patients were remarkably benefited, being restored to active life after years of absolute and hopeless immobility. The literature on the subject is reviewed in detail.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIII, No. 1, pp. 1-144. Last indexed May 1, p. 1466

42 *Immunity of the Tuberculous to Tuberculosis. (Weitere Versuche über Immunität gegen Tuberkulose durch Tuberkulose, zugleich ein Beitrag zur Phthisiogenese.) P. H. Römer.
43 *The Mechanical Predisposition of Lung Apices to Tuberculous Infection. (Mechanische Disposition der Lungenspitzen zur Erkrankung an tuberkulöser Phthise.) F. Koch.
44 *Importance of Diazoreaction for Prognosis of Pulmonary Tuberculosis. J. P. Gwerder.
45 *Specific Aids in Diagnosis and Prognosis of Tuberculosis. S. v. Ruck, Asheville, N. C.
46 Graphic Registration of Lung Findings. (Die graphische Darstellung des Lungenbefundes.) G. Liebe.
47 *Hemoptysis as Early Symptom of Pulmonary Tuberculosis. (Hämoptoe als Frühsymptom der Lungentuberkulose.) B. Müller.
48 Intracutaneous Tuberculin Test for Diagnostic Purposes. (Intrakutanreaktion.) F. Mendel.

42. **Immunity of the Tuberculous to Tuberculosis.**—Römer reports a series of experiments undertaken to determine the power of resistance of tuberculous animals to renewed infection. The results show that spontaneous tuberculosis of a chronic character protects guinea-pigs against renewed infection. The protection is more decided the more chronic the first infection and the longer the interval since the first symptoms. Comparing these results with clinical experience shows that a first infection which does not affect materially the general

health is yet able to protect against new infection, unless the opportunities for new infection are so numerous and the infection so intense that it overcomes the influence of the protecting immunization. A slight early tuberculous process thus protects the individual against mild new infection. The tuberculous individual reacts to severe new infection by the development of slow phthisis, while the normal individual under the same conditions reacts with acute miliary tuberculosis. The aim in prophylaxis should be to avoid severe new infection. This can be done by restricting the opportunities for family and house infection, or by protective vaccination, or by preventing autoinfection from the already tuberculous organism, or by these combined. Some stereoscopic views of the findings in the lungs of the guinea-pigs are given to show the difference between the reaction to new infection in the normal and the infected lungs.

43. **Prophylaxis of the Mechanical Predisposition of the Apices to Tuberculosis.**—Koch has practiced in the tropics and has been impressed with the remarkable development of the chest in native races, its broad outlines and expansion, all in such contrast to the narrow, almost concave chest of civilized peoples. He is convinced that this difference is the result of habits of clothing and schooling, and that until these are changed no effectual prophylaxis against the "white plague" is possible. He declares that the imagination can not conceive of any article better adapted to check the development of the chest of the child and the lungs within than the suspenders and skirt supporters worn by children nowadays. The shoulders and upper part of the lungs are compressed by them, and this pressure keeps up all day long, the weight of things in the pockets adding to the drag on the shoulders. The supporters over the shoulders are held down as the child sits on the trousers or skirts. The bones, cartilages, muscles and lungs are kept constantly compressed and are thus unable to develop and the compressed portion of the lungs and apex thus remains a place of lesser resistance all through life. The effect of compression on liver and kidneys from the wearing of corsets, and the influence of immobilization on the healing of fractures and pleurisy, demonstrate the great influence of external agencies on the development of parts and organs beneath. Injury from the clothing is supplemented by injury from long sitting in school, the bad air and the lack of opportunities for oxidation processes in the body cells. The heart also suffers from the lack of development of the chest and a vicious circle is set up. He concludes his article with an appeal for space in the growing lungs, freedom for the apices and shoulders, and more out of door air and exercise.

44. **Diazoreaction in Tuberculosis.**—Gwerder emphasizes the importance of the diazoreaction in pulmonary tuberculosis as it gives valuable information in many cases in regard to the intensity and probable course of the disease. The test should be repeated several times as single findings are not conclusive.

45. Abstracted in THE JOURNAL, July 4, 1908, p. 72.

47. **Hemoptysis as Early Symptom of Pulmonary Tuberculosis.**—Müller states that hemoptysis was an early symptom in 170 of the 875 tuberculous patients at the Davos German Sanatorium during the last four years. Early hemoptysis was twice as frequent in the male as in the female patients, but none of them displayed a greater tendency to hemorrhage later than other groups of patients. The alarm from the early hemoptysis generally has a salutary effect, as vigorous treatment is instituted earlier. After nine months or a year in the sanatorium full earning capacity was restored in 71 patients and partial in 60 others; one patient succumbed to miliary tuberculosis.

Münchener medizinische Wochenschrift

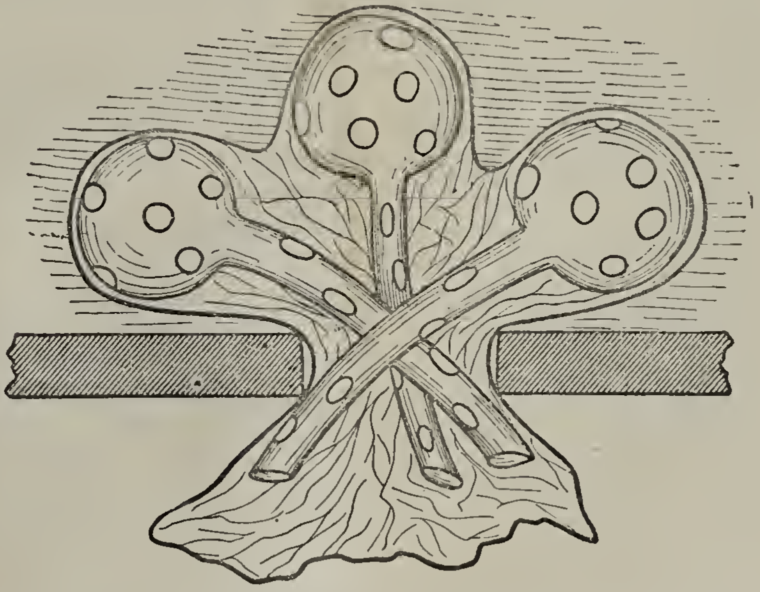
June 29, LVI, No. 26, pp. 1313-1360

49 Practical Value of Complement-Binding Reaction. H. Lüdke.
50 *Microbes in Normal Organs. (Keimgehalt normaler Organe.) H. Conradi.
51 Electric Injuries. (Verletzungen durch den elektrischen Strom.) Oberst.
52 *Importance of Intraperitoneal Hemorrhage in Stab and Firearm Wounds of the Intestines. (Bedeutung der intraperitonealen Blutung bei penetrierenden Darmverletzungen.) Gutzeit.
53 Moro's Tuberculin Salve Reaction. (Morosche Salbenreaction.) Bullinger.
54 Dilatation or Tumor of the Heart. (Herzdilatation oder Herztumor.) Schott.
55 Modification of Esbach Albumin Test. (Modifikation der Esbachschen Eiweissprobe.) Kwilecki.
56 *Utilization of Natural Defensive Forces in Treatment of Peritonitis. (Nutzbarmachung der natürlichen Schutzkräfte der Bauchhöhle bei der Behandlung der Appendizitis und der diffusen Perforationsperitonitis.) P. Janssen. Commenced in No. 25.

50. **Bacterial Content of Normal Organs.**—Conradi has perfected a technic which protects organs against contamination from without while favorably influencing bacterial proliferation, and his examination of 162 apparently normal organs taken from 150 recently slaughtered healthy animals has given surprising results. In 72 of the 162 organs bacteria were found; they were of a number of species, the colon bacillus most common. The bacterial findings were positive in 42 of the 63 livers examined; in 18 of the 59 pieces of muscles; in 6 of the 19 kidneys; in 4 of the 5 lungs, and in 1 of the 11 spleens. Anaërobic species were found in 30 of the 72 positive cases. This latent vegetation of bacteria in the organs throws light on the origin of cryptogenic and autoinfections, and also shows the necessity for revision of the present methods of meat inspection. With his technic a piece of the organ about 50 gm. in weight is cut out with a sterile knife and forceps and plunged at once, for a minute at least, into oil heated to 200 C. and then transferred for four hours to a solution of 2 per cent. mercuric chlorid. It is then placed in a large conical glass with hermetically closing cover and kept at 37 C. for twenty hours. The chunk is then cut in half and from the center of one half scraps are taken for culture of anaërobes in a fluid gelatin medium, while a scrap from the other half is transferred to a plate culture and the Gram technic is also applied to a specimen. The hot oil sears the outside of the chunk, while the bacteria are enriched by the long incubation.

52. **Intraperitoneal Hemorrhage with Stab or Firearm Wounds of the Intestines.**—Gutzeit reports a case which confirms his assumption that the hemorrhage and perforation are liable to counteract each other. If the blood pours out quicker than the bowel content it dilutes and checks the latter and aids in the encapsulation, both mechanically and by its protecting substances. On the other hand, the hemorrhage is arrested by the tension of the abdominal wall and the distension and paralysis of the intestines.

56. **Utilization of the Natural Defenses in Treatment of Perforation Peritonitis.**—Janssen describes the technic used at Witzel's clinic for drainage of the abdomen in case of appendicitis and diffuse peritonitis. The aim is to keep the parts from sticking together, to insure drainage of the depths and ample outflow. No attempt is made to rinse out the abdominal cavity but every effort is devoted to autoirrigation, that is, to utilize the enormous secreting capacity of the peritoneum. By supplying large amounts of fluid the peritoneum is induced to secrete copiously and this is drained rapidly away, thus flushing the peritoneum from within in the most effectual manner. The stomach and bowel can not be relied on, and consequently the fluid is infused subcutaneously. Physiologic salt solution is thus given four or five times a day, including the night, so that three or four liters of fluid are thus incorporated in twenty-four hours, and this is kept up, grad-



ually reducing the amounts, for six or seven days. The drainage is by hollow glass balls with a long stem studded thick with perforations (see illustration); the balls are from 1 to 3 cm. in diameter. A piece of gauze is fitted into the cavity, as for a Mikulicz tampon, and then the ball drains are introduced, the stems emerging from the operative wound. The patient lies permanently on his right side, thus insuring ample outflow of the fluid. Of equal importance is the supervision of the action of the heart, and digitalis is given systematically before and after the operation, and other stimulants are used at the slightest signs of flagging on the part of the heart. Great stress is also placed on the application of warmth, not only to prevent collapse but to induce active hyperemia in the organs inside the peritoneum and thus promote the activity of the bowels. The heat is applied in the form of hot compresses, poultices or a thermophore. The intestines are also stimulated by introduction of the intestinal tube; drugs are seldom necessary. The treatment of the peritonitis thus begins as soon as the patient returns to his bed after the operation and includes these four important factors: stimulation of the heart action and bowel functioning, application of heat and copious auto-irrigation of the abdominal cavity.

Wiener klinische Wochenschrift, Vienna

July 1, XXII, No. 26, pp. 911-948

57 Condensed Human Milk in Infant Feeding. (Ernährungsversuche bei Neugeborenen mit konservierter Frauenmilch.) E. Mayerhofer and E. Pribram.
58 *Non-Diabetic Glycosuria. K. Glaessner.
59 *Improved Instrumental Technic for Gastroenterostomy. (Instrument zur Anlegung von Magen- und Darmanastomosen.) R. Frank.
60 *Improved Technic for Cultivation of Spirochetes. (Untersuchung der Spirochaete pallida mit dem Tuschverfahren.) V. Hecht and M. Wilenko.

58. **Non-Diabetic Glycosuria.**—Glaessner discusses glycosuria from hyperglycemia and alimentary glycosuria, the toxic from chemical and thermic injury and bacteria, and the glycosuria of levulosuria, lactosuria, galactosuria, pentosuria and elimination of glucuronic acid. He has noticed that transitory glycosuria from asphyxia, carbon monoxid poisoning and exposure to cold is always accompanied by lactic acid in the urine. He has never detected lactic acid in the urine in diabetes and thinks that this may sometimes aid in differentiation.

59. **Instrument for Anastomosis.**—The two branches of the instrument are inserted separately, one in a buttonhole in the stomach wall, the other in a buttonhole in the loop of the intestine, when gastroenterostomy is contemplated. The branches are thus introduced in opposite directions. The two branches are then brought into juxtaposition and the handles screwed tight together. The serosa of the bowel and stomach is then sutured together, first on one side of the instrument and then on the other. A slender knife is then introduced between the blades and the lumen opened with it, after which the instrument is removed and the buttonholes sutured. Frank claims a number of advantages for this instrument.

60. **India Ink Method for Studying Spirochetes.**—Burri has materially simplified bacteriologic research by his India ink method. A droplet of the fluid to be examined is mixed with a droplet of India ink on an object glass and allowed to dry. Examined then through the microscope the bacteria stand out as with the dark field illumination. Hecht states that the method is particularly useful for examining spirochetes, so that any practitioner in less than a minute can reveal the *Spirochæta pallida* in case of positive findings.

Zentralblatt für Gynäkologie, Leipsic

June 26, XXXIII, No. 26, pp. 897-928

61 *Lactic Acid in Blood and Urine in Epilepsy and Eclampsia. (Ist die Fleischmilchsäure im Blut und Harn bei Epilepsie und Eklampsie eine Folge der Krämpfe?) P. Zweifel.
62 History of Extraperitoneal Cesarean Section. (Zur Geschichte des extraperitonealen Kaiserschnittes.) L. Nürnberger.
63 Parametritis and Posterior Paravaginitis with Heterotopic Proliferation of Epithelium. R. Meyer.

61. **Lactic Acid in the Blood and Urine in Epilepsy and Eclampsia.**—Zweifel has been continuing his study of this subject since he reported the constant finding of lactic acid in the urine in 17 cases of eclampsia. He has found small amounts in the urine in 5 cases of "pregnancy kidney" and large amounts in 3 cases of "pregnancy nephritis." He thinks this finding is important as this latter condition is the preliminary to eclampsia. Examination of the urine of three epileptics showed no trace of lactic acid in one and very little in the other, but in a third case 1.489 gm. of lactic acid were found in 845 c.c. of urine at one time and 3.369 gm. in 505 c.c. at another time. The seizures in this last case were very severe and in the intervals the patient was apathetic. Meat was dropped then from the diet of this epileptic, after which lactic acid could no longer be detected in the urine; there has been no recurrence of seizures and the patient is less apathetic. These findings confirm the assumption that tonic general convulsions are merely a symptom and that epileptic seizures may occur from very different causes.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 1, XXX, No. 78, pp. 817-824

64 *Work of the Heart. (Lavoro del cuore.) T. Silvestri.

July 4, No. 79, pp. 825-840

65 Hemorrhagic Purpura and Acute Aplastic Anemia. U. Deganello.

July 6, No. 80, pp. 842-848

66 *Improved Stain for Detection of Spermatozoa. (Nuovo metodo di colorazione degli spermatozoi nelle macchie.) B. Baecchi.
67 Fracture of Sphenoid Bone from Direct Trauma. (Frattura dello sfenoide da causa diretta.) T. Costa and C. Migliucci.

64. **The Work of the Heart.**—Silvestri relates some experiences and discusses physiologic findings which demonstrate that the mechanical work of the heart is much less than generally assumed, owing to certain mechanical factors which he enumerates. Also that the heart is capable of exertion six or seven times as great as its normal work, and is able to get along without inducing symptoms sometimes when its working capacity is reduced to a fraction of normal.

66. **Stain for Spermatozoa.**—Baecchi states that his technic is extremely simple and rapid, while it shows up the spermatozoa in a few seconds and the stained specimens are durable. A thread of the soiled tissue is placed in a concentrated aqueous solution of acid fuchsin for 25 or 30 seconds; then transferred to a 1 per cent. alcoholic solution of hydrochloric acid in 70 per cent. alcohol for from 10 to 30 seconds, until decolored to a pale pink; it is then placed in absolute alcohol for 15 to 20 seconds. The thread is then transferred to an object glass in a drop of xylol and the fibers separated when it is ready for the microscope. The heads of the spermatozoa show bright red while the thread fibers are decolored or only slightly pinkish. The most perfect specimens are obtained when the thread is first soaked in distilled water for a few hours. A counter stain with methylene blue shows up the spermatozoa even more perfectly.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

SECOND ANNUAL REPORT OF THE COMMISSIONER OF HEALTH OF THE COMMONWEALTH OF PENNSYLVANIA, 1907. Cloth. Pp. 974.

THE BLOOD IN HEALTH AND DISEASE. By R. J. M. Buchanan, M.D., F.R.C.P., Professor of Forensic Medicine in the University of Liverpool. Cloth. Pp. 318, with illustrations. Price, $4.50. New York: Oxford University Press, 1909.

THE THIRTEENTH GREATEST OF CENTURIES. By James J. Walsh, M.D., Ph.D., LL.D., Dean and Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine. Cloth. Edition 2. Pp. 458, with illustrations. Price, $2.50 net. Catholic Summer School Press, 110 W. 74th St., New York City.

THIRD REPORT OF THE WELLCOME RESEARCH LABORATORIES AT THE GORDON MEMORIAL COLLEGE, KHARTOUM. Andrew Balfour, M.D., B.Sc., F.R.C.P., D.P.H., Director, Fellow of the Royal Institute of Public Health. Cloth. Pp. 477, with illustrations. Published for Dept. of Education, Sudan Government, Khartoum, by Baillière, Tindall & Cox, 8, Henrietta St., Covent Garden, London, 1908.

FARMACOPEA DE LOS ESTADOS UNIDOS DE AMÉRICA. Octava Revisión Decenal. Autorizada por la Convención de la Farmacopea de los Estados Unidos. Reunida en Washington el año 1900 A.D. Revisada por el Comité de Revisión y Publicada por la Junta Directiva. Oficial desde Setiembre 1° de 1905 Incluyente Adiciones y Correcciones hasta 1° de Junio 1907. Sheep. Pp. 715. Price, $5.50. Nueva York, N. Y.: Agentes, American Druggist Publishing Co.

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Address

THE PART SANITATION IS PLAYING IN THE CONSTRUCTION OF THE PANAMA CANAL *

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ANCON, PANAMA

The best way of showing what part sanitation is playing in the present canal work is to point out what the conditions would be if the present methods of sanitation were not in vogue, and then to present conditions as they actually are. The difference between the two pictures will fairly represent what is due to sanitation.

For some years the Isthmus of Panama has had about as bad a reputation for health as any locality in the world. Probably it would not be extreme to say that there is no other place that had as bad a reputation. The English official guide for pilots for the year 1903 made these remarks about the canal district:

> The Panama Canal District is one of the hottest, wettest and most feverish regions in existence. Intermittent and malignant fevers are prevalent, and there is an epidemic of yellow fever at times. The death rate under normal conditions is large.—*West India Pilot*, vol. i, 6th ed., 1903.

The history of the Isthmus amply justifies this reputation. Panama is nine degrees north of the equator. It has a heavy rainfall—about 71.70 inches (a ten years' average) at Ancon on the Pacific side, and 128.37 inches (average for thirty years) at Colon on the Atlantic. The temperature is warm all the year round, sufficiently so for mosquitoes to breed freely in all seasons. From the year 1520 it has been the favorite point in the western hemisphere for transit between the Atlantic and Pacific coasts. Towns of considerable size have been located on the Isthmus since that time. These towns have always had to rely for their water supply on rain water collected in cisterns and barrels. The yellow fever mosquito, the stegomyia, requires a warm climate for its existence; it can not survive frost. For laying its eggs and rearing its larvæ it needs rain water in a protected locality. For the development, then, of this particular species of mosquito the Isthmus of Panama possesses in an eminent degree all the requirements; namely, a warm climate, large rainfall, and towns almost entirely dependent on collected rain water for their supply.

Many other tropical American cities are just as favorably situated for the development of the yellow fever mosquito as is the city of Panama, so we must look for some other element, not present in them, as a cause for the pre-eminent reputation which the Isthmus of Panama has obtained as a yellow fever center. Wherever yellow fever prevails endemically the native population becomes immune to the disease. This is generally explained by saying that the native, as a child, has a mild attack of the disease which protects him in after-life. It is a fact that an attack of yellow fever gives the individual entire protection—about as much so as does an attack of smallpox. Therefore, when yellow fever has prevailed for a longer or shorter period in a locality, all the people capable of having the disease contract it and become immune. There being no more material for the disease to feed on, it dies out and disappears. If, however, a constant stream of foreigners is poured into this locality, they keep up the disease, and yellow fever will continue as long as the supply of non-immunes continues.

I would state, then, that for the most favorable development of yellow fever three things are essential: (1) a hot climate all the year around; (2) an abundant supply of fresh water stored near human habitations, and (3) a steady influx of foreigners who have not had the disease.

Let us take a few localities in which yellow fever has prevailed as illustrative of this view. Philadelphia has suffered many times, and severely, from yellow fever. At the period at which that city suffered from this disease only two of the elements favorable to its spread were present, namely, a large number of non-immune, and an abundant supply of well- and rain-water. Philadelphia is north of the natural habitat of the stegomyia mosquito, and it is found there only when introduced during the warm summer weather by shipping from the South. The cold winters destroy all yellow fever mosquitoes that survive the summer. The change from sailing to steam vessels has greatly decreased the number of times that stegomyia are introduced every summer into Philadelphia, and the introduction of a piped water supply has decreased their ability to find breeding-places when introduced. Philadelphia, therefore, has not suffered from yellow fever for fifty years, and probably would not again, even if we did not know that the mosquito transmitted the disease.

New Orleans is more favorably situated for yellow fever. It has two of the essentials for the maximum development—a steady influx of non-immune foreigners, and an abundant supply of rain water stored close to human habitations. But the element of climate is against yellow fever becoming endemic. While New Orleans is within the stegomyia belt, the winters are sufficiently cold to destroy most of these mosquitoes, and for this reason yellow fever has never become endemic there for any number of years.

In Havana, Cuba, we have all three of the elements favorable for yellow fever. It has a climate sufficiently warm for the stegomyia mosquito to breed all the year around. While the winters are cool, the temperature is never low enough to frost, and, though the breeding of the yellow fever mosquito greatly decreases during January, February and March, in favorable localities they develop freely during these months. Rain water stored in and about the houses in barrels and cisterns was universal, and there was a large influx of Spanish immigrants and other foreigners. Consequently Havana was one of the principal centers of yellow fever. From 1760 to 1901 there was probably not a month in which yellow fever did not occur.

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* Address delivered at Jefferson Medical College, June 7, 1909.

In Panama the three essential elements for the development of yellow fever exist in the highest degree of perfection. The climate is warm all the year around. There is no difference in thermometric conditions between summer and winter. Wells and cisterns were generally depended on for the water supply, but the principal dependence was in rain water stored in barrels and cisterns. As the dry season lasts four months, and scarcely any rain falls during this time, rain water had to be stored in large quantities. For four hundred years the supply of non-immunes has been constant. This, I think, is the reason that Panama has acquired its preeminent reputation as an unhealthful locality. Many other localities in tropical America are just as favorably situated as is the Isthmus of Panama in respect to the first two elements (temperature and water supply) for the development of yellow fever, but no other locality approaches it in the third element. For four hundred years there has never been any interruption to the steady stream of foreigners who have crossed the Isthmus. These were food for yellow fever, and kept the disease alive in Panama. From our knowledge of yellow fever, and what we have seen in Panama, I believe that yellow fever has always existed there from the first Spanish settlement. Years can be found when no yellow fever was reported, but whenever a new garrison arrived, or a considerable number of non-immunes came, enough people died of the disease to attract attention, and yellow fever was reported. For the first three hundred years of the occupation of the Isthmus the principal travel consisted of the officials and employés (military and religious) of the great Spanish vice-royalty on the west coast of South America. Many of these died in Panama, and, as now and then an official of high rank would die, Panama obtained an exceedingly bad reputation all over the Spanish world.

About 1849, and for many years after, the rush of gold seekers to California took place. These suffered severely, and still further added to the unfortunate reputation of the Isthmus among English-speaking nations.

From 1850 to 1855 the Panama Railroad was under construction. The considerable force engaged in this work suffered so severely from the disease that work had to be stopped several times. By the authorities, the unfavorable health conditions were looked on as the principal obstacles to be overcome. From 1883 to 1889 the French had a large working force working on the canal. These also suffered very severely from disease, and this was considered one of the chief elements in their failure. The French experience on the Isthmus settled the reputation of Panama as to health conditions.

When the United States took possession in 1904 the Isthmus was generally looked on as probably the most unhealthy locality known. This was due, as I have pointed out, not so much to local conditions, as to the fact that no other tropical city has had for the same length of time such a steady supply of non-immunes. Many other tropical cities are just as well adapted to the development of yellow fever as is Panama, as far as the first and second conditions (temperature and water supply) are concerned, but none have had for anything like so long a time the third condition, namely, a steady inflow of foreigners.

There are no means of giving figures as to the death rates on the Isthmus. Until our arrival no general records were kept. We can obtain some basis for comparison by taking the records of the French Company. They had an excellent hospital, Ancon, where employés of contractors were treated at a charge of a dollar per day. But the contractor did not send many of his negro employés there. It was cheaper for him to discharge them. The hospital soon became infected with yellow fever, and non-immunes admitted generally contracted this disease. So the hospital was not very popular among the non-immunes. Many of the French employés when sick preferred to remain at their homes in Panama and Colon.

The records of Ancon Hospital were very accurately kept and are very good. During the nine years of the prosecution of the work under the French, 1,041 patients died of yellow fever in that hospital. As the Jamaica negro is not susceptible to yellow fever, the figures apply to whites alone, who are mostly Frenchmen. These are the figures for Ancon Hospital alone. They do not include those who died all along the line of the canal and in the cities of Panama and Colon. Probably at least as many died out of hospital as in it, and, while this is, of course, an estimate, I think it a very conservative one. This would give 2,082 deaths from yellow fever among the white French employés. The French averaged 1,606 white employés on their rolls. This means that the French lost five-fourths of their force in nine years or eleven-sixteenths in five years.

We have now been at work on the Isthmus five years. Our average white force has been 6,449. If we had lost at the same rate as I estimate the French did, we should already have buried 4,433 white men from yellow fever alone. We have an average of 4,852 Americans, including employés, their wives and children. At this rate we should by this time have lost from yellow fever 3,333 Americans.

Taking the stories of the survivors of families and small parties who came to the Isthmus during the French construction and also our general knowledge of yellow fever, I think the losses were larger than the above figures show. The family of one of the chief engineers consisted of five; four died of yellow fever. The family of the superintendent of the railroad consisted of five; three of these died of yellow fever. A party of seventeen engineers came on one steamer; sixteen of these died of yellow fever. Twenty-four sisters of charity came to Ancon Hospital at one time; twenty of these died of yellow fever. So from our knowledge of the conditions as they existed on the Isthmus and our general knowledge of yellow fever, I think it quite reasonable to say that one-third of the Frenchmen who came to the Isthmus during the French construction died of this disease.

Now let us see if we can estimate what this number was, taking our data from still another source. To keep an average of 4.852 Americans on the Isthmus connected with the work, we have had to bring to the Isthmus 24,260. It was estimated by the Department of Labor, Quarters and Subsistence, when that department was in existence, that the white gold roll is changed approximately about once a year. Estimating for the French in the same way, it would have been necessary to bring to the Isthmus in five years 8,330 Frenchmen, in order to keep their force up to 1,606. One-third of this number would give 2,770 as the deaths due to yellow fever. Applying this same ratio to the 24,260 Americans brought to the Isthmus in the past five years, we should have lost by this time 8,087 from this disease.

Now let us take the total force. The French average during their nine years was 10,121. They had in Ancon Hospital 5,651 deaths. The French were building the canal at Panama just as the subway in New York City was built, so far as police control is concerned. If a laborer got sick and went to his home and died, they had no means of finding out what became of him, any more than has the contractor on the subway in New York City. The man was simply dropped from the rolls. If he died in the hospital, he was recorded as a death, but not otherwise. The whole French canal was under construction by contract, and a contractor was charged a dollar per day for each patient he kept in hospital. The general opinion is that a very small proportion of the sick laborers were sent in. My experience with contractors teaches me that very few patients would come to the hospital if the contractor were charged a dollar a day for their care. The British minister at Panama tells me that he thinks that it would be a large estimate to say that one-fourth of the laborers who died, died in hospital. The present minister was there all during the construction days, and came in contact a great deal with the Jamaica negroes, who are British subjects and make up the bulk of the laboring force under the French. After giving the matter careful consideration, I think it fair to say that two men died out of hospital for every one who died in hospital. Estimating on this basis, and knowing that 5,651 died in hospital, we would have the total loss of 16,593. That is, the loss was eight-fifths of the average force.

The average American force for the past five years has been 26,532. Eight-fifths of this would be 42,449, which would be the number of deaths for nine years. For five years this would give us 23,580. I, therefore, make this claim for the sanitary work done on the Isthmus, that had not this work been done, we would have had the same losses as occurred under the French régimé.

At the end of the fifth year of work, this loss from yellow fever alone would have been, according to the French hospital figures, 3,463 Americans; according to my estimate, 8,087. The actual loss has been NINETEEN. At the end of five years from all causes and in the whole force, this loss would, according to my estimate, have been 23,850. Our actual loss has been 3,317.

The Card Index for Health of School Children.—The School Hygiene Association in France is making a valiant effort to have a system of card records adopted for each child. The card is to record the findings at each of the periodical visits of the medical school inspector, the physician merely noting that this or that organ or system of organs is defective, the weight or growth below standard, etc. The medical inspector does not state the nature or cause of the functional or organic disturbances he detects but merely notifies the parents that the child requires medical attention along certain lines, and that their family physician will diagnose the trouble and institute treatment. The card is the property of the scholar and is delivered to him as he leaves school, but is kept by the medical inspector in the meanwhile.

Original Articles

THE TREATMENT OF INFANTILE DIARRHEAS DUE TO INTESTINAL FERMENTATION WITH LACTIC ACID BACILLI*

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BOSTON

Modern classifications of the diarrheal diseases of infancy reject the term "summer diarrhea" as having no scientific foundation, since investigation has shown that the diarrheas occurring in the summer months present no etiologic, anatomic or clinical peculiarities distinguishing them from those occurring at other times of year. The only foundation for this term is the great frequency of these diseases during the hot months, the explanation of this frequency being the effect of hot weather both in lowering the infantile digestive powers and in increasing the opportunities for the contamination of food supplies. The term "summer diarrhea" is used here, therefore, only as a convenient name under which to group diarrheal diseases on which a series of investigations were made during the hot months.

The classification of the diarrheal diseases has been much discussed without final or definite agreement as to either its basis or its terminology. I believe that an etiologic basis is the only one in line with the most recent scientific advance. Under such a classification the diarrheal diseases fall naturally into four divisions, having as their fundamental etiologic factors: first, nervous influences; second, indigestion; third, bacterial fermentation, and, fourth, bacterial infection, respectively. The details of this classification have been sufficiently described elsewhere.

THE RÔLE OF BACTERIA

Some distinguished pediatrists have been unwilling to accept the distinction found in the last two divisions of this classification, contending that bacteria form but one etiologic factor, and that all diarrheal diseases caused by the action of bacteria should be designated as infectious. Nevertheless, into such a classification a certain amount of confusion in terminology at once enters, such terms as dysentery, ileocolitis, infectious diarrhea, fermental diarrhea, acute gastrointestinal intoxication, all referring to diarrheal diseases caused by bacteria, yet presenting various differences in their etiology, anatomic and clinical descriptions. The distinction between the conditions caused by true bacterial infection with parasites, which live in and on the tissues of the body, and those caused by bacterial fermentation with saprophytes, which live in and on the intestinal contents, I believe to be essential. Such a fundamental distinction removes much of the confusion. Under it the term infectious diarrhea may be selected to include all cases in which there is true infection with parasites, while the term fermental diarrhea, or acute intestinal indigestion of the fermentation type, may be selected to include all cases in which the fundamental etiologic factor is saprophytic fermentation. The term ileocolitis, like the term inflammation, is used, no longer as the name of a disease, but as a term describing the anatomic lesions found in a great variety of diseases, such as tuberculosis, typhoid and infectious diarrhea. The term dysentery may be used to describe any case of infectious diarrhea in which the *Bacillus dysenteriæ* is proved to be the infecting agent. The term acute gastrointestinal intoxication is a synonym for the fermental diarrhea. It has usually been employed to describe those cases in which symptoms from the absorption of toxins are particularly prominent.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

This distinction between parasitic and saprophytic action of bacteria has the further advantage of being in line with modern effort in specific therapy. It is the infectious parasites which give rise to the formation in the body of specific immune bodies, and which, therefore, are to be combated by means of serotherapy and vaccine therapy, in which such great progress has recently been made. The saprophytes must be combated by other methods, and to present the results of the systematic investigation of one of these other methods is the purpose of the present paper. This method necessitates the recognition of the etiologic distinction suggested, and suggests the possibility, under proper fundamental etiologic distinctions, of in time arriving at the elaboration of a specific form of treatment for each of the various forms of diarrheal disease.

THE ANTAGONISMS OF BACTERIA

This method depends on the principle of the antagonism existing between various varieties of bacteria, as developed by Metchnikoff and his followers. It has been clearly shown that in many instances one variety of bacteria possesses the power of inhibiting the development of another, and recent literature is filled with experimental work placing the proof of this principle beyond question. It has been chiefly applied to combating fermentation in the intestine, and has been successfully applied in a great variety of diseases, particularly in chronic disturbances and in certain chronic joint conditions supposedly caused by the absorption of the toxic products of intestinal fermentation.

THE RESEARCHES OF TISSIER

My own investigations on the application of this principle to the diarrheal diseases of infancy were suggested by the work of Tissier at the Pasteur Institute in Paris.

The subject was approached by Tissier from the point of view of the organisms causing fermentation in the intestinal contents. While he does not draw a distinction between parasites in the tissues and saprophytes in the food residue, he makes no mention of organisms found in the tissues, of tissue changes, or of agglutinin formation in the blood, but does refer constantly to the chemical results of the fermentation of the intestinal contents. Moreover, the clinical type of case described by him is exactly that described in a recent classification adopted by the pediatric department of Harvard University as intestinal indigestion with fermentation, or fermental diarrhea.

Tissier made careful studies of the intestinal flora in health and in this disease, establishing characteristic bacterial pictures for each, and identifying the various micro-organisms. He finds that in health the *Bacillus bifidus* is the predominating organism of the dejecta in overwhelming predominance. In disease a bacterial transformation occurs, the *Bacillus bifidus* disappears and a number of abnormal forms appear. Tissier identified these organisms and studied them in detail, particularly their fermenting action on food elements and products. Among them he found only one variety which was pathogenic toward animals, and which attacked proteid substances and their derivatives. In doing this it forms a toxin, which has some necrotic power on the tissues. This organism is the *Bacillus perfringens*, a large rod with square ends, staining by Gram's method. In early stages it has a spore at one end; later no spores are seen. It is anaerobic, ferments sugar, and has the special peculiarity of causing solution of meat or white of egg in sealed tubes.

Tissier believes this organism to be the cause of the class of cases which we know as fermental diarrhea. The products of the fermentation caused by other organisms he regards as having a possible contributive action through irritation of the mucosa. As predisposing causes he believes that lack of digestive power and unsuitable chemical composition of the food play the chief rôles. The predominance of this disease in artificially fed infants may be attributed to the excess of proteid in cow's milk, causing more unutilized proteid to pass into the intestine. He further noted that in recovery a very rapid change occurred in the bacterial content of the discharges. The abnormal forms disappear, and the *Bacillus bifidus* reappears, at first in its bifurcated form, and quickly resumes its place as the preponderating micro-organism. He found that in culture media containing a sufficiency of carbohydrate the *Bacillus bifidus* inhibits the growth of the *Bacillus perfringens,* but that in media without carbohydrates *B. perfringens* overcomes the *B. bifidus.*

Tissier concludes that the indications for treatment are to remove the fermenting intestinal contents by purgation and to cause a reappearance of the normal intestinal flora. The latter object can be furthered by diminishing the proteid and increasing the carbohydrate in the food, and can be more specifically attained by introducing into the intestine an organism tending to inhibit the growth of abnormal forms and to overcome them and cause their disappearance. In searching for a suitable organism for this latter purpose, he found that the *Bacillus bifidus* and the lactic acid bacillus both stop the development of *B. perfringens,* and he selected the latter, as it is more easily cultivated and handled than the former, which is anaerobic. He used this organism to effect a transformation of the intestinal flora.

In cases of fermental diarrhea, Tissier gave his patients pure cultures of the lactic acid bacillus, and under this treatment he noted a rapid transformation of the stools, subsidence of the symptoms and gain in weight.

This method of treatment struck me as being in the line of advance, as it is a specific treatment directed toward specific etiology, and based on scientific research. We are apt too long to neglect to apply in practice the knowledge given us from time to time by those engaged in scientific research. We had for a long time been accustomed to combating fermentation by purgatives, starvation, lavage of the colon, and regulation of the feeding. Intestinal antiseptics have not proved of value. Yet, although the fact that the growth of one organism inhibits that of another had long been known, it had not been applied in practice in cases of intestinal fermentation. It had never occurred to us to try to stop intestinal fermentation by introducing an inhibiting organism into the intestine—a procedure of very obvious possible value. This method of treatment as evolved by Tissier step by step to its logical conclusion proved very fascinating, and I determined to test it in practice.

Whether or not all Tissier's conclusions are justified does not affect the main issue. These processes may or may not be caused by the *Bacillus perfringens* or by other organisms. We do believe them to be caused by bacterial fermentation, and we are justified in introducing into the intestine any harmless organism that affords a hope of inhibiting the abnormal processes. The lactic acid bacillus is harmless. Tissier has shown that it inhibits the *Bacillus perfringens* in the test tube, and gives evidence that it effects a transformation of the flora in the intestine. Bienstock has shown that it prevents the putrefying action of the *Bacillus putrificus*. Therefore, it at least held forth a prospect of good results.

PRELIMINARY INVESTIGATION

I began my work on this subject in the autumn of 1905, confining my researches at this time to the bacterial examination of the dejecta in various types of diarrhea. This work was neither thorough nor complete, but the results, so far as they went, agreed with those published by Tissier.

In the beginning of the summer of 1906, I commenced a systematic investigation of the clinical results of this method of treatment in infantile diarrheal disease. This investigation I have continued ever since, whenever opportunity afforded, and am still engaged on it. My summer service in the out-patient department of the Infants' Hospital afforded a large material for this work, and I had the further advantage of Dr. Rotch's permission to carry on the work during his autumn service in the wards of the same hospital.

It occurred to me that buttermilk was made with lactic acid bacilli, and that an unpasteurized buttermilk should contain large numbers of this organism. Buttermilk had been widely advocated and employed in infant feeding, but, so far as I know, never on account of its bacterial content. It had been employed for chemical reasons, because its chemical composition was believed to be adapted to certain abnormalities of digestion and metabolism. In Europe it is invariably cooked before being given to infants, and in this country, so far as I know, had always been carefully sterilized or pasteurized. Consequently, none of the literature on buttermilk is of value as bearing on the question of the action of lactic acid bacilli in fermental diarrhea. Wurtz recommends it in cases of proteid and fat intolerance; von Rommel believes its acidity to be the active principle of its favorable action; Decherf believes it to be of wide value in gastroenteritis and rachitis, and prepares it by boiling with cane sugar. And there are many other recent articles on the great value of buttermilk as an infant food, usually in cases of chronic indigestion or atrophy. Other observers have not obtained such favorable results. It had been given a thorough trial, in a pasteurized form, in Boston, without notable favorable results. I believe that its favorable action is dependent on the proteid or fat intolerance so commonly observed, and have never seen a patient who did well on pasteurized buttermilk who did not also do well on proper milk modification.

I selected buttermilk as a convenient vehicle for giving lactic acid bacilli, in the first place, because it seemed to me that in that way, by combining medicine and food, I could introduce larger numbers of the organism than if I used small doses of bouillon cultures in addition to the food. In the second place, I wished to use a constant food in all my cases, and selected buttermilk as being a digestible food, not liable to produce accidental upsets from proteid or fat intolerance.

At this time I did not know, what later investigations have suggested as very probable, that the results depend on the particular strain of lactic acid bacillus employed. It was, therefore, more or less a matter of chance that an effective strain of the lactic acid bacillus was hit on in my preliminary work.

The buttermilk selected was first pasteurized to kill all other organisms, then inoculated with a pure culture of lactic acid bacilli, and ripened until the development of the organism had brought about the proper acidity and precipitation of the casein. The particular strain of lactic acid bacilli employed was isolated by Mr. S. C. Keith, bacteriologist with H. P. Hood & Sons, who selected it on account of the delicate aroma it produces.

I was unable to carry on proper bacteriologic investigations of the stools, confining myself to the study of the clinical results.

The results of the preliminary trial of this method of treatment were exceedingly striking. The unpasteurized buttermilk was first tried in 35 selected cases. Of these, there was evidence of a favorable result, as shown by a change in the character of the dejecta and by gain in weight, in 23. In 3 cases there was immediate cessation of diarrhea and favorable change in the character of the dejecta, without gain in weight. In 9 cases the lactic acid bacilli produced no effect.

CLINICAL PICTURE OF FERMENTAL DIARRHEA

Before describing the details of these results, it is perhaps necessary to describe the clinical picture presented in these cases in which the bacterial fermentation of saprophytes in the intestine is the principal etiologic factor. These cases are characterized by diarrhea, usually of sudden onset. The movements are loose, often very watery, are usually, but not always, green in color, have a foul or sour odor, and at times are frothy. Curds and mucus may or may not be present in addition. Blood is absent, and mucus is not extensive, except in cases of long standing. Very characteristic is the absence of persistent fever. The temperature may be high in the first twenty-four or forty-eight hours, but usually quickly falls after the diarrhea becomes thoroughly established; in very severe cases, or in long-standing cases, it is frequently subnormal. Vomiting is present in the majority of cases, and is often obstinate and severe. Colic may be present, but abdominal tenderness is almost invariably absent. There is rapid loss of weight. In severe, or long-standing cases, and in babies who have had repeated attacks, there is frequently an extreme degree of atrophy and inanition. In the severe cases are seen various toxic nervous manifestations, ranging all the way from slight apathy to convulsions and collapse.

In the majority of the cases the buttermilk was begun only after all ordinary and routine measures had failed. The work from the first was made as far as possible experimental. In the treatment of this disease there are always a certain number of cases which prove refractory, and which resist the employment of all the resources at our disposal. I endeavored, so far as possible, to select such cases for experiment with living lactic acid bacilli.

The routine employed in cases of fermental diarrhea was the following: The child was first given castor oil or calomel to empty the bowel, and nothing but boiled water was given for a period of twenty-four hours. Only barley water was given for a second twenty-four hours, and then feeding with a weak milk modification, usually fat 2, sugar 5, proteids 0.25, was begun. If there were no return of symptoms, the strength of the milk was gradually increased, beginning with an increase in the percentage of whey proteid only, such as fat 2, sugar 5, whey proteid 0.90, caseinogen 0.25. Later the other elements were increased until a satisfactory gain in weight was maintained. If, however, the resumption of milk feeding was followed by a return of the symptoms, and further loss of weight, the same process was repeated, milk being this time withheld longer, at least seventy-two hours. Bismuth and irrigation of the colon were also tried, and milk feeding was finally resumed in the form of whey, to be gradually strengthened. If after this treatment the symptoms did not improve after a reasonable time, the strength of the milk was increased, as I have found that by so doing a certain number of cases will gain weight in spite of the persistence of the symptoms of fermentation. If this failed, the case came into the category of obstinate and resistant cases, and was usually treated by alternating in turn the percentages of the various elements, by cereal diluents, by peptonizing, or by resorting to a wet-nurse. It was such resistant cases which were selected for the experiment with living lactic acid bacilli. The immediate improvement, alteration in movements, and gain in weight seen in so large a number of such cases were consequently all the more striking.

The number of cases in this preliminary investigation, made so far as possible under conditions designed to be experimental, was thirty-five.

Not all of the 35 cases were of the fermental type; 5 cases were diagnosed as of the irritative type of acute intestinal indigestion, and were selected for trial merely for experimental purposes. None of these 5 showed improvement. Two of the cases in the series were of the infectious type, probably of dysenteric origin, characterized by persistent fever and bloody mucous stools. In both of them, also, the unpasteurized buttermilk failed to bring about any notable change.

Thus only 2 of the cases of total failure were frankly of the fermental type of disease, the type described by Tissier. Consequently, if the fermental cases alone be considered, the figures are as follows: Treatment successful, 23 cases; partly successful, 3 cases; failed, 2 cases. In the 23 successful cases, the use of the living lactic acid bacilli was followed, not only by cessation of diarrhea and the signs of fermentation in the dejecta, but by rapid gain in weight. In the 3 partly successful cases, the signs of intestinal fermentation rapidly disappeared, but there was no notable gain in weight while the patients continued under observation.

PROOF OF SPECIFIC ACTION

In order to be able to justify the conclusion that these favorable results were due to the action of the living lactic acid bacilli, it was necessary to obtain evidence that they were not due to the chemical qualities of the buttermilk as a food. Such evidence is particularly necessary in view of the many reports of the favorable action of buttermilk referred to above. To investigate this, in fourteen resistant cases of the fermental type, the buttermilk was first given in a pasteurized form, and after a sufficient trial had demonstrated a failure to cause improvement the pasteurization was simply omitted, no other change being made. In every one of the cases the omission of the pasteurization was followed by immediate improvement. When it is remembered that these were all cases in which, under routine treatment, the babies had failed to show improvement, and that they had also failed to show improvement when fed on pasteurized buttermilk, I think I am safe in concluding, in so far as conclusions may be drawn from mere clinical experience, that the favorable change was not due to the chemical peculiarities of the food used, but was due to the only new element added to the treatment, which was the introduction of large numbers of living lactic acid bacilli into the intestine through the omission of the pasteurization.

FINAL STATISTICS

So favorable were the results of the treatment that I determined no longer to confine its use to resistant cases, but to use it as a regular weapon in the treatment of diarrheal disease. I have used it in several hundred cases. Many of the babies were out-patients, and did not return to the hospital often enough to permit the completion of the records. I was able, however, to collect fairly complete records of 120 cases. In all of these cases the treatment was with some milk preparation ripened with lactic acid bacilli, without subsequent pasteurization. Not all the babies were treated with unpasteurized buttermilk, in which the fat is removed by churning after the ripening, but many were treated with various formulas of modified milk similarly ripened. The statistics of these cases are as follows: Treatment successful, 78 cases; partly successful, 12 cases; failed, 30 cases.

Not all of the one hundred and twenty cases were of the fermental type. Twelve cases were diagnosed as of the irritative type of disease, and these cases were selected for trial only because they proved resistant to the routine treatment, or because the condition of the child was so serious as to warrant trying whatever held out any promise of doing good. As the two types run into one another, the element of fermentation often being found in cases of the irritative type, I hoped that, in view of the remarkable results which I was obtaining in the frankly fermental cases, I might be able to do good in these resistant irritative forms. This hope was disappointed. Every one of the twelve cases of the irritative type in which the buttermilk was used is numbered among the failures. This result was all the more significant in contrast with the similarly resistant fermental cases, and is evidence in favor of the specificity of this method of treatment.

Eight of the cases in the series were of the infectious type, but were selected because there were evidences of fermentation in the intestinal contents, in addition to infection of the tissues. In 4 of these cases, the patients had failed to gain after the acute stage of the disease had subsided, but later the use of the living lactic acid bacilli was immediately followed by Tissier's so-called "transformation of the stools" and by gain in weight. In the other 4 infectious cases, no good result followed the use of the treatment.

Taking the frankly fermental cases, the figures are as follows: Treatment successful, 74 cases; partly successful, 12 cases; failed, 14 cases.

CLINICAL EFFECTS OF THE TREATMENT

The principal result of this treatment, when successful, is the bringing about of what Tissier calls a "transformation of the stools." The character of the dejecta changes, frequently in the most remarkable way, from loose, foul and green, to formed, pale yellow, with a sour odor. The typical lactic acid stool is of rather firm consistency, is light yellow, or white and putty-like, and has a rather agreeable sour odor. With the cessation of the diarrhea, the toxic symptoms disappear, vomiting ceases, and the child becomes happy and comfortable. At times the sour milk is vomited at first, but this rarely lasts more than one or two days. In the most successful cases, gain in weight is rapid.

OCCASIONAL UNSUITABILITY OF RIPENED MILK AS FOOD

Not by any means in all of the successful cases were the babies able to gain weight on the ripened milk alone. In about 50 per cent. of the successful cases the children gained, for a time at least, while taking this food only. There were cases in which the use of the unpasteurized buttermilk was followed by immediate improvement in the symptoms and discharges, but in which a gain in weight did not follow. When, however, the buttermilk feeding was supplemented by alternate feedings of modified milk, steady gain in weight began at once. These cases suggested that, although the lactic acid bacilli had stopped the fermentation, the buttermilk was not adapted to the caloric needs of the child. When the buttermilk was supplemented with food of higher caloric value, the child gained weight. The lactic acid bacilli having prepared the way by causing a cessation of fermentation, the patient was able to thrive on a formula which in the first place it could not digest. In similar cases, the buttermilk was only continued until the alteration in the movements had occurred, and then the child was put back on the same food on which it had done badly before the use of the buttermilk. In such cases, after the buttermilk had been used, the patient gained weight. Thus the ripened milk was used only as a medicine against the fermentation, to be omitted when it had accomplished its work. In some cases in which unpasteurized buttermilk was used, in which there was no gain in weight, the food appeared, not so much of deficient caloric value, but rather as an irritant, causing gastric or intestinal indigestion. In these cases, it was similarly used merely as a temporary weapon against the saprophytic fermentation.

USE OF BOUILLON CULTURES

In four cases of this type, in which ripened milk could not be digested, the method of giving pure bouillon cultures of lactic acid bacilli was employed, as originally advocated by Tissier. In all four of these cases there was the characteristic change in the dejecta, but in only one of them was there subsequent gain in weight. I think this method of treatment is to be recommended in those cases in which ripened milk causes serious symptoms of indigestion.

RIPENING OF MODIFIED MILK MIXTURES

The fact that buttermilk as a food is not always adapted to the digestive and caloric needs of individual infants suggested the possibility of another method of employing living lactic acid bacilli in the treatment of this class of cases. A certain amount of fat in the food may be necessary for a particular infant, on account of the high caloric value of this food element, and the existence of this fermental diarrhea does not imply the existence of fat intolerance. On the other hand, the high proteid content of buttermilk may cause indigestion in babies of special susceptibility to proteid. If it is possible to grow lactic acid bacilli in buttermilk, it is also possible to grow them in other percentage modifications. We can thus combine the two indications for treatment by giving the food suited to the digestive and nutritive requirements of the infant and by stopping fermentation; and can also combine the resource of living lactic acid bacilli with the wide range of resources afforded by percentage feeding, by ordering the various mixtures which we believe adapted to the need of individual cases to be ripened with lactic acid bacilli.

With this end in view, I arranged with the Walker-Gordon Laboratory that on order they would inoculate and ripen any percentage formula with lactic acid bacilli. Under this arrangement the physician only has to select the formula which he believes to be most favorable for the individual case and write a prescription to the laboratory, as, for example: fat 2, sugar 5, whey proteid 0.90; caseinogen 0.25, lime water 5, ripened with lactic acid bacilli.

This experiment has by no means proved to be a complete success. It soon appeared that the various modified milk formulas, when thus ripened, were not well digested. The fat in such formulas, after ripening, tended to separate out and float on the top of the bottle in the form of liquid butter. This is not a suitable food for these babies. In view of this, I soon found that I was obliged to confine my work to formulas containing no fat. Fat-free milk ripened with lactic acid bacilli was the food employed in the majority of the later cases in the series. When made from whole milk and undiluted, this food amounts to about the same thing as buttermilk, the difference being that in buttermilk the fat is removed by churning after the milk is ripened, and in the fat-free milk the fat is removed by centrifugalization before ripening. It is possible to vary the percentages of proteid and the milk sugar, and in this way the resources of percentage feeding may be in part employed in cases which present peculiarities of digestive power and requirements. Many patients, however, take the ripened fat-free milk undiluted without indigestion. In those cases in which this food is insufficient in caloric value, it may be alternated with a modified milk formula in which there is fat, or it may be used temporarily as a medicine only.

Later work conducted by Mr. Howe, of the Walker-Gordon Laboratory, has shown that if the milk is properly ripened, formulas may be used which contain fat as high as 1 per cent. without the fat separating out. I have as yet had no clinical experience in the use of such formulas.

VARIATIONS IN THE EFFECTS OF DIFFERENT STRAINS OF LACTIC ACID BACILLI

Metchnikoff and other foreign investigators have pointed out that the lactic acid bacillus as a species is subdivided into many different strains which are not all of equal value in combating fermentation and putrefaction. I have been able in part to confirm this observation as applied to intestinal fermentation in infants. I have found that strains of lactic acid bacillus isolated from other sources did not appear always to give such good results as the strain of which I originally hit on by chance. My figures are too few to afford absolute proof of this fact, but I think it very probable that in the use of living lactic acid bacilli to combat fermentaton it is necessary to select a strain of good or proved value. I think that some of the failures which have been reported from this method of treatment may possibly be due to the fact that different strains have been employed. For instance, I have found during the last summer that Hood's buttermilk, when given unpasteurized, did not produce such good results as it had in previous summers, nor did it in general give such good results as the ripened fat-free milk prepared at the Walker-Gordon Laboratory from the original strain. I do not know whether the strain of the lactic acid bacilli now employed in Hood's Laboratory is the same as that employed in previous years, but I do know that there have been changes in their laboratory, and that Mr. Keith is no longer their bacteriologist. Recently we have received in Boston from Bulgaria Metchnikoff's own strain of the lactic acid bacilli, which has proved of value in combating fermentation. During the coming summer there will be a sort of contest between the home product and the importation from Bulgaria to determine which is the more effective.

THE USE OF THE LACTIC ACID BACILLUS IN PRACTICE

In practice, when it is desired to employ this treatment of living lactic acid bacilli, the physician may use buttermilk from some dairy, giving it unpasteurized, or he may prepare his own ripened milk with a culture of the lactic acid bacillus obtained from the nearest dairy. The objection to obtaining the bacillus in this way is that it is a matter of chance whether or not an efficient strain of the organism is hit on. It is possible that the buttermilk, or culture, so obtained, may be of the highest efficiency, and, on the other hand, it is possible that it may have but little power against saprophytic fermentation. It is better to obtain a culture of proved value for use in those places where laboratory feeding is available; the culture may be kept in the milk laboratory, and the ripened milk may be ordered from there. When laboratory feeding is not available, or is not desired, the physician may prepare his own ripened milk in the following manner: He should first send for a bouillon culture of an efficient strain of the organism. Such strains may now be had certainly at the Walker-Gordon Laboratory in Boston, and possibly at other places. The cream is removed as far as possible from the milk, and then the skimmed milk is inoculated with the lactic acid culture. The inoculated milk is then kept in a warm place until enough acidity develops to sour the milk or to produce a very fine curd, when the milk is set aside and kept on ice for use. Some of this milk is set aside each day, to be used as a culture for inoculating the next day's supply, and in this way the strain of lactic acid bacillus may be perpetuated indefinitely, as it apparently has the property of killing out accidental contaminating organisms. The artificial tablets of the lactic acid bacillus, such as the lactone tablets and similar products, make excellent buttermilk for mere feeding purposes, but are not advisable when the purpose is to give as many as possible of the living bacilli.

INDICATIONS FOR AND LIMITATIONS OF THE USE OF LIVING LACTIC ACID BACILLI

The results of my investigation on the action of living lactic acid bacilli have led me to conclude that it is of great value in the class of infantile diarrheas designated as fermental. The numerous variations in the series show that it is not absolutely a specific treatment. It is possible that these failures may be attributed to the fact that the particular strain of lactic acid bacillus used is not effective against the particular strain of fermenting organisms concerned. It is probable that there are also many other elements tending toward failure of which we know nothing. I believe, however, that this treatment is an extremely valuable resource, and one which is applicable to a very difficult class of cases. I believe that it should be tried in every case of infantile diarrhea characterized by saphrophytic fermentation, and in every case of chronic intestinal indigestion and atrophy in which the movements are characterized by evidences of fermentation. I believe a ripened milk containing living bacilli to be the best food with which to begin feeding in cases of fermental diarrhea after the initial period of starvation.

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ABSTRACT OF DISCUSSION

Dr. J. P. Crozer Griffith, Philadelphia: I have no doubt that Dr. Dunn has employed the best milk in his preparation, but in country districts, where it is not possible to obtain the cleanliness desired, would he feel justified in trusting that the growth of lactic acid bacteria would do away with the necessity of pasteurizing? I am a great believer in the use of buttermilk, but I have always heated it after it has been made. What, too, in the ordinary nomenclature, would Dr. Dunn call this lactic acid germ? There are many different germs, various in name, which are capable of producing lactic acid.

Dr. Elias H. Bartley, Brooklyn: There are about twenty-five or more different kinds of lactic-acid-producing bacilli. What particular one does Dr. Dunn consider the best? I have had failures and I can readily understand from the statements made that some lactic-acid bacilli are satisfactory and that others are absolutely worthless. For the treatment of this fermentative diarrhea we must have a suitable strain. This being the case, it is important that we know what strain to select or where we can get it. I think Dr. Dunn was exceedingly fortunate, as he says, in happening to hit on a satisfactory strain in his experiments. That might happen to any one of us, but the accident is much more likely to be in the other direction of getting a wrong strain. It seems to me that the value of the paper lies in reducing what has been a haphazard practice to a scientific one. Has Dr. Dunn had any difficulty in getting children to take the ripened milk? I have had that difficulty in feeding children on buttermilk. Babies do not seem to like it and after a few days refuse to take it. Again, Dr. Dunn says that in some cases the children were not improved and in some cases they were even made worse. Could he determine beforehand which cases were suitable for this treatment and which were unsuitable?

Dr. Thomas Morgan Rotch, Boston: From time to time great advances are made in the milk laboratories in just such questions as this. One of the latest laboratory discoveries is how to make the curdled milk fine enough to go through the nipple, which is the most practical point. These are not infectious cases but are due to the action of the saprophytes. They are simply fermentative forms of diarrhea, but there is no true infection in the cases in which the lactic-acid bacillus is an important factor in their relief. Now as to the separation of the strain; two years ago in Stockholm, I met Professor McGee, the most prominent Scandinavian physician. They have made great advances there in the use of buttermilk and Dr. McGee said that they had the very best buttermilk in the world; but he had found that some years it would act satisfactorily and another summer it would not. Dr. McGee came over here to see what Dr. Dunn was doing and he has taken back with him some of this strain with which Dr. Dunn has been working. We do know that this strain which Dr. Dunn has differentiated is the most satisfactory obtainable. The fact that a physician does not have success with the treatment does not prove that the method is a failure because, in the first place, he must have the especial type of case to treat and then he must have the especial strain of bacillus for the treatment.

Dr. John Lovett Morse, Boston: I wish to call attention to a paper read before the American Pediatric Society in 1905 by Dr. H. T. Bowditch and myself, the title being "Certified Milk in Infant Feeding." In it, many of the points brought out to-day were covered. I am sorry to disagree with my colleagues. I have, however, treated the babies in the same hospital with the same buttermilk, with skim milk "ripened" with the same strain of the lactic-acid bacillus and with mixtures ripened with the same strain and have not obtained the same results as did Dr. Dunn. My experience is that the results from buttermilk and from milk mixtures "ripened" with the lactic-acid bacillus are no better than those obtained from other milk mixtures of the same chemical composition. The results are the same whether the buttermilk is pasteurized or not. In a certain number of cases, however, the results are striking. In these cases they are probably due to the change in the bacterial flora. If the lactic-acid bacilli have this favorable action in suitable cases, they should have just as unfavorable an action in unsuitable cases. At present I doubt if we are able clinically to determine in advance what children will be helped and what injured by this treatment. It seems to me, therefore, that until we have some method for the rapid bacteriologic examination of the stools we certainly can not use this method of treatment intelligently and perhaps not even safely.

DR. FRANK P. GENGENBACH, Denver: I had the pleasure of spending nearly a year in Finkelstein and Heubner's clinics in Berlin, and they feel that the feeding of buttermilk derives its value from its chemical composition and the low fat percentage, and they also believe that the diarrhea is due simply to indigestion and not to the bacteria and that when you remedy the indigestion by a starvation process and then build up the nutrition you have met the indications. They have secured the same results by the use of pasteurized buttermilk that Dr. Dunn has obtained from the use of non-pasteurized buttermilk.

DR. T. M. ROTCH, Boston: There is no question but that after a baby has had an attack of this condition that we suppose is due to the saprophytes, the intestine becomes so vulnerable to irritation that other organisms will take hold very readily. After a child has been infected one can still go on with the lactic-acid bacillus and though one can not get at the organisms that have gotten into the tissues, at least it is better to continue the lactic acid, thus taking care of the saprophytes that are present in the intestinal tract and at the same time supporting the child thereby.

DR. LEGRAND KERR, Brooklyn: What was the longest time that any particular infant was fed on these mixtures? Following the time that the child was fed on these mixtures was there any subsequent disturbance?

DR. C. H. DUNN: I did not go into all the different statistics as to the names of the various strains of this bacillus. There is an immense number of strains. Each dairy has its own strain which it selects on account of the aroma it imparts to the butter. I tested the strains from a number of dairies until I got a strain that had the particular action desired. This strain has not yet been given a name. Another satisfactory strain is the Bulgarian. There are doubtless other good strains. In reply to Dr. Griffith, I would certainly not rely on the bacilli to counteract unclean milk. In every case milk is very carefully pasteurized to clear it of other organisms and it is then ripened. Two things are involved in the treatment of fermentative diarrhea, one being the removal of the fermentation and the other the feeding of the baby. In order to meet the last condition it is absolutely necessary to take into consideration the baby's peculiarities of digestive powers and requirements. These two things must go together to get success. I know that many physicians have believed that babies could be put on a fat-free food and kept on it indefinitely, but I have seen cases in which a baby with this form of diarrhea was kept on this food for one day and then was put back on its regular food and got along well. This is a suitable method of treatment in those cases showing symptoms of autointoxication when there are green stools, etc. Cases characterized only by undigested food in the stools are not suitable for this method. Only those babies having greenish, loose stools should be put on this treatment. The very title of Dr. Morse's paper, "Acidified Milk in Infant Feeding," shows that he does not quite grasp what I mean. The feeding in these cases must be distinguished from the specific treatment of the fermentation. When one speaks of buttermilk in infant feeding it is an entirely different matter. I am perfectly willing to grant the value of buttermilk feeding in cases of fat intolerance. In these cases pasteurized or non-pasteurized buttermilk has proved of great value, but this has nothing to do with the specific action of the lactic-acid bacillus. I believe you will find that giving a bouillon culture of a good strain in suitable cases will give as good results as buttermilk. It is not a question of buttermilk or fat-free milk, for that is a question of the digestive powers of the child. This is merely a question of fermentation. There is no question but that in those fourteen cases the moment the pasteurization was omitted, no other step being taken, the movements changed to normal, the patients began to gain in weight and all symptoms subsided. I do not see how there could be a greater proof that this favorable result was due to the action of the living lactic-acid bacillus. I am talking merely of acute toxic cases due to saprophytic action. I have had other patients who could be fed nothing but acidified milk, but those were not cases in which the action of the lactic-acid bacillus was required, and the good result was due to the need of an acidified diet.

ADENOID HYPERTROPHY DURING THE FIRST YEAR OF LIFE AND ITS TREATMENT *

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Although a great deal has been written concerning adenoids in children, so that competent practitioners readily diagnose them and have them removed, little attention has been paid to these growths in early infancy. In New York at least a very considerable proportion of infants have adenoids that require removal during the first year.

Adenoids, if they are to be removed at all, should be removed as soon as they produce symptoms, and especially during the first year of life, for it must be remembered that children with lymphatic hyperplasia have one of the indications of lymphatic constitution and may not be good subjects for anesthesia, while adenoids may be removed during the first year without anesthesia.

Attention should be directed to this abnormality of early infancy, as the persistence of this trouble interferes with the proper development of the child, by reflex action, by the irritation produced by its presence and by the obstruction it causes.

The postnasal pharynx at birth is a space only ¼ inch high by ⅓ inch wide so that a slight adenoid hypertrophy at this period will cause obstruction. By the end of the first year this space has increased to nearly double this size.

Adenoid hypertrophy often produces symptoms during the first days of life, that is, the mother states that the child has had snuffles from birth. Cases of this sort are sometimes diagnosticated as syphilis, but the other characteristics of syphilis at this period are lacking. A case of this sort in which the patient was receiving specific treatment came under my observation during the past winter. Becoming convinced that the symptoms were due to adenoid hypertrophy and not to specific disease, the specific treatment was discontinued and the child carefully watched for other symptoms, but nothing more developed that might be interpreted as an evidence of syphilis.

The snuffles are particularly evident when the child is nursing and may occur during sleep if the child's mouth is kept closed. If the mouth is kept open snoring replaces the snuffles.

Snuffles result from an adenoid which produces irritation, and if it becomes large enough to obstruct the postnasal pharynx we have the further symptom of mouth-breathing.

Mouth-breathing, like snuffles, may be due to other causes than adenoid hypertrophy, but most of the cases of nasal obstruction during the first year are due to adenoid hypertrophy.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

A third indication of this condition during the first year is the presence of recurrent colds. These colds have the character of a cold in the head, there being some nasal discharge and fever, and they are accompanied sometimes by a pharyngitis. These recurrent colds during the first year are usually caused by adenoid hypertrophy.

A most characteristic sign of this condition is the cough. This cough is usually of a persistent character, often without any indication in the pharynx or bronchi to account for it. In some cases it is paroxysmal and may simulate closely the paroxysms of whooping cough. A case occurred in my hospital work during the past winter. A baby of six months, weighing 10½ pounds, was presented by the house physician as affected with whooping cough. The child was very anemic and in a desperate condition, vomiting apparently practically all its nourishment and coughing continuously day and night. The removal of the adenoid in this case stopped immediately both the cough and the vomiting.

A fifth symptom of adenoids during the first year is otitis media, a complication which may produce dangerous results. One only or all of these symptoms may be present.

The determination of the presence of an adenoid in a very young infant is not as readily made on account of the very small space in the postnasal pharynx. In making this examination, as in all examinations of young children, rapid manipulation avoids resistance and disturbance.

In order to make an adenoid examination have the child held with its head against the left shoulder of the nurse, the right arm of the nurse holding the hands and her left hand holding the forehead. Then if the left thumb of the examiner is pressed against the right cheek of the child so as to bring the buccal mucous membrane between the gums, the ends of the fingers of the left hand grasping the right side of the lower jaw, a firm grip is obtained which makes it impossible for a child with teeth to bite the examiner. The right index-finger is used for passing through the mouth into the postnasal space, or, if this is too small to admit the index-finger, the little finger may be used. The rough surface of the adenoid is quickly detected by one accustomed to making this examination, which may often be completed so quickly that the child does not cry.

An acute adenoid enlargement due to a cold which was not preceded by adenoid symptoms may occasionally disappear on hygienic treatment without medicine or with the syrup of iodid of iron, with or without cod-liver oil. For a chronic enlargement, however, only one method of treatment is available, and that is the removal of the adenoid by operation.

This operation in infancy can be done quickly without an anesthetic and with very little shock to the child and no lasting fright.

For the purpose of operation an assistant is necessary to hold the child, while a nurse should be present to assist and to remain awake by the child for two nights to watch for hemorrhage.

The child should be wrapped tightly in a sheet which binds the arms to the sides and should be held upright by the assistant with the back of the head of the child against the assistant's left shoulder, one of his arms pressing against the arms of the child, the other hand pressing its forehead back against the shoulder.

A gag is first introduced which is held by the nurse, while the operator, holding down the tongue, passes a Gottstein curette to the posterior nares, bringing the blade of the instrument as far up and as far forward as possible, then first by a backward followed by a downward stroke the adenoid may be removed in one piece.

In case it is not entirely free, forceps must be used. In most cases one use of this instrument is sufficient. The child's head is then thrown forward over a basin and the hemorrhage, if profuse, is checked by the application of cold to the face, cold water, ice-water, or ice. When the hemorrhage has ceased the child is put back in the previous position, the tongue depressed, the throat examined for particles that may have been incompletely severed and the finger introduced into the postnasal pharynx to be sure that the adenoid is completely removed.

The child is then put to bed without a pillow, lying on the side with the face forward, and the nurse is supplied with a spray containing 1 to 5000 adrenalin, to be used in case of hemorrhage, in which case the child should be placed with face upward and the adrenalin sprayed through the nose.

The shock of this operation is so slight that on a number of occasions the child has been asleep, having taken its bottle as usual, before the operator left the house.

Frequently it is desirable to operate when the child is still having some fever, this being often due to a cold to which the adenoid hypertrophy is contributing. I believe that a temperature of 100 to 101 may not be a contraindication of operation, as frequently such a temperature drops to normal after the operation and does not rise again.

In some cases, owing to the desire of the parents, an anesthetic must be given. It is well in such cases to mention the possibility of a lymphatic constitution and the danger of anesthesia in that case. If an anesthetic is used it should be nitrous oxid, and only sufficient should be used to produce primary anesthesia.

As to the results of this operation, a slight increase in the snuffles may be present for a few days; rarely is there any fever or evidence of pain, while the improvement in the symptoms and in the development of the child is always most satisfactory.

In conclusion, adenoid hypertrophy which causes persistent symptoms should be operated on as early as the fourth or fifth month of life; the operation should be done rapidly and without an anesthetic.

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ABSTRACT OF DISCUSSION

Dr. George L. Richards, Fall River, Mass.: I have been considerably interested in this work, especially in children under 1 year of age, in whom there is difficulty in breathing at night. These children are nose breathers during the day but not at night, and in these cases the question of operating for adenoids comes up. Dr. Morse has written much on this subject and as a result of his teachings many of us watch for this condition in children who are referred to us far more than we did. In these young children it is hard to get the finger into the nasopharynx without injury and examination with the mirror is out of the question. In such cases, if the child is held before a good light, the tongue depressed and the palate lifted up with a palate retractor, a very good view of the pharynx can be obtained. The question of anesthesia or non-anesthesia is more or less a question of the desire of the parents. Very little anesthesia is required, but as a rule I find that the parents prefer even that little. The Gottstein curette is a good instrument, but it has one disadvantage, namely, the possibility of cutting too deep. The Shütz adenotome, and the new one devised by Dr. LaForce, of Iowa, give good results.

With either of these instruments the entire adenoid can be removed with one stroke of the blade and practically as painlessly as the ordinary examination. A small adenoid curette devised by Vogel is then used in each fossa of Rosenmüller to be sure that no adenoid is left in this situation. The one essential thing in the young child, on account of the danger of getting an infection of the Eustachian tube, is to do the operation in a good light and see the field of operation; not merely to operate by the sense of touch.

Dr. Henry L. Coit, Newark: I have generally expressed myself as opposed to operation on adenoids in children under 1 year, but Dr. Freeman's plan is reasonable and convincing. My chief objections to the operation are the danger to small infants of anesthetics, and the fact that they do not well bear the loss of blood. I would be sorry to see this matter turned over to the throat and nose men if they go after these little children as they do after some others who do not have adenoids. I recall one case of a child of 14 months who had a continuous temperature, and the physician made a diagnosis of tuberculosis due to hypertrophy in the nasopharynx. An operation was done and they did not get anything. I was called, and after disproving tuberculosis, found that the child had never been weaned and was taking nothing but milk with still 7 per cent. sugar. There were malodorous stools, and besides this the child had indulgent parents and grandparents. I felt sure that faulty feeding was the cause of its malnutrition and fever. It was not a difficult feeding case, but a case of easy feeding with difficult parents and grandparents. A trained nurse was ordered for the purpose of hypnotizing the parents and weaning the baby and there was no further trouble.

Dr. John Lovett Morse, Boston: The members of the section probably remember that I read a paper on this subject two years ago. I want to exphasize again the fact that the symptomatology of adenoids in infancy is not that of adenoids in childhood. The symptoms in infancy are snuffles, repeated "colds," irritating cough at night, difficulty in nursing and otitis media. I believe that adenoids should be removed whenever they cause symptoms, no matter how young the baby is. I have seen them cause symptoms in babies only a few weeks old. I do not operate myself, because I believe that the operation demands the skill of a specialist. I disagree entirely with Dr. Coit and think that the operation should be performed by a man who is in the habit of doing these operations. I do not find that the specialists are unduly anxious to operate; in fact, my difficulty in Boston is to find men who are willing to operate on these babies for me. They object to operating on young patients and it is very difficult to make them appreciate how much harm adenoids may do in infancy. It is not recognized how frequently otitis media in babies is due to adenoids. A baby may have repeated attacks although the adenoids are very small. In fact, it is possible to overlook them in these cases unless a very careful examination is made.

Dr. Frank S. Churchill, Chicago: I do not think there is any danger of the throat and nose men operating too often. My experience also has been that they are afraid to operate on these babies. I have had difficulty in getting them to operate even when it is clearly shown that there are marked symptoms of adenoids. Unless there is something very urgent about adenoids or hypertrophied tonsils, I always like to have them operated on during the late spring or early summer, when the children will have time to recuperate before the winter. My experience has been that when operated on late in the fall the children are apt to have as many colds during the ensuing winter, or even more of them, than before the operation was done. It is hard to convince the nose and throat men of the fact because they do not see the children afterward. We do. That is a point on which I think the nose and throat men need education. As to a temperature of 100 of 101 F. being an indication for the removal of adenoids, I would want to be very sure as to what that temperature is due before having an operation done. I should want to watch the baby carefully for several days and make many cultures before subjecting it to an operation.

Dr. D. J. M. Miller, Atlantic City: I think that much of the odium that has fallen on this operation has been due to the fact that these patients have been so often subjected to an operation by some one not skilled in the work. I am much opposed to the general practitioner performing such an operation. When these symptoms occur in very young babies, it seems to me that the milder cases can be cured without operative interference by the continued use of a weak solution of iodin in glycerin, and by the use of antiseptic sprays. I have seen babies recover entirely under this treatment.

Dr. S. W. Kelley, Cleveland: As has been said, whatever the physician may wish, the question of anesthesia is often decided by the parents. If it is left to me I do not use an anesthetic when operating on infants. For this I have sometimes been criticized as cruel. In other cases the parents positively will not allow the use of an anesthetic. In operating without anesthesia a sitting posture is to be preferred. As to the manner of holding the patient, instead of having a sheet wrapped tightly about the chest and the nurse holding the patient over the arms with one hand and with the other hand holding the head of the patient, I prefer to have the nurse seated, reaching around from behind, hold the patient by the wrists, one in each hand, the patient's arms being crossed in front; and have an assistant, standing behind, hold the child's head between his hands, at the same time retaining the gag in place, unless a Whitehead gag is used. I object to scraping and crushing instruments, and prefer a sharp curette or one of the forms of guillotine.

Dr. W. D. Ludlum, Brooklyn: One point barely referred to is the question of recurrence. In my judgment these babies operated on very early, even when the operation is thoroughly done, sometimes have recurrences, and that I think is the reason of the indisposition on the part of specialists to operate even up to 2 years of age.

Dr. S. M. Hamill, Philadelphia: I am not ordinarily ultraconservative, and in a general sense I agree with what Dr. Freeman has said. If I understood him correctly, he does not operate in every case of adenoids, but only in those cases in which there is some evidence of obstruction or some definite interference with health. Of course, when there is some indication, I approve of the operation, but the idea of operating in every case of adenoid swelling, which may be but temporary, or on every child with otitis media merely because one thinks there may be some slight enlargement of the pharyngeal tonsil, as has been advocated, I believe to be wrong. I agree that the symptomatology of adenoids in early life differs from that in older children, but these symptoms are frequently only temporary and will disappear without operation, and unless the indications are very definite, I do not approve of operation during the first year. I believe also that, aside from the child, we have no right to subject the parents to the shock of any operation on an infant, which may be of questionable value.

Dr. R. G. Freeman, New York: As to temperature being a contraindication to operation, a persistent temperature of from 100 to 101 F., apparently due to the presence of the adenoid, is best eliminated by removing the adenoid. Recurrence of adenoids is due largely to the predisposition on the part of the child to produce adenoid tissue and not to defective operation, and it might well be questioned whether, if it were possible, it would be good policy to remove all adenoid tissue. It is, however, necessary to eliminate obstruction and irritation due to large adenoids.

Changes in the Hypophysis During Pregnancy.—Erdheim and Stumme have recently published an extensive monograph on this subject (G. Fischer, Jena), reporting research at Weichselbaum's Pathologic Institute at Vienna. The findings in 122 cases are classified. The hypophysis seems to increase in size and weight during pregnancies until it becomes permanently enlarged. The average weight in the multiparæ was 1.06 gm., with 0.81 gm. as the minimum, while the average for the primiparæ was 0.83 gm., with 0.65 gm. as the minimum. Some of the physical signs hitherto ascribed to the pregnancy are probably the result of this hypertrophy of the hypophysis, such as the swollen face, lips and hands sometimes observed toward the close of a pregnancy. A tendency to adenomatous hyperplasia was observed in fully 10 per cent. of the hypophyses examined.

SUPPURATIVE CONDITIONS IN THE JOINT REGIONS IN INFANTS AND YOUNG CHILDREN *

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Inflammations in and about the joints in children are interesting for several reasons. The anatomic diagnosis is very often puzzling. The point of invasion of the infecting germ is frequently impossible to discover; and, finally, the results of early treatment are surprisingly satisfactory, except in cases of general sepsis. In looking over the records of a large number of cases of inflammations in the region of the joints in patients under five years old, it is found that the cases fall naturally into certain groups to which it may be profitable to call attention. My topic does not include tuberculous arthritis, but it is important to keep in mind all the while the picture of tuberculous joint disease in order to mark the contrast to the conditions that will be mentioned. This is all the more necessary because the great body of physicians are prone to consider joint disease either as tuberculous, if chronic, or as rheumatic, if acute.

Rheumatism is so rare under two years that this diagnosis should be made in a young child only by exclusion of all other possible conditions. True, rheumatism does occur, both multiple and monarticular. When monarticular, and especially if involving the knee or hip, it makes one very anxious lest the condition be tuberculous. In fact, it is frequently mistaken for tuberculous joint disease. Inasmuch as rheumatism is so rarely a suppurative disease, I shall omit it from my discussion.

As those who see the conditions in their early stages, the members of this Section can do a great service in calling attention to other forms of joint involvement besides tuberculosis and rheumatism. With the acute suppurative conditions delay in treatment or treatment by fixation and rest, with or without traction, is apt to result disastrously.

SUSCEPTIBILITY TO JOINT INFECTIONS

The joints in infants and young children are very susceptible to all sorts of infections. The younger the child the more apt it is to have joint infection, and, moreover, the number of joints apt to be involved seems to be greater the younger the child. This susceptibility is undoubtedly due to the rapid growth taking place at the joint ends of the bones.

Any large joint may be involved but there is a proneness for the additional infection of the small joints of the wrist, hand and foot and sternoclavicular articulation.

Shortly after birth the infections most frequently met are those due to sepsis, and somewhat later, though still during the first few months, those due to the gonococcus. Both these infections are apt to be multiple. Between the first and fifth year the child may suffer from various types of infection of several or single joints. The infective agent may be the streptococcus, the staphylococcus, the pneumococcus, the typhoid bacillus, the influenza bacillus, and occasionally (with the hip joint) the colon bacillus. Children over five years old are much less apt to have suppurative conditions in the regions of the joints, and when they do occur the point of invasion can usually be determined. Joint disease in children over five is usually either tuberculous or rheumatic.

TYPES OF INFECTION

The groups of cases which it seems important to emphasize are the following:

I. Arthritis due to the streptococcus, or to the staphylococcus or to mixed infection by these germs.

II. Arthritis due to the gonococcus.

III. Arthritis due to the pneumococcus.

IV. Arthritis due to the bacillus of influenza.

V. Cases of osteomyelitis, including periostitis and epiphysitis.

VI. Cases of deep cellulitis.

VII. Cases of perinephritic abscess, psoas abscess and ischiorectal abscess.

I shall relate very briefly a few typical cases of some of the groups.

GROUP I.—ARTHRITIS DUE TO STREPTOCOCCUS OR STAPHYLOCOCCUS OR BOTH

Case 1.—*Purulent Arthritis of Shoulder Due to Streptococcus.*—T. R., 1½ years old, in Babies' Hospital from May 1 to May 20, 1903, had been a healthy baby; was nursed three days, then fed on condensed milk, rice water and soup; had chickenpox at 1 year. He had never walked; had no digestive disturbance; had purulent conjunctivitis at 9 months, lasting five weeks. He entered hospital with history of having had for three weeks a "sore shoulder." It was slightly swollen at first, growing steadily worse. The child was feverish at times. Physical examination showed the fontanel 1 inch in diameter and depressed. The child looked stupid. Heart and lungs were normal; abdomen flaccid; liver and spleen not enlarged; all superficial lymph nodes enlarged. The right shoulder joint was swollen and fluctuating but not red, though somewhat warm. Temperature was from 102 to 103. Aspiration drew thick, yellow pus, containing the streptococcus. Operation was done on May 4 under chloroform, incision being made into the joint. On the next day temperature was 102 F. at noon and the child was very restless. Being exposed to diphtheria he was given 500 units of antitoxin. On May 6 the temperature was under 100 and the wound was looking well. The child's weight on admission was 16 pounds, and on May 11, eight days later, was 17 pounds 4 ounces. On May 20 the weight was 17 pounds 8 ounces and the wound had entirely healed, joint motion being good.

Case 2.—*Multiple Septic Arthritis Due to Streptococcus, Bronchopneumonia, Acute Pleurisy.*—A. S., 20 months old, was in Babies' Hospital from Oct. 25 to Oct. 29, 1904. The baby was taken acutely ill with fever, but without vomiting or diarrhea, three days before admission to the hospital. She became very fretful, crying out when touched; had also slight cough. Examination showed numerous dry friction rubs but no change in the breathing sounds. Behind were heard fine crackling râles. There was some dulness on right base. Respirations were 80 to the minute. The spleen was two fingers' breadth below, liver one finger's breadth below ribs. There were some enlargements of the joints of both extremities. The left wrist was swollen and hot, the left ankle and foot also. There was a fluctuating swelling, painful, hot and discolored on the inner side of the right arm at about its middle. The temperature was 103 to 105.8 F.; pulse, 160; respirations, 60 to 80; leucocytes, 9,000. The swelling of the left wrist and the left dorsum of the foot persisted and the right shoulder also became red and swollen. On October 28 the leucocytes were only 7,000. On October 29 the temperature was lower and the baby died at 10 p. m. Examination for gonococci was negative. Aspiration of shoulder joint showed streptococcus pus. Autopsy showed the lesions mentioned above and also an acute nephritis.

Case 3.—*Mixed Staphylococcus and Streptococcus Arthritis of Knee.*—J. H., male, aged 20 months, was in the Babies' Hospital from Jan. 14 to Feb. 28, 1907. Four days previous to admission the child stopped walking and cried with pain in the feet. There was high fever and swelling in both legs below the knee. For two days the swelling was mostly in the left leg around the knee; great pain on motion. On admission the whole region of the left knee was red and swollen. Ice bags were applied. Temperature was 104. At operation on February 2 the knee joint was incised and 4 ounces of pus obtained. It showed staphylococci and streptococci. By February 28 the wounds were nearly well and motion of joint was good.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Case 4.—*Streptococcus Arthritis of Shoulder and Hip.*—J. S., male, 7 months old, was admitted to the Babies' Hospital Nov. 27, 1908. Three weeks before admission the child had abscess on the right side of the neck. There was some general rigidity after that time and six days before admission the child was said to have had a convulsion. At this time it was noticed that the left thigh was larger than the right and there was some pain on motion. On admission the left shoulder joint was found to be swollen and tender and the shoulder was not moved. The left hip was likewise larger than the right and the thigh held flexed by spasm. No definite point of fluctuation was made out. The following day Dr. Hartley aspirated the left hip joint, obtaining turbid yellow fluid which showed staphylococci and later streptococci. Three days later a retropharyngeal abscess containing streptococci was opened. One week after admission 37,500,000 dead streptococci were given by hypodermic injection. The temperature ranged from 99 to 102 and the joints remained swollen. Two weeks later thin pus was drawn from the left gluteal region and showed streptococci. The following day an incision was made into the left gluteal region and a small quantity of light yellow fluid obtained. The joint was not incised. No operative treatment was attempted for the shoulder, but both joints healed completely.

GROUP II.—GONOCOCCUS ARTHRITIS

During the past five years I have seen two cases of gonococcus arthritis at the Vanderbilt Clinic, both being monarticular, and there have been nine cases at the Babies' Hospital, most of which I have seen. Seven of these Babies' Hospital cases occurred in the gonococcus epidemic at the hospital in 1903 and 1904, and were reported in detail by Dr. Kimball. The remaining two cases occurred in 1907, and there was not a single case in the intervening years.

A peculiar feature of these cases is that they occur almost exclusively in male infants without any urethritis or other discoverable entrance port. One of my cases at the Vanderbilt Clinic followed gonococcus ophthalmia. The baby was three weeks old and had had ophthalmia from birth. The right knee became swollen and tender on the tenth day. By the use of alcohol dressing the inflammation was allayed and the synovitis subsided.

Another feature is that there are usually several joints involved and that the tissues around the joint as well as the joint itself are implicated. Often the para-articular swelling is the greater and on cutting through these tissues there is a large amount of serum and pus obtained, while there may be little obtained from the joints. There is fever for two or three days before the joint swelling appears, ranging from 101 to 103.

A final characteristic is that the inflammation, even though purulent, yields readily to treatment; usually to such simple measures as 60 per cent. alcohol compresses or aluminum acetate and alcohol, equal parts. If these measures are not successful, simple incision into the joint is all that is needed. The joints heal quickly with no impairment of the function.

Of course, some of the cases prove fatal.

The histories of two cases will be given briefly:

Case 5.—*Multiple Gonococcus Arthritis.*—C. J., male, aged 2½ months, was in the Babies' Hospital from Jan. 25, 1907, to Feb. 18, 1907; died of bronchopneumonia. He was brought to the hospital on account of vomiting and cough. Twelve days after admission, i. e., on February 8, had temperature for two days up to 101 to 102.6. Then there appeared on the dorsum of the left foot above first metatarsophalangeal joint a tense swelling, with shiny skin. On the third day the temperature was 102 to 102.4, and the abscess was opened, ½ ounce of pus being evacuated from the joint. The next day temperature was 101 to 102.6 and the right ankle was swollen and tender but not fluctuating; the swelling seemed rather diffuse. By noon the second joint of the left forefinger was swollen and tense. Ice poultices were used. White blood cells were 13,100; temperature, 99 to 103.2. On the fifth day the metatarsal joint had closed. There was no fluctuating in the other three joints. The next day the ankle joint was much improved. On the eighth day the toe joint was again swollen and fluctuating so it was opened again, a small amount of thick yellow pus being obtained. This pus showed typical Gram-negative intracellular diplococci. Culture showed the same organisms. On the eleventh day the right sternoclavicular joint was swollen and the temperature went up to 104.8. The next day the baby developed a strip of bronchopneumonia and had a temperature up to 105, dying the following day.

Case 6.—*Multiple Gonococcus Arthritis.*—E. v. E., 3 months old, male, was in Babies' Hospital from January 24 to March 16, 1907; admitted to hospital because he did not gain in weight and was vomiting. On February 11, just sixteen days after admission and two days after the case just mentioned developed, there appeared diffuse non-fluctuating swellings at the left ankle and at last joint of the right middle finger. The temperature had been elevated for two days from 100 to 103. White blood cells were 13,100. For the next four days no new joints were involved, but the temperature ranged between 99.8 and 102.6. On the fifth day the left elbow and wrist were swollen—a diffuse swelling seeming like a cellulitis or para-articular inflammation. On the seventh day aspiration but no pus. By the sixteenth day the temperature was about normal, and the joints remained swollen and tender. Sixty per cent. alcohol dressings were applied. On the twenty-fourth day diplococci were demonstrated in the thick green pus obtained from elbow and ankle; they were proved to be gonococci both by microscope and by culture. The patient was discharged with the joints still somewhat swollen, but not very tender.

GROUP III.—ARTHRITIS DUE TO PNEUMOCOCCUS

Case 7.—*Arthritis of Shoulder (Probably Pneumococcus).*—H. F., male, 9 months old, was in the Babies' Hospital from March 14 to April 4, 1905; discharged cured. He had pneumonia in both lungs when 6 weeks old; was very sick for twelve days. For three months there was swelling of the shoulder joint. Just as the child was recovering from pneumonia the mother noticed that the shoulder was swollen, hot and red; it had been so ever since. There was irregular fever. The left shoulder joint was found to be swollen. The child did not move the arm, and, moreover, it could not be moved freely. There was slight fluctuation. The temperature ranged from 99 to 102.2. Aspiration of joint was made on March 21 and pus obtained, and the next day an incision was made into the joint and a large amount of pus was evacuated, most of which seemed to come from around the joint. By March 25 the temperature was normal and the leucocytes were 12,000. On April 4 the shoulder was healed.

Case 8.—*Purulent Pneumococcus Arthritis of the Left Knee, Bronchopneumonia, Meningitis.*—A. McL., female, 8 months old, was in the Babies' Hospital from Nov. 21 to Dec. 10, 1903; discharged dead. The patient was apparently well until seven weeks before entering the hospital, when she had a typical bronchopneumonia on both sides. Recovery was satisfactory. A swelling of the left leg was present. When incised 2 ounces of pus which showed pneumococci was obtained. Following this there was considerable constipation. One week before entrance to the hospital there was vomiting of cerebral type. It was for meningeal symptoms that baby was admitted. The meningitis proved to be due to the pneumococcus as shown by examination of the cloudy fluid obtained by lumbar puncture. On admission the right knee was found enlarged and held flexed. The patella floated. Kernig's sign was absent on the right side; could not be tested for on the left because of rigidity of the knee. The symptoms while in hospital were those of acute meningitis.

GROUP IV.—ARTHRITIS DUE TO THE INFLUENZA BACILLUS

Case 9.—*Multiple Arthritis and Meningitis Due to Bacillus of Influenza.*—In the spring of 1907, in consultation with Dr. F. S. Fielder, I saw a 12-months old patient who had had cough, fever and prostration with comparatively high temperature and, in addition, swelling of the metacarpophalangeal joints of the right hand. Later the left wrist became swollen, and the right hip and one of the vertebral joints. The child was sick for twelve days and died with no definite symptoms of meningitis. We had agreed on the diagnosis of grip, but no lumbar puncture had been made and no withdrawal of joint fluid. But a very careful necropsy was made by Dr. Welch of the Cornell Laboratory, and from all these joints, five in number, was obtained a pure culture of the influenza bacillus, absolutely no other organism being present. At the necropsy examination of the brain was made, and from the sulci was obtained pus of similar character to that found in the joints. Moreover, the germs found by careful culture were also only those of influenza. This baby had had simply signs of great prostration; no signs of meningitis at all. It may be that the baby had meningitis from the beginning, but it was a most striking case of influenza bacillus septicemia with terminal meningitis.

GROUP V.—OSTEOMYELITIS, INCLUDING PERIOSTITIS AND EPIPHYSITIS

Case 10.—*Osteomyelitis of the Femur.*—M. A., 14 months old, was seen at Vanderbilt Clinic, Oct. 2, 1905; on October 2 was referred to Roosevelt Hospital. There was a history of some inflammation about the vulva six months previous, but there had been no vaginal discharge. For the previous week the left thigh had been swollen and recently had been increasing very rapidly in size. It was painful to the touch and was not used. There was no pain in the other leg nor in any other joints. The swelling of the left thigh was pear-shaped and involved the upper four-fifths. There was no fluctuation, but the thigh was very tender. There was general glandular enlargement. Temperature was 102.4. Operation evacuated pus which came from about the upper part of femur, not from joint.

Case 11.—*Probable Periostitis.*—B. B., aged 13 months, was in the Babies' Hospital from Nov. 18 to Dec. 18, 1907; had periostitis of the thigh following a perirectal and scrotal abscess. Three weeks before entrance the left thigh became swollen near hip joint; swelling increased toward the knee. There was marked pain on motion and child did not move the thigh. The swelling of the left thigh was very hard and not movable; seemed connected with the bone. The skin was tense but not red or shiny. Passive motion of the thigh at hip joint was possible. Temperature varied from 100.2 to 100.6. Ichthyol ointment was used on the thigh. After a few days temperature became normal and the swelling of the thigh subsided. When the child was discharged one month from the time of admission the thigh was much smaller and the baby's condition was greatly improved. In this case it is not positive that the inflammation was suppurative. It is probable that it was a periostitis.

Case 12.—*Probable Osteomyelitis of Epiphysis.*—J. F., male, aged 16 months, was in the Babies' Hospital from Aug. 13 to Aug. 20, 1906. Eight days after admission there was swelling on the lower part of the left leg. This swelling increased and prevented walking. Latterly there was redness and heat. The swelling was found to be over the lower end of the left fibula, most marked about the malleolus; but the redness extended below the ankle and to the back of the leg. There was fluctuation. The child would not bear his weight on the foot but passive motion at the ankle was possible. Two days after admission 1½ ounces of pus were evacuated through an incision made at the lower part of swelling. The connection with the bone was not made out. The child was discharged with the wound almost healed.

Case 13.—*Osteomyelitis of Epiphysis.*—E. W., male, 17 months old; was in the Babies' Hospital from March 23 to April 4, 1907. At noon on the day preceding admission the child seemed feverish, complained of pain in the right leg and refused to walk. The right knee was swollen on the morning of admission and the child kept the knee flexible. On examination the right knee and the tissues below it were found much swollen, measuring nearly two inches more than the opposite leg. The skin was shiny and there was some redness. Temperature was 103.4. Next day white blood cells were found to be 28,400, and of these 80 per cent. were polynuclear. Notwithstanding ice poultices and hot poultices, the swelling increased and became more tense. Two days later thick, green pus was evacuated through incision on right knee. The pus did not come from the joint but from below the joint. At the time it was not made out whether the bone was affected, but four days later denuded bone could be felt deep in the wound, showing that the point of infection had been the shaft of the tibia.

GROUP VI.—CELLULITIS

Case 14.—*Pneumococcus Abscess in Region of Knee.*—J. L., male, 7 months old, was admitted to the Babies' Hospital March 29, 1909. When 6 months old he began to have swelling about the right hip gradually extending toward the knee. He had always been well up to that time. About March 1 he was vaccinated and after that there was fever and the thigh became worse. Seven days before admission to the hospital the family physician aspirated fluid and then operated on the right thigh above the knee. On admission the patella was apparently floating, the knee swollen and held flexed. Pus was discharging from old wound above the knee. On the following day two openings were made into the abscess, one above and one below and to the inner side of the patella. The bone was not involved and the abscess seemed entirely superficial. Smear and blood from the wound showed pneumococci. Seven days after the first operation by Dr. Alfred S. Taylor the wound was reopened and an incision made into the external surface of the joint. A week later it was thought necessary to open the joint again, but an incision above the joint on the anterior aspect of the thigh obtained a large amount of pus. Culture from this showed pure staphylococci and no opening was found into the joint. The temperature after the operation ranged from 98 to 104, and so 50,000,000 dead streptococci were injected into the left arm on April 1. This was repeated on April 6, and on April 10 10 c.c. of Hiss's leucocyte extract was injected. On May 3 the left thigh was badly swollen and about 4 ounces of thick yellow pus were aspirated; 20 c.c. of normal horse serum were injected into the cavity. The culture from this pus showed short streptococci. From the time of the last operation the child improved very satisfactorily.

Case 15.—*Stereptococcus Abscess Around Left Hip Secondary to Infected Nevus on Face.*—E. H., female, 4 months old. When 3½ months old a small vein at the back of a nevus on the right cheek burst and there was a slight bloody discharge. After three days there were some small vesicles in this area which later discharged some pus. Next, the lymph nodes under the right jaw became swollen. The swelling was quite diffuse but subsided after a few days. At the same time it was noticed that the left leg was not moved but was kept flexed at the knee and the hip. The temperature ranged from 100.6 to 102 up to the day of my visit, when it ranged from 102 to 103.5. There was limitation of motion by muscular spasm and some enlargement of the left hip but no sure swelling of the joint. The baby was kept under observation, the thigh being immobilized in an aluminum acetate dressing. After two weeks the baby was operated on by Dr. William G. Erving of Washington, D. C. Aspiration of the abscess in the region of the left hip had shown a pure culture of streptococcus. The abscess when opened was found to be of considerable extent and had dissected out the trochanter and neck of the left femur, although the capsule of the joint seemed to be intact on exploration at that time. The abscess drained freely but did not heal until two months later. Meanwhile the baby's general condition gradually improved. The convalescence was uneventful save for suppuration of an infected lymph node below the right ear, which was the probable site of the original infection. One week after the healing of the wound in the thigh an *x*-ray examination showed apparent damage to the upper border of the acetabulum with slipping of the head upward out of the socket. Otherwise no bony damage was made out. From that time until the present, traction has been continued on the leg and passive movements are still carried on, so that while the capsule is still probably distended there is no measurable shortening. There is full rotation, full adduction, normal extension and 60 degrees of abduction; so that there is every reason to believe that the joint will be a good one. The baby's general condition is excellent. This report was received from Dr. Erving on May 29.

Case 16.—*Deep Streptococcus Cellulitis Extending to the Bone.*—S. R., female, 14 months old, was in the Babies' Hospital January 15 to March 12, 1906; developed diphtheria and was discharged unimproved. She came into the hospital for pneumonia. Discharge from the nostrils showed influenza bacillus. Ten days after admission the patient developed swelling and redness of the right metatarsus. Temperature went up to 103 F. Three weeks after admission the patient developed swelling near the left knee joint, especially to the outer side of the patella. The patella did not float. Aspiration showed thick pus, pure streptococcus. On the following day this pus was evacuated by an incision to outer side of patella; the knee joint was not involved. Two weeks later there was swelling of the right shoulder in front, below and behind. Incision at angle of scapula evacuated several ounces of pus, which came not from shoulder joint but from around it. Cultures showed streptococci. At one place bare bone of the seventh rib could be felt. On account of the development of diphtheria the child was sent away; all the wounds were discharging; no joints involved.

Case 17.—*Deep Cellulitis of Thigh Near Hip Joint.*—S. W., 5 weeks old, was in the Babies' Hospital from February 18 to March 14, 1906; discharged cured. The child had some gastrointestinal disturbances from birth and stomatitis when ten days old. At 4 weeks a swelling was noticed in the left groin; this increased and became tender. It involved the inguinal glands and was at time of admission more marked on the outer side of the thigh. There was redness and fluctuation; the child did not move the leg; passive motion was painful. Temperature was 100.6. On the day after admission 4 ounces of thin pus were evacuated through an incision on the outer side of the thigh. There was pus in the tissues surrounding the bone but no communication with the joint. Cultures showed *Streptococcus b. eris.* The wound healed entirely in three weeks.

GROUP VII.—PERINEPHRITIC ABSCESS, ETC.

Case 18.—*Perinephritic Abscess, Bronchopneumonia, Marasmus.*—H. D., 7 months old, was in the Babies' Hospital from Jan. 21 to Feb. 22, 1904. Death occurred from bronchopneumonia. The baby was brought to the hospital because it was wasting and crying all the time and had fever. On examination the abdomen was found enlarged, its superficial veins distended over the diaphragm. The liver was one inch below the ribs and the spleen just felt. Superficial lymph nodes were found slightly enlarged, particularly near the axillæ. The abdomen became more distended while in the hospital and began to point in back on the left side. Temperature ranged from 102 to 103.8. On January 30 the abscess was incised and about 1 ounce of pus removed. After the operation the temperature varied according to the freedom of the discharge. Finally the baby refused food and died in an attack of edema of the lungs.

DIAGNOSIS

In general the first point in diagnosis is to determine whether or not the inflammation involves the joint. This would rule out scurvy and syphilitic epiphysitis. It is difficult to say at the outset that the joint is not involved; even after operation the surgeon may at times be in doubt. Next the diagnosis should be made from tuberculosis and rheumatism. Deep cellulitis of the thigh, perinephritic abscess and ischiorectal abscess should be carefully distinguished from disease in the hip joint.

TREATMENT

It is remarkable that wet dressings of aluminum acetate or of 60 per cent. alcohol or of these lotions combined succeed in a surprising number of cases. If progress is not satisfactory, incision should be made at an early date. The operation need be simply an incision into the joint with evacuation and provision for thorough drainage. It is remarkable that such simple measures succeed so frequently not only in saving life, but in securing perfect functional results. Of course, when the bone is diseased, the infected focus should be thoroughly scraped out. Vaccine therapy, especially the use of streptococcus and staphylococcus vaccine, is often a very valuable aid.

CONCLUSIONS

1. Cases of arthritis and of what might be called "near-arthritis" are quite common in infants and young children.

2. In all cases a careful history of the infant from birth should be obtained. The inquiry should be directed particularly toward obtaining a history of umbilical infection, of early ophthalmia, of vaginitis, of pneumonia, typhoid and influenza.

3. The feeding history, especially the use of sterilized, carbohydrate, or proprietary foods, should be carefully scrutinized. An inspection of the gums may save an incision into the thigh. It goes without saying that the patient should be undressed entirely for examination. Men frequently fail in diagnosis, not because they do not know, but because they do not see the patient and do not make use of what they know.

4. The diagnosis of tuberculosis and rheumatism should be made by exclusion.

5. The earlier proper treatment is instituted the fewer the number of joints involved and the greater the chance of complete recovery of function.

110 East Sixty-second Street.

ABSTRACT OF DISCUSSION

Dr. C. N. Dowd, New York: The symptoms of these joint infections and other infections in infants are often so similar that diagnosis is very difficult and the most skilful and astute practitioner may fall into the trap thus constructed. Two illustrative cases have recently come to my notice—in one a meta-pneumonic hip inflammation was believed to be due to intestinal disorder. The physician and the diet were changed and hard feeling was engendered which could not even be allayed after the hip abscess was opened and the baby had recovered. The second case presented a particularly unfortunate sequence of events. A child of 1½ years, previously well, awakened from his nap crying, and from that time was feverish and ill. The attending physician, unable to relieve him, called in a well-known pediatrist, who believed the trouble to be intestinal and advised accordingly. A little later another pediatrist was called and then an orthopedic surgeon and after a few more days a general surgeon. An *x*-ray picture was then taken, as the region of the right hip was evidently the place of maximum inflammation. This picture revealed no abnormality, but a large abscess was opened a few days later just above Poupart's ligament. Prompt healing followed and all seemed well for a time. A few months later, however, a limp was noticed and examination and another radiogram showed a really serious condition—an absence of the head and neck of the femur, which had been destroyed by the inflammation. This, of course, made a permanent and very disturbing deformity. These cases are cited to illustrate the difficulties of diagnosis and the possible seriousness of the disease and also to indicate our debt to Dr. La Fetra for calling our attention to so important a subject.

Value of Playgrounds.—The head of the schools of New York city says: "Public playgrounds have induced children to come to school whom we could not previously reach; they are a potent instrumentality for raising the health, mentality and morals of the community."—*Hygiene and Physical Education.*

PRIMARY HEMORRHAGIC GLAUCOMA, WITH PROBABLE SYMPATHETIC INFLAMMATION

A CLINICAL AND MICROSCOPIC STUDY OF A CASE *

MORTIMER FRANK, B.S., M.D.
CHICAGO

Pathologic investigations on hemorrhagic glaucoma have been reported in considerable number, but, owing to the peculiar combination of conditions, this case is of interest and we can, I think, make some useful deductions from it. It points out that a broad iridectomy freeing the filtration angle is not always a preventive of glaucoma, although iridectomy is the best method of treating acute glaucoma. It further indicates that diminished depth of the anterior chamber and narrowing or closure of the filtration angle are not absolutely essential for the production of glaucomatous symptoms, but that, perhaps, hypersecretion and changes in the character of the fluids of the eye impeding proper filtration are sometimes concerned in the onset of glaucoma.

History.—On the evening of Jan. 14, 1908, I was called to see M. R., a man aged 31, of Jewish extraction. The day before the patient went to Milwaukee on a business trip feeling as well as usual, never having had any severe illnesses or any previous eye trouble. Twenty-four hours prior to coming under observation he suffered with a sudden severe pain in the left eye and within two hours the globe was intensely injected and vision lowered so that he could barely make out his hand. After a long anxious night a well-known Milwaukee ophthalmologist was consulted in the morning, who told the patient to get back to Chicago as quickly as possible.

Examination.—The left eye presented all the cardinal symptoms of acute glaucoma. The globe was brick-red, the scleral vessels full and the cornea steamy with diminished sensibility. The anterior chamber was equal in depth to its fellow and contained about two minims of dark-colored blood. The pupil was fully dilated and immobile, with the characteristic glaucoma reflex. The tension was plus 3. An ophthalmoscopic examination was impossible, owing to the corneal haziness and cloudiness of the vitreous. The vision was reduced to counting fingers at two feet. To the temporal side of the globe there was a large subconjunctival hemorrhage extending to the limbus and at places in the vicinity the cornea appeared to be studded with minute hemorrhages. The field of vision was about normal. The pain in and about the eye was very severe. The fellow eye was absolutely quiet and normal in every detail; vision equaled 6/6 plus. A careful inquiry into the patient's previous history failed to ascertain any cause for the attack. His habits were the best; he drank and smoked only very moderately. There was no venereal history. It was evident that one had to deal with a case of primary glaucoma of the hemorrhagic type. As iridectomy was not advisable, the usual medical remedies, eserin (physostigmin), one grain to the ounce, combined with cocain, dionin (ethyl-morphin hydrochlorid) 5 per cent., leeches and hot fomentations had to be relied on.

January 15, 8:30 a. m.: The patient had a good night and was now free from pain; T + 3; cornea hazy; anterior chamber of normal depth; pupil widely dilated, but hyphema less marked.

January 15, 8:30 p. m.: Condition was the same, except that the blood in the anterior chamber has absorbed, and cornea clearing and sensitive. T + 3; vision equaled fingers at six feet. On careful repeated chemical analysis and microscopic examination the urine proved normal.

January 16, 8:30 a. m.: The pupil was still dilated, but tension slightly lower than the day before. Cornea was bright and vision equaled 3/60. Ophthalmoscopy was now attempted, but owing to the cloudiness of the vitreous, the details of the fundus were not sharply defined, although the disc could be seen and appeared hyperemic, swollen and the vessels full. The retina could not be studied.

January 16, 8:30 p. m.: Since noon the patient had had some pain; the cornea was again steamy and vision reduced to fingers at two feet. The field was good. Paracentesis of the cornea was advised and concurred in by Drs. Casey Wood and Thomas Faith. On account of the previous hyphema and the still present subconjunctival hemorrhage, iridectomy was advised against.

January 17, 8:30 a. m.: The patient's condition was the same. Under 10 per cent. cocain anesthesia, the anterior chamber was slowly emptied with a paracentesis needle, and immediately on the escape of the aqueous small rivulets of blood made their appearance on the iris. Tension was slightly lower than normal, and iris somewhat contracted. Physostigmin was instilled in both eyes and the eye which had been operated on was bandaged.

January 18, 8:30 a. m.: The bandage was removed. Anterior chamber reformed; cornea clear; pupil dilated ad maximum. T + 3, and vision equaled fingers at one foot. Hemorrhages were absorbed. A posterior sclerotomy was now made between the superior and external recti muscles under 10 per cent. cocain, and about 10 minims of a clear, straw-colored fluid escaped. The eye was very soft. Calcium chlorid in fifteen-grain doses was given every three hours, with a view of increasing the coagulability of the blood. In addition, nitroglycerin was given, 1/100 grain, four times a day.

January 19, 8:30 a. m.: T + 3. The eye was free from pain; the pupil fully dilated; the field good. The vision equaled fingers at one foot. Small hyphema present and the cornea was slightly hazy.

January 19, 2:30 p. m.: Hemorrhage disappeared. Dr. W. H. Wilder in consultation agreed with me in still holding out against an iridectomy. A combined paracentesis and posterior sclerotomy between the inferior and external recti muscles was made, under 10 per cent. cocain. Directly after the sclerotomy, bright red blood flowed into the lower part of the anterior chamber, appearing to come from the region of the iris root. The eye was very soft.

January 20, 8:30 a. m.: The bandage was removed. The cornea was clear; hemorrhage absorbed; pupil widely dilated; no pain.

January 21, 9 a. m.: The patient's condition was unchanged. The use of physostigmin, 3 grains to the ounce, was begun.

January 21, 2 p. m.: T + 3. The pupil was slightly contracted; now about 4 mm. in diameter; was still free from pain excepting after instillation of physostigmin. Blood pressure and coagulation time were taken by Dr. Adolph Gehrmann of the Columbus Laboratories, who found blood pressure 95 mm., pulse 80, coagulation time two to three minutes. The blood pressure was taken every day following for a week, and never went higher than 115 mm.

January 22, 8:30 a. m.: Condition was as noted yesterday afternoon.

January 23: The pupil about the same; tension slightly lower. Physostigmin was increased to 4 grains to the ounce.

January 24: Pupil was 4 mm., but there was a perceptible diminution in tension; cornea clearing.

January 25: The condition was unchanged.

January 26: The cornea was bright. The patient counted fingers at three feet; there was no change in tension from that last noted. Owing to the cloudiness of the vitreous, a view of the fundus could not be obtained.

January 29: The pupil was 2 mm.; tension + 1.

January 30: The tension was normal; field was taken (Fig. 1) and the eye transilluminated for a possible tumor, but found negative. The patient counted fingers at one foot.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

February 4: The eye was nearly white; the tension normal; vision, 6/60; the pupil 3 mm. in diameter. This condition remained until February 11, 1908.

February 12, 8:30 a. m.: At about 4:30 p. m., February 11 there was some pain in the eye, which continued during the night, but the patient attributed it to the use of physostigmin. Examination now showed a new atack. The cornea was steamy; tension + 2; pupil about 4 mm. in diameter; the anterior chamber of same depth as its fellow. Iridectomy was now advised as a last resort, and the patient made aware of the possible danger. Operation was done under 10 per cent. cocain anesthesia, and a broad iridectomy performed with a Landolt keratome without a mishap.

February 13, 2 p. m.: The patient had been very comfortable: was free from pain. The bandage was removed; the cornea was clear: the anterior chamber reformed. Tension was slightly subnormal. The pupil was 4 mm.

February 16: Tension was normal; the eye quiet; physostigmin was reduced to 1 grain to the ounce.

February 17: The condition was the same. With the ophthalmoscope numerous large clots were seen floating in the vitreous, but nothing further could be distinguished; the patient was given syrup of hydriodic acid.

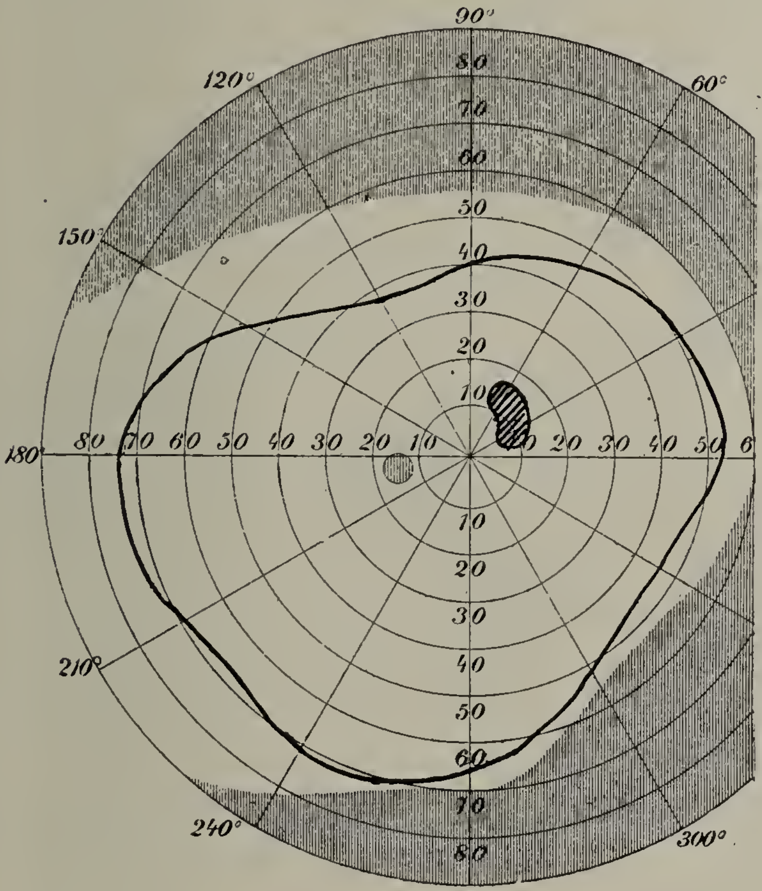

Fig. 1.—Field of vision for white (left eye), taken Jan. 30, 1908. Bright morning. Pupil 3 mm. in diameter. Disc, 1 cm.

February 27: The condition was the same. The vitreous had cleared so that the location of the disc with vessels could be made out. The vision equaled 6/60.

March 1: I did not see the patient from February 27 until this day. Tension was normal, but there was a broken ring of pigment on the anterior capsule, and one corner of the nasal pillar of the coloboma adherent to capsule. Physostigmin was stopped.

March 11: There was no change in the eye until this day, when a dust-like exudate was found on Descemet's membrane. Tension was slightly above normal; cornea clear.

March 12: The patient had pain during the night. The cornea was steamy; tension + 2. The use of pilocarpin was begun.

March 13: Tension was normal. The cornea was clear; keratitis punctata well marked.

March 14: Up to this date the right eye had been absolutely free from any discomfort, but this day there was a fine ciliary injection, some lachrymation, and a feeling of discomfort. Tension was normal. On examination with a loupe, numerous fine dots were seen on Descemet's membrane, which stained deeply with fluorescin. Right eye vision equaled 6/5 minus. Accommodation was impaired. The disc was slightly hyperemic and the vitreous hazy. The left eye tension was normal. The vision equaled fingers at four feet. With these conditions, enucleation of the left eye was immediately advised and done under ether anesthesia.

March 14: Treatment was given, consisting of mercurial inunctions, pilocarpin sweats, sodium salicylate, dionin 5 per cent. in right eye.

March 28: Exudate was absorbing on Descemet's membrane: there were large masses of exudate in vitreous. The disc was slightly hyperemic. Tension was normal. Vision equaled 6/7. There was a large subconjunctival hemorrhage in stump of enucleated eye.

April 18, 1908: Right eye vision was 6/6 plus; a few very fine spots of exudate were still visible on Descemet's membrane, with the loupe. The vitreous opacities were smaller; eye accepted + 0.75 D sphere; vision equaled 6/6.

February 23, 1909: The external eye was normal: the vision equaled 6/5 —. Some vitreous opacities were still present and a few very fine dust-like opacities were still remaining on Descemet's membrane.

MICROSCOPIC REPORT

The eye was given to Dr. E. V. L. Brown for anatomic study, and he has submitted the following report:

"The specimen (Lab. No. 264) was fixed in formalin followed by Zenker's fluid, and was cut in an anterior and posterior half, the anterior half sectioned throughout the area of the coloboma and the posterior sectioned horizontally. Some 400 serial sections of each half were made and every fifth or tenth stained.

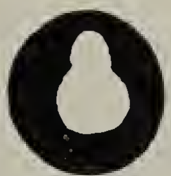

Fig. 2.—Anterior half of left eye as seen from behind (exact size).

"Seen from behind, the anterior half presented the appearance sketched in Figure 2; the lens is clear, the pars plicata and corona ciliaris are *in situ*, the processes and plicæ apparently normal and regular in arrangement. An accurate sketch of the position and extent of the operative coloboma area was made, because, clinically, a perfect and entirely effective iridectomy had been performed. No portion of the root of the iris could be seen behind the opaque corneoscleral limbus, either before or after the eye was taken out; yet, as shown in the sketch, the gross specimen shows that a good 0.5 mm. of the root of the iris had not been removed by the operation.

"*Microscopical Study.*—In a section through the center (section 205; see photomicrograph, Fig. 3) the curvature of the cornea and sclera are seen to be about the same. The cornea shows a tendency to collapse, and the center is slightly thinned to 0.5 mm. The epithelial layer is narrowed and elevated into empty vesicles in a number of sections; some of these (as section 110) have ruptured and left Bowman's membrane exposed. The outer cells are compressed and keratosed; the inner cell nuclei are thrown slightly forward or 'stilted'; many leucocytes are seen among the cells, especially in the upper portion of the cornea. Bowman's membrane is everywhere a trifle wider than normal and shows numerous delicate nerve canals as cross-striations. The body of the cornea is normal, although the very center takes a lighter eosin stain than usual. A narrow densely nucleated scar, corresponding to the site of the corneal section for the iridectomy, lies at the upper limbus; it commences just above the end of Bowman's membrane and runs obliquely from without, inward and downward at an angle of 45 degrees from the end of Bowman's membrane to a point 2.3 mm. central to the upper end of Descemet's membrane. Here at its inner end the cut layers of the cornea gape slightly, so that the anterior chamber bays forward into the back part of the cornea. The defect has the form of a narrow wedge, and both lips are bordered by the curled-up ends of Descemet's membrane; the surface of the triangle is covered by a single layer of new endothelial cells directly continuous with those lining the anterior chamber. The anterior end of the scar grades off into a mass of proliferating endothelial and stroma cells just beneath the limbus epithelium. A closely knit matrix of new stroma cells has definitely healed together the anterior three-fourths of the wound. In more temporal sections (see section 185) the defect produced by the operation extends forward as a narrow sinus one-half the way to the surface of the cornea. But the lips of the wound anterior to the sinus are so firmly knit together that no 'filtration cicatrix' could have been present. In sections still more temporal (such as section 110) several well-filled vessels of small size are seen running through the scar and are surrounded by considerable numbers of round cells. In all sections through the scar the surface epithelium is normally reformed, but nowhere dips down into the wound tract; the final repair has been effected entirely by proliferation of the fixed corneal cells. The lower one-half of Descemet's endothelium is thinned and the cells in part disintegrated; many clumps of small round cells and pigment detritus are found on the posterior surface of the cornea; some sections (Cf. section 110) showing as many as six clumps in the lower angle of the anterior chamber.

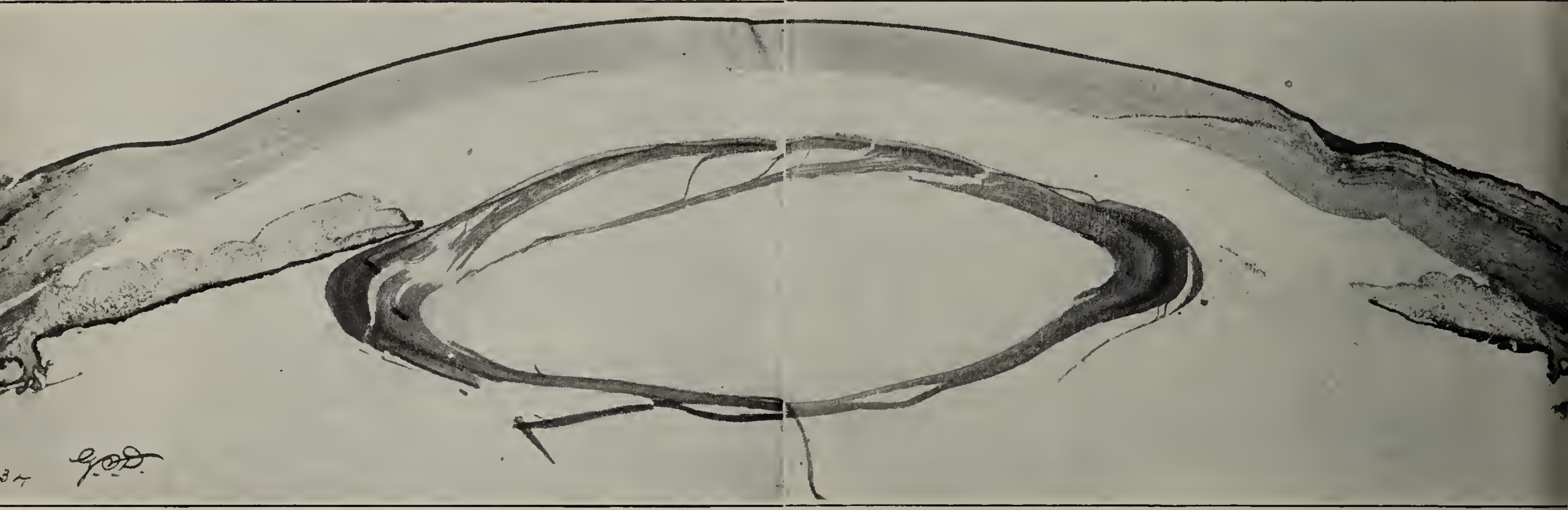

Fig. 3.—Section of left eye (photomicrograph, magnified 17 times). The upper limbus with the corneal incision and iridectomized iris lie to
it. One notes that: (1) The cornea is thinned; (2) the lens is thrown forward; (3) the chamber is shallow; (4) the sinus angles are open;
trabeculum corneosclerale is infiltered on each side; (6) the canals of Schlemm are open; (7) pigment epithelium is detached from the iris p
e and adherent to the lens capsule; (8) the iris stump above is 1 mm. long.

"The conformation of the anterior chamber and the sinus angles deserve special description. The entire lens system and iris body have been displaced forward, narrowing the chamber as a whole; indeed, the anterior pole of the lens rounds forward through the pupil to such an extent that the space between the anterior capsule and the cornea is reduced to two-thirds of a millimeter. The plane of the iris below is correspondingly thrown forward, and makes an angle of 25 degrees with the transverse axis of the eye in comparison with a normal angle of about 15 degrees. Yet the sinus angles are patent in all sections both above and below, and the fluids of the chamber have free access to the surface of the trabeculum corneosclerale; the angle above is reduced to a narrow slit but is free from cells. The iris below measures 3.23 mm. from the pupillary margin to the circulus major, whereas the iris above has been in a large part cut away by the iridectomy; the iridectomy extends from section 49 temporal to section 213 nasal; the columns are nearly parallel and nowhere in contact with the wound. The stump lies entirely behind and peripheric to the corneal portion of the corneoscleral limbus, corroborating the statement made above that the iridectomy clinically was a very peripheric one: yet accurate measurement of the shortest portions of the stump shows that over 1 mm. of iris, measured from the circulus major to the cut end, is still present (section 143). As stated before, the angle does not show any accumulation of round cells or plastic material in any section; a heavy eosin stain does not bring out more fibrin or albuminous material than would be expected in aqueous reformed after evacuation. What fibrin is present is almost entirely in the lower half of the chamber and disposed along its walls.

"The sinus angle above is wider than that below; the cut end of the iris stump does not reach the equator of the lens anywhere and consequently the iris above has been displaced backward into a position that is even more nearly at right angles to the optic axis than in a normal eye. The iris below is thrown forward so as all but to touch the base of the cornea in many sections; indeed, some anterior root synechia to the back portion of the trabeculum corneosclerale has taken place in the sections which go through the angles just a little temporal to the iridectomy area; sections still more temporal are again perfectly free from any evidence of union between the periphery of the iris and the back part of the trabeculum corneosclerale. Both surfaces are perfectly smooth and sharply defined in all except a few peripheric sections (as, for instance, section 49) which show good-sized pigment masses.

"The anterior half of the iris, trabeculum corneosclerale and canals of Schlemm are infiltrated with round cells; those in the iris are almost exclusively of the plasma cell type and only moderate in amount; the posterior layers of the iris do not show any considerable amount of cell increase; the stroma pigment cells are considerably disturbed toward the iris root both above and below. In most sections the infiltration about the canals of Schlemm is so dense or the cells so changed that only round heavy-staining nuclei are seen and the type of cell can not be made out. Despite this, the lumina of the canals are free and lined by a well-preserved endothelium in most sections and filled with blood in many; the position of the canals can always be readily made out. Further evidence of plastic inflammation of the iris is furnished by deposits of pigment detritus, clumps and short strips of pigmented cells on the anterior surface of the lens capsule. Their exact location and the relations to the pupil border of the iris are of great importance in any attempt to establish an order of pathogenesis in the findings.

"In the sections which go through the temporal (sections 60-120) or nasal (sections 144-205) portion of the lens capsule the pigmented cells lie in about the center of the portion of the capsule shown and these (vertical) sections go through two areas, each about 5 mm. wide, in the horizontal plane. The central sections (120-144) show no deposits on the center of the part of the lens capsule concerned, but do show deposits more toward the equator of the lens; these central sections go through a pupil area of about two-thirds of a millimeter in diameter. These evidences of posterior synechia, therefore, extend through an area 5 mm. in width and are absent through a zone of two-thirds of a millimeter corresponding to the size of a normal pupil. Furthermore, there was no actual posterior synechia present at the time the eye was removed, because no sections show adhesion betwen the iris and lens; the slight expanse of the iris below (only 3⅓ mm. overlap the lower equator of the lens for a millimeter in section 133) means that the pupil was well dilated at the last. One may conclude, therefore, that there was first formed a central posterior synechia in a zone corresponding to the position of the sphincter at a time when the pupil was small, and that this was later broken up by dilatation of the pupil and did not reform. These facts are in keeping with the clinical history.

"The ciliary body is markedly atrophic; the processes are all directed forward and much flattened down against the muscular portion of the body. The muscle has lost its triangular form and instead of a prominent angle on the inner anterior face, it presents a very flat curve extending forward from the region of the equator of the lens forward to the canal of Schlemm. No cell increase is found in any part of the ciliary body, and the stroma does not show any increase of connective tissue; a few of the processes are matted together at their bases; the apices are all free and there are no cells, fibrin or new tissue in the zonula ciliaris or anterior vitreous.

"The chorioidea is *in situ* and absolutely without any evidence of active or past inflammation, except where one of the sclerotomies was performed. Here the scleral wound is well healed externally, though gaping slightly internally; the cut ends of the chorioidea and retina are closely in apposition or slightly prolapsed in to the inner angle of the wound; the chorioidea shows round-cell infiltration for one-half to three-fourths of a millimeter only on each side of and in the wound and in a few sections only (section 289 and section 320); here the sclera is slightly ectatic. The chorioidea is not at all thickened by the process; the infiltration is never more than eight or ten cells in width from within outward; no epithelioid cells can be found; and the whole process apparently represents only normal wound healing after posterior sclerotomy. The retina in this area is atrophic and fused with the chorioidea into a dense atrophic scar permeated by broken-down pigment epithelium. Several *Drusen* bodies are found in the anterior part of one section, 380.

"Elsewhere the retina was detached in preparation and shows no evidence of inflammation aside from mantles of round cells about some vessels; it is markedly thinned. The vitreous is slightly shrunken in bulk, but otherwise quite normal aside from a considerable amount of fresh blood near the ora serrata below.

"One hundred and ninety serial sections through the portion of the optic nerve immediately behind the disc and including the entire course of the central vessels within the nerve show no evidence of inflammatory or atrophic changes in the nerve substance, and no changes in the blood vessels.

ANATOMIC SUMMARY

"We have therefore an active chronic iridocyclitis, healed operative corneal and scleral wounds, and an operative coloboma of the iris above. The eye shows effects of increased intraocular pressure in the displacement of the iris and lens system forward, in the flattening of the ciliary body and in the marked atrophy of the retina. No anatomic or histologic evidence of sympathetic inflammation is present. The presence of the chronic iridocyclitis throws doubt on the clinical diagnosis of primary glaucoma, and it is impossible to say from the anatomic findings that an anterior uveitis without clinical signs had not preceded and caused the glaucoma."

The conclusions deduced from the microscopic examination deserve careful consideration on account of their differences from the clinical findings. First, as to the non-existence of anatomic or histologic evidence of sympathetic inflammation: Although the changes in the iris, ciliary body and chorioid, as described by Fuchs, were absent, nevertheless the clinical symptoms were those of a sympathetic inflammation. Whether this was due to some agent entering the exciting eye as the result of the iridectomy, paracentesis or sclerotomy, I am unprepared to say. Until the pathologic anatomy of infiltrative-proliferative uveitis as described by Fuchs is found in all cases, and more firmly established as a pathognomonic finding, our diagnosis must be based on the clinical manifestations of the disease. The mere fact that the anatomic findings in this eye show a chronic iridocyclitis does not prove that it preceded the glaucoma and made it a secondary glaucoma, since the clinical precipitates on the posterior layer of the cornea and posterior synechia were not present until eight weeks after the onset of the primary glaucoma; but they did follow just exactly twenty-eight days after the iridectomy, and may very well have caused it. The patency of the sinus angles in all sections, and the lumina of the canals of Schlemm, free and lined by a well-preserved endothelium in nearly all sections, is striking and deserves careful consideration. That a gross obstruction of the filtration angle at any point in the filtration zone accounted for the increased intraocular pressure is not at all probable, and the fact that another attack followed iridectomy seems to be both pertinent and conclusive. It is more reasonable to assume, according to Priestley Smith, Bulson and Troncoso, inasmuch as primary glaucoma in a certain group of cases is dependent on disease of the blood or blood vessels causing an excess of fluid in the vitreous chamber, the exit of which is prevented by the swollen ciliary processes, or on alteration in the constitution of the intraocular fluids with failure in drainage, that the acute glaucoma here was dependent primarily on some vascular disturbance. As a result of this vascular disturbance, possibly due to some form of toxemia, there is diminution in the circulation of the blood favoring the occurrence of hemorrhages which result rather from transudation than from ruptured vessel walls.

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ABSTRACT OF DISCUSSION

Dr. S. D. Risley, Philadelphia: I have no adverse criticism to express concerning the treatment pursued, but I think that there is opportunity for another opinion than that given in the paper, as to the nature of the case. This man was free from arteriosclerosis. He was a healthy man, 31 years of age. The attack came on suddenly, without clinically recognized cause, and throughout the subsequent history of the case the different manifestations are, to me, unique. It is only when we come to the laboratory study of the enucleated eye that we get any light on its essential nature. The hemorrhages, which occurred, it should be borne in mind, only after the increase in tension came on, throw some light on the case. Whether the intraocular hemorrhage shall occur, as has been suggested here, during the period of low tension, or whether it shall occur with very high tension depends altogether on which set of vessels furnish the hemorrhage—the arteries or the veins. If we let up the tension very suddenly in a glaucomatous eye with high tension, by iridectomy or otherwise, it is natural that we should expect hemorrhage from a rupture of the retinal arteries or arterioles, whereas the higher the tension the greater the engorgement of the venous system of the eye becomes and therefore venous hemorrhage is more and more imminent. This man had no arterial disease, but the pathologic study of the ball shows that there was unquestionably a chronic iridocyclitis, *e. g.*, there was a deposit on the anterior capsule of the lens, left undoubtedly by delicate synechiæ which were torn loose with the dilation of the pupil when the high tension came on. It was at this point in the clinical history that the blood leaked through the pupil into the anterior chamber, pressed forward by the increase of tension, the hemorrhage being a leakage from the venous system of the eye. I think, therefore, that we are justified in regarding this case, not as one of hemorrhagic glaucoma, associated with sclerosis of the retinal arteries, but glaucoma with hemorrhages from the venous system of the eye. It is therefore separated as wide as the poles from hemorrhagic glaucoma with arteriosclerosis. It is important that we distinguish between them. The diagnosis should be changed to glaucoma with hemorrhages.

Dr. Walter L. Pyle, Philadelphia: Through the courtesy of Dr. Frank, a year ago I had an opportunity to examine this patient. From the clinical history and study of the physical signs at that time, I believed the case to be one of sympathetic affection, and despite the absence of the characteristic microscopic findings described by Fuchs, I am still of that opinion.

Dr. H. Gifford, Omaha: It seems to me that it is altogether premature for us to lay down a microscopic diagram of what we consider to be the findings of sympathetic ophthalmia and say that if the clinical picture, no matter what it is, does not give microscopic findings corresponding with the diagram it is not sympathetic ophthalmia. Remember we do not know what sympathetic ophthalmia is. The idea is wrong. Here is an eye that had abundance of chance to get infected. Several openings had been made. We find the evidence of iridochoroiditis. Whether it was of a kind to produce sympathetic ophthalmia we do not know. We have to diagnose sympathetic ophthalmia from the clinical picture and not entirely from the microscopic findings at the present time.

Dr. E. V. L. Brown, Chicago: I rise to defend my anatomic findings and their significance in this case. First it is true, as Dr. Gifford says, that we do not know the organism which causes sympathetic inflammation, but this does not lessen the value of anatomic facts. The same is true of sarcoma, yet we know when sarcoma is present and when it is not, and from the anatomic facts alone. We must accept Fuchs' statement as to whether the anatomic findings in sympathetic ophthalmia are constant or not. His statement is that in 181 eyes he made a clinical diagnosis either of sympathetic inflammation or of sympathetic irritation and from the anatomic study of these cases made up his mind as to a characteristic anatomic finding. Then, without reference to the clinical histories, he divided the specimens into two groups and, so to say, said of the first group: "Each of these 25 eyes caused inflammation of the fellow eye." And of the second group: "None of these 157 eyes caused inflammation of the fellow eye." Referring then to the clinical records, he found that 24 of the 25 eyes had caused sympathetic inflammation and that none of the 157 had done so. Now, it is true, this is not a constant finding, but in my opinion one must either doubt Fuchs' word or admit he has made a most remarkable contribution. These findings have been corroborated by others and in a recent number of the *Archives of Ophthalmology* Fuchs reiterates his conclusions.

I have shown the specimens of this case to Professor Fuchs as well as to Professors Salzmann and Wintersteiner and to Mr. Treacher Collins and two well-known members of this Section, and my report is made in keeping with the remarks of these men. I would not have had the temerity to present simply my own opinion of the case. Yet I have studied the facts with an open mind. I saw the patient before the eye was removed, and my clinical diagnosis was sympathetic inflammation. The eye had had many openings made into it; there was ciliary injection and there were also precipitates on the back of the cornea of the fellow eye. But many traumatized eyes do not cause sympathetic inflammation, and no one has yet described a picture of the inflammation in the second eye so typical that we may cover the primary eye and diagnose sympathetic inflammation from the appearance of the second eye alone. A perforating wound and precipitates on the back of the other cornea do not make a diagnosis of sympathetic inflammation, and unless we go back to the dark ages we must change a clinical diagnosis when reliable anatomic facts refute it. I hope Dr. Frank will state, in summing up, why he still considers this case one of sympathetic inflammation.

Dr. G. H. Price, Nashville: Dr. Risley called attention to a very significant point in this particular case, when he said it was glaucoma with hemorrhage. It is a well-known physical fact that in a locomotive boiler which has been carrying a pressure of 200 pounds to the square inch and in which the pressure has run down to 30 pounds or less, there may be an explosion due to some defect in the mechanism by which this pressure is suddenly released. Or if in a boiler that is carrying a temperature of several hundred degrees, and a steam pressure of 200 pounds, a valve is suddenly opened which liberates the pressure instantaneously, the water remaining in the boiler, which is above the steaming point, is immediately converted into steam and the result is an explosion of the boiler. This is the same principle of the high-tension hemorrhage in glaucoma when we do an iridectomy; the tension being immediately released, a hemorrhage occurs because the high blood pressure suddenly overfills the vessels, causing the walls to give way, since the restraining influence of the intraocular pressure is lost. There is another very simple physical experiment that perhaps bears some relation to the condition we find present in some of these cases. If we take a flask and fill it half full of water and bring it to the boiling point and allow it to boil a few minutes, and while boiling remove from the flame and cork it, the ebullition ceases. If we then apply cold to the flask the supernatant steam is condensed, the tension lowered and the water boils again. There may be hemorrhages, depending on these two physical principles. In the case reported, it was a low-tension hemorrhage, a venous hemorrhage, and as Dr. Risley has suggested, this in all probability was due to some autoinfection or autointoxication somewhere, and the condition set up in the other eye, for which the enucleation was made, was probably brought about by just such a condition. Now if we had reached the point where we could determine whether we had a glaucoma which was due primarily to a marked increase in tension *per se*, then we would be in a position to determine what was the best procedure. In the case reported by Dr. Bull, of exceedingly high tension, if he had made an iridectomy in that case the chances are that he would have had considerable hemorrhage, due to the sudden release of the restraining influence on the retinal vessels, and so the thing to do was to gradually decrease the tension by paracentesis. But in Dr. Frank's case it was due to an entirely different etiologic factor and the relief of pressure, unless it was total, had no effect on it.

Dr. F. H. Verhoeff, Boston: I have examined many cases of sympathetic ophthalmia and before Fuchs published his work had come to the conclusion that there was a perfectly characteristic lesion. There is one point, however, connected with the histology of it that to me is not absolutely clear. The essential lesions consist of focal collections of lymphoid cells in the centers of which epithelioid and occasionally giant cells appear. Now in the early stage it is a question whether epithelioid cells are present, or if so, whether they could be distinguished from the lymphoid cells. Thus, going by Fuchs' description, when examined in this stage we must say the case is not one of sympathetic inflammation, although strictly speaking we would be wrong. However, I have never seen a case of sympathetic ophthalmitis develop after an eye showing this histologic picture was enucleated, although I have examined many such. At this early stage, therefore, if such it is, it is safe to say that the other eye will not become affected. In regard to Dr. Frank's case, I would like to suggest that the most obvious explanation is that it was a case of serous iritis complicated by glaucoma. Probably the condition had been present sometime without being noticed by the patient. Afterward, as is usual, the other eye became affected.

Dr. Mortimer Frank, Chicago: I accept Dr. Risley's criticism of the title of my paper, but until Fuchs' findings are universally accepted as pathognomonic of sympathetic inflammation I still consider my case one of sympathetic ophthalmia according to the clinical symptoms described in the text-books, and I am willing that the pathologists should fight out the diagnosis by microscopic section.

HAIR BALL OR HAIR CAST OF THE STOMACH AND ITS OCCURRENCE IN CHILDREN

REPORT OF TWO INSTANCES WITH BIBLIOGRAPHY AND SYNOPSIS OF CASES REPORTED TO DATE*

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The occurrence of bezoars in various domestic animals is not uncommon and these strange concretions have been esteemed alike for their antidotal properties against poisons, and likewise because of the efficacy or charm they were supposed to possess against the plague, malignant fevers, vertigo, epilepsy, dysentery and other ailments.

Certain concretions likewise occur in man as a result of the ingestion of indigestible substances; thus Tidemand[1] reports a gastrolith or stone, probably of some resinous material and weighing 15 gm. Friedlander,[2] Vonnegut,[3] and Manasse[4] each record cases of gastric shellac calculus, while Ewald[5] quotes an instance of a carpenter who mistook his varnish for liquor and drank it; it formed a gastrolith. Outten[6] has reported a case of double gastrolith.

Concretions of vegetable origin are also occasionally found in the stomach of persons; thus Langenbach[7] and Kooyker[8] relate such instances. In Schreiber's[9] patient, a peasant woman, a phytobezoar was found at operation. The mass was composed of the fibrous roots of a plant (*Schwarzwurzel*) which is said to be a popular remedy for all sorts of ailments in Germany.

In Quain's case[10] a mass weighing 4 pounds and consisting chiefly of cocoanut fiber was taken from the stomach at autopsy. It had caused perforation and peritonitis. More fortunate was a woman mentioned by Capelle[11] who vomited a foreign body formed exclusively of vegetable débris and thus discredited a diagnosis of cancer of the stomach which had been made.

The most remarkable of these singular concretions, however, is the hair ball, or, more correctly speaking, the hair cast of the stomach, and sometimes of the intestines also, and, while they can not be called rare conditions, at least they are of infrequent occurrence, for, after a somewhat thorough search, I am able to find only 42 cases recorded to date. Oddly enough thirty-nine of the patients were females, the youngest of whom, my patient, was 8 years old at death, while the oldest person was an insane man, aged 43.

Curiously enough, very few instances of trichobezoar are found reported in German literature, the habit of eating hair apparently being more prevalent among English-speaking people, which led Bussell to say that "the eating of hair seems to be a favorite occupation of English women."

The history of my patient is as follows:

CASE 1 (BUTTERWORTH'S).—*Patient.*—Pearl F., white, aged 8, a native of Mississippi. Her father is living and well at 53; her mother living, 38 years old, has had bowel trouble all her life and does not enjoy good health. They have had eight children: Pearl, the subject of this history, and seven who are living. All look sickly, except the two oldest girls, 16 and 19 years old, respectively. The five younger children are boys and are 4, 6, 8, 11 and 13 years old; they are anemic and emaciated, but are never sick in bed. Examination of their feces show that seven of the nine members of the family have hookworm infection.

History.—The patient was sickly from birth until about 2 years of age, after which time she was in apparently good health, though pale and anemic all her life. She had ground-itch every summer since the age of 3. She was not so well for the last two years, though she had no definite ailment. A little more than a year before her death she complained of extreme weakness; would vomit frequently, but never any blood. The stools were dark in color and contained much mucus. She was known to eat sand and dirt for several months prior to her last illness. Not a member of the family suspected that she was eating her hair, which was worn long and loose over her shoulders. Her mental condition was not abnormal, yet she had odd ways peculiar to herself. She was very shy and secretive, good-natured, very placid and seemed to lack power of concentration.

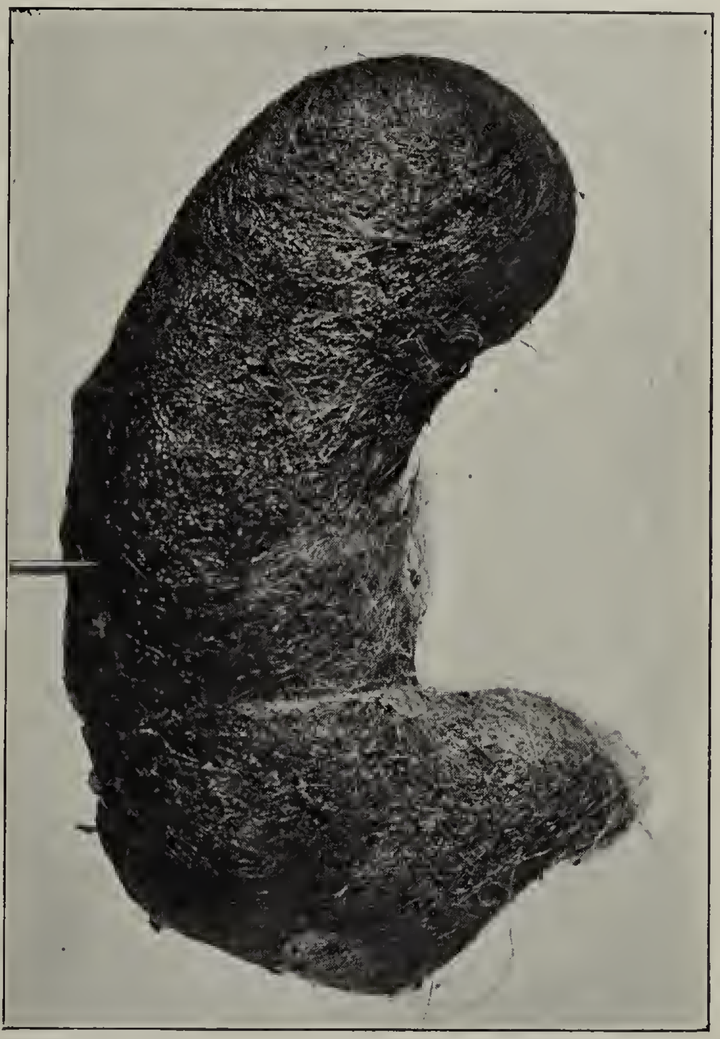

Fig. 1.—Hair cast of stomach, Butterworth's case.

Present Illness.—The patient had complained of abdominal pain for about two weeks, when she was seen (Nov. 3, 1908) by Dr. N. W. Fountain of Nicholson, Miss., to whom I am indebted for these notes. He discovered a firm crescent-shaped swelling in the epigastric region. The temperature was 104 F., respiration 40, and pulse 148 per minute. The patient was twice given a cathartic without satisfactory results. On the fourth day of her illness, 12 grains of calomel with soda were given, after which she had several loose copious movements. Temperature dropped to normal, respiration to 20 and pulse to 108. On the fifth day the blood was examined and tertian malarial organisms were found. The feces contained an immense number of uncinaria ova. The patient was given quinin, phenacetin and stimulants.

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* Read before the Section on Diseases of Children, of the American Medical Association, Atlantic City, June 10, 1909.

1. Tidemand: Norsk. Mag. f. Lægevidensk., 1865, p. 80.
2. Friedlander: Berl. klin. Wchnschr., 1881, No. 13.
3. Vonnegut: Deutsch. med. Wchnschr. 1897, No. 26.
4. Manasse: Berl. klin. Wchnschr, 1895, p. 723.
5. Ewald: Ztschr. f. klin. Med., xiv, No. 3. (Ewald's 1902 Ed., p. 376.)
6. Outten: Med. Fortnightly, St. Louis, Aug. 15, 1894.
7. Langenbach: Verhandl. der deutsch. Gesellsch. f. Chir., 1881, ix Cong., p. 54.
8. Kookyer: Ztschr. f. klin. Med., 1888, xiv, 203; abstr. Sajous' Ann. of Universal Sciences, 1889, vol. 1, c-23.
9. Schreiber: Mitt. a. d. Grenzgeb. d. Med. u. d. Chir. 1896, 1, 729.
10. Quain: Tr. Path. Soc., v, 145.
11. Capelle; Jour. de. méd. de Bruxelles, February, 1861, p. 147; Hemmeier: Diseases of the stomach, Ed. 3, p. 612.

Examination.—The patient entered the Charity Hospital (New Orleans, La.) on the eleventh day of her illness, when it was noted that she was very weak, emaciated and anemic. She rested on her side in bed with the knees bent and thighs flexed on the abdomen. All visible mucous membranes were pale. Examination of the chest was negative except that there was a pronounced hemic murmur. The abdomen was distended, somewhat tender and tympanitic. There was a firm somewhat irregular cucumber-shaped swelling occupying the epigastric region and losing itself in the hypochondriac region of the left side. The mass was only very slightly movable; firm continuous pressure caused slight indentation for a time. The child complained of pain after manipulation. The liver was slightly enlarged; the lower border was palpable one inch below the costal border; it was not sensitive; was smooth and hard. The spleen was not palpable in its normal region. There was considerable edema of the feet and legs. The urine was negative for sugar, albumin and indican, but contained a small amount of pus with hyaline and granular casts. Numerous uncinaria ova were found in the stools, as well as blood and pus. The blood was free from plasmodia. Hemoglobin was below 15 per cent.; leucocytes, 20,000 per cm. Differential count:

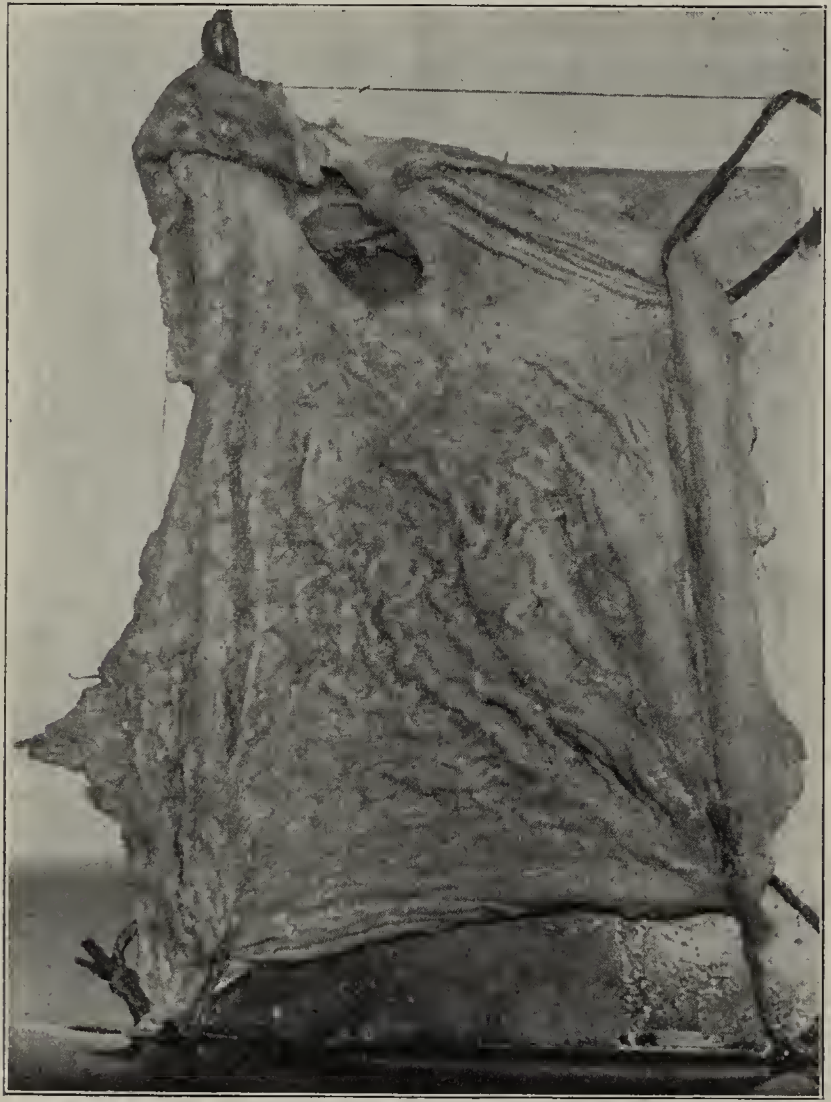

Fig. 2.—Stomach, Butterworth's case, showing ulcer.

Large mononuclears, 4 per cent.; small mononuclears, 13 per cent.; polynuclears, 81 per cent.; eosinophiles, 1 per cent.; transitionals, 1 per cent. Polychromotophilia, poikilocytosis and normoblasts are noted in the report. A von Pirquet test was negative.

Course of Disease.—The patient's condition was such that an exploratory operation was not considered justifiable. During the last two weeks of life she ran a constant temperature usually between 100 and 101; had a fairly good appetite; had daily several dark-colored, offensive stools containing mucus and blood. She was not nauseated, neither did she vomit. At times she complained of severe abdominal pain, which was paroxysmal in character and was so violent that it caused her to cry out aloud. She was intelligent and singularly placid. It was remarked later that several of the nurses had observed that she would twine slight strands of her hair (which was rather long and worn loose) around her fingers from time to time. No one saw her put any hair into her mouth and her family denied all knowledge of the habit. Examination of her scalp after death, however, showed several irregularly bald patches. She gradually grew weaker, became delirious, edema increased, and death occurred after an acute illness of twenty-seven days. Thymol was given on three occasions with negative results. In this connection it is to be noted that when the stomach was opened at autopsy, the contents, viz., mucus, food and hair ball, had a pronounced thymol odor. The last course, 15 grains, divided in two doses and given one hour apart, was taken forty-six hours before death.

Autopsy.—This was held by Dr. O. L. Pothier, pathologist to Charity Hospital, an abstract of whose report follows:

Body of white female child, which was still warm and was anasarcous. The lungs and heart were apparently normal. The abdominal cavity was found to contain fluid which seemed to be purulent. The stomach was filled with a hard mass which was resistant to touch, and measured 16 x 8 x 5.5 cm. On section a mass of hair was found which filled the whole cavity of the organ and resembled a cast of viscus. It was free in the stomach and was not adherent to any portion of the mucous membrane, which was covered by a thick coating of glairy mucus. In a dry state the hair cast, which was a fairly accurate mold of the stomach, was 4 inches wide at the esophageal end and had a fairly uniform thickness of 1¾ to 2 inches. It weighed, dry, 3¾ ounces, and was composed of human hair of a texture and color corresponding to patient's. Many of the hairs measured 15 to 18 inches in length. Incorporated throughout the mass were small particles of husks of grain and fruit. The mucous membrane of the stomach was normal except at a point 2 cm. from the pyloric extremity and along the lesser curvature and anterior wall of the organ. At this point there was a chronic circular ulcer about one inch in diameter which formed an abscess cavity and which was firmly adherent to the under surface of the right lobe of the liver. Pylorus and cardiac extremities were patulous. On examining the small intestine, several hundred uncinaria were found imbedded in the mucous membrane; very few were present in the duodenum, the greater number being in the jejunum. They progressively diminished in number in the ileum, none being found beyond the middle third of this portion of the intestine. There was considerable blood and mucus in the small bowel. The mucous membrane was of a shaven-beard appearance, and presented many points of punctate hemorrhage, particularly in the jejunum. The spleen was adherent to the diaphragm and to the posterior wall of the abdomen, and presented two superficial gangrenous areas, one at the lower pole which measured 4.5 by 3 cm.; the other along the anterior border and upper pole measured 8 by 2.5 cm. The kidneys and liver showed a parenchymatous degeneration.

The habit of swallowing hair is most often commenced in early life. Lyons[12] relates that a boy, 2 years of age, would pick at the carpet, woolen garments or anything of a hairy nature. He had convulsions, was given a cathartic, and passed by rectum a ball of hair about the size of a silver dollar, together with some smaller masses. He had no more convulsions. Jacobson's patient[13] acquired the habit at 2½ years of age; Allen's[14] Best's,[15] and Pollock's,[16] and the patient in the British Medical Museum case[17] at the age of 3, while it is recorded that Ritchie's[18] and Baudamant's[19] patients had been addicted to eating hair all their lives. In 75 per cent. of the collected cases the patients were

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12. Lyon: Boston Med. and Surg. Jour., cxlii, No. 15, p. 385.
13. Jacobson: A Hair Cast of the Stomach, Med. News, 1901, xxxvi, 245; abstr. The Journal A. M. A., 1901, xxxvi, 596.
14. Allen, W. L.: A Case of Gastrotomy for the Removal of Hair Ball, The Journal A. M. A., 1896, xxvi, 199.
15. Best: Brit. Med. Jour., 1869, ii, 630.
16. Pollock: Proc. Path. Soc., London, 1851-52, iii, 327.
17. Gould and Pyle: Anomalies and Curiosities of Medicine, 1897, p. 640.
18. Ritchie: Edinburg Med. Jour., 1849, ix, 931.
19. Baudamant: Jour. de méd., Paris, 1779, ii, 507.

known to have acquired this habit during childhood. In the majority of these instances it is not clear why such a perverted appetite existed; it is not noted that the presence of intestinal parasites played any important part in the etiology, for I find only two such instances, my own case and Quain's[10]

The fact that insane persons are addicted to eating foreign bodies has led to erroneous conclusions; those addicted to eating hair, almost without exception, are apparently mentally sound; demented subjects usually partake of more solid substances, viz., nails, screws, wood, etc. In this series only four patients were reported insane: those in Cobbold's,[20] Campbell's,[21] Gemmel's,[22] and Osler's[23] cases; and, with the possible exception of the last mentioned, all had such extraneous matter as nails, tacks, leaves, cocoanut fibers and twine, in association with limited amounts of matted hair, removed from the stomach.

In fact, Dandois' patient[24] is the only one reported to have been hysterical, while several narrators expressly state that their patients had good, active minds, and that there was not the slightest suspicion of an impaired mentality.

It is probable that the custom of young girls wearing their hair loose, flowing and hanging over the shoulders, is an important factor in favoring the establishment of the practice of biting the hair or passing strands through the mouth, or between the teeth. This is most likely the reason why hair bolus is practically confined to the female sex, and to its greatest frequency at an age corresponding to the period in a girl's life when her hair is worn long and loose.

Various reasons are given in explanation of the abnormal appetite; thus Paton's patient[25] ingested her hair "because it was so nice;" Knowsley Thornton's patient[26] had for years been in the habit of "eating the combings of her hair, and her sewing-cotton ends, to clean her tongue;" while Schönborn's patient[27] confessed that she swallowed hers in order "to make her voice clear;" Jacobson's[13] because she rather liked the tickling sensation produced by the hair in its transit to the stomach; another[28] adopted this method with suicidal intent and failed.

The localization of a trichobezoar is influenced by its size; it can be readily conceived that small tufts or mats of hair may be passed through the bowel. The observation of this fact alone suggested the diagnosis in at least three cases—viz., Thornton's,[26] Harvie's,[29] and Rather's.[30] Others were less fortunate in that the migrating concretion either caused intestinal obstruction (Brewster's[31]) or a fatal perforation (Ritchie's [18]).

A small concretion in the stomach will assume a spherical or oval form; with increase of size it becomes molded to the contour of the viscus and may overflow into the duodenum (Bruce,[32] Harvie,[29] Allen,[14] Von Bollinger[33]); and even into the jejunum (Pollock[16] and Baudamant[19]); less frequently the prolongation protrudes through the esophageal opening of the stomach. In only one instance was a hair ball limited to the esophagus (Gemmel[22]).

Most often only one hair bolus is present in the stomach; when two occur they appear facetted and join each other snugly. Such are reported by Wood,[34] Finder,[35] Russell,[36] and Osler,[23] while Day[37] records the only instance I can find of three distinct trichobezoars occupying the stomach.

These tumors vary in bulk and weight. One of the smallest, Pell-Ilderton's,[38] weighed, dry, 2¼ ounces, or about one-third of its original weight. Several were over 2 pounds; O'Hara's,[39] Baudamant's,[19] Dandois',[24] Swain's[40] weighed 5 pounds 3 ounces, while Mermet d'Hauteville's[41] is reported to have weighed about 6 pounds, and after nineteen days of desiccation weighed 2½ pounds; the latter two are the largest known.

The long-continued action of the digestive juices influences but very little the color or general character of the hair ingested; it has been explained (Bell[42]) that chemical changes occur in the stomach, with the result of deepening the shade of the hair composing the bolus; while the individual hairs are wonderfully pliant and strong, notwithstanding the influence of digestion, perhaps for years.

It is remarkable how little the general health suffers, considering the duration of the habit; eventually the limit of toleration is reached, and Nature protests. Pain is a fairly constant symptom; vomiting at some time or other is usual, and yet, considering the sponge-like and absorbent character of the hair cast, it need occasion no wonder if vomiting should not occur. This happened in my case, and, after seeing the character of the foreign body, I could readily understand that she could not have vomited even had she wished to. Hematemesis is comparatively rare, while dyspepsia and an abdominal tumor are usually the earliest and most constant of symptoms.

Alternating attacks of constipation and diarrhea are the usual rule; eventually the breath becomes exceedingly offensive and malodorous; anemia grows more pronounced, ingestion of food more difficult, emaciation and weakness more noticeable, and, unless surgical measures are instituted, with rare exceptions (Rather,[30] Stover[43]), death occurs from inanition or perforation.

Cancer of the stomach was the most frequent diagnosis; then followed a displaced spleen, floating kidney, fecal impaction in transverse colon and omental tumors.

In 33 cases in which the final results are obtainable 1 patient died following laparotomy, 16 recovered after

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20. Cobbold: Jour. Ment. Sc., 1886, xxxii, 52.
21. Campbell: Jour. Ment. Sc., 1886-87, xxxii, 212.
22. Gemmel: Lancet, London, 1894, ii, 432.
23. Osler: Personal communication from Dr. Maud C. Abbott, Montreal, Canada.
24. Dandois: Bull. de l'Acad. roy. de méd. de Belgique, 1903, xvii, 1031.
25. Paton: Brit. Med. Jour., Jan. 18, 1902, p. 147; quoted by W. Soltau Fenwick, Brit. Med. Jour., ii, 1696.
26. Thornton, J. Knowsley: Tr. Path. Soc., London, 1886, xxxv, 199; Lancet, London, Jan. 9, 1886, p. 57; quoted by Homans, Boston Med. and Surg. Jour., 1900, cxlii, 419.
27 Schönborn: Arch. f. klin. Chir. (Langenbuch's), 1883 xxix, 609; Berl. klin. Wchnschr., 1883, xvii, 260.
28. Wren: Internat. Jour. Surgery, October, 1908.
29. Harvie, J. B.: A Case of Hair Ball in the Stomach, THE JOURNAL A. M. A., 1908, l, 512.
30. Rather: Texas Med. Jour., April, 1906, xxi, 358.
31. Brewster: Boston Med. and Surg. Jour., 1900, cxlii, 395; abstr. Med. Rec., 1900, lxxxvii, 687.
32. Bruce: Canada Lancet, November, 1901, xxxv, 123; reported by Cathelin, Bull. Soc. anat. de Paris, iv, 106.
33. Von Bollinger: München. med. Abhandl., 1891, Ser. 1, No. 4; München. med. Wchnschr., June 2, 1891, xxxviii, 383.
34. Wood: Med. Facts and Observations, 1800, viii, 139.
35. Finder: Tr. New York Med. Assn., 1886, p. 1696.
36. Russell: Med. Times and Gazette, London, 1869, i, 681.
37. Day: Brit. Med. Jour., Dec. 20, 1902, ii, 1899.
38. Pell-Ilderton: Brit. Med. Jour., 1907, i, 18.
39. O'Hara (reported by Schlesinger, Medical Club of Vienna, 1899): Wien. klin. Wchnschr., No. 5, 1895; Bull. Soc. anat. de Paris, 1902, iv, 105.
40. Swain: Lancet, London, June 22, 1895, p. 1581.
41. d'Hauteville, M.: Jour. de méd., chir. et pharm., Paris, 1813, xlviii, 147-153.
42. Bell: Montreal Med. Jour., February, 1903, xxxii, 94, 131; also Reference Handbook, vii, 522.
43. Stover: Reported at Amsterdam City Medical Society, 1895; quoted by Harvie, J. B., THE JOURNAL A. M.A., Feb. 15, 1908, p. 513.

operation, 6 died of peritonitis and perforation, 10 died of inanition.

In only five of these cases was a correct diagnosis made prior to operation, viz., Harvie's,[29] Bell's,[42] Paton's,[25] Thornton's,[26] and Stelzner's,[44] and it is to be remarked that the judgment of these men was almost entirely influenced by a knowledge of similar cases. An exploratory operation revealed the true nature of the swelling in several, while 50 per cent. went to the autopsy table for a final solution.

In the light of my recent personal experience I am inclined to think that a most important element in the recognition of these otherwise puzzling abdominal tumors is a fairly active imagination of this condition which occurs most often in young female children.

I append a brief synopsis and bibliography of all cases reported to date, a total of forty-two.

Case 2 (Wood's).—This case is given from the personal recollections of Dr. Hummel: A child, aged about 7 or 8, was accustomed to eat dirt. The parents, having become aware of this habit, were accustomed to shut the child in a plastered room when it was impossible to keep it under observation. The child began to pick the plaster from the wall and ingest it. This went on for quite awhile. The child became cachectic and lingered in an anemic condition with gastrointestinal disturbances for perhaps a year.

Autopsy.—Death finally occurred, and, the symptoms in the case having puzzled the physician, a necropsy was done, and the stomach was found to contain a ball of cattle hair about as large as a hen's egg. It was then recalled that plaster had been eaten by the child, and that the hair found in the stomach had been ingested with the plaster months before.

It may be explained that the house in which the child had been kept was of antebellum days, and that it was the custom of those days to incorporate cows' hair from tanneries in the plaster used on the walls of dwelling-houses in order to give it consistence and to keep it from crumbling. It is readily realized, then, that the child had taken in the hair while eating the plaster from perverted taste. This case occurred in the practice of Dr. Wood of Shelbyville, Tenn., and the narrator merely has rather indefinite recollections of the circumstances of the case, for at the time he was himself a small boy.

Case 3 (Harvie's[29]).—A girl under 10 years, well nourished, always a moderately nervous child, bright in her school studies, began picking at carpets and woolen materials before she commenced to walk. She developed an early desire to pick her hair and swallow it. She was almost completely bald from the habit, and her mother noticed small masses of hair in her stools at odd times for many years. She was taken ill with nausea, vomiting and pain. A sausage-shaped mass was found in the epigastrium, which was thought to be impacted feces. A brisk cathartic was followed by a copious purge which contained a small bundle of hair. This with the previous history led to a diagnosis of probable hair ball.

Operation.—A hair-cast was found, which projected into the duodenum about 1¼ inches. It measured 13 inches along its greater curvature, with a circumference of 7 inches. It was composed of hair of varying length, absolutely black and densely packed. There were no definite areas of ulceration. The patient was discharged on the twelfth day after operation completely recovered.

Case 4 (Rather's[30]).—The patient was a girl 9 years old. At the age of 7 it was necessary to clip the child's hair short to keep her from eating it. She confessed to a craving for it, and would secrete herself and indulge her abnormal appetite. For two years "the stomach was easily outlined by palpation and was seemingly as hard as wood." Every few months the child had severe attacks of vomiting. Finally she was given half an ounce of castor oil every three hours for two or three days, and passed three or four rolls of densely matted hair, 2 inches in diameter and 8 inches long, which had little or no feces mixed with them. There was immediate relief and rapid recovery.

Case 5 (Bell's[42]).—A girl, aged 12, for nearly two years had attacks of vomiting, diarrhea and abdominal pain. The vomitus consisted mainly of frothy mucus, with at times particles of food. Six months before operation she had a very severe attack of vomiting and diarrhea, when a mass was felt in the abdomen, and was thought to be an abscess of the liver. The patient weighed 49 pounds, was very bright and intelligent. At about 3 years of age it was noticed that she had a habit of breaking her hair with her fingers, and some difficulty was experienced in overcoming the habit. A diagnosis of probable hair ball was made prior to operation.

Operation.—A hair cast of the stomach 18.1 cm. long and weighing 702 gm. was removed, and a small detached mass was seized in the intestine. Some of the hairs were found to be 18 inches long. At a second operation a hair cast of the intestine 8 inches in length was extracted. At a fourth operation a section of the small intestine was found riddled with openings and 2 inches of intestine were resected. Other perforations developed, and it was necessary again to resect a portion of the bowel, when a Murphy button was used, which she passed. Six months after she entered the hospital, after undergoing eleven operations, she was said to be "on the high road to recovery."

Case 6 (Paton's[25]).—The patient was an intelligent girl, aged 9, in whom a lump was accidentally found in the epigastric region. As she was known to have eaten hair and other similar substances since she was 3 years old, and had only been broken of the habit recently, a hair ball was diagnosed. There were no gastric symptoms.

Operation.—On opening the stomach, a mass consisting chiefly of the child's own hair, 7 inches long, weighing 7¼ ounces and having the general shape of the stomach, was extracted. The child recovered without a bad symptom. While the case was under observation, the doctor's cat had vomited a small hair ball and this suggested the diagnosis of hair ball in his patient.

Case 7 (Jacobson's[13]).—A girl, aged 11, had gastric disturbance for two and one-half years. She vomited a good deal of frothy mucus, but never at any time any food or blood. She had colicky pain, was constipated and lived principally on milk. A cucumber-shaped mass was noticed in her abdomen one year prior to operation. She was quite nervous; was an exceedingly bright child.

Operation.—A perfect cast of the stomach was removed, which on section was seen to be composed almost entirely of hair, with an occasional bit of string. The cast weighed 15 ounces. Later she admitted that from the earliest years of her life she had been in the habit of biting off the ends of her hair, which was always worn long enough to be brought to her mouth. At first she thought she did it simply because she was nervous, but later she rather liked the tickling sensation produced by the hair in its transit to the stomach. She made a good recovery.

Case 8 (Schopf's[45]).—A girl of 12, from her fifth year on, had been in the habit of biting her hair. About one year before the time of operation, she began to vomit and had colicky pains in the stomach; a tumor appeared and was diagnosed as a floating kidney.

Operation.—(At this time diagnosis was made.) A hair tumor weighing 160 gm. in a dry state was removed. A long process of the hair cast extended into the duodenum. Good recovery.

Case 9 (Brewster's[31]).—A girl of 10 had a habit of chewing the ends of two curls which were long and hung over her shoulders. She was sick for two weeks with what was thought to be indigestion. After repeated and unavailing attempts to move the bowels, symptoms of complete obstruction came on. In the median line over the bladder was felt a sausage-like mass about the size of half a banana.

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[44] Stelzner: Centralb. f. Chir., 1896, No. 31, supplement, p. 121.

[45] Schopf: Wein. med. Bl., 1899, No. 44, p. 863; abstr. Med. Rec., April, 1900, p. 703.

Operation.—The mass was in the small intestine, and when removed measured 3½ inches long and 4½ inches in circumference. It was composed of long and short hairs firmly matted together. The patient died five hours later

Case 10 (Stover's[43]).—A girl 11 years of age was in the habit of eating her hair, the temporal region being bald. She was said to have suffered with colicky pains in the upper part of her abdomen for two years. She presented symptoms of incomplete obstruction of the bowels for a period of ten days with rectal tenesmus, and then passed per rectum, with relief of all symptoms, a ball of hair which measured 2 inches in length and 3 inches in circumference.

Case 11 (St. George Hospital Museum[17]).—Gould and Pyle, quoting from the meeting of the British Medical Association, London, 1895, state that in the Museum of St. George Hospital, London, are masses of hair and string taken from the stomach and duodenum of a girl of 10. It is said that from the age of 3 the patient had been eating these articles.

Case 12 (Schönborn's[27]).—A girl, 15 years old, vomited incessantly, and became weak and emaciated. A freely movable swelling occupied the left half of the abdomen; it was painful at all times. The diagnosis rested between a floating kidney, movable spleen or a growth of the omentum.

Operation.—The stomach was found distended and a mass of hair weighing 281 gm. was removed. It was molded to the form of the gastric cavity and consisted of a network of short hairs felted together. The patient confessed that four years ago she had swallowed the hair in order "to make her voice clear." Recovery.

Case 13 (Dandois'[24]).—A girl, 16 years old, was not in good health from the age of 12, and gradually grew worse, had occasional convulsions, probably had hysteria. A hard swelling was discovered occupying the epigastric region, the motility was something extraordinary; the swelling resembled a fetal head; it was not thought to be the stomach.

Operation.—A compact dirty mass, malodorous and difficult to dislodge, was removed from the stomach; it weighed 1 kilo and measured 45 c.c. from pole to pole; circumference was 25 c.c. It was formed of layers of dark hair of same color as patient's.

Recovery followed.

Case 14 (Allen's[14]).—A girl, aged 16, had felt an oval and freely movable swelling in the region of the stomach for five or six years. She had lost weight during the last year, had some pain after eating, vomited frequently and had frequent attacks of diarrhea followed by constipation.

Operation.—A hair ball removed from the stomach was 17 inches long, including the part that extended into the duodenum, and 8½ inches in circumference at the greater curvature.

After operation patient admitted that she had been in the habit of eating her hair ever since she was 3 years old, and up to two years ago. She had bitten off, pinched or pulled out the hairs which she rolled around her finger into a ball or loop and then swallowed. Recovery ensued.

Case 15 (Von Bollinger's[33]).—A girl, aged 16, had been complaining for two and one-half years with symptoms of gastrointestinal catarrh, anorexia, vomiting, abdominal pain, diarrhea, insomnia, and finally only liquids could be ingested. A swelling was present in the epigastrium, which was thought to be a malignant tumor. Death resulted from exhaustion.

Autopsy.—The stomach and duodenum were distended with a great mass of hair measuring 55 cm. long and 11 cm. broad. As a child the patient had been in the habit of pulling out her hair and putting it in her mouth, which she must have swallowed.

Case 16 (Knowsley Thornton's[26]).—A girl, 18 years old, presented very few symptoms. There was a sausage-shaped swelling in the region of the transverse colon. Frequent doses of castor oil brought away a small concretion of hair and fecal matter.

Operation (Gastrostomy).— A hair cast was extracted measuring 9 inches long by 2½ wide, and which weighed 2 pounds. A sponge was unintentionally left in the abdomen, which was recovered by reopening the abdomen on the following day. Recovery followed.

The patient had been in the habit of "eating the combings of her hair and her sewing-cotton ends to clean her tongue." This she had done for about twelve years. Probably this is the first authentic case in which a correct diagnosis was made prior to operation.

Case 17 (Ranzi's[46]).—A young woman had had the habit of swallowing hairs, threads, etc., since childhood. Her symptoms were referable to the stomach, and there was a history of the passage by rectum of a hair ball four years previously. There was a movable tumor in the abdomen.

Operation.—A concretion composed of hair, thread and rubber bands was found nearly filling the stomach and duodenum down to the ascending position. This, when removed, presented a perfect cast of these organs, weighing, after drying, 440 gm. and measuring 22 cm. in the stomach and 44 cm. in the duodenum; in all, about 24 inches.

Case 18 (Berg's[47]).—A married woman, aged 26, had suffered for three years with symptoms of dyspepsia and anemia and with attacks of vomiting of glairy mucus. For two years there had been noticed a swelling in the epigastric region, and it had grown more rapidly during the last six months. In the epigastric and left hypochondriac region was a swelling as large as a hand, with a concave upper and a convex lower border. It could not be displaced toward the region of the kidney. The spleen was in its normal position.

Operation.—Laparotomy showed that the swelling was in the stomach and was composed of hair, short and long, forcibly compressed. It was removed piecemeal and weighed about 900 gm. Complete recovery ensued.

The mother of the patient said that when about 3 years old she had a habit of chewing hair, but the patient denied having done so since she could remember.

Case 19 (Russell's[36]).—The patient was a woman, aged 31. Her health had been good and she had never suffered from indigestion. She had a severe attack of hematemesis. A large swelling occupied the left side of the abdomen and extended into the pelvis. It was thought to be an enlarged spleen. The tumor was first observed when the patient was 14 and had been gradually increasing in size for the last seventeen years.

Autopsy.—The tumor was found to consist of a great mass of human hair, accurately molded to the shape of the stomach in which it lay. It had drawn down the stomach into a vertical position, so that the pylorus lay in the pelvis. The mass of hair was divided into two unequal portions, accurately fitted to one another, constituting a hard solid mass; it weighed 4 pounds 7 ounces, was 12 inches long, 5 inches broad, and nearly 4 inches in thickness. The mass was divided and found to be composed entirely of human hair intermixed with broken-down particles of food. The hairs constituting the tumor coincided exactly with the hair on the patient's head, both in color and in general character. They were of all lengths, up to 20 inches; most of them of the greater length. Not a single root could be found; all appeared to be broken off. A single small ulcer existed in the greater curvature of the stomach, which otherwise was healthy, except that the pyloric orifice was four times its normal diameter.

Case 20 (May's[48]).—A woman, aged 26, began to suffer pain, about three years before examination, in the left hypochondriac region, and soon noticed a hard swelling near the navel, a little to the left of the median line. When seen the tumor occupied the situation of a distended stomach; it was hard and slightly movable. The patient looked unhealthy, had lost flesh, and vomited occasionally. She gradually became weaker and died from exhaustion.

Autopsy.—The stomach was found adherent to abdominal wall, and in it was a mass of hair composed of numerous small hairs matted together by mucus. The concretion measured 20 inches in its longest and 12 inches in its shortest circumference, and weighed 26 ounces; when dry it weighed 10 ounces.

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46. Ranzi: Wien. klin. Wchnschr., December, 1905, No. 48; abstr., The Journal A. M. A., 1905, xliv, 588.

47. Berg, John: Nord. med. Ark., xix, No. 25; Sajous' Ann. Univ. Med. Sc., 1889, i, 23.

48. May: Tr. Chir. Soc., London, 1855; Assn. Med. Jour., London, 1855, ii, 1147.

Inquiry revealed the fact that the patient had been in the habit of swallowing her hair ever since she was 4 years old, a period of twenty-two years. She did not exhibit any trace of mental alienation.

CASE 21 (POLLOCK'S[16]).—A young woman, aged 18, had always been delicate, but more so during the last year. For several months she had been suffering from a swelling, about the size of an orange, in the epigastric region. It was not painful on mild pressure, was apparently solid and slightly movable. Following a paroxysm of vomiting she complained of much pain; this recurred on the following day and soon afterward she collapsed and died.

Autopsy.—There was evidence of recent peritonitis. A mass was removed from the stomach and duodenum, which consisted chiefly of long black hair and pieces of strings matted together. That taken from the stomach had a length of 6 inches, a width of 3¾ and a thickness of 2½ inches. The duodenal mass extended into the jejunum; it was 14 inches in length and 2¼ inches in diameter. It appeared that the patient had been known to eat hair since 3 years of age.

CASE 22 (RITCHIE'S[18]).—This was reported by Dr. Steele. A factory woman, 21 years old, had severe and painful vomiting with alternating constipation and diarrhea. A hard swelling was found occupying the whole epigastric space. It was not discovered until after her death that the patient had all her life evinced a morbid appetite for chewing human hair.

Autopsy.—A hair mass was extracted from the stomach, which weighed 21 ounces. It was devoid of a nucleus and seemed composed chiefly of human hair, with here and there small remnants of thread and sponge closely agglutinated with mucous secretion. Near the ileocecal valve, two smaller masses were found, weighing, respectively, ½ ounce, and 1½ ounces, and having the same distinctive characters as the one already mentioned. That portion of the intestinal canal lying in close approximation with the lower concretions were found disorganized and perforated.

CASE 23 (MERMET D'HAUTEVILLE'S[41]).—A girl, 17 years old, often had abdominal pain and irregular fever; had vomited more or less constantly for three years. A swelling of large size of the contour of the stomach and freely movable was present in the epigastrium. She died of inanition.

Autopsy.—On opening the stomach a compact mass of hair was seen extending from the esophagus to the upper jejunum; the central core consisted of the kernel of a nut. The mass was of the same color as the patient's hair. She was almost bald. When first removed, the hair cast weighed about 6 pounds, and after 19 days of desiccation weighed 2½ pounds.

CASE 24 (BAUDAMANT'S[19]).—This is the earliest reported case of hair ball. It occurred in a boy 16 years old, who was seemingly unable to resist the impulse to pull out and swallow his own hair and that of others also; it is reported of him that he ate all the hair he could find. He had diarrhea, frequent and violent vomiting and fever. An oval mass could be felt a little below the pit of the stomach which became very painful. He died of exhaustion.

Autopsy.—Two masses of hair were discovered; the largest of these filled the stomach and extended throughout the duodenum; this had a cherry-stone for its nucleus. The smaller mass was in the jejunum. The combined weight was 2 pounds and 1 ounce. When dry they weighed 11½ ounces.

CASE 25 (SIRAUD'S[49]).—A girl of 16 presented very few functional signs. A hairy mass was removed from the stomach, which weighed 765 gm. and measured 28 c.c. by 7 c.c. in width. The condition had been diagnosed as fibroma, tuberculous peritonitis, splenomegalia or cyst of the pancreas.

CASE 26 (STELZNER'S[44]).—A young woman 18 years old, habitually bit off the ends of her own hair and of other girls also.

Operation.—Stelzner, who knew of Schönborn's case, suspected hair-ball prior to operation. A hair-ball weighing 180 gm. and the size of a goose egg was found at operation. The patient made a good recovery.

CASE 27 (SWAIN'S[40]).—A woman of 20 had had almost daily attacks of vomiting during the last five years. There was a large abdominal swelling, well defined, solid and very movable laterally. It stretched obliquely across the abdomen from the left costal border down into the pelvis; the fingers could be passed around the lower border, between it and the pelvic cavity. It was continued up behind the left costal cartilage by a thick pedicle apparently about 10 or 11 inches in circumference. There was no tenderness on pressure. A tentative diagnosis was made of tumor of omentum or a splenic enlargement.

Operation.—The mass was removed piecemeal from the stomach. Mucous membrane at the pyloric end was studded over with circular patches of granulations about the size of a shilling. Cardiac extremity was healthy. The concretion weighed 5 pounds, 3 ounces. Recovery ensued.

It was recalled that at one time the patient had had a very fine head of black hair, which fell below her waist, and it was noted that on three occasions during her illness she became quite bald.

CASE 28 (COBBOLD'S[20]).—An idiotic, epileptic and hydrocephalic boy of 18 had been in very poor health for more than a year when obstinate vomiting set in, and he died from exhaustion.

Autopsy.—The peritoneum showed no signs of inflammation; the stomach was enormously distended and contained an elongated ball of human hair and horse hair, all closely matted together. The mass in its wet state weighed 2¼ pounds. There were no signs of irritation, inflammation or ulceration of the mucous membranes of the stomach or intestines.

CASE 29 (O'HARA'S[39]).—Reported by Herman Schlesinger. A woman, 22 years old, was delirious following an attack of grip, during which time she ate her hair. There was no gastric trouble other than continued pain. A swelling was present, about the size of a cocoanut, which was freely movable. This had been diagnosed as a hydatid cyst or a movable kidney.

Operation.—A hair ball was found which filled the stomach and which weighed two pounds. Good recovery.

CASE 30 (WOOD'S[34]).—A young woman of 22, always healthy until about the age of 18, had symptoms of chlorosis, vomiting, constipation, and abdominal discomfort resembling labor pains; passed a small lump of hair by the bowel.

Autopsy.—The abdomen contained a large quantity of dark-colored fetid fluid. Except for the stomach, the organs were normal; the stomach contained two lumps of hair which nearly filled the viscus. The hair in color and texture seemed much like the patient's own, which was noticed to be very short. The total weight of casts when dry was 16½ ounces.

CASE 31 (WREN'S[28]).—A widow, aged 23, had complained for three months of almost constant pain in the epigestric region, with occasional vomiting. Examination revealed a movable swelling extending down to within one inch of the umbilicus, and up under the ribs and ensiform appendix. Malignant growth was suspected.

Operation (Gastrostomy).—A large mass of hair was delivered from the stomach which weighed 13½ ounces and measured 7½ inches by 5 inches by 1¾ inches thick. After drying, the cast weighed 4 ounces.

The patient afterward stated that because of an illegitimate pregnancy she tried to commit suicide. She pulled her hair out, and swallowed it for that purpose. If so, the hair had been in the stomach for two years and seven months.

CASE 32 (BRUCE'S[32]).—In a non-hysterical woman, aged 26, two months prior to the birth of her child, a swelling which gave no symptoms, was discovered in the left hypochondrium. Twin pregnancy was suspected. The mass persisted after delivery and it was then thought to be a displaced spleen.

Operation.—A hairy mass was removed from the stomach, which weighed 23 ounces and measured 24 inches long and was two inches in diameter, coming to a point in the duodenum into which it extended about 6 inches. The cast consisted entirely of hair twisted and intimately woven together; of a brownish color, and exactly the same shade as that of the patient's. Single hairs were dissected out, ten and twelve inches in length.

CASE 33 (THORBURN'S[38]).—Reported by Pell-Ilderton. A woman, aged 29, for more than two years had had more or less

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49. Siraud: Soc. de chir. de Lyon, 1901; reported by Cathelin, Bull. Soc. anat. de Paris, 1902, iv, 107.

vomiting after meals; she could usually keep food down if she remained in a recumbent position. The pain was persistent. A mass could be felt in the epigastrium, extending over into each hypochondrium, which rose and fell with respiration, and was freely movable. The patient's hair was scanty and was about 3 inches long.

Operation.—The stomach was opened and a hair ball, in form and contour resembling this organ, was removed. It weighed in the dry condition 2¼ ounces, and measured, length 3¾ inches, depth 2¾ inches, width 1¾ inches.

After the operation the patient was occasionally caught eating her hair, and she admitted having been addicted to the habit ever since she had scarlet fever, fourteen years before.

Case 34 (Best's[15]).—A woman, aged 30, had begun to suffer pain in the stomach at the age of 15, but was able to continue her duties as a domestic until the age of 24. From that time on she was constantly under treatment. A hard nodular tumor could be felt in the epigastrium which was thought to be scirrhous cancer of the stomach. This she stated increased in size. While at work in a harvest field she fainted from violent pain in the abdomen and died seven weeks later.

Autopsy.—A large concretion of human hair was found in the stomach and lower part of the esophagus, forming a mold of the cavities. The mass weighed 30 ounces avoirdupois. Death was due to peritonitis. There was perforation of a chronic ulcer about the size of a shilling, in the posterior wall of the stomach; also three papillomatous excrescences of the mucous membrane existed. These varied in size from a shilling to half a crown. The patient had indulged in the habit of eating hair since the age of 15.

Case 35 (Dickinson's[50]).—Reported by Inman. A woman of 34 died with obscure symptoms. In cleaning her comb she acquired the habit of placing the detached hair in her mouth and swallowed her combings night and morning.

Autopsy.—A hair cast was removed which was matted into a mass of the shape and size of the stomach when distended. The specimen is in the Museum of the Royal Infirmary Medical School.

Case 36 (Schulten's[51]).—A woman, 30 years old, for three years had pain in the stomach and vomited frequently; recently had noticed a hard round swelling in the abdomen. Floating kidney was considered the most probable diagnosis.

Operation.—The hair ball was spherical and weighed 120 gm. It consisted of matted fragments of cow's hair. The patient was engaged in spinning cow's hair and from time to time would moisten the fingers with her tongue and thus ingested small amounts of this material.

Recovery followed.

Case 37 (Carver's[52]).—Reported by Sir William Gull. A married woman of 32, of vile temper and intemperate habits, otherwise mentally normal, became pregnant and vomited unceasingly until she expelled a seven months' fetus. An offensive vaginal discharge continued with intense pain in the abdomen for two days, when she died from peritonitis.

Autopsy.—In the stomach was found a large mass of hair which extended through the pylorus into the duodenum, perforating the small intestine. The concretion consisted of string, thread, cotton, wool and hair of three colors; the latter could be recognized as belonging to the patient and her two children. The weight of the mass when dried was 5¾ ounces.

Case 38 (W. S. Cooper's[35]).—Reported by Finder. A young woman, who had been insufficiently fed in her youth, suffered great pain which was intensified on the slightest movement. She was unable to take nourishment and there were constant efforts at vomiting. A swelling was distinctly seen and felt in the upper abdomen; the mass was hard on palpation. She was supposed to have a malignant tumor and died of exhaustion.

Autopsy.—In the stomach were found two masses whose combined weight was 16 ounces. The concretions were composed of human hair and horse hair, sewing-thread, grasses and plant fiber. Two deep ulcers had almost perforated the stomach.

The specimens are in the Pathologic Museum of the College of Physicians, New York.

Case 39 (Day's[37]).—A woman, aged 37, a brushmaker by occupation, for about three years had noticed a swelling in the left hypochondrium which was slowly increasing in size. The patient had been treated for ulcer of the stomach with hematemesis six years before. She complained of dull aching in the stomach, with occasional acute paroxysmal attacks, accompanied by nausea without actual vomiting. The swelling, which lay just under the left hypochondrium, was as big as a cocoanut, and felt trilobate. Cystic disease of the spleen was diagnosed.

Operation.—The stomach was incised and three separate masses of matted hair were found. They were facetted and evidently shifted their position occasionally. They consisted of black bristles, such as she was in the habit of using for making brushes. Recovery was uneventful.

Case 40 (Campbell's[21]).—A woman, aged 23, had been insane for several years; was thought to have phthisis because of her emaciation and general weakness. She vomited frequently for several weeks before death.

Autopsy.—There was no tuberculous deposit in the lungs. In the stomach was found a mass containing matted hair, portions of blankets, and a hank of fine brown twine unwound. Two feet of this twine extended through the pyloric orifice into the small intestine.

Case 41 (Gemmel's[22]).—An insane man, 43 years old, had swallowed several foreign bodies, including nails. Vomiting and pain followed. To the left of the median line in the epigastrium, there was a lump, about the size of a duck's egg, which was firm and movable.

Operation.—Gastrostomy was performed and 192 nails, half of a screw nail, a piece of brass wire, a carpet tack, several small pieces of stick, a button and a mass of hair, matted and nearly two inches in length, were removed. The concretion of hair was withdrawn from the lower end of the esophagus from which it was projecting into the stomach.

The patient died.

Case 42 (Osler's).—Photograph and specimen are in the Royal Victoria Hospital Museum, Montreal. A personal communication (Feb. 22, 1908) from Dr. Maud C. Abbott, Curator, Royal Victoria Hospital Museum, Montreal, Canada, says the specimen "consists of two large masses of hair placed end to end and together forming a complete cast of a greatly dilated stomach. It was removed postmortem from an insane woman. The diagnosis was not made before death, though it must have formed an enormous tumor in the epigastrium."

609 Macheca Building.

ABSTRACT OF DISCUSSION

Dr. John Ruhräh, Baltimore: While hair-ball is very rare, the habit of eating hair is not uncommon. I have frequently seen cases in which children have eaten hair. In one case the patient was the child of a physician who brought me something which he thought to be some sort of a parasite. On examination I found that it was hair and the child was carefully watched and the habit broken. Two other cases that I have seen were in hospital patients who ate the hairs which they picked from the blankets.

Dr. R. B. Gilbert, Louisville: Did the hookworms found in Dr. Butterworth's case have anything to do with the pathology? Another peculiar thing about such a case is that these hairs are not carried down through the alimentary tract by the solid food taken. It seems that the child eats only a small portion of hair each day and yet the hairs remain in the stomach instead of passing through. Were any of these hairs found in the lower portion of the intestinal tract? This is the first case of hair-ball in the stomach of a human being that I have ever seen. It is certainly an interesting and rare case, and doubtless many of these cases go to autopsy without a diagnosis.

Dr. W. W. Butterworth, New Orleans: I have appended to this paper all the known cases of hair-ball reported to date. In one instance a physician found a tumor in the epigastric region, prescribed a half-ounce of castor oil every three hours, and after two or three days the hair was passed by rectum. There are other instances of similar casts being passed with the fecal matter. It is likely that picking at hairy and woolen material is common in infancy and early childhood, and undoubtedly many of these cases give rise to no symptoms. The foreign matter passes through the stomach into the intestinal tract and is carried off without further discomfort.

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[50] Inman: Med. Times and Gaz., London, July 3, 1869, ii, 6.

[51] Schulten: Centralb. f Chir., 1896, xxxi, 68: Finska läk. sällsk. handl., September, 1895, xxxvii. No. 9, 1897, ii, 289.

[52] Gull, Sir William: Tr. Clin. Soc., London, 1871, iv, 180.

These concretions (hair casts) may or may not have a nucleus of some hard substance, such as a cherry stone or other fruit seed. In my case, section of the mass disclosed nothing of this sort. The tumor was limited strictly to the stomach. In a case reported by Dr. Knowsley Thornton he states that the mass extended up into the esophagus quite a distance. He facetiously remarks that if the patient had lived long enough, a diagnosis could have been made without the slightest difficulty, because the mass would have protruded from the mouth.

The occurrence in my case of uncinariasis with hair-ball made me wish to know if there were any relation between the habit of hair swallowing and the presence of intestinal parasites. It is well known that children harboring the latter have an abnormal and perverted appetite; they eat all sorts of things. It is interesting in this connection to note that in only one other case (which was reported by Quain) was the patient said to have worms. Oddly enough, these interesting and unusual conditions seem to occur in series, and I am now anxiously watching for another case of hair-ball to present itself and hope to establish a correct diagnosis antemortem and not, as happened in the present instance, postmortem.

EMANATION OF RADIUM ABSORBED AND RETAINED BY COCOANUT CHARCOAL

AN ADVANCE IN RADIUM THERAPY*

JOHN B. SHOBER, A.M., M.D.
PHILADELPHIA

About two years ago my attention was called to a letter published by Prof. E. Rutherford in *Nature*, Oct. 6, 1906, in which he points out that cocoanut charcoal has the property of absorbing and retaining for some time the emanation of radium, thorium or actinium. In this letter it is stated that cocoanut charcoal retains the emanation at ordinary temperatures, for Professor Rutherford finds that the emanation retained in charcoal in a tube open to the air loses its activity at the normal rate observed in sealed vessels. Further, he says:

> In a recent investigation I had occasion to pass the radium emanation through a tube filled with cocoanut charcoal, and was surprised to find that the emanation was completely absorbed by it. If a slow current of air, mixed with the emanation of radium, thorium, or actinium, is passed through a tube filled with charcoal, the issuing gas is completely deprived of emanation. This occurs at ordinary temperatures, and there is no necessity for initial cooling of the charcoal.

Impressed by these interesting observations of Rutherford, I at once thought that here was a certain and practical means of utilizing the emanations of radium and other radioactive salts, internally as well as externally, and a practical method of testing the therapeutic value of emanation treatment in various diseases. For a long time the medical profession has felt that the administration of radioactive solutions internally might be followed by pronounced beneficial results in certain diseases, and many efforts have been made to induce radioactivity in water, but only with partial success.

Dr. William James Morton of New York has done much work along this line and has finally decided that the best method of producing radioactive water is to immerse 50 to 100 pounds of a high-grade pitchblende in a vessel of water and has found that the measure of radioactivity of this water is about one-tenth to one-half that of metallic uranium; a very low degree of radioactivity. He dispenses this water to patients who are taking *x*-ray or radium treatment and claims to have cured in eighteen days a man suffering with a small rodent ulcer of the face by the administration of this water and small doses of bisulphate of quinin. The rate of decay of the radioactivity of water, however produced, is very rapid, falling to one-half in a few hours and no trace remaining after a few days.

Since the spring of 1906 I have been occasionally using water prepared in the same way, but can not claim to have observed any pronounced results following its administration. A recent report from the Randal-Morgan Laboratory of Physics of the University of Pennsylvania on the measure of activity of this water gives the following figures:

The water was sent to the laboratory on March 29, 1909.

March 29, activity = 0.1 of uranium disc.
March 30, activity = 0.11 of uranium disc.
March 31, activity = 0.1 of uranium disc.
April 2, activity = 0.07 of uranium disc.
April 6, activity = 0.03 of uranium disc.

It is now generally admitted that the healing and curative properties of many well-known springs is due to the radioactivity of the waters and not to the salts which they may contain. No matter how carefully reproduced artificially, they have not the same therapeutic value, and, even when the original water is shipped from the source of supply, it loses its efficacy. We now know that this is due to the fact that the radioactivity is lost in a few days.

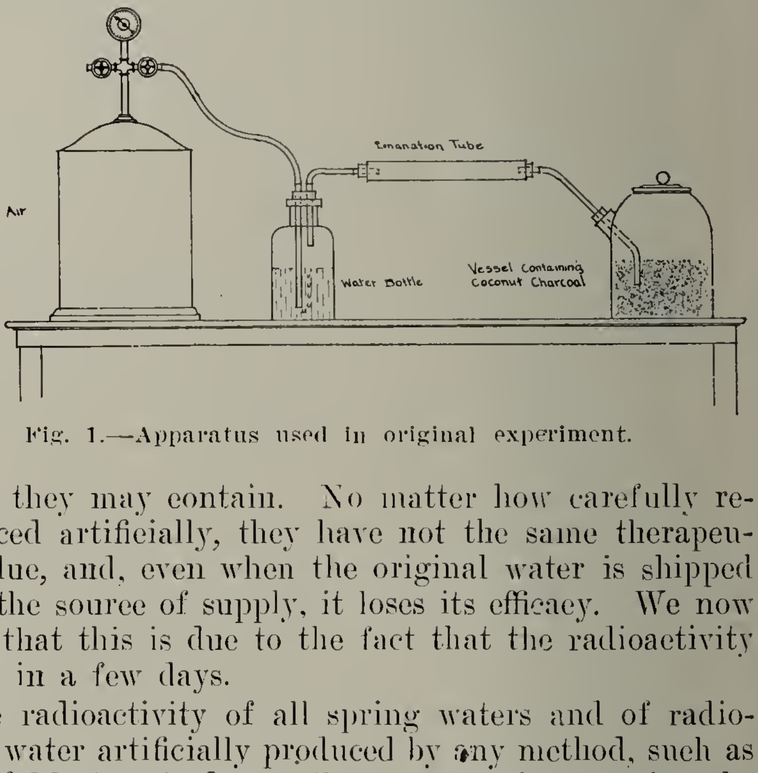

Fig. 1.—Apparatus used in original experiment.

The radioactivity of all spring waters and of radioactive water artificially produced by any method, such as that of Morton, is due to the amount of emanation the water is able to absorb. We know that water will absorb a very small amount of emanation and is able to retain it for but a short time. If, therefore, we can find any substance which can be administered internally and which will absorb and retain all the emanation from a given quantity of a radioactive salt, it seems to me that a great advance will have been made and that we shall be in a far better position than we have ever been before to observe the effect of radioactivity on metabolism and to note its therapeutic value.

Acting on the hint obtained from Rutherford's letter above referred to, on Feb. 19, 1909, I started my first experiment.

Through the courtesy of Powers-Weightman-Rosengarten Company of Philadelphia, I was supplied with a quantity of purified cocoanut charcoal. I had an emanation tube made by H. Lieber of New York. This is a celluloid tube about 8 inches long and ¾ inch in diameter, coated on the inside with a collodion solution containing 1 mgm. of strong radium bromid. Through this tube I passed a slow current of air into a porcelain vessel containing a quantity of cocoanut charcoal (Fig. 1). I found the charcoal to be strongly radioactive, discharging my electroscope more rapidly than would a specimen of high-grade pitchblende ore. I then spread a quantity of this charcoal over a key on an *x*-ray plate and obtained a very strong picture of the key after an exposure of four days (Fig 2). As a control I tested untreated charcoal on the electroscope and on an *x*-ray plate, with negative results.

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* Read before the Maine Medical Association, at the Fifty-seventh Annual Meeting, held at Portland, June 16-17, 1909.

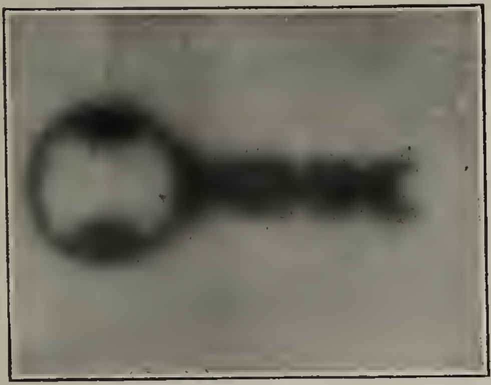

Fig. 2.—Radiograph of key obtained by exposure to radioactive charcoal for four days.

I now felt that it was important to obtain accurate and reliable measurements of the degree of radioactivity to which cocoanut charcoal could be raised and its rate of decay, and I therefore applied to Prof. Arthur W. Goodspeed of the University of Pennsylvania, at whose request Mr. D. H. Kabakjian, of the Randal-Morgan Laboratory of Physics of that university, kindly consented to undertake the work. I supplied Mr. Kabakjian with 1 gm. of 1,000 radioactive radium chlorid and requested him to place this in solution and pass a current of air through it into cocoanut charcoal and measure its radioactivity and rate of decay. I herewith submit his report.

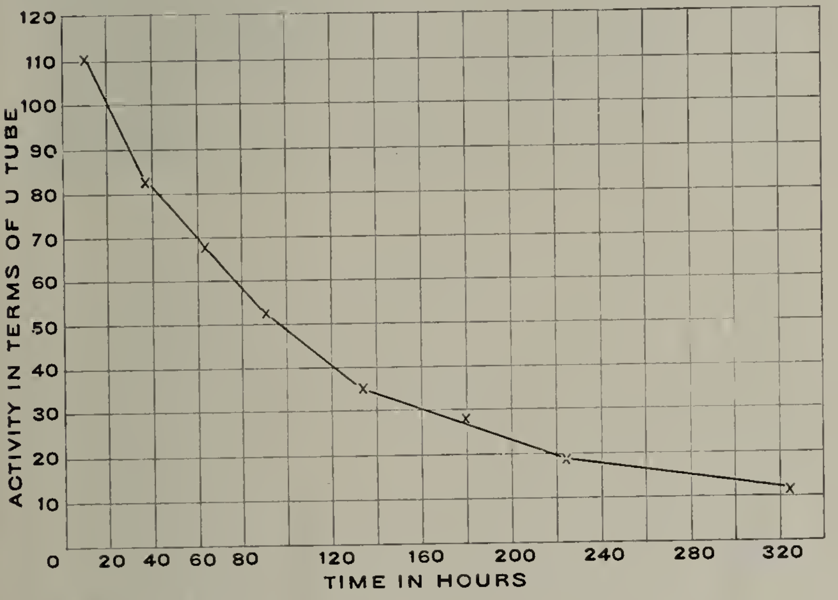

Fig. 3.—Curve showing the decay of activity of radioactive charcoal in sealed tubes.

MEASUREMENTS ON THE ACTIVITY OF COCOANUT CHARCOAL MADE ACTIVE BY ABSORBING RADIUM EMANATION

PREPARATION OF THE ACTIVE CHARCOAL

About 12 gm. of powdered charcoal were divided between two U-tubes, which were connected with each other and also with an aspirator.

One gram of radium chlorid of 1,000 activity was put in a test-tube. Through one of the holes of the two-holed stopper of this test-tube a thistle-tube was introduced which almost touched the bottom, while another glass tube made connections at the top with the U-tubes. A little water was put into the test-tube, just enough to dissolve the radium chlorid, and the aspirator was regulated so as to draw a very slow current of air through the solution (of the radium chlorid) and the U-tubes containing the charcoal. This was kept on for three hours.

The charcoal thus prepared was divided into twelve small tubes and the tubes were sealed. The tubes were opened one at a time at various intervals and their activity compared with the activity of a standard uranium oxid disc.[1] The measurements were made by means of a Dolezalek electrometer, the needle of which was kept charged to 98 to 105 volts, during different measurements, the voltage remaining constant during each particular measurement. The same difference of potential was also applied between the plates of the testing apparatus.

It was found by experiment that freshly prepared charcoal gives out emanation under ordinary conditions which, diffusing into the testing apparatus, greatly interfered with the accuracy of the measurements; for this reason the first two or three readings, often taken in less than two minutes, were regarded as more reliable.

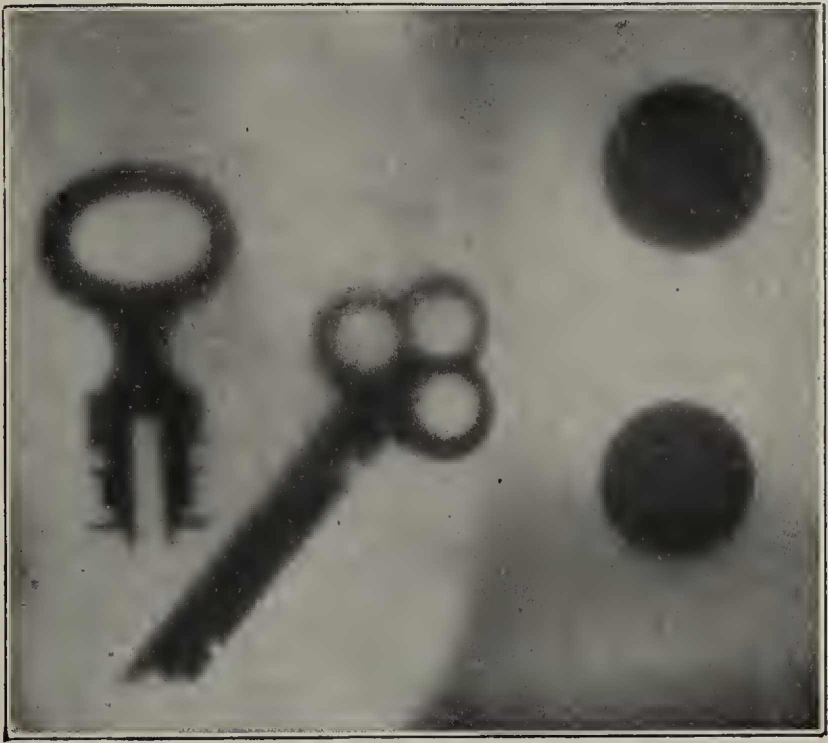

Fig. 4.—March 24 one-half of this plate was exposed to the action of about 1 gm. of charcoal of about 10 activity, spread on a thin sheet of paper, while on the other part of the plate were placed six of the sealed tubes each containing 1 gm. of active charcoal. The difference in the shade of the negative clearly showed the results. The plate was exposed for ten hours; all the other plates were taken by means of the sealed tubes only.

To test the rate of diffusion of the emanation from such charcoal, kept in open vessels, samples were taken, having the same degree of activity with those in the sealed tubes and kept in an open test-tube, and the activity of this exposed specimen was measured under similar conditions. Also one of the samples was divided into two equal parts and one part kept in a sealed tube while the other was kept in a corked test-tube. The results of these measurements are given below:

(1) Wednesday, March 24.
Charge on the needle 98 volts.
Potential difference between the plates of the testing apparatus 98 volts.
12 hours after preparation.

Uranium Disc B

Scale readings.	Time.
28	9 :11 :40
24	9 :15 :50
23	9 :16 :60

Time occupied in passing over 1 cm., t = 64 seconds.

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[1] The disc which is used as a standard of comparison in all subsequent measurements is a brass disc 6.7 cm. in diameter coated with a thin uniform layer of uranium oxid. Measurements of activity of water or of charcoal were made on similar shallow dishes or discs.

ACTIVE CHARCOAL TUBE 1

Scale readings.	Time.
29 - 10	10 seconds

Observed number of deflections in cm.	Total time in seconds.	Time of 1 cm. deflection.
19	10	10/19
19	12	12/19
19	12	12/19
19	10	10/19
19	11	11/19

Average time of 1 cm. deflection 11/19 second.
Activity compared with that of uranium disc

A=19/11 x 64=110

(2) Thursday, March 25, 8:45 a. m.
Uranium disc B. period of 1 cm. deflection, t = 71 seconds.

CHARCOAL TUBE 3

Total observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
19	16	16/19
19	16	16/19
19	15	15/19

Activity=19/16. x 71=84
A = 84

(3) Friday, March 26, 8:45 a. m.
U. disc, time of 1 cm. deflection, t = 65.

CHARCOAL TUBE 4

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
19	19	1 second.
19	18	18/19 second.
19	16	16/19 second.

Average 18/19. Activity = 19/18 x 65 = 69. A = 69.

(4) Saturday, March 27, 10 a. m.
U. disc, time of 1 cm. deflection, t=63.

CHARCOAL TUBE 5

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
19	24	24/19
19	23	23/19
19	23	23/19
19	24	24/19

Average 23.5/19

Activity=19/23.5 x 63=51
A = 51

(5) Monday, March 29, 9:30 a. m.
U. disc, time of 1 cm. deflection, t = 60 seconds.

CHARCOAL TUBE 6

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
20	34	17/10
10	17	17/10
20	35	17.5/10
10	17	17/10

Average 17/10

Activity = 10/17 x 60 = 35.3
A = 35.3

(6) Wednesday, March 31, 8:30 a. m.
U. disc time of 1 cm. deflection. t = 54 seconds.

CHARCOAL TUBE 7

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection in seconds.
20	36	1.8
20	37	1.85
10	18	1.8
20	39	1.95

Average 1.85

Activity = 10/18.5 x 54 = 29
A = 29

(7) Friday, April 2, 8 a. m.
U. disc, time of 1 cm. deflection, t = 60 seconds.

CHARCOAL TUBE 8

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
5	15	3
10	30	3
15	45	3
5	15	3
10	30	3

Activity = 1/3 x 60 = 20
A = 20

(8) Tuesday, April 6, 9 a. m.
U. disc, time of 1 cm. deflection, t = 66 seconds.

CHARCOAL TUBE 9

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection in seconds.
5	30	6
10	60	6
15	85	5.7
20	120	6

Activity = 1/6 x 66 = 11
A = 11

ACTIVITY OF THE CHARCOAL IN THE OPEN TEST-TUBE IN TERMS OF U. DISC STANDARD

Specimen having an activity of 110, of U. disc.

24 hours after exposure, Activity = 11
48 hours after exposure, Activity = 7.8
72 hours after exposure, Activity = 6.6
7 days after exposure, Activity = 6.6
9 days after exposure, Activity = .9
13 days after exposure, Activity = .4

We see from the figures given that charcoal powder made radioactive by absorbing radium emanation when kept in sealed glass tubes loses its activity slowly, owing to the decay of the emanation absorbed. On examining the curve of decay of activity of such charcoal it is seen that the shape of the curve is not unlike that of the decay curve of the emanation itself. The fact that it reaches the half value in less than four days may probably be explained by supposing that the charcoal so enclosed (probably) gives out some of the emanation absorbed, which diffuses into the glass tube, thereby diminishing its activity. The figures given above show that if the charcoal is kept in an open test-tube instead of sealed tubes, the loss of activity is very rapid and falls to about one-tenth of its original value in twenty-four hours, if the powder is well exposed, (*i. e.*, when the depth of a layer of powder is not greater than the exposed surface).

In thirteen days the activity has fallen to about 2.36 per cent. of its original activity.

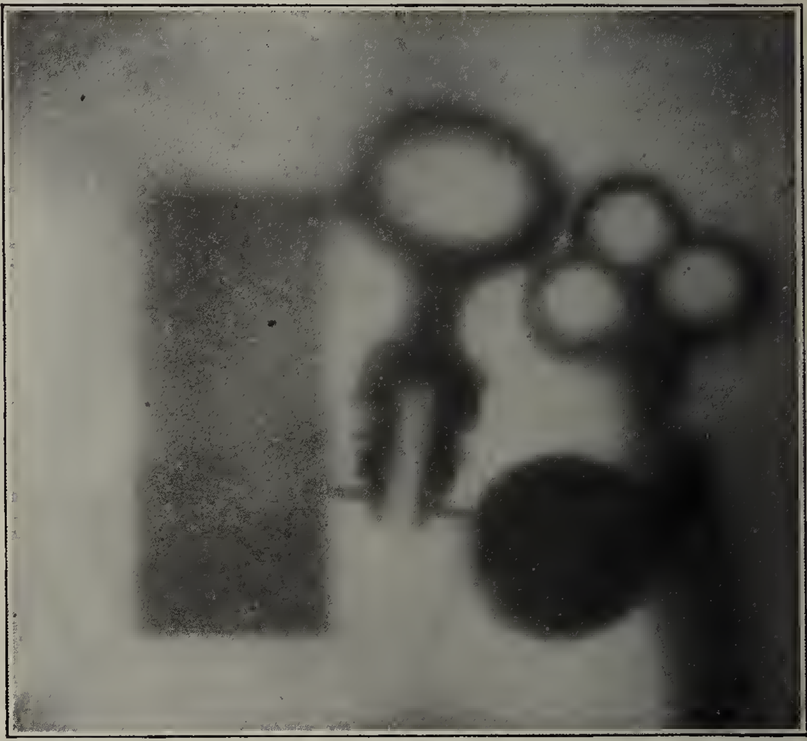

Fig. 5.—March 27. Objects exposed from 10 a. m. to 10 p. m. Exposure twelve hours.

One gram of charcoal of about 100 activity was divided into two equal parts and one was kept in a small corked test-tube while the other was in a sealed tube. Their activity was measured after fifteen days and the part in the sealed tube was found to be four times as active as that in the corked tube.

Several photographic tests were made to measure the activity and rate of decay of these sealed tubes, and of the charcoal itself. The results are seen in the illustrations, Figures 4 to 6. The objects seen on the negatives are one brass and one steel key, one cent piece and a piece of plate glass about 2 mm. in thickness.

Attention is called to the fact that the charcoal in the sealed tubes is radioactive at the end of sixteen days.

It will be seen from this report that by a very simple method and by the use of weak radium, cocoanut charcoal can be raised to a very high grade of radioactivity. Whereas water can be raised to only a fraction of the radioactivity of uranium oxid, which at the present time is taken as the unit of radioactivity, cocoanut charcoal, according to this report, can be raised to 110 times the radioactivity of uranium oxid. And, whereas water loses its radioactivity entirely in a few days, cocoanut charcoal retains a radioactivity above ten times that of uranium oxid for more than thirteen days. Subsequent experiments have shown that we can raise the charcoal to 160 times the radioactivity of uranium oxid.

In connection with this report it may be of interest to quote from an article[2] on "The Absorption of Radioactive Emanations by Charcoal," by R. W. Boyle, communicated by Prof. E. Rutherford:

> The experiments of Sir James Dewar in 1903 drew attention to the property possessed by the charcoal of cocoanut of absorbing gases in a remarkable degree. Since then this property has been investigated by several experimenters[3] and has been applied by Sir William Ramsay in separating the inert gases helium and neon from the air, and measuring the quantities in which they exist in the atmosphere. The results in the papers mentioned below may be summarized as follows:
>
> 1. The absorption of gases by cocoanut charcoal is greatly increased by lowering the temperature of the charcoal.
>
> 2. The charcoal has a greater affinity for some gases than for others, there being something of the nature of a selection absorption.
>
> 3. In consequence of this property, it is possible to separate from one another, in some degree, the constituents of a mixed gas. Of the inert gases of the argon family, argon is absorbed in about the same degree as ordinary gases, but helium and neon in a much less degree, and helium less than neon.
>
> 4. The absorption is also influenced by the pressure of the gas in contact with the charcoal, the pressure concentration curves varying in a regular manner with the temperature.

Fig. 6.—April 9. Objects exposed twenty hours.

Boyle then refers to Rutherford's letter to *Nature* above mentioned and states that he pointed out that this property of cocoanut charcoal also holds for the radioactive emanations. Experimenting with radium and thorium emanation, Boyle found that in the case of charcoal in granulated form the amount of absorption depends on (a) the nature of the charcoal, (b) the speed of the air-current through the absorbent, (c) the amount of charcoal surface exposed to the emanation, and (d) the temperature of the charcoal.

He concludes by stating that the percentage of absorption of thorium emanation by means of charcoal (1) depends on the nature of the charcoal used, being greatest for cocoanut charcoal, intermediate for animal, and least for wood charcoal; (2) is decreased by increasing the velocity of the gas-current which conducts the emanation through the charcoal; (3) is increased by increasing the charcoal absorbing surface, and (4) is dependent on the temperature, following the law of ordinary gases, viz., that a lowering of the temperature of the charcoal causes an increase and a raising of the temperature a decrease in the amount of absorption.

It takes about two or three hours to exhaust all the emanations from 1 gm. of 1,000 radioactive radium.[4] Before the radium can be utilized again the solution must be evaporated to dryness and the radium must be allowed to rest for about ten or fourteen days before it has recovered itself sufficiently to give off its full quota of emanation. The amount of charcoal which can be charged at any one time has not been accurately determined, but it will probably depend on the degree of radioactivity desired. I have been able to obtain on one charge sufficient charcoal of 140 activity to fill five small test-tubes, each containing enough to supply a patient for fourteen days, the dose being about as much as would cover a dime, taken three times a day. The tubes are stoppered with rubber corks and kept in a cool place, and the patients are instructed to replace the cork immediately after each dose. A fresh tube should be supplied about every ten days or two weeks. We have not found it necessary to prepare the charcoal either by cooling or heating. The current of air which carries the emanation into the charcoal is passed very slowly and in order that the gas may pass over as large a surface of the charcoal as possible it is placed in a glass tube eighteen inches long having a diameter of half an inch. After this tube is charged the charcoal is quickly transferred to small test-tubes, which are stoppered immediately with rubber corks. The charcoal in these tubes has an initial radioactivity of 120 to 160 times that of the uranium disc and remains strongly radioactive for two weeks.

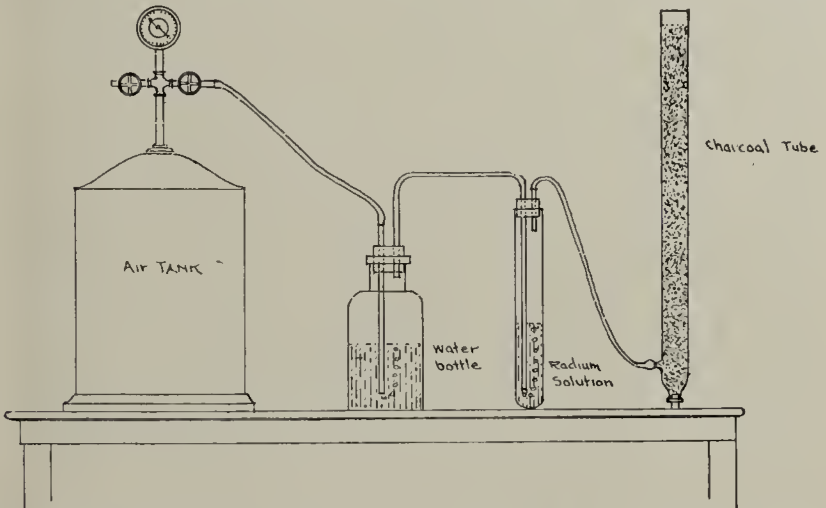

Fig. 7.—Author's method of charging cocoanut charcoal with radium emanation.

I therefore feel that I have developed a very easy and simple method of utilizing radioactive emanations internally as well as externally, for there is no reason why the charcoal should not be incorporated in ointments or gelatin or other solutions and applied in cases of leg ulcer, lupus, eczemas and other cutaneous lesions. The effect of the internal administration of such charcoal on metabolism and its value as a therapeutic agent in many diseases will require careful study and accurate observations in many carefully selected cases before any definite conclusions can be drawn.

The *Archives of the Roentgen Ray* for January, 1909, contains an abstract of a paper[5] by Dr. F. Nagelschmidt, of the Finsenklinik, Berlin, on the "Therapeutic Action of Radium Emanation." Mention is made of previous work by Lowenthal and by Laqueur. Lowenthal administered preparations containing radium emanations, which he found useful in articular rheumatism and chronic neuritis, while Laqueur worked with tablets containing an emanation salt, and it is stated that neither of them observed any ill effects apart from the ordinary reaction. The reaction referred to is probably the erythema which might follow the local application of the preparations. The quantity of radium emanation in Laqueur's emanosal tablets is said to be very small. The internal therapeutic dose is from 10,000 to 20,000 emanation units per diem, gradually increasing. For the bath 100,000 to 200,000 emanation units are given, the patient remaining in the water for half an hour. If reaction sets in the treatment must be intermitted.

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[2] Boyle, R. W.: Phil. Mag., March, 1909.

[3] Dewar: The Absorption and Therman Evolution of Gases Occluded in Charcoal of Low Temperature, Proc. Roy. Soc., lxxiv, 122: The Separation of the Most Volatile Gases from Air without Liquefaction, ibid., lxxiv, 122. Ramsay: The Determination of the Amount of Neon and Helium in Atmospheric Air, Proc. Roy. Soc., May 24, 1905. Travers: The Law of Distribution in the Case in which one of the Phases possesses Mechanical Rigidity, Absorption and Occlusion, Proc. Roy. Soc., July 21, 1905.

[4] The time for exhausting all the emanation stored in radium depends on the velocity of air-current and probably is much less than three hours.

[5] Nagelschmidt, F.: Berl. klin Wchnschr., March 16, 1908.

Nagelschmidt's preparation appears to be entirely different. An insoluble salt of radium is enclosed in a parchment capsule and placed in water, which, he asserts, is thus kept charged with the radium emanation. He uses this water internally and externally by compresses and baths. It is stated in the abstract that, like Lowenthal, he has had satisfactory results in cases of muscular and articular rheumatism, in neuritis, in ozena and in catarrh. He did not observe the bath reaction in articular rheumatism. His doses began with 2,000 units and were increased to 10,000. He believes that the emanation treatment may be counter-indicated in certain cases, and cites a case of latent ulcer of the stomach, in which profuse hematemesis came on after eight doses of the emanation. This observation may be taken in connection with the fact that wounds of patients taking the Gastein waters, which are markedly radioactive, heal with difficulty. Contrary to Lowenthal's observations, the presence of emanation was not found in the urine and feces of his patients. It is asserted that this treatment is indicated in diseases of the respiratory organs, in arteriosclerosis, in rheumatic, subacute and chronic diseases of the joints or nerve sheaths, the mucous membrane or the muscles, such as are treated at Wiesbaden or Baden-Baden, and that ozena, from whatever cause, is amenable to the emanation without any further treatment.

The class of cases in which I am inclined to test the value of this agent is that of chronic diseases which do not yield to our present methods of treatment, such as chronic gastritis or duodenal or intestinal ulcers, tuberculous ulceration of the intestine, various forms of functional diseases of the stomach or intestine, carcinoma of the stomach or esophagus, chronic muscular or articular rheumatism, neuritis, arteriosclerosis, certain general skin diseases, such as psoriasis and the eczemas, all forms of tuberculosis and in general debility after wasting diseases, in which the agent may be used as a tonic.

In addition to this, since the same rays are given off from the emanation as are obtained from radium itself we may find that the same therapeutic effects follow the local application of celluloid tubes filled with cocoanut charcoal in which the emanation is captured, as follow the local application of a tube or capsule containing radium. The potency of such a tube will, of course, diminish from day to day, but with improved methods will last long enough to allow of several treatments in a given case, when a new tube can be obtained from the source of supply.

In conclusion I beg to submit the following observations for the consideration of the medical profession:

1. Cocoanut charcoal is an inert substance and can be administered freely internally.

2. Cocoanut charcoal will absorb and retain the emanation of radium and, when treated by my method, can be raised to a very high degree of radioactivity compared to water—namely, from 200 to 300 times the radioactivity of the most radioactive water.

3. It can be prepared with but small expense. The same radium can be used over and over again indefinitely; none of the radium need be lost.

4. The charcoal will retain its radioactivity for at least two weeks and the method of administration is simple.

5. The beneficial effects of radioactive spring waters in many diseases and the results obtained abroad by the administration of weak emanation preparations warrants the belief that in this highly radioactive charcoal we have an agent the use of which will be followed by the same if not better results.

6. The local application of emanation cocoanut charcoal in tubes or capsules or incorporated in ointments or solutions is worthy of trial.

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Clinical Notes

ASEPTIC MITTENS

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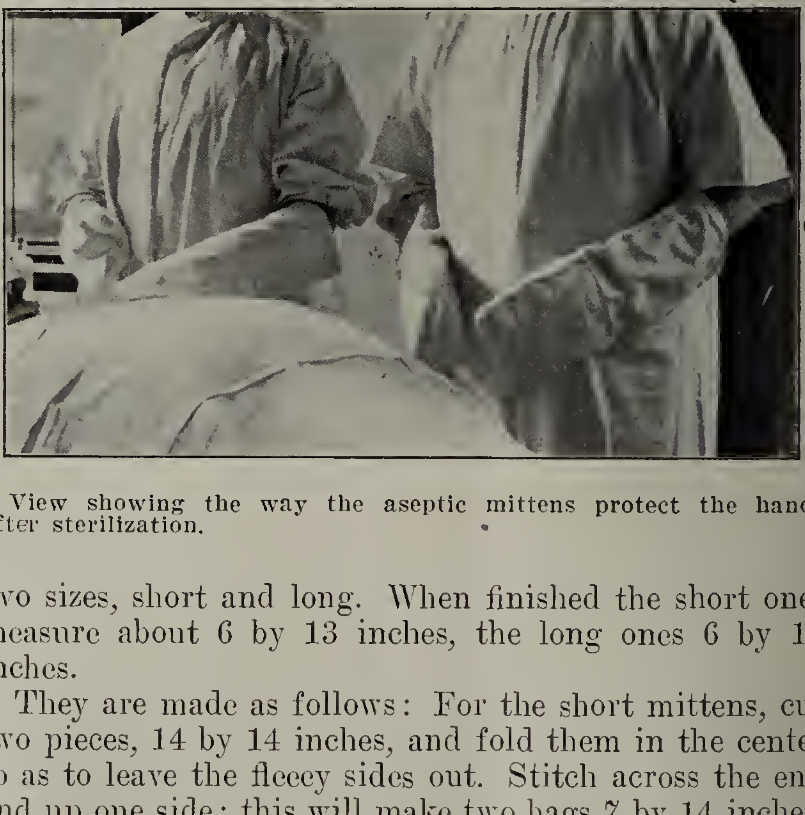
After scrubbing the hands and arms, preparatory to operative or obstetric work, it is important to keep them clean. Frequently, I have seen an operator or his assistant, or both, clean the hands and arms thoroughly, then, while waiting for the patient to be anesthetized, walk around the room with their hands by their sides, brushed by a passing nurse's apron or a physician's coat.

To overcome this difficulty, I introduced into my operating room, fifteen years ago, what I call "mittens," which are nothing more than bags of double thickness. These mittens are made of canton flannel and are in two sizes, short and long. When finished the short ones measure about 6 by 13 inches, the long ones 6 by 19 inches.



View showing the way the aseptic mittens protect the hands after sterilization.

They are made as follows: For the short mittens, cut two pieces, 14 by 14 inches, and fold them in the center so as to leave the fleecy sides out. Stitch across the end and up one side; this will make two bags 7 by 14 inches.

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6. The Journal A. M. A., Dec. 19, 1908, p. 2173.

One bag should now be turned fleecy side in and the other bag inserted into it, so that the fleecy sides are in contact. The raw edges are now turned in and the two bags stitched together, giving a bag of double thickness. To make the long mittens, two pieces 14 by 20 inches are cut and folded in the long axis and stitched as described above. The sizes I have given are those I find most convenient.

With a little practice one can, without soiling the hands, do a great deal with the mittens on: unpin packages of dressings, move tables or chairs; if necessary, assist in arranging the patient, etc. Care must be taken not to get the mittens damp, because the dampness, passing through the mitten, will carry microorganisms through to the hands.

The reason for making them of canton flannel is that it is thick, and dirt will not pass through as quickly as it would if made of muslin or other thin material. They are made of double thickness so that if by any means a little dirt should pass through the one thickness you are guarded by the second.

The short mittens are worn when it is important to have only the hands and the lower parts of the arms clean. It is always important to clean the arms above where the top of the mitten comes; otherwise the top edge would become soiled and in slipping it off and on would soil the hands. When ready to remove the mittens let them slide off the hands in such a way that if it is necessary to use them again they need not be picked up, but the hands simply thrust into them. Care should be taken to put them where the ends will not be brushed by those passing; otherwise the ends become soiled and soil the hands and arms as they are put on.

My method of sterilizing the mittens is the same as that employed in sterilizing towels. The short mittens are not folded, the long ones are folded once, they are wrapped in double thickness of unbleached muslin or cotton toweling and pinned, having a tag marked "short mittens" or "long mittens" as the case may be.

PROTEIN FEVER: THE PRODUCTION OF A CONTINUED FEVER BY REPEATED INJECTIONS OF PROTEIN

A PRELIMINARY NOTE

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AND

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The purpose of this paper is to make a short preliminary report on some experiments in which we are now engaged The work done in the hygienic laboratory of the University of Michigan during the past ten years in the study of the cleavage products of proteins, bacterial, vegetable and animal, has, in our opinion, given us quite a new point of view from which to study the infectious diseases. We have shown that all the true proteins which we have investigated, now more than thirty in kind and from diverse sources, may be split up into poisonous and non-poisonous proteins or into toxophors and haptophors. The toxophor group seems to be the same so far as its effects on animals are concerned, whatever the protein from which it is derived. Egg-white contains the same poison, physiologically at least, as that found in the typhoid bacillus, and if egg-white could grow and multiply in the animal body it would, as a result of such growth and subsequent cleavage, be just as deadly as the bacilli of the infectious disease. When a man drinks water containing typhoid bacilli and proves susceptible he does not immediately manifest symptoms of this disease. There is a period of incubation, which in typhoid fever is about ten days. During this time the bacilli are multiplying in the man's body in great numbers and still the man has no warning of their presence. Instead he often feels quite well during this period of incubation. We must, therefore, conclude that it is not the growth and multiplication of the bacilli directly that cause the disease. While growing and multiplying in the body the typhoid bacilli are converting the proteins of the man into bacterial proteins. They are converting normal and native proteins into abnormal and foreign proteins, and this process continues for about ten days before the man feels ill or the first symptoms of the disease develop. What new factor is it, then, that appears, closes the period of incubation and ushers in the disease? This new factor is the sensitization of the body to the foreign protein which has been introduced from without in the form of a few bacilli which have grown and multiplied by feeding on the proteins of the man's body. This sensitization consists in the development in certain cells, most probably connective tissue cells, of a specific proteolytic ferment which splits up the foreign proteins, existing as bacterial cells. It is a belated attempt on the part of the body to destroy the invader. The period of incubation is measured by the time necessary to develop this ferment, and it varies with the nature of the foreign protein and the species of animal invaded. We can not induce a continued fever in rabbits and guinea-pigs by inoculating them with the typhoid bacillus, because this protein sensitizes these animals within a few hours instead of a few days, and within a short time the animal is either dead or well. This is a condition like unto that which renders man immune to many bacteria. His cells are soon sensitized, and the invading organism is killed before it has time to multiply and store up enough poison to kill him. We have shown that it is the non-poisonous portion of the protein molecule or its haptophor that sensitizes the animal or leads to the development of the specific ferment. This is a brief statement of the conclusions which we have reached from our studies of the proteins and their cleavage products and their relation to the infectious diseases. We are quite aware of the fact that our views have not met general acceptance, and consequently we are glad to present herewith what we believe to be a marked confirmation of our teachings.

It occurred to us that if the above given ideas be correct we should be able to induce in animals a continued fever by repeated subcutaneous injections of a soluble foreign protein. We have done this with bacterial proteins, but, since vitalistic dogmas cling so closely, we intend to present herewith an illustration of the results that we have obtained by repeated subcutaneous injections of egg-white dilutions in rabbits. The whites of fresh eggs have been diluted with an equal volume of 0.5 per cent. phenol solution.

Table 1 is self-explanatory, and the record is strikingly similar to one for typhoid fever. We have here a condition practically identical with an infectious fever and yet without any infection. Fever results when any foreign protein finds its way into the blood and the body becomes sensitized to it and begins to split it up. The foreign protein may be from the animal's own body. The subcutaneous injection of solutions of silver nitrate or other destructive chemical agents causes fever by de-

TABLE 1.—RABBIT RECEIVING 1:1 EGG ALBUMIN (NOT FILTERED) SUBCUTANEOUSLY EVERY 2 HOURS IN AMOUNT INDICATED BELOW. URINE COLLECTED AND WEIGHT TAKEN AT 1 P. M. URINE FILTERED THROUGH PAPER

1909 Date.	Weight.	Amt. Urine.	Sp. Gr. with Picnometer.	% Ash.	% N.	Temperatures. 7	9	11	1	3	5	7	9	Remarks.
5/20	....	...	......	....	....	.....	.....	.....	102.5	.....	102.2	.....	.....	Normal Temperature.
5/21	....	...	......	....	....	.....	102.1	.....	102.0	.....	102.3	.....	.....	Normal Temperature.
5/22	....	...	......	....	....	.....	101.9	.....	102.3	.....	102.5	.....	.....	Normal Temperature.
5/23	....	...	......	....	....	.....	102.0	.....	102.4	.....	.....	.....	.....	Normal Temperature.
5/24	....	...	......	....	....	.....	101.8	.....	102.0	.....	101.8	.....	.....	Normal Temperature.
5/25	....	...	......	....	....	.....	102.1	.....	102.2	.....	102.2	.....	.....	Normal Temperature.
5/26	2525	...	......	....	....	.....	102.1	102.3	102.3	102.3	102.1	101.8	101.7	Normal Temperature.
5/27	2450	260	1.0106	1.61	.16	101.4	101.6	102.4	2 c.c. 101.8	2 c.c. 101.7	2 c.c. 101.3	2 c.c. 101.4	2 c.c. 101.9	
5/28	2440	125	1.0124	2.12	.15	2 c.c. 101.1	2 c.c. 101.2	2 c.c. 101.5	2 c.c. 102.5	2 c.c.	2 c.c. 102.2	2 c.c. 103.2	2 c.c. 102.6	
5/29	2380	54	......	....	.16?	2 c.c. 102.7	2 c.c. 102.6	2 c.c. 102.4	2 c.c. 103.6	2 c.c. 103.9	2 c.c. 104.2	2 c.c. 104.0	2 c.c. 103.4	
5/30	2330	275	1.0110	1.73	.19	.....	2 c.c. 103.0	2 c.c. 103.5	2 c.c. 104.0	2 c.c. 104.0	2 c.c. 103.8	2 c.c. 103.8	2 c.c. 103.2	
5/31	2270	266	1.0130	2.41	.23	2 c.c. 103.2	2 c.c. 103.8	2 c.c. 103.5	2 c.c. 104.0	2 c.c. 103.7	2 c.c. 103.4	2 c.c. 103.3	2 c.c. 103.0	
6/1	2355	104	1.0294	3.75	.53	2 c.c. 103.0	2 c.c. 103.3	2 c.c. 103.4	2 c.c. 103.2	4 c.c. 103.8	4 c.c. 103.9	4 c.c. 104.0	4 c.c. 105.2	Forty doses of 2 c.c. each.
6/2	2335	370	1.0114	1.89	.16	4 c.c. 103.8	4 c.c. 103.6	4 c.c. 103.2	4 c.c. 106.2	4 c.c. 106.0	4 c.c. 104.0	4 c.c. 104.1	4 c.c. 105.0	Much albumin present in urine as shown by heat aud HNO_3.
6/3	2320	290	1.0093	1.26	.30	4 c.c. 103.4	4 c.c. 103.2	4 c.c. 103.0	4 c.c. 103.0	4 c.c. 103.6	4 c.c. 103.2	4 c.c. 103.5	4 c.c. 103.6	Twenty doses of 4 c.c. each.
6/4	2290	155	1.0101	1.55	.28	8 c.c. 103.1	8 c.c. 103.2	8 c.c. 103.2	8 c.c. 103.6	8 c.c. 103.6	8 c.c. 103.6	8 c.c. 103.6	8 c.c. 104.3	Much albumin in urine.
6/5	2290	225	1.0129	1.20	.42	8 c.c. 105.4	8 c.c. 105.7	8 c.c. 105.5	8 c.c. 106.0	8 c.c. 106.0	8 c.c. 105.6	8 c.c. 106.1	8 c.c. 106.4	Much albumin in urine.
6/6	2250	95	1.0148	1.71	.56	.....	8 c.c. 105.6	.....	8 c.c. 106.0	.....	8 c.c. 105.9	8 c.c. 105.6	8 c.c. 105.3	Much albumin in urine.
6/7	2320	100	1.0165	2.00	.66	8 c.c. 105.2	8 c.c. 104.7	8 c.c. 104.0	8 c.c. 104.7	8 c.c. 105.4	8 c.c. 105.6	8 c.c. 105.2	8 c.c. 105.2	Much albumiu in urine. Casts, mucin, phosphates and carbonates in heavy ppt.
6/8	2350	52	1.0267	2.02	2.53	8 c.c. 105.5	8 c.c. 105.4	8 c.c. 104.9	8 c.c. 105.2	8 c.c. 104.9	8 c.c. 105.3	8 c.c. 104.9	8 c.c. 104.9	Much albumin in urine.
6/9	2355	115	1.0134	1.56	1.00	8 c.c. 105.3	8 c.c. 105.2	8 c.c. 105.1	8 c.c. 105.1	8 c.c. 106.0	8 c.c. 105.4	8 c.c. 105.8	8 c.c. 105.8	Much albumin in urine.
6/10	2345	155	1.0106	1.66	.56	8 c.c. 105.4	8 c.c. 104.8	8 c.c. 104.8	8 c.c. 104.8	8 c.c. 104.8	8 c.c. 104.9	.....	8 c.c. 105.3	Much albumin in urine.
6/11	2230	165	1.0100	1.64	.60	8 c.c. 105,2	8 c.c. 104.8	8 c.c. 105.2	8 c.c. 105.7	8 c.c. 105.8	8 c.c. 105.7	8 c.c. 105.8	8 c.c. 105.8	Much albumiu in urine.
6/12	2330	95	1.0170	1.56	.92	8 c.c. 105.3	8 c.c. 105.0	8 c.c. 104.8	8 c.c. 105.6	8 c.c. 106.0	8 c.c. 106.0	8 c.c. 105.8	.....	Albumin in urine.
6/13	2280	190	1.0140	1.81	.54	.....	8 c.c. 104.8	.....	8 c.c. 105.0	8 c.c. 104.9	.....	8 c.c. 104.7	.....	Albumin in urinc.
6/14	2250	115	1.0148	1.15	.98	8 c.c. 104.5	8 c.c. 104.7	8 c.c. 104.7	8 c.c. 104.7	8 c.c. 104.9	8 c.c. 105.4	8 c.c. 105.6	8 c.c. 105.4	Albumin in urine.
6/15	2180	140	1.0179	2.60	.65	8 c.c. 105.6	8 c.c. 105.5	Doses Stopped. 105.1	105.4	105.3	105.2	105.2	105.2	Eighty-two doses of 8 c.c. each. 816 c.c. given in all.
6/16	2135	155	1.0194	2.99	.66	104.2	104.8	104.1	104.1	104.0	104.0	103.9	104.1	Albumiu in urine.
6/17	2080	170	1.0139	2.76	.50	104.2	104.6	104.1	103.6	103.9	103.4	103.4	103.2	Albumin in urine.
6/18	2040	205	1.0184	2.10	.43	103.0	103.0	103.2	103.4	104.1	103.6	103.8	103.5	Albumin in urine.
6/19	1960	150	1.0198	2.80	.64	103.3	103.0	103.7	103.0	103.0	103.4	103.1	102.8	Albumin in urine.
6/20	1880	22	......	....	2.90	.....	102.8	.....	102.9	.....	103.0	102.7	.....	Albumin in urine.
6/21	1850	10	......	....	....	102.6	102.6	102.5	102.3	102.2	102.0	101.8	101.8	Albumin in urine.
6/22	1885	55	......	....	....	.....	102.4	.....	102.8	.....	101.5	.....	.....	Albumin in urine.
6/23	1900	...	......	....	....	.....	101.5	.....	.....	.....	101.5	.....	.....	Albumin growing less.
6/24	1980	...	......	....	....	.....	101.6	.....	.....	.....	101.5	.....	.....	Only a trace.
6/25	2070	...	......	....	....	.....	101.5	.....	.....	.....	101.6	.....	.....	Only a trace.
6/26	2120	...	......	....	....	.....	101.5	.....	.....	.....	101.5	.....	.....	No albumin.

TABLE 2.—RABBIT RECEIVES 200 MG. TYPHOID POISON (FILTERED, BUT UNNEUTRALIZED), SUBCUTANEOUSLY, AS SHOWN BELOW. WEIGHT AND URINE TAKEN IN MORNINGS

1909 Date.	Weight.	Amt. Urine.	Sp. Gr. with Pic.	% Ash.	% N.	Temperatures. 9	11	1	3	5	7	9	10	Remarks.
4/26	2820	...	......	....	....	.....	103.4	102.7	102.8	102.8	103.1	103.0	.....	Slight diarrhea throughout afternoon.
4/27	2805	*325	1.0084	1.23	.22	200 mg. 102.8	200 mg. 102.7	200 mg. 102.4	200 mg. 102.2	200 mg. 102.9	200 mg. 103.2	200 mg. 103.9	200 mg.	
4/28	2550	160	1.0092	1.38	.37	200 mg. 105.5	200 mg. 104.6	200 mg. 104.6	200 mg. 104.6	200 mg. 104.5	200 mg. 105.5	200 mg. 105.5	200 mg. 105.8	
4/29	2550	35	1.0263	3.12	2.20	200 mg.† 105.5	.....	.....	.....	.....	.....	.....	.....	

* Normal amount of urine for 21 hours.
† Died within a minute after this dose.

TABLE 3.—RABBIT RECEIVES 200 MG. TYPHOID POISON (FILTERED, BUT UNNEUTRALIZED) SUBCUTANEOUSLY, AS SHOWN BELOW. WEIGHT AND URINE TAKEN IN MORNINGS

1909. Date.	Amt. Urine.	Sp. Gr. with Pic.	% Ash.	% N.	Temperatures. 9	11	1	3	5	7	9	Weight.	Remarks.
4/21	...	......	....	....	.....	.....	.....	102.2	102.2	.....	.....	....	Normal temperature at 7 and 9.
4/22	*125	1.0105	1.60	.30	200 mg. 102.0	200 mg. 100.9	200 mg. 101.3	200 mg. 102.8	200 mg. 103.5	200 mg. 104.4	200 mg. 103.1	2440	
4/23	255	1.0044	.61	.18	200 mg. 105.8	200 mg. 105.4	200 mg. 105.0	200 mg. 104.2	200 mg. 103.4	200 mg. 103.2	200 mg. 103.2	2255	
4/24	60	1.0089	1.04	.55	200 mg. 103.2	200 mg. 103.8	200 mg. 104.0	200 mg. 103.6	200 mg. 101.5	200 mg. 98.4	200 mg. §	2080	Total amount of toxiu given, 4 gm.
4/25	†15(?)	1.0112	.70	1.22	.....	.....	.....	.....	.....	.....	.....	....	

* Normal amount of urine for 16 hours.
† Normal amount of urine for 10 hours.
§ Died at 7:05.

stroying the tissue with which it comes in contact. An injury that crushes and destroys tissue without breaking the skin or being accompanied by bacterial infection causes fever because the broken-down tissue is absorbed into the circulation. Fever, more or less marked, accompanies perfectly aseptic operations in which tissue is destroyed and left in the body. In the intermittent fevers the elevation of temperature is simultaneous with or immediately subsequent to the discharge of protein into the blood. In the infectious diseases the primary, multiplying, invading cell supplies and maintains the foreign protein. In our experiments we have kept up the supply of foreign protein by the frequency of our injections.

There are certain things in Table 1 to which we may call attention. The loss in weight is gradual, with some slight fluctuations; it continued for some six days after the injections were discontinued, after which it gradually increased. The amount of urine is quite variable, but averages much less than normal, as it does in typhoid fever in man. The elimination of nitrogen is increased as it is in the fevers to which man is susceptible. The temperature of the fore period varied from 101.8 to 102.5. The first injection of egg-white was made at 1 p. m. May 27. During the next twenty-four hours the temperature kept below the normal average. It is noticeable that when the dose was increased from 2 c.c. to 4 c.c. there was a marked rise at the end of twenty-two hours. When this dose was again doubled, no marked effect on the temperature was seen until the next day. If one will follow down one of the morning hours he will see the gradual rise in the morning temperature so generally observed in the development of typhoid fever. Equally

TABLE 4.—THIS RABBIT RECEIVED SUBCUTANEOUSLY 200 MG. TYPHOID TOXIN (FILTERED, NEUTRALIZED, REFILTERED) EVERY 2 HOURS, BEGINNING 5/4/09. URINE AND WEIGHT TAKEN AT 1 P. M. 117 DOSES GIVEN IN 15 DAYS (23.4 GM. TYPHOID TOXIN)

				Sp. Gr.			Temperatures.									
Date.	Cage.	Wt.	Amt. Urine.	with Pic.	% Ash.	% N.	7	9	11	1	3	5	7	9	11	Remarks.
5/3	12	....	...	......	....	....	.....	.....	.....	102.1	102.3	102.8	102.9	103.4	.....	Carrot food.
5/4	12	2820	*215	1.0068	1.00	.32	102.4	102.9	102.7	D102.8	D102.3	D103.3	D103.8	D103.9	.....	Carrot food.
5/5	12	2785	100	1.0102	1.35	.59	D104.2	D104.9	D104.9	D105.5	D105.8	D105.8	D106.2	D105.6	.....	Carrot food.
5/6	12	2810	75?	1.0122	1.80	.62	D104.9	D106.5	D106.0	D105.9	D104.9	D104.9	D105.8	D105.1	.....	Carrot food.
5/7	12	2825	22	1.0302	3.52	2.17	D104.4	D104.9	D105.4	D105.2	D104.4	D104.2	D104.6	D105.2	.....	Carrot food.
5/8	12	2790	52	1.0173	1.49	1.95	D104.2	D104.2	D104.2	D104.9	D104.3	D104.7	D105.5	D104.8	.....	Carrot food.
5/9	12	2770	60	1.0156	1.75	1.41	D103.3	D103.2	D103.3	D104.1	D104.3	D104.6	D104.0	D104.4	.....	Carrot food.
5/10	12	2800	110	1.0114	1.30	.81	D103.3	D103.3	D104.6	D103.7	D103.8	D104.0	D105.2	D104.4	.....	Carrot food.
5/11	12	2770	98	1.0120	1.42	.61	D104.0	D104.6	D104.6	D104.3	D104.8	D105.0	D104.8	D104.8	.....	Carrot food.
5/12	12	2750	136	1.0100	1.15	.65	D104.1	D105.0	D104.3	D104.6	D105.5	D105.1	D104.7	.....	D104.4	Carrot food.
5/13	12	2720	120	1.0114	1.42	.58	D103.8	D103.9	D104.5	D104.6	D104.5	D105.9	D103.3	.....	D104.6	Carrot food.
5/14	12	2670	140	1.0103	1.69	.70	D104.0	D103.8	D105.1	D104.9	D105.0	D104.8	D104.8	.....	D104.5	Carrot food.
5/15	12	2660	135	1.0107	1.48	.64	D104.0	D103.7	D104.1	D104.0	D104.7	D104.7	D104.3	.....	D104.5	Carrot food.
5/16	12	2670	158	1.0087	1.66	.43	D103.7	D104.3	D103.4	D103.5	D103.8	D104.7	D104.3	D103.8	.....	Carrot food.
5/17	12	2595	256	1.0054	1.06	.30	D103.7	D104.3	D104.5	D104.4	D104.4	D104.7	D104.5	D104.3	.....	Carrot food.
5/18	12	2690	184	1.0107	1.31	.28	D103.6	D104.0	D103.6	D104.2	D104.5	D104.0	D104.7	D104.4	.....	Dandelion food. 117 doses given. 23.4 gm. Ty. toxin.
5/19	12	2695	265	1.0106	1.19	.18	103.6	103.6	103.1	104.2	103.7	103.6	104.0	103.9	.....	Doses stopped.
5/20	12	2695	125	1.0153	2.43	.24	103.5	103.5	103.3	103.6	103.4	103.3	103.6	103.2	103.2	Dandelions.
5/21	12	2650	75	1.0159	2.24	.25	103.2	103.2	103.3	103.3	103.1	102.9	.....	103.3	102.8	Dandelions.
5/22	12	2680	76	1.0153	2.01	.36	103.0	102.8	102.8	102.8	103.0	103.2	.....	102.9	.....	Dandelions.
5/23	12	2540	...	......	....	....	.....	103.4	.....	103.1	.....	.....	.....	102.8	.....	Dandelions and crackers.
5/24	12	2555	†225	1.0119	1.69	.15	102.7	103.0	103.0	103.1	103.1	103.2	103.2	103.2	.....	Dandelions.
5/25	12	2650	210	1.0128	1.81	.36	102.9	103.1	103.2	103.7	103.8	103.8	103.4	103.3	.....	Dandelions.
5/26	12	2655	220	......	....	....	103.1	103.3	103.6	.....	.....	.....	.....	.....	.....	Dandelions.
5/27	12	2660	160	......	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dandelions.
								Rabbit alive 6/22/09.								
5/28	12	2610	275	......	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dandelions.

* Amount of urine normal for 24 hours.
† For 48 hours.
D = Dose.

TABLE 5.—THIS RABBIT RECEIVED SUBCUTANEOUSLY 200 MG. TYPHOID TOXIN (FILTERED, NEUTRALIZED, REFILTERED) EVERY 4 HOURS, BEGINNING 4/30/09. URINE COLLECTED AND WEIGHT TAKEN EVERY MORNING. 80 DOSES GIVEN IN 19 DAYS (16 GM. TYPHOID TOXIN)

				Sp. Gr.			Temperatures.									
Date.	Cage.	Wt.	Amt. Urine.	with Pic.	% Ash.	% N.	7	9	11	1	3	5	7	9	11	Remarks.
4/29	10	2750	...	......	....	....	.....	102.2	102.9	102.8	103.1	103.6	103.3	.....	.....	Carrot food.
4/30	10	2750	*250	1.0060	.92	.14	D102.4	103.1	D102.8	104.1	D104.3	105.3	D104.6	105.0	.....	Carrot food.
5/1	10	2560	245	1.0052	.77	.13	D104.7	105.3	D105.1	104.3	D104.0	104.2	D104.6	104.4	.....	Carrot food.
5/2	10	2610	460	1.0063	.70	.13	D104.2	104.2	D104.0	104.6	D103.8	103.8	D104.2	103.6	.....	Carrot food.
5/3	10	2560	350	1.0062	.92	.19	D103.3	103.8	D104.2	103.7	D104.0	104.2	D104.2	103.8	.....	Carrot food.
5/4	10	2555	270	1.0062	.90	.16	D103.6	103.5	D103.6	103.7	D103.7	104.2	D104.0	104.2	.....	Carrot food.
5/5	10	2575	215	1.0083	1.26	.24	D103.5	103.4	D103.7	103.8	D103.7	104.4	D105.1	104.5	.....	Carrot food.
5/6	10	2545	175	1.0075	1.13	.32	D103.4	103.3	D103.4	104.2	D104.9	105.0	D105.1	105.0	.....	Carrot food
5/7	10	2605	166	1.0098	1.45	.26	D103.7	103.5	D103.6	104.1	D104.0	104.6	D104.4	104.7	.....	Carrot food.
5/8	10	2540	132	1.0091	1.21	.21	D103.3	103.6	D103.7	103.6	D104.4	104.2	D104.6	104.2	.....	Carrot food.
5/9	10	2569	240	1.0087	1.26	.19	D103.2	103.3	D103.5	103.4	D103.7	103.6	D104.2	104.4	.....	Carrot food.
5/10	10	2600	280	1,0081	1.17	.25	D103.6	103.4	D103.7	104.0	D104.5	104.2	D103.9	103.8	.....	Carrot food.
5/11	10	2530	260	1.0090	.95	.22	D103.1	103.2	D103.6	103.6	D103.7	104.2	D103.8	103.8	.....	Carrot food.
5/12	10	2570	295	1.0072	.87	.19	D103.6	103.6	D103.9	104.0	D103.7	104.4	D104.3	.....	D104.4	Carrot food.
5/13	10	2540	295	1.0078	.89	.21	D103.6	104.5	D103.8	104.4	D104.7	105.0	D104.6	.....	D104.6	Carrot food.
5/14	10	2505	140	1.0123	1.36	.27	D103.3	104.5	D104.0	104.3	D104.8	105.2	D104.9	.....	D104.7	Carrot food.
5/15	10	2660	255	1.0093	.96	.18	D103.2	103.8	D104.2	103.8	D104.2	104.3	D103.9	.....	D104.1	Carrot food.
5/16	10	2565	185	1.0108	1.82	.27	D103.5	103.8	D103.8	103.6	D103.7	103.9	D104.2	103.7	.....	Carrot food.
5/17	10	2580	280	1.0071	1.22	.22	D103.0	103.5	D103.4	103.9	D104.1	104.6	D104.0	104.5	.....	Carrot food.
5/18	10	2625	174	1.0129	1.91	.28	D103.4	103.7	D104.1	103.7	D104.1	104.2	D104.4	104.5	.....	Dandelion food and carrots.
5/19	10	2575	215	1.0133	2.16	.18	103.3	104.0	103.5	103.7	104.1	103.9	104.3	104.0	.....	Dandelion food only. Doses stopped.
5/20	10	2470	210	1.0121	1.91	.25	103.5	103.4	103.9	103.4	104.0	103.7	104.6	103.8	103.5	Dandelion food.
5/21	10	2490	108	1.0171	2.40	.41	103.3	103.2	103.2	103.3	103.6	103.1	.....	103.3	103.0	Dandelion food.
5/22	10	2460	44	1.0199	2.38	.74	103.2	103.2	103.4	103.8	103.7	103.7	.....	103.2	.....	Dandelion food.
5/23	10	2440	263	1.0119	1.67	.23	.....	103.0	.....	103.4	.....	.....	.....	102.8	.....	Dandelion food and crackers.
5/24	10	2340	46	1.0151	1.40	.72	102.6	102.9	103.2	103.3	103.3	103.5	103.3	103.0	.....	Dandelions.
5/25	10	2495	175	1.0118	1.36	.27	103.2	103.4	103.7	103.3	103.2	103.6	103.6	103.6	.....	Dandelions.
5/26	10	2400	270	1.0115	1.67	.29	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5/27	10	2520	220	......	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
								Rabbit alive 7/9/09.								
5/28	10	2495	210	......	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

* Urine normal in amount for 22 hours.
D = Dose.

striking is the fact that for the most part the highest temperature for the day falls in the afternoon. When the injections were discontinued the temperature gradually fell and remained somewhat below the normal, as is often observed in typhoid.

We were anxious to determine the nature of the albumin in the urine—whether it was some of the egg-albumin injected or came from the serum albumin of the animal's blood. In order to determine this we injected 2 c.c. of the filtered urine of June 18 intra-abdominally into each of five guinea-pigs for the purpose of sensitizing them to whatever proteins the urine might contain.

Twelve days later two of the pigs received intra-abdominally each 5 c.c. of egg-white dilution (with an equal volume of water); two others had each 5 c.c. of fresh serum from a rabbit, and the fifth had a mixture of 2.5 c.c. of each of these fluids. All the animals were found to be sensitized, thus showing the presence of both egg-white and serum protein in the urine of the febrile rabbit. It is worthy of note that, while these animals developed the three stages characteristic of protein sensitization, the second and third stages were unusually prolonged and less acute than those generally observed in sensitized guinea-pigs. Of the two treated with egg-white, one died at the end of two hours and the other fifteen minutes later. Of the two treated with rabbit serum one died at the end of one hour, while the other lived for three hours. The one that had the mixture of proteins developed the symptoms more promptly than any of the others, but did not die.

If less than a fatal dose of the poisonous group of a protein be injected into an animal, recovery is speedy and at the end of two hours the same dose may be repeated.

The effect of a single dose is to lower the temperature, but when repeated doses are employed a continued fever develops. Within a few days, however, the time depending on the size and frequency of the dose, the animal dies. The effects of the free, unneutralized poison are shown in Tables 2 and 3. In these the poisonous portion of the protein of the typhoid bacillus was used.

The fact that an animal recovers so speedily from only a little less than a fatal dose of the protein poison shows that this poison must be quickly neutralized in the animal body. We are inclined to the opinion that this neutralization is secured only by the destruction of the tissue of the animal body.

It was shown by V. C. Vaughan, Jr., some years ago, that the neutralization of the poisonous group of the protein molecule greatly reduces its toxicity. This led us to try repeated subcutaneous injections of the poisonous group from the typhoid protein after neutralizing it with sodium bicarbonate. The results of these injections are shown in Tables 4 and 5.

We think that these investigations show that fever results when a foreign protein is introduced into the blood. This foreign protein is not necessarily of bacterial origin, though under natural conditions this is usually the case in continued fevers. The fever results from the cleavage of the foreign protein and from the effect of its split products on the body tissue. The object that Nature seeks to accomplish in this process is the destruction of the foreign protein. The effect of the high temperature *per se* on the infected animal is slight. The ill effects, the wasting of tissue and death in which fever often results are due to the action of the protein poisons that are set free.

UNDIAGNOSTICATED BRAIN ABSCESS

F. DOWNING, M.D.
BALTIMORE

In The Journal of May 22, 1909, Dr. Eshner reported a case of undiagnosticated brain abscess. In a day when chiefly successes are given to the medical press I feel like congratulating the Doctor for his courage in publishing a failure, for as such much be regarded all cases which are undiagnosticated, or are wrongly diagnosticated.

Though it is embarrassing to report mistakes, the science of medicine is often materially promoted thereby and the fear of criticism arising from a pardonable failure of diagnosis should not prevent one from speaking of the undiagnosticated. For that reason a parallel case to Dr. Eshner's is submitted.

History.—X., male, aged 27, was admitted to St. Joseph's Hospital May 3, 1909, complaining of severe headache. There was nothing of note in his previous history except that he had had an otitis media in early life which gave him very little trouble. General health had always been good; no history of venereal infection of any kind. For the past two years he had been somewhat out of sorts, not positively sick, but not feeling quite himself. Occasionally during the past six months he complained of pain in the left ear. About March 10, 1909, he was taken with what was thought to be influenza and was sick about two weeks, during which he had an attack of unconsciousness lasting a few minutes. In the first week of April he again became sick with what was said to be "typhoid-pneumonia" and was under treatment in another hospital for three weeks. He left feeling rather weak but otherwise apparently well. About one week later he began to suffer pain in the head, and had another spell of unconsciousness which came on suddenly and lasted only a few minutes. No convulsions were noticed by the family and no paralysis observed after the attack. Two or three days later he had a third attack of unconsciousness. During the night of May 2 he suffered intensely with headache and was taken to St. Joseph's Hospital the following day complaining of great pain in the head, especially on the left side.

Examination.—Patient fairly well nourished; complexion sallow; tongue coated; breath fetid; appetite good; no rigidity of muscles of neck; no vomiting; no vertigo; but rather obstinate constipation. Abdomen negative; few scattered râles and dulness at base of both lungs posteriorly. Expectoration contained a few diplococci but no tubercle bacilli. Heart negative; pulse 60; temperature 98.4 F.; respiration, 20.

Urine: cloudy, alkaline, specific gravity 1.025, no albumin, slight amount of sugar; under microscope, few epithelial cells and triple phosphates.

Blood: Leucocytes, 18,200; differential counts, polymorphonuclear, 81; large mononuclear, 4; small mononuclear, 10; eosinophiles, 1; basophiles, 1; myelocytes, 3; number of cells counted, 337.

Eyes: Direct and consensual reflexes present but not so active as normal; surface of each disk raised, grayish-white, edges blurred and "fuzzy," veins enlarged and tortuous; no hemorrhages and no exudates in retina. Choked disk was somewhat more marked on left side. Central vision was good; there was no paralysis of the external ocular muscles and there was no nystagmus.

Ears: Right side showed evidence of previous otitis media which had fully healed with no impairment of hearing. On left side were a partly defective drum, little moisture in tympanum with faint odor, and slight impairment of hearing. No fistula, no sinking of posterior-superior wall, no tenderness about mastoid or along sigmoid groove or over the occipital protuberance.

Slight loss of power was observed in right hand and some little dragging of right foot. Patella reflex exaggerated at first on both sides, but absent after a few days in hospital; ankle clonus present on admission but absent one week later. Kernig sign present on both sides; Babinski sign present, also *tâche cérébrale;* areas of anesthesia over portions of right foot; no aphasia. Mental condition good; answered questions intelligently; was rather anxious about outcome of his illness.

Hospital History.—During his illness in the hospital the patient's chief complaint was headache. He vomited only once, had no chills, and never complained of vertigo. Potassium iodid had no effect. Two lumbar punctures drew no fluid whatever, though needle was clearly in spinal canal. Edema of optic nerve head increased only slightly, never became great, and examination of eye grounds three days before death showed no retinal hemorrhages. Central vision remained good up to two days before death. Temperature ranged from 96.4 F. to 100.5 F.; pulse from 60 to 110; respiration 16 to 24. For twelve days before death he would have several hours of coma alternating with periods of consciousness. The latter gradually becoming shorter, the periods of coma longer until 24 hours before dissolution, when deep coma set in. Death occurred May 25, 1909, on the twenty-second day of his residence in hospital.

Autopsy.—Brain with enveloping dura came out easily There was no pus on outer or inner surfaces of dura. Vessels of pia on left hemisphere congested. There was discoloration with slight bulging of the cortex high up on left parietal lobe extending to the longitudinal fissure. Incision into this fluctuating area released from 6 to 8 ounces of foul-smelling pus. Abscess cavity involved the greater part of the parietal lobe and extended well down into the temperosphenoidal. The cortical wall of the abscess lay just posterior to the fissure of Rolando. No pus in any of the ventricles. Decided softness of brain tissue surrounding abscess cavity. Roof of petrous portion of temporal bone was found intact. No communicating channel between middle ear and abscess was made out. Mastoid and cerebral sinuses unfortunately were not opened. General section was not permitted.

The staff was divided in regard to diagnosis. Internists were for meningitis until this was negatived by lumbar puncture, the neurologist was for inoperable brain tumor, the otologist for brain abscess. In deference to the greater experience of the neurologist in intracranial affections, diagnosis of tumor prevailed. Headache, constipation, slight motor and sensory involvement on the right side and double choked disc were the chief symptoms. Abscess had probably existed for some time, patient's illness of March and April being due to this and not other causes. Although no direct route of suppuration was made out between middle ear and cerebral abscess, it is highly probable that the abscess was of otitic origin, infection occurring, if not by direct extension, by metastasis.

INGUINAL HERNIA OF THE BLADDER

H. E. RANDALL, M.D.
FLINT, MICH

Hernia of the bladder through the inguinal canal, while rare, is a condition that must be borne in mind when operating on any hernia, either femoral or inguinal. Failure to recognize this rarity has led to disastrous results. Cooley, in Keen's "System of Surgery," says that but three cases of hernia of the bladder were encountered in a series of over 1,900 cases of hernia in patients operated on at the Hospital for Ruptured and Crippled.

History.—Miss H., aged 20, first noticed a small bunch in the right inguinal region last April. This did not disappear and was painful at times, but she continued teaching school. The mass felt like a fatty growth. At times it was thought that an impulse on coughing could be felt and at other examinations no impulse on coughing could be detected. There were no bladder symptoms. Symptoms were similar to that of an enlarged tender gland.

Operation.—This was performed at Hurley Hospital, July 13, 1909. On cutting down to the mass it looked and felt like a lipoma except that the walls could be moved on each other as though there were a cavity in its center. The mass extended down into the inguinal canal. After separating the mass from the adhering structures it appeared as a diverticulum of the bowels. A sound passed into the bladder easily passed into this diverticulum, making the diagnosis of an extraperitoneal direct inguinal hernia of the bladder. The bladder was returned to the abdominal cavity and the abdominal wall closed with silk-worm gut sutures, with layer suturing with catgut.

The case of Justo is interesting because, after making a diagnosis of vesical hernia from the patient's symptoms, he cut into the fatty mass and opened the bladder because he was unable to distend this portion of the bladder by fluid, concluding that no vesical hernia existed.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 530*)

IODONE SURGICAL DRESSING AND DUSTING POWDER—Pulvis Iodoni Compositus.—Iodone surgical dressing and dusting powder consists of four parts of iodone ($(C_6H_4C_2O_3)_2KI.I_4$), a periodide of phthalic acid anhydride and 96 parts pure sterile talcum.

Iodone is prepared by treating a solution of phthalic-acid anhydride in acetic ether, with a solution of iodine and potassium iodide, and crystallizing the product from suitable solvents.

Iodone occurs in the form of dark green prismatic crystals which melt with decomposition at 163° C. (325.4° F.). When freshly prepared it is odorless, but on standing, traces of iodone are liberated, giving it a faint odor of iodine. It is gradually decomposed into phthalic acid, iodine, and potassium iodide by water, in which the decomposition products dissolve until a saturated iodine potassium iodide solution results. Any excess of iodine remaining in contact with the supernatant liquid remains unchanged. Alcohol, chloroform, and ether decompose iodone, but more slowly than water. Iodone crystals are stable in dry air; exposed to damp air, they gradually liberate iodine.

When 0.1 Gm. iodone is heated in a crucible at not more than a dull red heat, the compound chars, iodine vapor is driven off, and a residue of white potassium iodide remains. At a bright red heat, the latter is dissipated, leaving no weighable residue (absence of metallic impurities).

About 0.1 Gm. iodone, accurately weighed, is allowed to react, with occasional agitation, with a solution of 1 Gm. potassium iodide in 50 c.c. water. At the end of 15-20 minutes the titration of this solution with tenth normal thiosulphate solution should indicate the presence of not less than 51.1 per cent. iodine.

Iodone surgical dressing and dusting powder, assayed by the above process, should yield not less than 2 per cent. of available iodine. (About 2.5 Gm. should be taken for the assay.)

Actions and Uses.—Like iodine, iodone is a potent germicide and stimulant to the processes of repair in wounds. It is said to be useful in all conditions in which the local use of iodine is indicated, also as an antiseptic dressing in wounds and all local affections.

Dosage.—Its employment as a surgical dressing and dusting powder should be regulated on the basis of its containing 2 per cent. of available iodine, slowly liberated on contact with the moisture of wound secretions, etc.

Manufactured by The Henry C. Blair Co., 800 Walnut St., Philadelphia, Pa.
U. S. patents applied for.

PEPTONE—Peptonum.—Peptonum (Pharm. Belgica., edit. 3); Peptona Medicinalia (Pharm. Francaise, 1908).

Peptone is a product of the peptic or pancreatic digestion of albuminoid substances.

Peptone may be produced artificially as follows: Mince 1000 parts of lean beef freed from bone, etc., and mix it with 4000 parts of water, to this add a solution of 5 parts of pepsin in 1000 parts of water with 50 or 25 parts of hydrochloric acid. The mixture thus prepared is kept at a temperature not exceeding 50° C. (122° F.) until 10 Cc. of the filtrate or the addition of 1.5 Cc. of nitric acid in the cold no longer produces a precipitate. (Formation of a coagulum indicates incomplete peptonization.) The solution is then filtered, neutralized with sodium bicarbonate and evaporated to dryness in vacuo. It may be purified if necessary from adherent sodium chloride by dialysis or by precipitation by alcohol washing with ether and drying. By desiccating its concentrated solution upon plates peptone may be obtained in scales. (Brit. Codex.)

Peptone occurs as a white or yellowish-brown amorphous powder or in scales, with a somewhat cheesy but not unpleasant taste and nearly odorless. The pure substances when added to water hisses and froths at the same time evolving heat. It is soluble in water (1 in 20) forming a neutral solution or slightly acid. Aqueous solutions are pale yellow and clear or may be made quite clear by the addition of a little hydrochloric acid. The addition of alcohol precipitates peptone. Aqueous solutions are not coagulated by heat. No precipitate is formed in aqueous solution on the addition of nitric acid or potassium ferrocyanide (difference from albumen) nor is a precipitate formed by solutions of ferric chloride or cupric sulphate nor by saturation with ammonium sulphate or zinc sulphate (distinction from albumoses). The aqueous solutions are laevorotatory. Neutral solutions are precipitated by tannin and by various salts of mercury. Acid solutions give precipitates with bismuth potassium iodide, potassium mercuric iodide, bromine water and other precipitants of alkaloids. Peptone is colored yellow with Millon's reagent on warming a red color and precipitate; with cupric sulphate and caustic alkali a violet red color (biuret reaction). Picric acid gives yellow flakes. Peptone should not be precipitated by lead acetate, alum or hydrogen sulphide. On ignition it should not yield more than 2 per cent. ash.

Action and Uses.—Peptone is given as a nutrient in malnutrition and certain forms of dyspepsia. Its value is limited because larger amounts, often even small quantities, cause irritation.

Dosage.—Peptone is given in the form of pastilles, 5 Gm. in each prepared with gelatine. It is administered in rectal alimentation in the form of suppositories or it may be added to rectal enemata.

(To be continued)

Therapeutics

ECZEMA

This troublesome condition is often so difficult to cure that the thoughtful consideration of its treatment by Dr. E. G. Little (*British Medical Journal,* June 5, 1909) is well worth describing.

He makes the very pertinent dictum that it is the patient who has the eczema who is being treated, and not merely the eruption on the skin, and therefore believes it necessary that the patient should be subjected to a very careful physical examination. Also, the urine should be carefully analyzed, the diet should be investigated, and, in fact, no examination is too rigid to thoroughly understand the physiologic (or pathologic) condition of a patient who is suffering from eczema.

Little adopts Tilbury Fox's long descriptive definition of the disease, which it is well to bear in mind, viz.: "Eczema is a catarrhal inflammation of the skin which is mainly characterized by a peculiar discharge, stiffening linen and drying in thin yellow crusts, and having its stages of erythema, papulation, vesiculation, discharge, pus formation, and squamation more or less marked under different circumstances and followed in some cases by the secondary results of inflammation such as hypertrophy, edema and the like."

ACUTE ECZEMA

This is an erythematous eruption, occurring mostly on exposed surfaces of the body and due to cold or irritants. This eruption may abort at this stage, or it may go on to vesication, exudates, and even pus infection. The disease is not contagious.

The best treatment of this condition is rest in bed, with a low diet and the use of sedative lotions. Little believes that a pure milk diet is the best. The bowels should be kept loose, best with saline laxatives; it is unimportant which one is selected—Rochelle salt, effervescing phosphate of soda, or artificial Carlsbad salts, a teaspoonful or more (enough for one or two movements of the bowels), taken in a glass of hot water before breakfast.

Little finds the best lotion for the skin to be similar to the following:

℞.	gm. or c.c.		
Acidi salicyli	10	or	ʒiiss
Liquoris plumbi subacetatis	150		fl. ℥v

M. et Sig.: Add one tablespoonful to half a pint of milk, and apply to the inflamed skin every four hours.

[Prepare fresh daily, and shake before using.]

CHRONIC ECZEMA

Little urges the necessity for very carefully investigating the patient's work and the possible use of irritants on the parts affected with the chronic eczema, before attempting to treat the disease. In many patients an irritant cause will be found, which if removed, or corrected, will allow the skin to become rapidly healed. If, in the work of the individual, there is a necessity for coming in constant contact with the irritant that has caused the trouble, the cure will be retarded and perhaps prevented. Whether the cause of the eczema be found or not, strong antiseptics or irritants should never be used in the treatment of the condition. If the skin is moist or weeping or red and itching, Little finds that lotions are more sedative than ointments. He suggests the following:

℞.	gm. or c.c.		
Calaminæ præparatæ	2		gr. xl
Zinci oxidi	1	or	gr. xx
Aquæ calcis	10		fl. ʒiii
Olei olivæ	25		fl.℥i

M. et Sig.: Apply with a brush or cotton swab.

This lotion may also be well applied by moistening gauze in the solution, placing it over the diseased skin, and holding it in place with thin bandages. The skin should never be heated with over-bandaging or thick coverings.

If the eczema has become purulent, the part affected should be subjected for twenty minutes to the action of a mild antiseptic solution, and perhaps the official Liquor Antisepticus will be of sufficient strength. It may, however, be necessary to use a bichlorid of mercury solution (1 to 3,000), or perhaps for a shorter period (ten minutes) one-half of a 1 per cent. solution of the official Liquor Formaldehydi, in water. The infected areas having been thus sterilized, the above soothing lotions may be applied.

When the oozing from the surface has about ceased and the skin shows a tendency to become dry, Little applies a paste in place of the lotion, and he believes Lassar's paste, or something similar, to be the best. The ingredients of this paste or ointment vary, but Little particularizes the composition as follows:

℞.	gm. or c.c.		
Acidi salicyli	2		gr. xxv
Zinci oxidi	25	or	
Amyli	25		āā, ℥i
Paraffin mollis	50		℥ii

M. et Sig.: Use externally.

If the skin shows considerable redness and irritation, the salicylic acid may be omitted, or the following ointment may be used:

℞.	gm. or c.c.		
Zinci oxidi	25		℥i
Aquæ calcis	25	or	
Olei olivæ	25		āā, fl.℥i
Adipis lanæ hydrosi	10		ʒiii

M. et Sig.: Use externally.

This ointment having been spread thickly over the affected areas, a fine powder, as starch, may be dusted over the ointment so that it almost makes a dry dressing; no bandages are needed.

When the patient is first seen during the stage when dry crusts have formed and scabs from epithelial débris are present, local applications are useless until these are removed. To remove these scabs, wet dressings may be used, well applied by soaking clean, sterile gauze in warm boric acid solutions and applying it to the region of the crusts and scabs. These moist applications are then covered with an oil silk or rubber tissue and kept in place with a bandage. These dressings should be changed as often as they become dry. If pus organisms are present. the skin must be made sterile with one of the antiseptics, and when clean of crusts the above lotion or paste may be applied.

If chronic pus infection is present and the disease is not readily controlled by this treatment, vaccine therapy should be used.

If patches of inveterate eczema have persisted months or even years, associated disease or persistent causes should be suspected. These may be "ichthyosis, varicose veins, gout, diabetes, or tuberculosis." If any of these conditions are found, they should be properly treated, and with their improvement the skin condition will generally improve. A healthy exfoliation of the thickened epidermis may be aided by applying every four or five days the following lotion:

℞.	gm. or c.c.		
Phenolis liquefacti	15	or	
Liquoris picis alkalini (N. F.)	15		
Glycerini	15		
Alcoholis	15		āā, fl.℥ss

M. et Sig.: Paint on the part with a brush. or swab, once in four or five days.

Each day during the interval the diseased surface should be dressed with some soothing lotion or ointment.

If the above phenol solution is too painful, the sensation of the parts may be first dulled with a cocain application.

In chronic eczematous patches occurring about the junction of the skin and mucous membranes, as the lips, vulva, anus, and on the nipple, nitrate of silver applications may be substituted for the above phenol combination. The fissure, or irritated, or inflamed part may be touched lightly with a swab wet with a nitrate of silver solution (15 to 25 per cent.). This may be done at intervals of four or five days, for several times, if necessary. However, prolonged nitrate of silver applications are inadvisable, as they may tend to prevent healing, and perhaps even give sufficient irritation. in older people at least, to cause pathologic growths.

Little has found picric acid in from 0.5 to 1 per cent. solution, in water, valuable as an application for itching in pruritus ani with fissures, and for itching of other excoriated surfaces.

Eczematous patches or fissures about the nipple occurring during lactation are often cured by one or two nitrate of silver applications, great care as to cleanliness after nursing, and by the continuous applications of saturated boric acid solutions.

In very chronic dry eczema Little obtains satisfactory results by applying gauze saturated with tarry preparations, and then covering the gauze with oil silk and bandaging for twenty-four hours. This same treatment may be several times repeated, if necessary. The Unguentum Picis Compositum of the National Formulary would be a suitable preparation for such use.

ECZEMA OF CHILDREN

The most frequent cause of infantile eczema seems to be exposure to cold, and such local irritants as hard water, strong soap, dirt and irritation caused by lack of cleanliness and neglect. The treatment is to treat properly any parasitic disease that may be present, to keep the parts that are subject to moisture scrupulously clean, to prevent the use of any irritant on the child's skin that could perpetuate the disease, to keep the part comfortably warm but not overheated, and to prevent scratching by any method that seems best. A simple strawboard splint on the arms, long enough to prevent flexion at the elbows, is generally sufficient to prevent scratching. The above calamine lotion and Lassar's paste will aid in curing the condition, but at times the disease in infants is difficult to cure.

Overfeeding and underfeeding should be prevented. The bowels should be carefully watched, both to prevent constipation and to see that the food is satisfactorily digested, and agrees with the child. It is sometimes advisable to cause the bowels temporarily to be rather loose. While the excessive use of artificial foods is often a cause of eczema in young children, still it occurs when the child is breast fed. Certainly, it is inadvisable to allow a restricted diet of artificial food that contains large amounts of salts. Large amounts of alkalies are certainly contraindicated, and the same is true of much acids. Water should be freely given. Change of air to the country or the seashore seems often advisable. This is especially true during the heated term, and overheating houses in winter, causing the child to become very warm, will prolong the disease.

Little does not believe that warm bathing of the eczematous child is inadvisable, and believes that the part may be bathed at any stage, with the precaution to use no strong alkaline or irritating soap, and to use either soft water or water that has been made soft by the addition of soothing powders. The inflamed area should never be rubbed, but should be dried by mopping with soft towels or gauze.

If there is much swelling or infiltration of the skin in children, Little administers calcium lactate, doubtless on the presumption that calcium prevents or inhibits exudation. As soon as the edema is less, he stops the administration of the drug. It may be given as follows:

℞.	gm. or c.c.		
Calcii lactatis	3	or	gr. xl
Aquæ cinnamomi	100		fl.℥iii

M. et Sig.: Two teaspoonfuls, in water, three times a day, before meals.

Nothing will hasten the improvement of these little patients more than fresh air, quiet, rest, and the prevention of mental as well as physical irritations.

Chinese Surgery.—Medical missionaries in China say that the natives will bear without flinching a degree of pain from which the stoutest of us would shrink in terror. A woman in Shao-wu, afflicted with a ulcer of the leg, was treated by a native "doctor." One day he came to the mission hospital to show the physician in charge a "string" which he calmly announced he had pulled from the wound. It was the sciatic nerve! To people suffering from such barbarous methods, and to whom anesthetics are unknown, the merciful methods of foreign doctors in the mission hospitals seem like miracles.

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SATURDAY, AUGUST 21, 1909

THE BACTERIOLYTIC ACTION OF BILE ON THE PNEUMOCOCCUS

Jaundice in pneumonia has generally been considered a very unfavorable prognostic sign indicative of an extreme grade of toxemia produced by the pneumococcus. If this explanation is true, the phenomenon first described by Neufeld[1] in 1900 of the lytic action of bile on the pneumococcus stands in almost paradoxical contrast. If one drop of fresh rabbit's bile is added to 20 drops of a broth culture of pneumococci in a test tube, there is almost immediate clearing up of the cloudy fluid, due, as is observed in a hanging drop under the microscope, to complete lysis of the bacteria. Bile salts were later found to act in the same way. The reaction is specific, as no other organism is dissolved by bile, and it has been of considerable importance in differentiating streptococci from pneumococci. The so-called *Streptococcus mucosus capsulatus,* which in most respects behaves like a variety of pneumococcus, is dissolved by even less bile than is required for the pneumococcus.

Recently Grixoni[2] has reported from Grocco's clinic a series of most interesting experiments conducted both *in vitro* and *in vivo.* All strains of streptococci tested gave negative results. Using six different strains of pneumococci he showed that the reaction depends largely on the bile used, as is to be expected from the varying chemical composition of "normal" bile at different times. Rabbit bile is more active than ox bile, and fresh sterile bile acts more rapidly than contaminated bile. The lytic power is lost at room temperature or at 37° C., and is damaged by heat of sterilization, but is retained if the bile is kept on ice. Both sodium glycocholate and taurocholate have lytic power, the latter acting more powerfully; but the dissolving power of the combined salts, each in 2 per cent. solution, is less than that of fresh bile, although greater than that of bile heated to 120° C. for an hour.

Neufeld[3] a short time before the publication of Grixoni's results confirmed his original observations, and showed that a direct relation exists between virulence and rapidity of lysis by bile. Grixoni independently reached the same conclusion, and found that a culture freshly isolated from the blood of an infected animal is dissolved in about one-fourth the time necessary for the same organism after it has grown on artificial culture media. Grixoni's animal experiments almost shatter any dreams of a practical therapeutic application of this reaction, at least in systemic pneumococcus infections like pneumonia. Subcutaneous, intraperitoneal and intrapleural injections of bile, or bile salts, protect only when given at the same place and time as the bacterial injection, so that what practically occurs in the experiments is an injection of organisms already dissolved. Given in any way, bile has no prophylactic power, while intravenous doses hasten the death of the animal, probably on account of the toxic action of the bile itself.

Remarkable as is the phenomenon of lysis by bile, no explanation of its cause has yet been offered. Neufeld suggests the possibility of its being related in some way to the capsules of the pneumococcus, but as no other encapsulated organisms yield the reaction no definite conclusions are to be drawn. At present it is a phenomenon *sui generis,* of importance in the differential diagnosis between pneumococci and streptococci and in testing the virulence of pneumococci.

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1. Ztschr. f. Hyg., xxxiv, 1900, 454.
2. Riv. critica di clin. med., x, 1909, 17-33.
3. Arb. a. d. kaiserlich. Gsndhtsamtc., xxviii, 1908, 572

THE PURIFICATION OF WATER BY OZONE

Ozone has been called the ideal agent of purification since it is only a more active form of ordinary oxygen, already existing normally in the atmosphere in small quantities, and since its application to water leaves behind no foreign chemical residue. The first attempt (1889) to sterilize water with ozone was reported by Fröhlich,[1] and was carried out with an apparatus manufactured by Siemens and Halske of Berlin. The Siemens and Halske method was installed later on a larger scale at Wiesbaden and Paderborn in Germany, and is said by Erlwein[2] to have given highly satisfactory results at those places. Other forms of ozonizing apparatus have been devised by Tindal (since improved by De Frise), Marmier and Abraham, Vosmaer and Otto, and are in use in several installations in Holland, France and Germany. The process has been investigated by a number of competent bacteriologists, including van Ermengem, Roux and others, and has shown in practically all cases excellent results. Bacteria in the water, including *B. coli,* are destroyed to such an extent that an initial content of 2,000-4,000 per c.c. is reduced to 1 or 2 per c.c. or even less. There is consequently no doubt as to the bacterial efficiency of the process.

The nature of a water treated by an ozonizing system is of some importance since it is plainly extravagant to employ ozone for the oxidation of any large quantity of chemical impurity. The method, for example, is hardly applicable to the direct treatment of a turbid river water containing a considerable quantity of or-

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1. Electrotechn. Ztschr., 1891, p. 344.
2. Ber. über d. XIV Internat. Kong. f. Hyg. u. Demog., 1908, 3, p. 195.

ganic matter in solution or suspension. At the St. Maur municipal waterworks of the city of Paris, where the DeFrise ozonization method is employed with considerable success for furnishing a portion of the Paris drinking water supply, the water of the river Marne is subjected to a preliminary clarification before it is ozonized. The river Marne is highly polluted with sewage, but after the water is passed through beds of sand and gravel and then treated with ozone it possesses a degree of bacterial purity indicated by the fact that *B. coli* is not found when quantities as large as 200 c.c. are tested.[3]

The question of the relative expense of ozonization of large public water supplies as compared with that of sand filtration or of certain forms of mechanical filtration is a point on which it is not easy to secure definite information based on data covering a considerable period. Erlwein estimates that with a large plant the cost might be as low as about one-half cent per 1,000 gallons, and Rideal gives about two-thirds of a cent per 1,000 gallons as the actual cost of ozonization at St. Maur. Neither of these estimates includes the cost of preliminary treatment of a polluted water. In the absence of any uniform system of waterworks accounting, it is very difficult to obtain trustworthy information concerning cost of installation and operation of purification systems, though this is a vital point.

To justify the introduction of any new system of water purification, even though it be one of recognized efficiency, the question of comparative cost should be presented in such a way as to convince reasonable inquirers. This has not yet been done with the ozonization process.

THE FIRST PHYSICIAN

The first physician of whom we have any definite record is evidently I-em-Hetep, who lived in the reign of King Tcheser, a monarch of the Third Dynasty of Egypt, the date of whose reign is somewhat uncertain, but is probably not later than 4500 B. C. In the light of recently awakened interest in psychotherapeutics and the use of the mind to influence the body, it is extremely interesting to note that his name, I-em-Hetep, means "the bringer of peace." According to tradition, he had two other titles, one of which was "The Master of Secrets" and the other "The Scribe of Numbers." The reference embodied in the first of these titles is easy to understand. The second is less easy of comprehension. Perhaps the writing of his prescriptions required an unusual knowledge of numbers in those days, for even at that time the Egyptians had a great many remedies that they employed for diseases of various kinds and many methods of administering them. He seems to have been held in high honor by his generation and to have received ample rewards for his professional work, for the well-known "step pyramid" at Sakkara, the old cemetery near Memphis, is attributed to him, showing that he was only next to the king in honor and also very probably in revenue.

Even more interesting than this, however, is the honor that was paid to him after death. Men had learned to trust him so much, they had come to realize how thoroughly he fulfilled his name, the "bringer of peace," and how often he had helped them in suffering, that after his death they concluded that he must have had more than human knowledge and so they made a deity of him and worshipped him. While doing this they were careful, however, to maintain his humanity as the principal element for their reverence. While they made statues of him these never have a beard, which was the distinct mark of divinity at that time. He is represented as a placid-looking man seated with a scroll on his knees and a look of very sympathetic humanity on his face. For over four millenniums he continued to be held in high honor among the Egyptians, and the hospitals erected in various places were always placed under his protection. When after Alexander's time the Ptolemies, who were originally Greek, came to rule in Egypt, I-em-Hetep came to be identified with Æsculapius, the Greek physician of about 1200 B. C., whose wonderful success in relieving men's ills, bodily and mental, had caused the Greeks after his time, in similar fashion, to make a deity of him.

While I-em-Hetep is the first physician among the Egyptians, he must not be considered an isolated figure in Egyptian history, for every few centuries since we have the story of some distinguished man in medicine whose merits have given him a place in the memory of men ever after. About three centuries after I-em-Hetep came King Athothis, who is said to have written the first text-book of anatomy. A few centuries later came the distinguished surgeon on whose tomb, in the same cemetery of Sakkara or Saqqârah near Memphis, the old capital of Egypt, not far from the present city of Cairo, is to be found the series of pictures of surgical operations which are the earliest extant and which were described in THE JOURNAL, Nov. 9, 1907. The Ebers papyrus gives us a still more detailed picture of Egyptian medical life and education, so that it is evident that for about 3,000 years before the writing of this papyrus there was great devotion to medicine and surgery on the part of the men who reached high distinction among their fellows in Egypt. In a word, it is possible, as a consequence of recent discoveries in Egyptian history, to trace the medical profession with its members occupying places of honor and confidence among men for more than 6,000 years.

INDUSTRIAL OVERSTRAIN

While more attention is being continually given to industrial diseases, it is likely to be the feeling of the physician that this is a special field which concerns mostly the practitioner in the industrial centers. Those who have to do with painters or other lead workers are naturally interested in plumbism; other groups will find it to their advantage to study grinder's phthisis, etc. But there is a more general relation of labor that demands the attention of the medical profession and must interest every physician who has patients of the laboring class. While a trade may be free from poisons or other special tendencies to disease, it may contribute to the production of disease by the severe and exhausting character of the labor itself. Josephine Goldmark[1] calls attention to the influence of fatigue and the need of a thorough investigation of its effects in predisposing the system for other diseases, such as the infections. The prevalence of neurasthenia among the working population and the increase of other nervous diseases among tradesmen and laborers are phenomena whose relation to fatigue and long working hours it would be well to investigate. This author calls attention to the lack of study of this subject on the part of American hygienists, although foreign investigators have taken it up and it is receiving emphatic attention from the Permanent International Commission for the Study of Professional Maladies, a French organization on which American medicine has no representative. Attention is called to the fact that the 1910 meeting of the International Congress of Hygiene and Demography, to be held in the United States for the first time, will give an opportunity for the presentation of the results of studies of the effects of fatigue and long hours under American industrial conditions. Such a study would be exceedingly beneficial as a basis for framing suitable laws to regulate such conditions and would also give the medical profession a new insight into the pathogenesis of many common ailments.

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[3] Rideal: Jour. Roy. San. Inst., 1909, xxx, 32.

Medical News

ILLINOIS

Chicago

Infantile Mortality.—The total deaths of infants under 1 year of age during the past week jumped from 142 to 194, an increase of 52 over the preceding week, and an excess of 13 over the corresponding week of last year. Gastrointestinal disorders are accountable for 185 deaths, or more than 31 per cent. of the total for the week from all causes; 167 of these 185 deaths were among children under 2 years of age. This record exceeds the preceding week by 39, and is 23 higher than the corresponding week of last year. Notwithstanding these increases, the general death rate was more than 4 per cent. lower than the August average and 6.5 per cent. below the rate of the corresponding week of 1908.

MARYLAND

Baltimore

Smallpox on Steamship.—The North German Lloyd steamship *Main* was delayed at quarantine August 10 by the discovery of a case of smallpox among its steerage passengers. After a thorough fumigation, she was allowed to go to her pier. There were 450 passengers aboard the vessel.

Typhoid Decreasing.—The health report for week ending August 14, shows a large falling off in typhoid fever cases. There were 86 cases for the same period in 1908 and 46 in 1909. This result is attributed by the health commissioner to the unusually dry season and the care taken of the city's milk supply.

NEW YORK

Home for Destitute and Sick Children.—The Holiday Farm, organized to maintain a home for the reception and temporary treatment of indigent or destitute sick and convalescent children, was incorporated August 5, with its principal office at Rhinecliff.

No Insurance Company Hospital.—The application of a life insurance company for permission to acquire real estate for the purpose of erecting thereon a tuberculosis hospital has been denied by Superintendent Hotchkiss. The denial rests on the insurance law which does not permit insurance companies to acquire real estate excepting such as is required in the transaction of their ordinary business, i. e., making and selling insurance.

National Tuberculosis Hospital.—It is reported that 27,000 persons in 28 states will contribute a little over 9 cents a month each to build and maintain a tuberculosis sanitarium at Liberty, which is to be established by the Workmen's Circle, a fraternal insurance organization. Immediate steps will be taken toward the erection of the hospital as soon as the application is granted by Health Commissioner Porter. The institution will accommodate 40 patients.

New York City

Gone Abroad.—Dr. and Mrs. W. P. Cunningham, Dr. and Mrs. Samuel G. Gant, Dr. and Mrs. Henry D. Chapin, Dr. and Mrs. Henry B. Delatour, Drs. William E. West and Michele Accetta and Dr. and Mrs. William V. Hayes have sailed for Europe.

Milk Famine Threatens.—The persistent drought throughout New York and the eastern states is responsible for a milk famine, which has already raised the price of milk. Dealers are curtailing their output in every possible way, and a meeting has been called to consider the problem in New York.

Gas Checks for Charity.—From the gas rebate fund, which amounts to about $11,000,000, the committee on the prevention of tuberculosis of the Charity Organization Society has received as a voluntary contribution $14,244. This money will be used by the committee in its crusade against tuberculosis, and will enable the committee to pay for an exhibit to be made in all the schools, preparations for which are now under way.

Work of the Junior Sea Breeze Hospital.—The report of Junior Sea Breeze, a hospital maintained by John D. Rockefeller through the Association for Improving the Condition of the Poor, shows that there have been about twice as many dispensary cases as during the same time last year, while, although the hospital is filled to the extent of its capacity, the total number of admissions has been only about one-half what it was during the same time last summer. While it is admitted that the cool summer may have something to do with the falling off, the real explanation is attributed to the work of the visiting nurses who send the babies to the dispensary before they become dangerously ill. The number of deaths at the hospital has been very small.

Hospital Notes.—Plans have been filed for remodeling the bacteriologic laboratory, improving the lighting and adding accommodations on the first floor of St. Luke's Hospital for animals to be used in experiments. The improvements will cost $25,000.——Plans have been filed for remodeling the upper floor of the City Hospital, Blackwell's Island, and erecting an operating theater. There will be a surgeon's room, a workroom for nurses and an *x*-ray room, together with several recovery rooms. These and several minor improvements will cost $30,000.——Elaborate plans have been approved and a liberal appropriation has been made for the establishment of rest stations, comfort stations and medical stations in all parts of the city during the Hudson-Fulton celebration. One-third of the churches have planned to keep their doors open and to provide nurses from 9 a. m. to 9 p. m. Tents will be put up as emergency hospitals, each containing twelve cots, and nurses, orderlies and physicians will be on duty at all hours. Ambulance launches will be in service during the water celebration.

Buffalo

Personal.—Drs. John Hudson Grant, George A. Himmelsbach and James W. Putnam have gone abroad.

Isolation Hospital Condemned.—Dr. Walter Goodale, superintendent of the temporary Municipal Isolation Hospital, condemns the building, which, originally a public school building, was condemned and abandoned. A site should be provided by the city for a modern hospital for communicable diseases.

Esculapian Club Election.—The Esculapian Club has elected the following officers: President, Dr. Cornelius J. Carr; vice-president, Dr. Irving W. Potter; secretary, Dr. Julius Ullman; treasurer, Dr. Albert J. Colton; and advisory council, the president, and Drs. Francis M. O'Gorman and Frderick S. Hoffman.

Hospital Notes.—Plans have been drawn for an addition to the German Deaconess' Hospital, to cost about $80,000. The addition will be four stories in height, fireproof and will provide 75 new rooms and a well-equipped and complete operating room.——Riverside Hospital, Lafayette avenue, has been enlarged, taking in the Riverside Accident Hospital and the Marine Hospital. The institution is under the charge of Dr. Lillian Craig Randall.

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[1] The Survey, July 10, 1909.

Academy Elects Officers.—The following officers have been elected for the Buffalo Academy of Medicine: President, Dr. Earl P. Lothrop; secretary, Dr. Harry R. Trick; treasurer, Dr. Lawrence Hendee; trustee, Dr. Grover W. Wende; chairman section on medicine, Dr. Thomas J. Walsh, and secretary, Dr. Henry P. Frost; chairman section on surgery, Dr. Thew Wright, and secretary, Dr. James A. McLeod; chairman section on obstetrics and gynecology, Dr. Burt C. Johnson, and secretary, Dr. James F. Whitwell; chairman section on pathology, Dr. Frederick J. Parmenter, and secretary, Dr. Norman K. McLeod.

NORTH CAROLINA

Personal.—Dr. J. Edward Smoot, Concord, who was operated on for appendicitis at the Salisbury Sanitarium recently, is improving.——Dr. William J. McAnnally, High Point, is seriously ill with septicemia, due to the bite of a spider.——Dr. William Allen, Charlotte, has been elected secretary-treasurer of the Associated Charities of the City of Charlotte.

Impure Mineral Waters.—Under a recently enacted law authorizing the State Board of Health to make examinations from time to time, as it may see fit, of the various mineral waters offered for sale throughout the state, examination of a number of specimens of bottled waters has been made, showing the presence of colon bacilli in a lithia water bottled in Virginia and sold widely throughout the United States.

State Health Officer Commended.—The Medical Society of the State of North Carolina, on the retirement of Dr. Richard H. Lewis as secretary of the Board of Health, adopted resolutions expressing the regret with which they accept his resignation, and its conviction that he has done more, both in his official and individual capacity, than would have been possible for any other one to have done, and commending his work in saving them from impending adverse legislation, and having secured such salutary measures as are responsible for their present advanced position in sanitary work.

State Hospital for Tuberculosis.—The State Hospital for Tuberculosis in Moore county has been visited by the assistant secretary of the State Board of Health, and has been closed pending needed sanitary improvements. The institution is expected to be opened next month with accommodation for 50 patients, and after January 1 next accommodation for 50 additional patients will be provided. A strong sentiment exists among leading phthisiologists of the state that the present site for the institution should be abandoned, and a new location secured in the mountain section of the state.

NORTH DAKOTA

New Hospital Opens.—Dedicatory exercises of the Bismarck Hospital and Deaconess Home were held July 4. The hospital is a three-story structure, 40 x 120, and is well built and thoroughly equipped.

Physician Wins Suit.—In the suit against Dr. Edward J. Hagen, Williston, in which damages were claimed on account of alleged malpractice, the jury, after five hours' deliberation, brought in a verdict in favor of the defendant.

Sanitarium News.—Bottineau, Dunseith, Cando and Walhalla are working to secure the State Sanitarium for Tuberculosis, recently authorized by the legislature.——Bids were opened and the contract let on July 24 for the new $10,000 addition to the Fargo Sanitarium.

OHIO

Personal.—Dr. Paul W. Tappan, Dayton, has been elected first lieutenant O. N. G.——Drs. W. Watson Conger, Toledo, William P. Love, Youngstown, and Adolph J. Girardot, Toledo, have been taking the course of instruction at the Government School, Sparta, Wis.——Dr. R. H. Bishop, Jr., has succeeded Dr. Frank Vincent as a member of the staff of the Tuberculosis Dispensary, connected with the Western Reserve University Medical School, Cleveland.——Dr. William J. Means, Columbus, was seriously injured in an automobile accident, July 16.——Dr. and Mrs. George F. Brubaker, Springfield, have sailed for Europe.——Dr. Louis M. Early, physician of the State School for the Blind, Columbus, has retired and has been succeeded by Dr. Isaac B. Harris.

Cincinnati

Roentgenologists Meet.—Medical men, interested in *x*-ray work, met August 7, at the office of Dr. Henry Kennon Dunham and organized the Cincinnati Roentgen Ray Society, with seven charter members. Dr. Dudley Webb was elected secretary.

PENNSYLVANIA

State Medical Society Meeting.—The annual meeting of the Medical Society of the State of Pennsylvania will be held in Philadelphia, September 27 to October 1.

Tablet Presented to Hospital.—A bronze tablet of the late Dr. John Fay is to be presented to the Altoona Hospital to be placed in the reception room early next week. Addresses will be made on behalf of the staff by Drs. William S. Ross and Frederick H. Bloomhardt, Altoona, Dr. Henry H. Brotherlin, Hollidaysburg, and others.

Hospital Notes.—St. Margaret's Memorial Hospital, which was equipped for service ten years ago, but has been unused since that time because of the lack of a maintenance fund, is soon to be opened. The hospital has a capacity of 100 patients.——The president of the Bethlehem Steel Works has ordered the closing of the Bethlehem Steel Works Hospital.

State Board of Examiners for Nurses.—The examining board for nurses, appointed under the act passed in the last legislature, consists of Miss Ida F. Giles, Pittsburg, Miss Roberta M. West, Erie, and Drs. Alice M. Seabrook, William S. Higbee and Albert E. Blackburn, all of Philadelphia. The board met for organization at Harrisburg, July 27, and elected Dr. Higbee, president; Miss West, vice-president, and Dr. Blackburn, secretary-treasurer. The board is now ready to receive applications for registration in compliance with the act, through its secretary.

Personal.—Dr. Samuel H. Gilliland, Marietta, has sailed for Europe.——Dr. Percival A. Herman, Middleburg, has been appointed a medical inspector in the department of tuberculosis of the State Health Bureau.——Dr. Hamilton K. Beatty, Pittsburg, superintendent of the sanitation bureau of the City Health Department, was presented, July 7, by the chief inspectors of the stations over which he presided, with a gold shield.——Dr. J. William Schultz, Tremont, has been elected president and Dr. Theo. C. Fegley, Tremont, secretary of an organization composed of the physicians in the territory extending from Pine Grove to Hegins.——Dr. Mary M. Wolfe, resident physician to the State Hospital for the Insane, Norristown, has resigned, to take effect October 1.——Dr. Wilmer R. Batt, Harrisburg, one of the three representatives of the United States at the meeting of the International Commiission for the Revision of the Classification of Causes of Death and Illness, has sailed for Europe.

Philadelphia

Clinic Opens in New Location.—The Philadelphia Clinic for the Free Treatment of Throat and Chest Diseases has removed to its new quarters at 2114 Lombard street. Free clinics are held at the institution on Mondays, Wednesdays and Fridays at 3 p. m.

Personal.—Drs. Henry R. M. Landis, Charles K. Mills, Eugene L. Van Sant and John McLernon have sailed for Europe.——Dr. Sheridan P. Manship has been appointed a police surgeon.——Dr. Walter W. Roach has succeeded Dr. William Graton, resigned, as medical inspector.

Bequests to Tuberculosis Sanitaria.—Payment of the $5,000 bequest of John G. Brill to the Free Hospital for Poor Consumptives, White Haven, have been made by representatives of the estate.——Dr. Lawrence F. Flick, director of the Phipps Institute, has received an offer from one of the Philadelphia hospitals of six beds, the expense of which will be paid by Henry Phipps.

Christmas Stamp Money Apportioned.—The funds received from the sale of Christmas stamps for the tuberculosis cause have at last been apportioned as follows: Free Hospital for Poor Consumptives, White Haven, $2,500; Pennsylvania Society for the Prevention of Tuberculosis, $1,000; Germantown Hospital, $1,500; Grandview Institution for the Cure and Treatment of Tuberculosis, $1,000, and Philadelphia Protestant Episcopalian City Mission Home for Consumptives, Chestnut Hill, $2,000. The committee recommended that the balance of more than $3,000 be retained for distribution to tuberculosis institutes which have not yet applied for relief.

TEXAS

New Sanitarium.—Dr. Andrew J. Bell and associates are to erect a twenty-room sanitarium at Quanah, to cost $10,000.

Building for Doctors.—The Dallas Medical and Surgical Building Association has been organized to erect an office building to be devoted to professional men entirely and to cost $500,000.

Acquitted.—In the district court at Rusk, July 3, a jury returned a verdict of not guilty in the case of the State vs. Dr. J. J. Lockhart Forest, charged with the murder of Ollie Branch, about two years ago.

Personal.—Dr. William M. Brumby, Austin, president of the State Board of Health, has returned from a trip of inspection to Cuban, Central American and Mexican ports, and reports great progress in sanitation.——Dr. John W. Tottenham has been appointed health officer of Brownwood.——Dr. John H. Florence, Galveston, has been acting as state health officer during the absence of Dr. Brumby.——Dr. G. W. Basket, Van Alstyne, has been elected medical director of the Texas Homeo. Sanitarium, Llano.

UTAH

Faculty Changes.—Leon W. Hartman, associate professor of physics, and William Blum, assistant professor of chemistry, have severed their connection with the University of Utah.

Sanitary Bulletin.—Dr. Theodore B. Beatty, Salt Lake, secretary of the State Board of Health, has issued an imperative bulletin to all health officers of the state, in which he urges them to use the utmost vigilance in the enforcement of the law requiring the disinfection of all discharges from typhoid fever patients.

New Hospital.—The contract for the construction of the Dee Memorial Hospital, Ogden, has been awarded for $75,000. The building, when completed and equipped, will have cost more than $100,000. It will be five stories in height, 149x60 feet, will contain accommodation for eighty patients, and is to be completed by February 1, 1910.

Care for Veterans.—Dr. William F. Beer, in charge of the forty-third annual encampment, G. A. R., Salt Lake City, has arranged for a thoroughly-organized medical and nursing corps to furnish first aid and provide medical attention for all cases of illness and accidents during the encampment. An emergency hospital has been secured in the Boston Building and a special retention hospital has been arranged on the grounds of the Latter Day Saints Hospital. Automobile ambulances are to be placed at various stations along the line of march.

VERMONT

Alumni Election.—The annual meeting of the Alumni Association of the medical department of the University of Vermont, Burlington, was held June 29, and the following officers were elected: President, Dr. U. A. Woodbury, Burlington; vice-presidents, Drs. William N. Bryant, Ludlow; Patrick E. McSweeney, Burlington; Michael F. McGuire, Montpelier; Charles L. Fletcher, Dover, N. Y.; and Don D. Grout, Waterbury; and, secretary-treasurer, Dr. Lyman Allen, Burlington.

Society Meetings.—At the annual meeting of the Lamoille County Medical Association, held in Burlington, July 28, the following officers were elected: President, Dr. George L. Bates, Morrisville; vice-president, Dr. Harry W. Barrows, Stowe; secretary-treasurer, Dr. William M. Johnstone, Morrisville; censors, Dr. W. M. Johnstone, Morrisville, John C. Morgan, Stowe, George H. Newton, Cambridge; auditor, Dr. George L. Bates, Morrisville; and delegate to the state society, Dr. Archibald J. Valleau, Morrisville.——At the annual meeting of the Addison County Association, held in Middlebury, July 22, the following officers were elected: President, George F. B. Willard, Vergennes; vice-president, Dr. Robert W. Prentiss, East Middllebury; secretary, Dr. Frank C. Phelps, Vergennes; treasurer, Dr. Frank T. Briggs, Bristol; and librarian, Dr. Merritt H. Eddy, Middlebury.

VIRGINIA

Sanatorium Opens.—The new State Sanatorium for Tuberculosis at Roanoke Red Sulphur Springs, was opened to receive patients July 16.

Medical Society Organized.—Ocean View Medical Society has been organized at Norfolk, with the following officers: Dr. Southgate Leigh, Norfolk, president, and Dr. Wiilliam .D. Turner, Shoal Bay, secretary.

Medical Society Meets.—The Fairfax Medical Society held its annual meeting in Alexandria August 5, and elected the following officers: President, Dr. Frederick M. Brooks, Swetnam; vice-presidents, Drs. C. R. DuFour and Carlton L. Starkweather, Occoquan; secretary, Dr. Llewellyn Powell, Alexandria; corresponding secretary, Dr. Arthur G. Coumbe, Vienna, and treasurer, Dr. Edwin L. Detwiler, Herndon.

Personal.—Dr. Kenneth Bradford has been elected health officer of Staunton.——Dr. Truman A. Parker, Richmond, has been placed in charge of the new Catawba Sanatorium for Tuberculosis, in Roanoke County.——Drs. George J. Williams, Newport, Will R. Williams, Richlands, Lomax Gwathmey and Herbert N. Old, Norfolk, have sailed for Europe.——Dr. Henry Stuart MacLean has been appointed chief surgeon for the Virginia Railway and Power Co., and Dr. Francis W. Upshur, assistant, for Richmond and Manchester, and Dr. John G. Rennie has been appointed local surgeon at Petersburg.

WEST VIRGINIA

Antituberculosis Society Organized.—The Antituberculosis League of Parkersburg was organized August 2 with nonprofessional officers, but with Drs. Alfred N. Frame, Walter S. Link and O. Dustin Barker on the board of directors.

Personal.—Dr. W. Dewitt Stewart, city health officer of Moundsville and Dr. Charles W. Hudson, health officer of Parkersburg, have resigned.——The diploma of Dr. James F. York, Huntington, issued by the Eclectic Medical Institute, Cincinnati, June 4, 1895, has been stolen from his office.

Smallpox Prevented.—Dr. J. F. Scott, president of the board of health of Henry, reports a case of smallpox imported by an Italian immigrant, which by reason of prompt diagnosis and quarantine by Dr. R. M. Riley, was followed by no spread of the disease.

WISCONSIN

District Society Meeting.—At the sixth annual meeting of the Second Councilor District Medical Society, held in Kenosha, August 3, the following officers were elected: President, Dr. Samuel C. Bochan, Racine; secretary-treasurer, Dr. George W. Nott, Racine, and vice-presidents, the presidents of the affiliated county societies. The next meeting will be held in Racine.

Faculty Announced.—The Wisconsin College of Physicians and Surgeons, Milwaukee, announces that its first semester will open October 5, and the following faculty list is given: Dr. Wilbur O. Carrier, president; Dr. Thomas C. Phillips, dean; Dr. Solon Marks, emeritus professor of military surgery and of fractures and dislocations; Dr. A. Hamilton Levings, professor of surgery; Dr. Uranus O. B. Wingate, professor of nervous and mental diseases; Dr. William H. Washburn, professor of medicine; Dr. James A. Bach, professor of ophthalmology; Dr. Harry A. Sifton, professor of clinical surgery; Dr. Lorenzo Boorse, professor of pediatrics; Dr. Gustav A. Kletesch, professor of gynecology; Dr. Henry Blank, professor of orthopedic surgery; Dr. Thomas C. Phillips, dean of the faculty, professor of ophthalmology and otology; Dr. William Francis Becker, professor of mental and nervous diseases; Dr. Gustav A. Hipke, professor of obstetrics; Dr. Herman Reineking, professor of surgery; Dr. Henry B. Hitz, professor of rhinology and laryngology; Dr. Frank E. Darling, professor of bacteriology; Dr. Louis F. Rauschaupt, professor of chemistry; Dr. James D. Madison, professor of medicine; Dr. Curtis A. Evans, professor of anatomy; Dr. Emerson Armour Fletcher, professor of genitourinary surgery; Dr. George C. Ruhland, professor of pathology; Dr. Milton M. Spitz, professor of therapeutics; Dr. Otto H. Foerster, professor of dermatology; Dr. Wilmot F. Miller, professor of electrotherapeutics and associate in neurology; and Dr. Henry Hasson, professor of clinical microscopy.

GENERAL NEWS AND COMMENT

Railway Installs Paper Cups.—The Baltimore and Ohio Railway has installed one of the new systems of individual drinking cup machines at both Camden and Mt. Royal stations, Baltimore. The cups are made of white paraffin paper, and arranged in slot machines. By dropping a cent in the slot, a paper cup is dropped into the hand and becomes the property of the user.

Branch Federal Laboratory to be Established.—The Public Health and Marine-Hospital Service has taken steps looking to the establishment of a branch of its Federal Laboratory on the Pacific Coast in the zone of squirrel plague infection. This branch laboratory will have for its special purpose the elucidation of the various problems in connection with plague and rodents, work which can not safely be performed in laboratories in the great centers of population.

FOREIGN

Allegory in Sculptured Memorials to Scientists.—Several statues of prominent members of the profession in Europe have been installed recently as memorials at the scene of their labors, but the designs of the sculptors have all been ornately allegorical, and many criticisms have been made that this conflicts with the simplicity and love of absolute truth which distinguished the scientists thus honored. The Brouardel statue at Paris is a bust of the scientist on a tall pedestal with two graceful female figures below, Forensic Medicine and Hygiene, a little smaller in proportion than the bust, lifting high a garland to wreath it at the base of the bust. It stands in the grounds of the medical school. The Mikulicz memorial at the surgical clinic at Breslau represents in bas relief Mikulicz seated in profile, while two standing female figures, Medicine and Science, of a size rather dwarfing the recipient, are placing the wreath of immortality on his brow. One can not help imagining that Mikulicz feels rather embarrassed at the situation. The Kussmaul memorial is a bust rather larger than life-size hewn out of the stone forming the base of the memorial, with a smaller allegorical bas relief below of Medicine relieving a sick youth. The allegorical design has run riot in the Virchow statue, which is to be merely a statue of Hercules overcoming the Nemean lion, representing Virchow's conquest of disease. There is nothing to suggest Virchow personally except a small bas relief bust below. Something like the simple grandeur and life-like presentation of a St. Gauden's statue of Lincoln is what the friends of the scientists long for as a much more appropriate tribute to the memory of men of science, perpetuating their personality, but the sculptors, as a rule, seem determined to insist on decorative allegorical designs.

LONDON LETTER

(From Our Regular Correspondent)

London, Aug. 7, 1909.

Premature Burial

As stated in a previous letter the coroner's inquest of Great Britain, like many others of its institutions, is antiquated. A committee of the House of Commons is now considering the subject and the trite but ever-interesting subject of premature burial is one of the topics which came up. Mr. Pepper, of St. Mary's Hospital, the well-known medicolegal expert, gave evidence. He said that under the present condition of death certification there was practically no danger of any one being buried alive. Nearly all the cases of premature burial were myths. He regarded the present scare on the subject as baseless. A muscular movement of a corpse possibly was the basis of some of the reports. But he thought that no person ought to be buried until the corpse had been seen by a physician and no physician ought to give a certificate until he had seen the corpse. According to the present system a medical man may give a death certificate if he has never seen the corpse; all that is necessary is that he should have been in attendance during the last illness and seen the patient within a week of death.

Malaria Without the Anopheles Mosquito?

A despatch received from the governor of the Seychelles Archipelago—which lies about 750 miles northeast of Madagascar—appears to show that an epidemic of malaria is possible without the agency of the anopheles mosquito. In April, 1908, malaria broke out suddenly in Picard Island. The cases were of the benign tertian type mixed with a few isolated quotidian ones and occurred up to the end of August. Almost all the laborers in the settlement were attacked, but none died. The diagnosis was confirmed by microscopic examination of the blood which was performed by Dr. M. S. Power. Under quinin the epidemic soon subsided. It began soon after the arrival of a vessel from Manhigo, a French island off Madagascar, where malaria is prevalent. Some laborers suffering from malaria landed from the vessel and within a month the disease spread to others.. Careful search for the anopheles was made but failed to reveal it. At first this was attributed to the season, as mosquitoes are scarce during the southeast monsoon. However, larvæ of the culex and stegomyia were found. Further search for the anopheles during and after the rainy season was made for five months, but it could not be found. The conclusion was drawn that it does not exist in Picard Island. Previous investigators have also recognized the absence of this mosquito from the Seychelles Islands and malaria has been unknown there excepting imported cases, but these were not known previously to have given rise to fresh cases. Two suggestions have been made. Perhaps under certain circumstances malaria may be conveyed by other mosquitoes than the anopheles. Perhaps the vessel in which the malarial laborers arrived may have carried some anopheles which went ashore and bit the inhabitants, but, the local conditions not being favorable to their existence, they disappeared.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Aug. 5, 1909.

Prize of the Academy of Sciences

The Academy of Sciences has just awarded three prizes of $500 (2,500 francs) each, one to Dr. Neumann for his researches on the family of the ixodidæ and on various groups of parasites of the superior vertebrates; one to Dr. Charles Nicolle for his works on infantile kala-azar; and one to Prof. J. Bergonié and Dr. L. Tribondeau of Bordeaux for their work on Roentgen rays and fulguration. In the same competition three second prizes of $300 (1,500 francs) each were awarded, one to Prof. H. Truc and Dr. P. Chavernac of Montpellier for their work on ocular hygiene and ophthalmologic inspection of schools; one to MM. C. Porcher and C. Hervieux for their "Investigations on Indol and Some of Its Derivatives;" and one to M. Moussu, professor at the National Veterinary School of Alfort, for his "Investigations on the Tuberculosis of Cattle." The Godard prize ($200) was awarded to Dr. Pousson, professor at the College of Medicine of Bordeaux, for his "Surgery of Nephritis." The Bellion prize ($280) was awarded to Dr. C. Nicolas, resident physician of Lifu, New Caledonia, for his work, "Public and Private Hygiene of the Kanakas of the Loyalty Islands." The Bréant prize ($20,000), offered for a cure for Asiatic cholera, was not awarded; but out of the accumulated interest of this fund the academy awarded a prize of $800 to W. M. Haffkine for his works on vaccination and bubonic plague, and a second prize of $200 to Dr. Louis Rénon, physician of the hospital of Paris, for his work entitled "Practical Treatment of Pulmonary Tuberculosis."

Personal

The chair of therapeutics of Bordeaux has just been replaced by a clinical department of cutaneous and syphilitic diseases, of which Dr. Dubreuilh, adjunct professor, has been appointed head. At the same college the chair of operative medicine has been replaced by a clinical department of diseases of the urinary passages, and Dr. Pousson, an adjunct professor, has been appointed as its head.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 29, 1909.

The First Provincial Institution for Tuberculosis

The first provincial institution for the treatment and prophylaxis of tuberculosis has just been founded in Göttingen, and has already proved to be a necessity, for in several places in the district tuberculosis is very prevalent. The clergy of the district have undertaken the local direction of the institution. Its objects are twofold: first, to eradicate the various foci of tuberculosis; and, second, to discover incipient cases of tuberculosis and to furnish institutional treatment to the patients. Sputum cups may be obtained for distribution. The washing of the patients is to have special treatment in laundry bags, the property of the institution. Strengthening foods (milk and eggs) are to be furnished in special cases. The effort will be made to see that tuberculous patients with sputum capable of conveying infection shall have separate sleeping-rooms or at least separate beds in their homes. The disinfection of the dwelling will also be done by the institution. The funds for the new institution have been raised and placed at the disposal of the local commission by the life insurance organization.

Investigation of the Influence of Roentgen Rays on Physical Growth

It has been established through animal experimentation that exposure to Roentgen rays impairs physical growth. To investigate the question how far these findings apply to human beings, this year's congress of the German Roentgen Society has decided on a collective inquiry. Children who have been treated with Roentgen rays during their first year, especiallly those whose treatment took place some time ago, are to be investigated, for it has been shown by animal experimentation that the disturbance in growth is greater the younger the animal, and also that a slighter degree of disturbance of growth may not manifest itself until after several years.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 30, 1909.

Death of Hofrath von Vogl

A few days ago August von Vogl, emeritus professor of pharmacology in Vienna, died at Bozen in his seventy-sixth year. The remarkable personality of this scientist is well known, as he was the originator and founder of the modern pharmacognosy; he was the first man to apply the researches of histology and the use of the microscope to this branch of medicine; and his pupils are scattered all over the world. Von Vogl obtained the degree of M.D. in 1860, being the first man in Austria to obtain it. (Formerly only surgeons or physicians or "accoucheurs" (masters of obstetrics) were entitled to practice, each one his own specialty.) Von Vogl soon took up the study of pharmacology and materia medica, became privat docent and a short time afterward professor of this branch, and in 1879 he was appointed ordinary professor of materia medica in Vienna. In 1897 he became president of the *Oberste Sanitätsrat* (chief board of health in this country). He was elected twice as "rector magnificus" of the Vienna University, and was appointed by the emperor as Hofrath (privy councilor), and finally ennobled. When he retired from university life at 70, his duties were divided among his pupil and successor, Prof. Hans Horst-Meyer, and Professors Schattenfroh and Mitlacher; such was the enormous amount of work accomplished by this one man. The chief books of the deceased are a text-book on materia medica (translated into seven languages), an anatomic atlas of pharmacognosy (a commentary on the pharmacopeia of different countries), and a work on the adulteration of food, especially of flour, condiments and fruits. Among other distinctions he possessed the English Hanbury medal. von Vogl sometimes used to say he had examined more than 50,000 specimens under the microscope. He was a severe but kind examiner of the students, and none bore him a grudge.

Correspondence

Dr. Harvey Cushing's Oration on the Hypophysis Cerebri

To the Editor:—Those who expressed surprise when, over six years ago ("Internal Secretions," 1st Ed., 1903), I asserted that the anterior lobe of the pituitary played a leading rôle in the vital process *per se*, must now acknowledge the far-reaching meaning of Dr. Cushing's statement, in the Oration on Surgery, published in The Journal, July 24, that "more than one hundred total or partial hypophysectomies" had shown that "the anterior lobe of the hypophysis is a structure of such importance that a condition of apituitarism is incompatible with the long maintenance of life." While fully acknowledging the great value of Dr. Cushing's experiments, however, I must take exception to his conclusion that they sustain the theory that it is by means of a secretion capable of influencing the organism at large that the anterior pituitary carries on these all-important functions.

That extracts of the posterior lobe raise the blood pressure, slow the heart and promote diuresis, is certain, but I maintain that these effects are not produced by a true secretion, but by a mere component of the organ similar to that which, in extracts of the kidney, testis, ovary, etc., produces identical effects. As I have shown recently (*Monthly Cyclopedia*, June and July, 1909), these effects are those of adrenal extracts, and have long misled observers into believing that these various organs produced internal secretions (See "True *versus* Pseudotherapy," in a forthcoming number of the *New York Medical Journal*). Additional, but as yet unpublished, researches have suggested, moreover, that this was due to the presence in the pituitary, as well as in all the above-mentioned organs, of cellular elements, the so-called "adrenal rests" (not aberrant cells from my viewpoint, but activators of local metabolism), which are well known to give rise, especially in the kidney, to hypernephroma. Dr. Cushing, in fact, compares the action of the so-called pituitary secretion to that of adrenalin.

Again, although Herring's view that the colloid fluid (laden with broken-down cells, let me add) passes upward is quite warranted, this does not prove in the least that it is a true secretion. Indeed, Dr. Cushing's own text suggests the contrary. Since the blood pressure raising substance is "confined, as Howell has proved, to the posterior lobe," why is it that, as Dr. Cushing says, "after this portion of the gland has been removed, there is no apparent disturbance with the physiologic balance of the body?" Everyone knows that removal of the adrenals or of the thyroid, which produce true secretions, causes marked and even fatal disturbances. Again, the anterior pituitary is regarded by Dr. Cushing as the original source of this secretion; why is it that its extracts are inert? Can we consistently, with him, ascribe acromegaly, overgrowth, etc., to "hypersecretion," and dystrophia adiposogenitalis, Dercum's adiposis dolorosa, etc., to "hyposecretion" of this inert substance? These are but few of the many directions in which the secretion theory blocks all progress.

Permit me to state that such is not the case when the functions I have ascribed to the pituitary, after a far more searching study than has ever been given it by physiologists, are taken into account. The anterior lobe (including its nerve cells) from this viewpoint is connected with the floor of the third ventricle (Ramon y Cajal, Genti's) and the pons (Andriezen) by nerves which can be traced, both physiologically and clinically, to the adrenals and thyroid, while the secretions of these organs, as I have shown by many incontrovertible facts, are active factors in oxidation, metabolism and nutrition. Under these conditions it is plain that any morbid activity of the anterior pituitary, whether caused by hyperemia, hypertrophy, tumor, etc., must, by exciting unduly the adrenals and thyroid, cause excessive nutrition, overgrowth, and even giantism. Have we not the giantism of childhood in adrenal hypernephroma and rapid growth in the cretin under thyroid extract? Conversely, destructive or debilitating disorders of the anterior pituitary, by lowering the activity of the adrenals and thyroid, must necessarily entail small stature with deposition of fat and adiposis dolorosa. Do we not use thyroid extract in obesity? Do we not witness also, as symptoms of degeneration of the pituitary, myxedema, lowered oxidation, hypothermia and bronzing? Page after page of perplexing queries could be submitted attesting pointedly to the fact an imported doctrine is not always invulnerable.

All this does not militate in the least against Dr. Cushing's researches or the correctness of his surgical conclusions. His experimental and surgical work is entitled to the greatest appreciation; but it is precisely because I value his work so highly that I would like to see it devoted to the development of something besides mere assumptions.

C. E. de M. Sajous, Philadelphia.

High Enemas—Can a Tube Be Passed Into the Colon?

To the Editor:—In connection with Dr. Horace W. Soper's paper on page 426, and your editorial on page 464 of The Journal, August 7, I wish to express my appreciation of Dr. Soper's ingenuity and industry, displayed in the scanning of foreign literature. From page 48 of the third edition of Jacobi's "Therapeutics of Infancy and Childhood," I beg to quote as follows: "The great normal length of the sigmoid flexure in the infant and child, which results in its being bent on itself, prevents the introduction of an instrument to a considerable height. It will bend on itself." On page 343 one may read: "The condition of the sigmoid flexure renders the introduction of the instrument beyond the very beginning of the sigmoid flexure, a perfect illusion in many cases. It often happens that an elastic or flexible tube, when introduced to or beyond the third sphincter, bends on itself and reappears at the anus. To facilitate the entrance of the liquid into and beyond the sigmoid flexure, the irrigation should be made slowly and gently, while the pelvis of the infant is raised. The nozzle must be smooth and not thin." Similar statements are found in Jacobi's "Intestinal Diseases of Infancy and Childhood," 1887. The abnormal length and flexures of the sigmoid colon which lend to what Jacobi has called "Congenital Constipation," were first described by him in 1869.

In an article on "Congenital Constipation," which appeared in the Transactions of the American Pediatric Society, vol. vi, page 41 (1894) I wrote as follows: "The article by Jacobi, 'Some Important Causes of Constipation in Infants' is classical, and though it appeared in 1869 (*Am. Jour. Obstet.*, vol. ii), it will repay careful reading and study at the present time." During the twenty-five years of my college assistantship, Dr. Jacobi has annually referred to the difficulty or impossibility of passing elastic or solid tubes through the sigmoid flexure. When felt below the liver, the instrument is not in the transverse colon, but in the sigmoid, which has simply been raised to an abnormal position.

Francis Huber, M.D., New York City.

To the Editor:—Having observed in The Journal of Aug. 7, 1909, the article by Horace W. Soper, M.D., of St. Louis, I wish to call attention to the enclosed extracts from a paper read by me before the American Proctologic Society in June, 1904, entitled, "The Present Status of the Flexible Rectal Tube, Which Should be Paraphrased Non-utility and Impracticability." I make this request in order that the society may be placed in a proper light before the profession, as having taken the initiative in this matter.

"The members of our society generally have definitely accepted the existence and functions of Houston's rectal valves, we have dilated on their pathologic conditions, but have not reflected what effect they must have on the use of the flexible rectal tube. . . . I venture to assert, that notwithstanding all of our boasted knowledge with regard to these valves, that it is the universal practice with rectal specialists, when ordering or giving a high enema, to use the long rectal flexible tube.

"It occurred to me that if the pathologic function of these valves is to shelve and ease down the fecal matter, and if in a pathologic condition they could become so thickened as to form an obstruction to the passage of the fecal matter, that they must interfere materially with the passage of the rectal tube beyond them. I therefore instituted a series of experiments with the soft rubber tubes, to ascertain the true state of affairs. In a number of instances I introduced the rectal tube, then passed in Tuttle's proctoscope over it, and on turning on the electric light, I found, as I had expected, the rectal tube coiled on itself in the lower portion of the rectum, between the first valve and the anal margin. I have not yet found a single exception to this condition, although, I am willing to admit that occasionally it may pass them. This I should regard more as an accident, than an intended result. . . .

"But why should we depend on such uncertain means, and one attended with so much difficulty in its use, when we always have one, that is so much easier and certain to accomplish the purpose. I refer to the application of the physical law of gravity. A patient should be placed in the knee-chest position, or if too weak, in Sims' position, with the head and shoulders lowered, and the hips elevated with a pillow. The high enema can be given in this position with the most satisfactory results, using a short rectal nozzle. Even in cases of impaction, the water so introduced can be made to distend the bowel, and get beyond the point of obstruction, by sufficiently elevating the bag. By using a large quantity of water, it can be made to run around as far as the ascending colon."

SAMUEL T. EARLE, M.D., Baltimore.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HISTORY OF THE LEUCOCYTE MIGRATION

To the Editor:—Who first saw the emigration of leucocytes through the capillaries, or stated that the polymorphonuclear cells of inflammatory exudates were emigrated from the blood-vessels? LUDWIG F. GULDNER, Davenport, Iowa.

ANSWER.—Adami, in his monograph on "Inflammation" (Macmillan and Co., 1907) gives the history of this discovery as follows: "By his researches, Cohnheim (1867) forcibly attracted the attention of pathologists to the diapedesis of leucocytes in inflammation —a process which had already been very clearly described years before by W. Addison (1843) and Waller (1846) in England, and yet earlier (though without grasp of the connection between the diapedesis and inflammation) by Dutrochet (1828) in France."

FLECHSIG TREATMENT OF EPILEPSY

To the Editor:—In THE JOURNAL, August 7, page 494, is a paragraph in which is mentioned the Flechsig opium-bromid and baths method of treatment. Please give the details.

J. H. REED, M.D., Sharon, Pa.

ANSWER.—We have received several similar letters asking for details of this method of treatment, concerning the merits of which the various authorities on nervous and mental diseases disagree. The treatment is practically abandoned now, on account of the little benefit obtained in comparison with the dangers run. The Flechsig method is to administer opium for a short time in enormous doses, then to stop it abruptly and follow with large doses of bromids. Ordinary pulveris opii is administered in ascending doses up to 0.3 gm. (5 gr.) three times a day, the maximum quantity being reached as soon after the beginning of the administration as possible. The patient is kept on this maximum dose for six weeks; at the end of that time the opium is stopped abruptly and bromid of potassium or sodium to the quantity of 2 drams daily is given. After a few weeks, varying according to the evidences of bromism produced. the quantity is reduced one-half, and later may be diminished to 30 or 40 grains, and in some cases even less than this in the twenty-four hours. The opium is regarded as a preparation for the bromid treatment. Flechsig warns that the patient should be watched throughout the course of opium administration as one suffering from an acute disease.

H. A. Hare in the 1907 edition of his "Practical Therapeutics" states that the frequency and severity of the fits are materially reduced in this way for several months in some cases but that it does not cause a cure. It succeeds best in old cases and is not useful in recent ones. In the 1901 edition of his "System of Practical Therapeutics" he says: "After a year or two, if the attacks are not kept in abeyance, the opium may be repeated. I have yet to see any detrimental results or sequences of employing this method."

Gowers in his work, "Epilepsy," 1901, asserts that he regards it as doubtful whether the subsequent administration of bromid in such large doses has more influence than it would have without the preceding course of opium. The benefit sometimes seen in old obstinate cases of epilepsy, he says, may be explained by the large doses of bromid administered after a period of freedom from its influence.

Oppenheim, in "Diseases of the Nervous System," 1900, p. 783, says: "On the whole, the results of this treatment are very doubtful, and, in addition, it is not harmless, does not suit those of weakened constitutions, and demands careful watching, and is therefore probably only practicable in a hospital."

Starr, in "Nervous Diseases, Organic and Functional," 1907, p. 755, says: "I have not had good results from this course of treatment. I have known the opium habit to be induced. It is a method which is falling into disrepute. Opium and morphin should be avoided in epileptics."

Mettler, in "Diseases of the Nervous System," 1905, p. 220, says: "The plan is of doubtful efficacy and its dangers are not insignificant. In my own experience, though limited, it was not superior to the use of the bromids alone."

Spratling, in "Epilepsy," 1904, p. 374, states: "Flechsig recommended this treatment only in chronic cases in which the bromids alone had failed and cautions that the patient be carefully watched during the whole course of treatment. In my experience the plan was of little use. . . . The verdict of those who have tried the method is almost uniformly unfavorable, including Donath, Bohme, Landois, Luske, Rathe, Homen, Liehen, Warda, and Bratz."

The Public Service

Medical Department of the Army

Memorandum of changes for week ended August 14, 1909:

Skinner, G. A., major, ordered to Ft. Lawton, Wash., for duty on arrival from San Francisco.

Reynolds, C. R., major, relieved from duty at the Walter Reed General Hospital, Washington, D. C., and ordered to Washington, D. C. for duty.

Shepard, J. L., capt., ordered to duty with militia field exercises, Massachusetts coast, August 14 to 21.

Hartnett, E. H., major, granted leave of absence for 10 days.

Glennan, J. D., major, O'Connor, R. P., capt., Brechemin, Louis, Jr., capt., and Smith, H. M., capt., relieved from duty in the Philippines Division in time to sail Nov. 15, 1909, from Manila, P. I., for San Francisco, Cal.

Baker, F. C., major, ordered to Governor's Island, N. Y., for duty during the maneuvers in Massachusetts, August 14 to 21.

Juenemann, G. F., capt., relieved from duty at Fort McDowell, Cal., and ordered to Fort Logan, Colo., for duty.

Wickline, W. A., capt., ordered to accompany troops from San Francisco, Cal., to Washington Barracks, D. C.

Suggs, Frank, M. R. C., ordered from Fort Niagara, N. Y., to Fort Porter, N. Y., for temporary duty.

Brown, W. E., M. R. C., granted sick leave of absence for six months.

Jackson, T. W., M. R. C., when relieved at Washington Barracks, D. C., ordered to Fort Hunt, Va., for duty.

Hart, J. W., M. R. C., when relieved at Fort Hunt, Va., ordered to Henry Barracks, Cayey, P. R., for duty.

Wallace, G. I., M. R. C., when relieved at Henry Barracks, Cayey, P. R., ordered to Fort Sam Houston, Texas, for duty.

Coffin, H. L., M. R. C., relieved from duty on the transport *Burnside*, and ordered to Vancouver Barracks, Wash., for duty.

Eber, A. H., M. R. C., granted sick leave of absence for 2 weeks.

Usher, F. M. C., major, granted leave of absence to and including Sept. 1, 1909.

Wertenbaker, C. I., M. R. C., relieved from duty at Fort Wadsworth, N. Y., and from temporary duty at Fort Terry, N. Y., to take effect on the arrival at the latter post of Major Chandler P. Robbins, M. C., and will then proceed to Fort Jay, N. Y., for duty, relieving Capt. S. J. Morris, M.C., who on being relieved will return to his proper station, Fort Washington, Md.

Clarke, J. T., and Bratton, T. S., majors, relieved from duty as members of the board of medical officers, appointed to meet at Fort Crook, Neb., and Fort Des Moines, Iowa, respectively, for the purpose of conducting examinations of applicants for appointment to the Medical Reserve Corps.

Wells, F. M., M. R. C., ordered to Fort Leavenworth, Kan., for duty with troops to be ordered to Des Moines, Iowa.

Church, J. R., major, left Fort Robinson, Neb., with troops on practice march.

Smith, A. M., major, ordered to Presidio of Monterey, Cal., for duty.

Gunckel, G. I., dental surgeon, ordered to Fort Oglethorpe, Ga., for one month.

Medical Corps of the Navy

Changes for the week ended August 14, 1909:

Rodman, S. S., commissioned surgeon, with rank of lieut. commander, from Dec. 11, 1908.

Peck, A. E., commissioned surgeon, with rank of lieut. commander, from June 12, 1909.

Smith, C. G., commissioned surgeon, with rank of lieut. commander, from July 1, 1909.

Brooks, F. H., commissioned P. A. surgeon, from July 14, 1908.

Reed, E. U., commissioned P. A. surgeon, from Sept. 21, 1908.

Woods, E. L., commissioned P. A. surgeon, from Oct. 14, 1908.

Robertson, Gardner E., appointed acting asst.-surgeon, from Aug. 5, 1909.

Clark, G. F., orders of July 23, modified; ordered to duty at the Naval Hospital, Washington, D. C.

Robnett, A. H., commissioned P. A. surgeon, from March 24, 1909.

McDonald, P. E., P. A. surgeon, unexpired leave revolked; detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Academy, Annapolis, Md.

Dean, F. W. S., detached from the *Maine* and ordered to the *Prairie.*

Seaman, W., P. A. surgeon, detached from the *Prairie* and ordered home to await orders.

Wilson, H. D., surgeon, detached from the *Kearsarge* and ordered to continue other duties.

McCormick, A. M. D., surgeon, detached from the *Maine* and ordered home to await orders.

Reed, E. U., P. A. surgeon, detached from the Naval Recruiting Station, Chattanooga, Tenn., and ordered to the Naval Recruiting Station, Nashville, Tenn.

Donelson, M., asst.-surgeon, detached from the Naval Recruiting Station, Oklahoma City, Okla., and ordered to the Naval Recruiting Station, Chattanooga, Tenn.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Aug. 11, 1909.

Pettus, W. J., Asst. Surgeon-General, granted 27 days' leave of absence from August 16, 1909.

Gassaway, James M., surgeon, bureau order of July 20, 1909, amended to read on being relieved by P. A. Surgeon M. J. White, directed to proceed to San Francisco, and assume command.

Mead, F. W., surgeon, granted 1 month's leave of absence from Aug. 27, 1909.

McIntosh, W. P., surgeon, granted 21 days' leave of absence from Sept. 1, 1909.

Guiteras, G. M., surgeon, directed to proceed to Savannah Quarantine Station for temporary duty.

White, M. J., P. A. surgeon, directed to proceed to Philadelphia, Pa., and assume temporary charge pending arrival of Surgeon H. R. Carter.

Ramus, Carl, P. A. surgeon, on arrival of Asst.-Surgeon R. A. Herring, directed to proceed to Honolulu, Hawaii, and report to the chief quarantine officer for marine hospital duty.

Ramus, Carl, P. A. surgeon, granted 7 days' leave of absence *en route* to station.

Moore, Dunlop, P. A. surgeon, relieved from duty at Honolulu, Hawaii, and assigned to duty at Yokohama, Japan.

Trotter, F. E., P. A. surgeon, leave granted July 8, 1909, for 15 days from July 21, 1909, revoked.

de Valin, Hugh, asst.-surgeon, on the arrival of Surgeon G. M. Guiteras, directed to proceed to Stapleton, N. Y., and report to chairman of board of medical examiners to determine his fitness for promotion to the grade of Passed Assistant Surgeon.

Guthrie, M. C., asst.-surgeon, directed to proceed to Stapleton, N. Y., and report to chairman of board of medical examiners to determine his fitness for promotion to the grade of Passed Assistant Surgeon.

Atilles, Pedro del Valle, acting asst.-surgeon, granted 30 days' leave of absence from Sept. 1, 1909, with pay, and 15 days' leave from Oct. 1, 1909, without pay.

Duffy, Francis, acting asst.-surgeon, granted 6 days' leave of absence from Aug. 10, 1909.

Dynan, N. J., acting asst.-surgeon, granted 2 days' leave of absence from July 1, 1909, and 1 day, July 24, 1909, under paragraph 210, Service Regulations.

Goldsborough, B. W., acting asst.-surgeon, granted 3 days' leave of absence from July 31, 1909, without pay.

Harkin, F. McD., acting asst.-surgeon, granted 10 days' leave of absence from Aug. 10, 1909.

Rowles, J. A., acting asst.-surgeon, granted 25 days' leave of absence from Aug. 7, 1909.

Savage, W. L., acting asst.-surgeon, granted 30 days' leave of absence from Aug. 6, 1909.

Stevenson, J. W., acting asst.-surgeon, granted 12 days' leave of absence from Aug. 17, 1909, with pay, and a further period of 30 days' leave, without pay.

Thornton, M. J., acting asst.-surgeon, granted 4 days' leave of absence, July 8, 10, 11 and 12, 1909, under paragraph 210, Service Regulations.

BOARD CONVENED

Board of medical officers convened to meet at the marine hospital, Stapleton, N. Y., Aug. 30, 1909, for the examination of Asst.-Surgeons Hugh de Valin and M. C. Guthrie, to determine their fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Surgeon L. L. Williams, chairman; P. A. Surgeon John McMullen; P. A. Surgeon C. W. Vogel, recorder.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 13, 1909:

SMALLPOX—UNITED STATES

Illinois: Danville, July 25-Aug. 1, 2 cases; Moline, July 24-31, 1 case.
Indiana: Fort Wayne, June 19-26, 7 cases. July 3-10, 4 cases, July 17-31, 34 cases.
Kansas: Wichita, July 10-17, 1 case, July 24-31, 2 cases.
Kentucky: Lexington, July 10-17, 3 cases, July 24-31, 1 case; Newport, July 19-26, 1 case.
Michigan: Saginaw, July 24-31, 1 case.
Minnesota: Duluth, July 23-30, 4 cases.
Missouri: St. Joseph, July 3-24, 15 cases.
Pennsylvania: Philadelphia, July 17-24, 3 cases.
Texas: Fort Worth, July 1-31, 1 case; San Antonio, July 24-31, 1 case.
Wisconsin: Appleton, July 17-31, 17 cases.

SMALLPOX—FOREIGN

Africa: Tripoli, June 19-July 10, 17 cases, 1 death.
China: Hongkong, May 29-June 19, 2 cases, 2 deaths; Tientsin, June 26-July 3, 1 case, 2 deaths.
France: Paris, June 26-July 10, 5 cases.
Indo-China: Saigon, June 19-26, 2 cases, 2 deaths.
Italy: General, July 11-18, 32 cases; Naples, 16 cases, 3 deaths.
Java: Batavia, June 16-July 3, 3 cases.
Portugal: Lisbon, July 17-24, 2 cases.
Russia: Moscow, June 26-July 10, 47 cases, 2 deaths; Odessa, July 3-17, 2 cases; Riga, July 10-17, 6 cases.
Spain: Barcelona, July 12-19, 4 deaths; Valencia, June 26-July 10, 12 cases, 1 death; Vigo, July 10-17, 1 death.
Turkey in Aisa: Mercine, vicinity, July 19, epidemic.
Turkey in Europe: Constantinople, July 4-11, 1 death.

YELLOW FEVER

Brazil: Manos, June 26-July 3, 1 death; Para, June 26-July 10, 12 cases, 12 deaths.

CHOLERA—FOREIGN

Indo-China: Saigon, June 12-26, 7 cases, 6 deaths.
Russia: General, July 17-23, 164 cases, 73 deaths; St. Petersburg, 526 cases, 234 deaths.

PLAGUE

Australia: New South Wales, Sydney, May 22-29, 2 cases, 1 death; Queensland, Mackay, June 6, 1 death.
China: Canton, June 12-26, 70 cases, 50 deaths; Hongkong, May 29-June 19, 33 cases, 32 deaths.
India: General, June 19-26, 628 cases, 531 deaths.
Indo-China: Saigon, June 12-26, 8 cases, 5 deaths.
Japan: Kobe, July 3-10, 2 cases, 1 death; Osaka, July 2, 1 case, 1 death.
Trinidad: June 19-July 3, 2 cases, 2 deaths, July 18, 1 case, 1 death.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: State House, Des Moines, September 21-23. Sec., Dr. Louis A. Thomas.

MISSOURI: Kansas City, September 20-22. Sec., Dr. J. A. B. Adcock, Warrensburg.

NEW YORK: Albany, September 21-24. Chief of Examinations Division, Charles F. Wheelock, Albany.

MASSACHUSETTS: State House, Boston, September 14-16. Sec., Dr. Edwin B. Harvey.

Colorado Requires Practical Examinations

Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners, reports that practical tests are required by that board in the examinations for license to practice in Colorado. These practical tests are in (a) regional anatomy, making use of a living subject; (b) chemistry, particularly the making of a urinalysis; (c) pathology, consisting in the recognition of diseases by the examination of gross and microscopic specimens and (d) symptomatology, or physical diagnosis.

At least four state boards require practical tests in their examinations for license—Colorado, Massachusetts, Ohio and Minnesota. These practical tests form one of the best means of differentiating between graduates of a didactic or quiz-compend college and those who have received a thorough training in laboratory and clinic.

Nebraska State Board Controversy

The newly appointed board of secretaries of the Nebraska State Board of Health is as follows: President, C. P. Fall, M.D., Beatrice; vice-president, H. B. Cummings, M.D., Seward; treasurer, A. L. Muirhead, M.D., Omaha, and secretary, E. Arthur Carr, M.D., Lincoln.

The appointment of this board is being contested by the former board, it is reported, on the ground that, since the legislature repealed the wrong clause in the section of the act referring to the appointment of the state health inspector, and since this act also covers the appointment of the board of secretaries, the entire act was thereby made null and void.

The new board is, of course, the one recognized by the State Board of Health proper, which consists of the governor, the attorney general and the superintendent of public instruction. Mail addressed to the State Board of Health has been opened by the new board following the receipt of a favorable decision by P. V. Keyser, the acting assistant attorney general of the Postoffice Department at Washington. The whole matter will probably be tried in the courts within a short time.

New Officers of the Wisconsin Board

The newly elected officers of the Wisconsin State Board of Medical Examiners are: president, Dr. A. B. Bailey, Fennimore; secretary, Dr. John M. Beffel, Milwaukee.

Idaho April Report

Dr. W. F. Howard, secretary of the State Board of Medical Examiners, reports the written examination held at Boise, April 7-8, 1909. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 33, of whom 27 passed and 6 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Chicago	(1885)	77
Rush Medical College	(1896) (1904)	82.4 84.8, 90.1
Chicago College of Medicine and Surgery	(1908)	80.2
Northwestern University Medical School	(1904)	80
Medical College of Indiana	(1898)	76.8
University of Iowa, College of Med.	(1905) (1908)	82 80.8, 85.1
Keokuk Medical College	(1900)	75.3
University of Michigan	(1892) (1896)	85.1 78.4
Detroit College of Medicine	(1901) (1905)	81.9 75
University of Minnesota	(1907)	81.8
St. Louis University	(1905)	75.7
Ensworth Medical College	(1908)	76.8
Barnes Medical College	(1908)	82
Creighton Medical College	(1906)	79.6
Bellevue Hospital Medical College	(1898)	77.5
University of North Carolina	(1906)	86.5
Medical College of Ohio	(1882) (1889)	78.3 77.7
Jefferson Medical College	(1908)	78.7
University of Toronto, Ontario	(1888) (1907)	78.7 85.7
FAILED		
Hahnemann Medical College and Hospital, Chicago	(1909)	65.1
Michigan College of Medicine and Surgery	(1895)	61
St. Louis University	(1905)	53.1
Barnes Medical College	(1907) (1908)	69.4 72.3
Chattanooga Medical College	(1903)	69.6

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Life Insurance Companies Working for Better Health Conditions

Following the announcement by Prof. J. Pease Norton of the Committee of One Hundred, that the Metropolitan Life Insurance Company of New York City is beginning a systematic campaign against tuberculosis among its policy holders, comes the announcement of the Provident Savings Life Assurance Society of New York that a bureau has been established in the medical department of the society to assist in guarding the health of policy holders and to be known as the Policy Holders' Health Bureau. The object of the bureau is to increase mortality savings by helping policy holders to prevent disease and to discover disease in time to check or cure it. This assistance is to be offered to policy holders without charge, through the medium of health bulletins, correspondence and free medical examination, at the expense of the company, every two years, of such policy holders as may desire it. After emphasizing the needless waste from illness among the general population, the president of the society states that it is not only the right but the duty of the society to use, within proper limits, the facilities at its command to protect the policy holders from needless suffering and loss of life, and that the results of such a work will soon return the relatively small cost of operating the bureau. It is proposed to issue health bulletins from time to time, giving the policy holders the benefit of recent discoveries and advances in medical knowledge, also to aid them in discovering symptoms of disease in time to effect a cure or to arrest its progress. The society will not, of course, undertake to provide medical treatment for policy holders, such services should be rendered by the local or family physician in each case, but will endeavor to discover disease in time to prevent serious results therefrom. To this end, periodical medical examination by the physicians of the society will be given every two years.

Professor Norton states that the inauguration by the great insurance companies of a general sanitary campaign, is in his judgment, the most important event in the history of life-insurance in fifty years. Obviously, the adoption of such a policy by a few of the insurance companies will eventually lead to its adoption by all, since the advantages to the policy holder of such a plan are apparent. It will only be necessary for the medical profession to demonstrate the material advantages of good health and the wastefulness of disease and sickness, to inaugurate an effective campaign against preventable disease.

British Medical Association Warns Prospective Medical Students

In a recent issue of the *British Medical Journal* containing the transactions of some of the branches of the British Medical Association, is an especially interesting circular, issued by the Salford Division and submitted to the council of the association with a view to securing its circulation in the public schools. The council as yet has taken no action on the matter, but transmits the circular to the representative meeting for consideration. The circular is of interest, as showing the economic conditions existing in the medical profession in Great Britain. After stating that the increase in the number of medical students in the last year shows the ignorance on the part of parents of the present economic crisis in the profession of medicine, the circular states:

"In general practice, to which nine-tenths of the entrants are destined, the field of work, and therefore the income, has been contracted and is bound to contract as disease becomes more and more preventable. A single instance of it: Dr. Davy, in his presidential address to the British Medical Association said: 'My predecessor told me that fifty years ago his average income from attendance on cases of typhoid was £300 ($1,500) a year. For the past few years my income from that source has hardly averaged five guineas.'"

The *British Medical Journal* says: "The average income of the practitioner has been estimated at from £200 to £250 a year. The chances of being able to save even to the extent of the capital expended in education are, in a large proportion of cases, slight, while reasonable provision for old age, after family expenses are met, is difficult and often impossible. This after a training lasting seven years and costing from £1,000 to £1,200 ($5,000 to $6,000), and even this pittance is only gained by working seven days a week and being on duty twenty-four hours a day, with the natural result that the death rate in the medical profession is higher than in any other, the army excepted.

"In France and Germany it has been found needful to issue letters of warning to intending students, as the results of practice are equally unsatisfactory there.

"We would, therefore, ask you to urge intending entrants to inquire further before joining so overcrowded a profession."

Marriages

Herman A. White, M.D., to Miss Nellie Phelps, both of Clinton, Iowa, August 5.

Robert Sloan Irwin, M.D., to Miss Nora Elizabeth Hawver, both of Denver, July 14.

Caleb N. Athey, M.D., Baltimore, to Miss Helen Skipwith Wilmer, at Baltimore, August 2.

Walter H. Darling, M.D., Minneapolis, Minn., to Miss Florence Girard, of Boston, July 4.

Joseph E. Powley, M.D., to Miss Caroline Robertson, both of Altoona, Pa., at Philadelphia, July 29.

John P. Young, M.D., Richburg, S. C., to Miss Constance Witherspoon, of Lancaster, S. C., June 23.

Loiza Elwell, M.D., Battle Creek, Mich., and Philip Johnstone, of Belfast, Ireland, at Detroit, July 31.

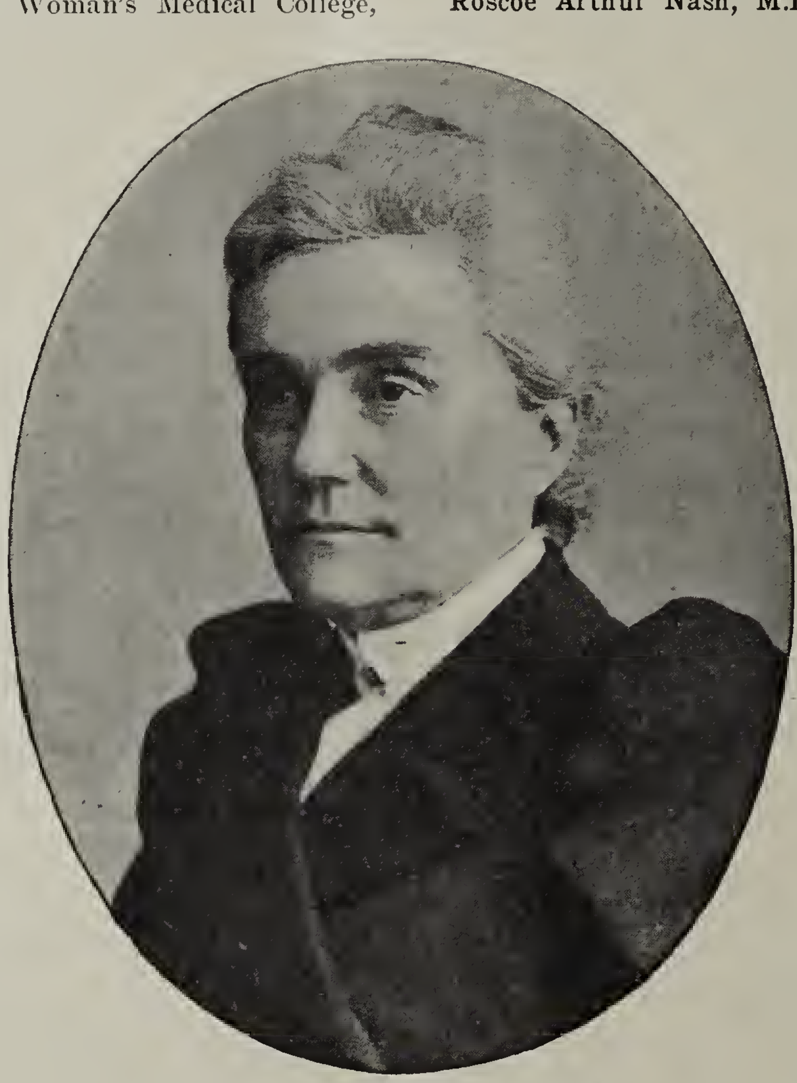
William E. Sunderland, M.D., Estancia N. M., to Miss Hazel F. Rietz, of East Dubuque, Ill., at Santa Fe, N. M., August 4.

Deaths

Sarah Hackett Stevenson, M.D. Northwestern University Woman's Medical School, Chicago, 1874; a member of the American Medical Association till her enforced retirement through illness; who has been an inmate of St. Elizabeth's Hospital since 1906; died at that institution from paralysis, after an illness of three years, August 14, aged 64.

Dr. Stevenson was one of the first women in America to take up the study of medicine and to practice the profession, and had a hard fight in overcoming the early prejudices against her sex. As a club woman and philanthropist, Dr. Stevenson was well known; she was a member of many prominent women's clubs, among which were the Chicago Woman's Club and the Twentieth Century and Fortnightly clubs. She was instrumental in founding several well-known institutions, among them being the Chicago Maternity Hospital and Training School for Nurse Maids, and the Illinois Training School for Nurses.

At various times she had held important public positions, having been a member of the Illinois State Board of Health and professor of obstetrics at the Woman's Medical College, her alma mater. She had been attending gynecologist to Cook County Hospital; and was on the attending staffs of the Mary Thompson, Frances Willard and Maternity Hospitals.



Sarah Hackett Stevenson

Ignatius Donnelly, M.D. Jefferson Medical College, Philadelphia, 1883; formerly secretary of the Minnesota State Medical Society; a member of the staff of the City and County Hospital and St. Joseph's Hospital, St. Paul; a specialist on diseases of the nose, throat and ear; for many years a member of the American Medical Association; who went to Butte, Mont., two years ago to gain relief from heart disease, died July 31, in St. Mary's Hospital, Minneapolis, from heart disease, aged 51.

Matthew Turner Newton, M.D. Yale University, New Haven, Conn., 1851; in 1853 a member of the legislature from Salem, Conn.; assistant surgeon of the Third, and later surgeon of the Tenth Connecticut Volunteer Infantry during the Civil War; a member of the legislature from Suffield in 1893; president of the Suffield (Conn.) Savings Bank for twelve years; died at his home, July 24, from senile debility, aged 80.

Pliny Brett Morgan, M.D. Pulte Medical College, Cincinnati, 1881; of Berkeley, Cal.; a specialist on tuberculosis; and for many years professor of physical diagnosis and diseases of the lungs in Hahnemann Medical College, San Francisco; died at the home of his son in Ben Lomond, Cal., July 29, from heart disease, aged more than 70.

Jacob Moyer Hagey, M.D. Rush Medical College, Chicago, 1862; for many years a member of the American Medical Association; once president of the Livingston County, Ill., Medical Society; a member of the American Public Health Association, died at his home in Mount Morris, N. Y., August 3, from cerebral hemorrhage, aged 76.

Erskine Boies Fullerton, M.D. Starling Medical College, Columbus, 1866; of Columbus, Ohio; a member of the American Medical Association; for many years professor of materia medica and therapeutics in Starling Medical College; died suddenly in the Good Samaritan Hospital, Portland, Ore., July 31, from cholera morbus, aged 66.

Francis Everard Roche, M.D. Queen's University, Dublin, Ireland, 1867; formerly surgeon major, British reserve military forces; a fellow of the Pathological Society, London; a member of the British Medical Association, and Utah State Medical Association; died at his home in Ogden, Utah, July 31, from septicemia, aged 67.

James A. Pinson, M.D. Medical College of Indiana, Indianapolis, 1872; an honorary member of the Vigo County (Ind.) Medical Society; a veteran of the Civil War; and a member of the local board of U. S. pension examining surgeons; died at his home in Terre Haute, June 22, from senile debility, aged 73.

George Mays, M.D. University of Pennsylvania, Philadelphia, 1861; a member and once president of the Philadelphia Medico-Legal Society; assistant surgeon and surgeon to the Ninety-third Pennsylvania Volunteer Infantry during the Civil War; died at his home in Philadelphia, August 1, aged 63.

Joseph W. Southall, Medical College of Virginia, Richmond, 1860; formerly superintendent of Public Instruction of Virginia; a Confederate veteran; for eight years a member of the state senate; died at his home near Jetersville, August 2, from cholera morbus, aged 77.

Cranston H. Dodd (license, Iowa, 1886); formerly postmaster of Koszta, Iowa, and coroner and justice of the peace of Iowa County; died in a hospital in Iowa City, August 2, from hemorrhage following an operation for pancreatic cyst, aged 62.

Roscoe Arthur Nash, M.D. State University of Iowa, Iowa City, 1894; formerly a member of the American Medical Association; for many years house surgeon at Mercy Hospital, Tipton; died at his home in Tipton, Iowa, August 1, from tuberculosis, aged 42.

Susanna Hayhurst, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1857; of Philadelphia; who had been connected with the Woman's Hospital of Philadelphia for thirty-three years, died in that institution, August 7, from senile debility, aged 89.

William C. Doane, M.D. Castleton (Vt.) Medical College, 1846; who held a position in the Department of the Interior, Washington, D. C., and was afterward inspector of prisoners during the Civil War; died at his home in Elmira, N. Y., August 2, aged 83.

Edward F. Menger, M.D. Medico-Chirurgical College of Philadelphia, 1884; a member of the Medical Society of the State of Pennsylvania; physician to the Old People's Home; died at his home in Philadelphia, August 3, from acute nephritis, aged 51.

Edward F. Paramore (registration, Wis., 1899); for fifty-three years an eclectic practitioner; a veteran of both the Mexican and Civil Wars; died at his home in Oconto, Wis., August 1, from paralysis, aged 78.

Samuel Joseph Patterson, M.D. Bellevue Hospital Medical College, New York City, 1867; of Dunlap, Iowa; died at the Methodist Hospital, Omaha, Neb., June 18, from postoperative pneumonia, aged 65.

Barnett P. Watts, M.D. College of Physicians and Surgeons, Keokuk, 1871; a member of the Illinois State Medical Society; died at his home in Randall (East Galesburg), Ill., July 31, aged 62.

Peter E. Jones, M.D. Medical Faculty of Queen's University, Kingston, Ont., 1866; formerly Indian agent of the Mississaugas of the New Credit, died at his home in Hagersville, Ont., June 29.

Joseph R. McLeod, M.D. College of Physicians and Surgeons, Keokuk, 1877; a pioneer practitioner of Findlay, Ohio; and a veteran of the Civil War; died at his home July 30, aged 75.

John H. Cox, M.D. Cincinnati College of Medicine and Surgery, 1854; a veteran of the Civil War; died at his home in Guthrie, Okla., July 8, from cerebral hemorrhage, aged 86.

Asher D. Atkinson, M.D. New York, 1840; one of the founders of the American Numismatic Society; died at his home in New Brunswick, N. J., June 26, aged 88.

Alfons Edler von Rosthorn, professor of gynecology and obstetrics at Vienna, where he succeeded Chrobak in 1907, died recently. He was one of the distinguished foreign guests at the Boston session of the American Medical Association in 1906, at which time a biographical sketch and a portrait were published in The Journal, May 5, 1906, pages 1372 and 1375. He delivered an address on "Uterine Cancer," and was made an honorary member of the Association. For the last seven years he has been associated with A. Martin in the publication of the *Monatsschrift für Geburtshülfe und Gynäkologie*. The second part of his important work on gynecology, in collaboration with Chrobak, which forms Vol. XX of Nothnagel's "System of Medicine," was published last year, the special subject being malformations of the female genital organs, classified from the etiologic standpoint. He was a contributor to many medical journals and wrote important chapters in Virt's "Handbook of Gynecology" and von Winckel's "Handbook of Obstetrics." His strong personality left a marked impression on his students and on all those brought in contact with him. He was born in Vienna in 1857 and had a professorship in turn at Prague, Graz and Heidelberg before he accepted the call to Vienna. He had many friends in this country and was the brother-in-law of Dr. C. S. Bacon of Chicago.

Society Proceedings

COMING MEETINGS

Amer. Association of Obstetricians and Gynecologists, Fort Wayne, Ind., September 2.
Amer. Electrotherapeutic Association, New York, September 14-16.
Colorado State Medical Association, Estes Park, September 19.
Michigan State Medical Society, Kalamazoo, September 15-16.
Missouri Valley, Med. Society of, Council Bluffs, Ia., September 9-10.
New Mexico Medical Society, Roswell, September 15-16.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
Utah State Medical Association, Ogden, September 21-22.
Wyoming State Medical Society, Cheyenne, September 1-2.

STATE MEDICAL SOCIETY OF WISCONSIN

Sixty-third Annual Meeting, held at Madison, June 30-July 2, 1909

(Concluded from page 480)

Cerebral Surgery

Dr. J. L. Yates, Milwaukee: Distinct emphasis should be laid on the underlying physiology, and a great many questions will arise in daily practice, such as apoplexy, meningeal hemorrhage in the new-born and cerebral tumor.

DISCUSSION

Dr. Arthur W. Rogers, Oconomowoc: It is disastrous to try to lower blood pressure in cases of intracranial tension. Cerebral hemorrhage is known to be amenable to treatment, but a decompression operation is often advisable. In regard to cerebral tumors: In diagnosis pay especial attention to headaches, vomiting and condition of the eye grounds, examining for choked disc, thus making early diagnosis.

Dr. N. M. Black, Milwaukee: In cases of suspected intracranial pressure, an immediate and prompt examination of the eye grounds by means of the ophthalmoscope and perimeter is important, and the earliest possible diagnosis should be made, so that surgical relief may be promptly given.

Address in Surgery: The Surgical Management of Handicapped Patients

Dr. George W. Crile, Cleveland, Ohio: Handicapped cases now largely constitute the mortality in surgical operations. Many patients with Graves' disease have been frightened to death. The psychic factor must be given special consideration. Cocain properly applied to nerve trunks affords absolute protection. The handicap of hemorrhage is now well under control by the use of direct transfusion of blood, injection of serum and special clamps. In the entire domain of medicine there is no subject so neglected, so badly done, with so much needless distress and disaster as the administration of anesthetics. The untrained anesthetist invites disaster. The administration of the anesthetic ranks close in importance to the work of the operating surgeon. Nitrous oxid with oxygen is excellent, especially in short operations, in which there is a strong contraindication to ether or chlorform. The shock is comparatively slight. The advantage of nitrous oxid over ether is greater when the handicap is in the central nervous system than when the handicap is in the heart. Scopolamin and morphin prior to gas anesthesia form an agreeable adjuvant; but gas with scopolamin and morphin should be reserved for certain handicapped patients, in whom it has been abundantly proved that this combination is distinctly safer and incidentally incomparable as to comfort. As an illustration, in patients with senile or diabetic handicap, use gas or oxygen anesthesia in amputations of lower limbs, cocainizing the sciatic nerve, and making a feather edge division of tissue. Similar careful work may render successful surgical treatment of cancer in the very aged, and when there is great hemorrhage transfusion of blood should be employed. We must enlist new and fundamental methods in these cases, and to accomplish this we require the use of greater facilities in the hospital, and a greater number of assistants, and the entire surgical resources of the hospital must be so mobile as to be concentrated at any moment on the fate of the patient. Surgery will then offer relief to a large number of patients who are now refused operation, or who, if operated on, succumb.

Experimental Investigation of Cancer

Dr. C. H. Bunting, Madison: This is one of the greatest problems in medicine. The scientific world has been criticized for directing its efforts rather to the cause than to the cure of cancer. But the criticism is scarcely deserved, as much work is being done in both directions. The causation of cancer is still unknown. Much has been expected from recent experimental methods, but as yet the results are disappointing. Cancer is pandemic, extending from the poles to the equator; although it is particularly a disease of the temperate zones. The negro is much less susceptible than the white race. France leads the world in percentage of cancer. Over 60 per cent. of cases occur in females. The greatest number of cases occur after 45, and the average age in the United States is 58. Hard labor out of doors gives susceptibility to cancer. More cases occur in small cities than in large. Wooded, hilly regions give undue proportion of cancer cases. Analysis of cases shows definite foci, groups of cases, cancer houses and cancer streets. It is a question whether or not cancer is really on the increase. The apparent increase is due to greater length of life, more exact diagnosis and closer statistics. Yet the first case of proved contagiousness of human cancer has yet to be reported. Chronic irritation is the most important predisposing if not actual cause of cancer. Note the frequency of cancer occurring in the scar of ulcer of the stomach, in the gall bladder following gallstones, and as the result of *x*-ray burns. Operation in this precancerous stage is often indicated as a preventive. Pathologic study as yet has disclosed no organism to be associated with cancer; there is no evidence that cancer is produced by a parasite. Those cells which become cancerous first show a degeneration of the protoplasm of the cell which causes a change in the nucleus. Jensen, in 1903, discovered that he could transmit cancer from one mouse to another by inoculation. The cancerous material which he thus produced in 1903 is still alive and growing in many of the cancer laboratories of the world. If any parasite existed it must be coextensive with the cell, because fragments of cells when inoculated on mice will not grow; but that a parasite should be of the same size exactly as the cell seems absurd. Cancer cells show great resistance to the action of the cold. The tumor cell of cancer is practically immortal. Artificial immunity to cancer has been produced in laboratories, in the lower animals. Jensen secured a serum from the rabbit which will cure cancer in mice. Dr. Crile has protected inoculated dogs by injecting the blood of immune dogs. It is along these lines of immunity that a cure for the disease is hoped for, but so far the work has been unsuccessful. It is interesting to note that the immunity once obtained renders the animal immune not only to the type of tumor injected, but to all types of malignant tumor, which again demonstrates that we are dealing not with a parasite, but with a biologic disease. The results experimentally have been unsatisfactory up to this point, but there is hope that we may yet find a cure for, even though we do not discover the cause of cancer.

Pompeian Surgical Instruments; with Exhibition of Instruments

Dr. L. F. Frank, Milwaukee, exhibited replicas of the collection of ancient surgical instruments taken from the ruins of Pompeii, including probes, spatulæ, curettes, traction and sharp hooks, perforaters, forceps, rectal specula, uterine trivalve and quadrivalve specula, trocars, cannulæ, phlebotomes, scissors, fixation forceps, epilating forceps, calculi extractors, male and female catheters and dilators. These instruments were beautifully made, usually of bronze, and were very similar to instruments designed for similar purposes and at present in use. While, however, the ancients performed Cesarean section, hysterectomy, laparotomy, lithotomy, nephrectomy and herniotomy, yet their surgery was, of course, largely confined to minor operations.

Report of the Recent Epidemic of Spinal Paralysis in Wisconsin

Dr. Jacqlyn Manning, Eau Claire: A careful examination of all the facts at my disposal shows that anterior poliomylitis is a highly contagious disease, and that this particular epidemic was the result of an infection which journeyed along the main highways of travel from the Old World to the Eastern United States and thence to the Middle West.

DISCUSSION

Dr. C. M. Echols, Milwaukee: It is difficult to investigate this subject properly owing to the failure of physicians to report data. Little help can be secured from state boards of health in investigating this disease. They have statistics on mortality but not on morbidity. The etiology of the disease is doubtful. There is no symptom-complex by which we can make a diagnosis until after the damage is done. The disease is likely to attack children in perfect health and living under sanitary conditions as well as others. This is a crippling as well as a killing disease, from 50 to 60 per cent. of those attacked becoming permanently crippled.

DISCUSSION

Dr. C. A. Harper, Secretary State Board of Health: It is now a settled proposition that this is a disease of gastrointestinal origin. There seems to be a strong contagious element in the disease. Under present circumstances quarantine seems to be the only remedy.

Dr. L. W. Juergens, Portage: I would recommend the use of static electricity, what is called the wave current, instituted soon after the acute stage has been passed. Under this treatment patients usually recover the use of their paralyzed limbs.

Address in Medicine: Bearings of Occupational Conditions on Medicine

Dr. David L. Edsall, Philadelphia We have a marvelous dearth of knowledge and great apathy shown in this country regarding these conditions, and an unhappy lack of regulation. This is to be contrasted with the activity shown in European countries and the excellent laws protecting the workingman in his occupations. I might cite an instance of one firm that makes an ingenious safety device and sells it, but it is not used in that firm's factory. Instances of this character should make the people of the United States bow their heads in shame, especially when we compare our disgraceful conditions with the excellence abroad. Physicians are the only persons with some scientific information who can observe the effect on public health of these conditions, and from whom the information should emanate which will lead to a betterment in the regulation of these occupational conditions.

Treatment of Syphilis

Dr. O. H. Foerster, Milwaukee: Mercury given for two or three years, combined with iodid during the third year, is still the accepted treatment of syphilis. The abortive treatment has proved a failure. Treatment should be instituted before the development of lesions in all cases in which the spirochaeta is found. Atoxyl is inferior to mercury in its control of symptoms and is not devoid of danger. Circumstances should determine the choice of the method of administration of mercury. Subcutaneous and intramuscular injections are finding favor. They are accurate and prompt, not entirely free from danger and possess the disadvantage of having to be repeated at short intervals. Two and one-half years' vigorous treatment of the disease is considered sufficient in this country to effect a cure. The Wassermann test is difficult of application and appears to stand in direct ratio to the length and vigor of treatment. It can not be said that at the present time the test is conclusive as a prognostic measure to determine a cure.

Treatment of Chronic Gonorrhea

Dr. E. A. Fletcher, Milwaukee: Gonorrhea untreated does not tend to recovery, but rather to progression. Many parents with chronic gonorrhea have exacerbations during treatment, but this does not prevent ultimate recovery, nor are such relapses indications for cessation of the treatment. Our purpose in treatment is not only to eliminate the gonococcus but also to restore the tissues to normal so far as possible. The discharge should be reduced to the minimum by daily irrigations. Injections and instillations are inferior to irrigations. Narrow meatuses are incised and suppurating ducts opened or cauterized. Infiltrations are treated by dilation. Medicated bougies are to be condemned, and ointments are usually of little service. When chronic prostatitis exists, massage of the seminal vesicles is advisable, followed by bladder irrigations and occasional posterior dilatation.

The Sociologic Aspect of the Venereal Diseases

Dr. P. F. Rogers, Milwaukee Over 90 per cent. of our young men stray from the paths of virtue before marriage; 60 per cent. contract venereal diseases which are difficult to cure. More wives than prostitutes have venereal diseases, innocently contracted from husbands; thousands of unborn babes are annually killed by prenatal infection; 60 per cent. of the blindness in the country is due to venereal disease. One-eighth of all cases in New York hospitals are venereal; 200,000 infected persons walk the streets of New York daily. These diseases burden society with incompetence. What are we going to do about it? The fundamental requirement is knowledge of how such diseases are acquired and transmitted. Teach the young boy and girl in the school, by a process of natural induction, by a slow evolution and unfolding of the subject, to know the truth about themselves and about the reproduction of the race, just as they are taught the mechanism of the fertilization, reproduction and development of flowers in botany. Let this instruction lead naturally at the age of puberty to a study of sexual physiology and hygiene; inculcate feelings of the highest respect and reverence for Nature's most wonderful secret, but let it no longer be a secret, to be hinted at, guessed at, giggled over and learned all distorted from contaminating sources. Teach the young man the manliness of self-restraint and virtue, and the falsity of the double standard of morality which condones in man what it condemns in woman, and at the same time teach him plainly the consequences of vice. Put innocent womanhood on its guard, and manhood on its honor to protect woman in the sacred relations of wedlock as carefully as she would be shielded from violence from without. Teach parents, by special lectures in the schools, to train their children as carefully in matters pertaining to sex as in deportment and religion; let mothers learn the wide difference between innocence and ignorance. Let physicians be diligent in disseminating the truth in season and out of season; and let pulpit and press break silence, lift the dense pall of ignorance, mystery and superstition that has rested so long on a subject that so vitally concerns society; let in the clear sunshine of intelligent enlightenment and truth, and we shall have a cleaner, purer, healthier and happier citizenship than the world has ever known.

DISCUSSION

President Gilbert E. Seaman, Milwaukee We should emphasize on every occasion the fact that gonorrhea is so frequently the cause of blindness. It has been estimated that from 25 to 33.3 per cent. of all cases of blindness are due to gonorrheal infection at the time of birth, and this infection can be absolutely prevented.

Dr. J. A. Bradfield, La Crosse: Whatever is done on this subject must come from the medical profession. I have been utterly disgusted with the teaching of our religious brethren on this subject, many of whom show woeful ignorance of its fundamental principles, on which it is their duty to be well posted. Religious teaching does not reach the root of the subject. Proper instruction in sexual physiology will do more toward the upbuilding of our nattion than anything else.

Detection of Tubercle Bacilli in the Blood

Drs. M. P. Ravenel and Karl W. Smith, Madison: About three months ago Rosenberger, of Jefferson Medical College, reported the finding of tubercle bacilli in the blood of patients in whom there were no signs or very slight signs of tuberculosis; and gave this out as a method of early diagnosis at a time when the disease would be readily curable. An examination of the blood of 18 tuberculous patients by this method, which is a very simple one, failed to demonstrate the tubercle bacillus in the blood in a single case. This investigation has been confirmed by reports from all over the world, and the only conclusion that can be reached is that the Rosenberger method is of no value.

Resection for Tuberculosis of the Hip Joint

Dr. H. Greenberg, Milwaukee: Cases suitable for resection are as follows: Cases of hip tuberculosis which, owing to mistaken diagnosis and hence, misdirected therapeutics have been allowed to progress until considerable destruction, abscess formation, and even mixed infection have occurred. There are other cases which despite early and correct diagnosis and diligent application of proper conservative treatment progressively go on with more destruction of tissue, abscess formation and grave constitutional symptoms. Another class of patients apparently yield to accepted therapeutics but continue from time to time to have renewed acute attacks, perhaps many years after the original one. In still another class the course is so rapid and virulent that nothing but radical procedure can save life or limb. When amyloid disease becomes evident or when extensive necrosis has occurred resection is especially indicated. In short, as soon as it becomes manifest that the recuperative powers of the patient are not sufficient to overcome the ravages of the disease, showing that a retrogressive process is going on, operation is positively indicated.

DISCUSSION

Dr. H. E. Dearholt, Milwaukee: Satisfactory results in the treatment of tuberculous joints do not depend so much on the technic of the operation as on the general hygienic conditions.

Other Papers Read

The following papers were also read: "Intravenous Therapy," by Dr. A. N. Baer, Milwaukee; "Neglect of the Sacroiliac Articulation by the General Practitioner," by Dr. Edward Evans, LaCrosse; "Treatment of Acute Gonorrhea," by Dr. D. J. Hayes, Milwaukee; "Vaginal Hysterectomy; A New Operative Technic to Establish a Sound Pelvic Floor and to Prevent Cystocele," by Dr. Ralph Elmergreen, Milwaukee; "The Physician and the Child," by Dr. L. R. Sleyster, Appleton; "Present Status of the Ocular Tuberculin Reaction," by Dr. S. G. Higgins, Milwaukee.

NEW JERSEY STATE MEDICAL SOCIETY

Annual Meeting held at Cape May, June 23-25, 1909

(Continued from page 477)

Indications for the Induction of Labor, Instrumental Delivery through the Vagina, and Cesarean Section

Dr. E. P. Davis, Philadelphia, said that the cases may be divided into those that have had the test of labor and those that have not. In patients who have not had the test of labor, labor should not be induced because of pelvic deformity. Whenever, by spontaneous efforts, the presenting part did not engage in the pelvis, the application of forceps was to be declined. An effort should be made to stimulate the patient's expulsive forces. If the parents place great value on the life of the child, labor should not be induced, because of the high fetal mortality; but if this is not the case, the best time for the induction of labor is at the thirty-fourth week. Delivery by abdominal section should be undertaken only when mother and child were in good condition, and no previous attempts to deliver had been made by forceps, version or any other means. When the mother was infected in long and impossible labor, delivery by Porro's operation offered the best chance for the mother. Occasionally, children, though badly bruised and injured by previous attempts at delivery, were saved by this operation.

Indications for Interference during Labor

Dr. Simon Marx, New York: In my opinion one gift that is possessed by very few obstetricians is the faculty of knowing both the how and the when for operative interference. I think that the operator should keep in mind the following: (1) The study of the woman before labor. (2) A positive appreciation of the position and presentation of the fetus and its relation to the pelvis. (3) The constant control of the fetal heart action and the maternal condition. (4) Interference only when there are positive indications which warrant such interference.

In estimating the safety of the unborn child the constant regularity of the heart beats is of undoubted value, while as regards the mother the pulse and temperature play a prominent part. Never interfere with labor save (1) when the mother shows symptoms of beginning exhaustion or (2) exhaustion of the fetus. To cope successfully with such an emergency as a sudden irregularity of the fetal pulse with a discharge of meconium from a woman whose os was hardly distended I doubt if one could operate quickly enough or deliver with such rapidity as to succeed without producing dangerous lesions. I think that when on examination a neurotic or spastic condition of the os is found with sharp edges, chloral should be given in divided doses up to three grams. In cases in which during the first stages there was danger of lagging pains and exhaustion, I frequently have found opium of good service.

DISCUSSION ON INDUCED LABOR

Dr. J. Watson Martindale, Camden, said that in women who have not had the test of previous labor, labor might go on without interference, even if there were considerable pelvic deformity. In those who had had the test of previous labor, he would unhesitatingly suggest the Cesarean section. Dr. Martindale said that there were more lacerations occurring in primiparæ than physicians usually think, as they often examine the skin perineum without inspecting the vagina. The number of lacerations in women delivered before his arrival was no greater than in those delivered when he was present. He had frequently felt the perineum tear while he was doing his best to prevent it. He described the technic of pubiotomy, and said that the indications were a true conjugate of three inches and a half, and possibly three and one-quarter. He did not agree with Dr. Marx that the subject of obstetrics is insufficiently taught in medical schools. On two occasions Dr. Martindale has found it necessary to induce labor on account of the uncontrollable vomiting in pregnancy. He had found calomel, in small, divided dose, of great benefit in threatened eclampsia. He thought that frequent examinations tended to produce sepsis, and that to apply the forceps before there was complete dilation of the os was likely to result in laceration of the cervix. On the other hand, it was possible to be too tardy in applying them. He said that the transverse diameter was materially increased by laying the woman on her back with her knee flexed on her thighs, and her thighs on her abdomen, and instructing her to pull on her knees. When a woman was suffering from severe labor pains and there was slow dilation of the os, he gave her enough morphin to deaden the pain.

Dr. Ellis W. Hodges, Plainfield, wondered whether methods for the quick delivery of women were not often intended more for the convenience of the operator than for the good of the patient, although he thought that one should interfere before the mother was so exhausted by the pain, shock, and fatigue that convalescence would be indefinitely prolonged. The nervous type of women, he said, often suffer with uterine inertia. The uterus plays out after a time, and he thought that in such cases the physician was warranted in bringing on labor. In case of an occipito-posterior presentation, he said, the only thing to do was to pull pretty hard. In case of rachitic dwarfs, nothing but Cesarean section should be attempted. If the diagnosis of placenta prævia is made early, he thought that labor should be brought on before the seventh month; but if the patient had gone to full term, one should at once plug the cervix and do Cesarean section. In cases of eclampsia, the uterus should be emptied at once. If the cervix were hard, this should be done by Cesarean section.

Dr. Edward J. Ill, Newark, did not approve of vaginal Cesarean section. He had seen, also, several cases of incurable vesicovaginal fistula due to high forceps delivery. He thought that the majority of patients with deep cervical tears remain invalids for the rest of their lives. In placenta prævia, when the bag of membrane could be felt anywhere in the vagina, it was not necessary to resort to prompt Cesarean section. If eclampsia came on in the seventh or eighth month, Cesarean section should be done; but not the vaginal Cesarean section, the results of which had been very disastrous.

Dr. Richard C. Morris, Philadelphia, thought that the importance of internal pelvimetry had been exaggerated; but he thought, also, that no physician had a right to attend a primipara without a knowledge of the size and shape of her pelvis, or to attend a multipara who had had a previous difficult delivery, without having studied the case from the standpoints of her previous labor and present physical condition. He said that it was impossible to learn these measurements accurately without the administration of an anesthetic. He made an appeal for a more general recognition of the value of induced labor, and said that the time would come when every woman with a conjugate diameter of four and a half centimeters, or less, would be submitted to Cesarean section. He had had great success in saving many patients from the major operation by means of induced labor, the practice of which also reduced the number of cases of forceps delivery and version. He agreed with the view that the forceps should not be applied to the unengaged head, as a general rule; but qualified this by saying that it should not be done unless one knew the pelvic diameter and the woman had been in labor pains for two or three hours. In a difficult forceps operation, the patient should be kept profoundly anesthetized during the third stage, and allowed to come out of ether just before the final delivery, the uterus then being strengthened by a dose of ergot. He did not think that quinin had any more effect than a glass of wine, acting as a general stimulant. In regard to placenta prævia, he said that he had yet to see a cervix so rigid and tight in a case of placenta prævia that had produced hemorrhage as not to permit him to pass the index finger readily through the cervix. He believed that in such cases Cesarean section had an exceedingly narrow field. In eclampsia, he thought that vaginal Cesarean section was not indicated in all cases. It should be performed in cases in which the condition came on without warning.

Dr. L. Davis said that if the test were made, it would probably be found that large numbers of lacerations occurred in both the anterior and the posterior segment. Failure to close lacerations in the anterior segment resulted in subsequent prolapse of the urethra, dystocia, and other minor troubles. If uterine inertia existed, it should be treated before delivering the patient. He was not in favor of giving ergot until the uterus had been emptied, but he approved of the use of strychnin. Section should be done in placenta prævia only when there had not been severe hemorrhage, when the child was viable, and when hospital facilities were at hand. Eclampsia tended to cure itself. He had not done vaginal Cesarean section, which he considered a dangerous operation. He considered the old treatment of placenta prævia satisfactory, if one did not care about the child. In taking the pelvic measurements, he thought it well to measure across the two processes of the ischia, and also the intertuberosity distance. He considered elective surgery the surgery of the future.

(*To be continued*)

AMERICAN ORTHOPEDIC ASSOCIATION

Twenty-Second Annual Meeting, held at Hartford, Conn., June 14-16, 1909

(Concluded from page 588)

Preliminary Study of the Mechanics of the Upright Position, With Especial Reference to Backache. (A Combined Orthopedic and Gynecologic Study)

Drs. R. W. Lovett and E. Reynolds, Boston, described a method for automatically determining the center of gravity of the individual in the upright position. The relation of the center of gravity to the hip joint, sacroiliac joints, feet, etc., they contended, determines the amount and character of back strain. They studied and formulated the effect of corsets and high-heeled shoes on the balance of the body and on the position of the center of gravity, and exhibited charts illustrating this.

DISCUSSION

Dr. A. Freiberg: What does displacement of the center of gravity mean? Has the proper method been adopted for correcting what is a pathologic state of affairs? I have heard nothing of what put the center of gravity forward. The logical thing to do is to go at the cause and correct it. I have not yet recovered sufficiently from my astonishment to swallow, with composure, those high heels and corsets which I see pictured on the wall.

Dr. Sayre: Undoubtedly many of our cases of backache are due to intrauterine and intrapelvic causes, and many of the pelvic abnormalities come from abnormal positions held on account of deficient muscular force. The chief use of a corset is to keep the bands of a woman's skirts from cutting into her, as a woman does not have her clothes hung from suspenders. I have had difficulty in getting corsets made loose enough over the iliac crests not to be uncomfortable when they are tight enough around the buttocks.

Dr. Wilson: Would similar conditions existing in a man be met by the application of some form of corset?

Dr. Lovett: We have simply presented a method that we believe is going to be of some use in elaborating the question of why the center of gravity is too far forward. We are sure that the corsets carry the center of gravity back and that high-heeled shoes also do this. In my practice I use corsets on men, just as in women, but less frequently, because one sees fewer backaches in men.

Dr. Reynolds: We must regard corsets as merely a temporary means of relieving the acute stage of static backache. In the cases that I have seen I have first relieved the cause in operating on the abdominal condition, and have used the corset to carry the patients beyond the backache, and then let them drop it. Bad corsets produce static backaches, and these can not be relieved so long as the bad corset is worn. We must learn to produce a good corset that is sightly and is near enough to the prevailing fashion to induce the patients to wear it.

Relation of Posture to Human Efficiency and Influence of Poise on the Support and Function of the Viscera

Dr. Joel E. Goldthwait, Boston: The human body is a delicately balanced organism, and no one part can be used with undue strain without straining other parts and wasting energy. In normal balance the muscles and ligaments are used without undue strain, and the movements are made with the minimum expenditure of energy. Not only is the correct balance of importance because of the effect upon the joints, bones, muscles and ligaments, but also because of the interference with visceral support and function that must take place if the poise is materially disturbed.

DISCUSSION

Dr. McKenzie: Unless we are to pander to a degenerate age we should not rectify postural defects by means of braces, but by training the physical organism so that it can maintain the ideal standard and attitude. While we want all the information that can come from mathematical study of the subject, it must be approached by the general study of the intuitive perception of the right attitude.

Dr. C. Riely: I have thought along the same lines regarding the circulation of the spinal cord as Dr. Goldthwait, and have talked over the subject with an anatomist and a neurologist. I had no doubt that it was the pressure of the muscles that caused the stagnation in the anterior and posterior vertebral columns, but thought it was an obstruction in cases of spine disease by the disease in the bodies of the vertebræ, as the veins that enter the bodies are very large.

DR. FREIBERG: How is Dr. Goldthwait going to take the patients from the tuberculosis clinic and give them the chance that other people have in the present state of civilization?

DR. J. E. GOLDTHWAIT: I do not believe it impossible to give them a chance. What has been done is no more remarkable than what can be done. When they use their bodies better they will have greater resistance and more power for work.

Congenital Deformities

DR. AUGUSTUS THORNDIKE, Boston, gave a short historical sketch of theories of causation, which to-day seem to be narrowed down to three: mechanical influence, heredity and maternal impressions. Further study, he said, is needed to reveal the true etiology and chronology of the inception of many skeletal deformities. Such studies must be of three kinds: studies of human embryos, of abortion sacs and of the embryos of certain lower animals.

DISCUSSION

DR. RUGH: I am not yet convinced that maternal impressions play no part in the production of congenital deformities. Recent investigation demonstrates the presence of nerve fibers in great number in the placenta and in the umbilical cord. This has gone a great way toward establishing the fact of a more intimate nerve relation between mother and child than had previously been suspected. I feel that in certain cases this acts as a factor in producing congenital deformities.

DR. MCKENZIE: I do not know what Dr. Thorndike meant by his statement that no case of congenital amputation of the limb very high up had been reported. I have seen lately a boy whose right arm had apparently been amputated just above the elbow.

DR. BAER: I should like to report another case almost identical with that of Dr. McKenzie, in which there was complete amputation just below the elbow.

DR. THORNDIKE: I think that Dr. Rugh is right. It was a surprise to me to find so little about maternal impressions in literature. As I have found cases of amputation high up so rare. I hope the gentlemen will report theirs fully with illustrations.

Bilateral Congenital Dislocation of the Head of the Radius; and Congenital Absence of the Acromion Process, Bilateral

DR. W. G. TURNER, Montreal, read these two papers. The first case presented a marked increase of the length of the radius as compared with the tibia, non-development of the coronoid fossa, and absence of the orbicular ligament. Strong silk was employed as an artificial orbicular ligament. He exhibited photographs and a radiograph of the second case, showing a condition not previously described.

DISCUSSION

DR. BLODGETT: Was there effusion between the head of the radius and the ulna? In that case one would expect to find a rotating condition of the rudimentary muscles.

DR. W. G. TURNER: There was no effusion between the radius and ulna. The upper end of the radius was perfectly movable. I operated on the left arm a year ago, with satisfactory result as to function; though the patient can not get the arm past the midway position.

Other Papers Read

"A Case of Myositis Ossificans with Multiple Exostoses," by Dr. V. P. Gibney, New York; "Some Myogenous Types of Rigid Spine," by Dr. G. B. Elliott, New York; "Toxic Arthritis of the Hip in Children," by Dr. Michael Hoke, Atlanta, Ga.; "Suggestions on the Improvement of Plaster-of-Paris Technic," by Dr. A. H. Frieberg, Cincinnati; "Increased Growth in the Shaft of the Femur Following Fracture," by Dr. John Ridlon, Chicago.

Medicolegal

Admissibility of Lay Testimony as to Mental Capacity

The Supreme Court of the Unitied States says, in the will case of Turner vs. American Security & Trust Company, that the rule governing the admission of the testimony of lay witnesses as to their opinion for or against the mental capacity of a testator, which has been prescribed by this court for the courts of the United States, is easy of statement and administration. Where the issue is whether a person is of sound or unsound mind, a lay witness who has had an adequate opportunity to observe the speech and other conduct of that person may, in addition to relating the significant instances of speech and conduct, testify to the opinion on the mental capacity formed at the time from such observation. In no other way than this can the full knowledge of an unprofessional witness with regard to the issue be placed before the jury, because ordinarily it is impossible for such a witness to give an adequate description of all the appearances which to him have indicated sanity or insanity.

Such testimony has been well described as a compendious mode of ascertaining the result of the actual observations of witnesses. Ordinarily, and perhaps necessarily, the witness, in testifying to his opportunities for observation and his actual observation, relates more or less fully the instances of his conversation or dealings with the person whose mental capacity is under consideration, and it is, of course, competent, either on direct or cross-examination, to elicit those instances in detail. The order of the evidence must be left to the discretion of the trial judge; but, when sufficient appears to convince the trial judge that the witness has had an opportunity for adequate observation of the person's mental capacity, and has actually observed it, then the judge may permit him to testify to his opinion.

This is not to say that, in a very clear case, an appellate court ought not to review the discretion of the trial judge. For instance, if it should appear that the witness had never spoken to the testator or seen any significant act, but merely observed him driving from day to day through the streets, and the opinion of such a witness as to sanity had been received, it would be the duty of the appellate court to correct the error. On the other hand, if the witness for years had been in constant communication with the testator, had frequently conversed with him and observed his conduct from day to day, the exclusion of the opinion of the witness ought to be corrected by the appellate court. These are instances of a plain abuse of judicial discretion.

Sufficiency of Testimony of Physician as to X-Ray Photograph

The Supreme Court of Iowa says, on the second appeal in the assault case of State vs. Matheson, that on the first appeal an exhibit, consisting of an *x*-ray photograph or radiograph which it was claimed showed the location of a bullet close to one of vertebræ was held to have been properly admitted in evidence, being identified by the electrician who made it as such a photograph. On the last trial the electrician who made the photograph was not called as a witness, and it was argued that the exhibit was improperly admitted. The court, however, thinks that there was no error in the ruling admitting the exhibit, for the physician who directed the taking of the photograph, and who was present when it was taken, testified that it was a correct representation of the condition of the subject's body at the time it was taken. This physician would know, as well as the man who operated the machine, that the radiograph was the result of the action of the *x*-ray machine in producing a representation of the bony structure of the body, and of any piece of metal, such as a bullet, which might be imbedded therein. Neither the operator nor the physician would be able to testify that the spot indicated on the radiograph was a bullet, but it would be competent for either of them to testify that the spot was such as a bullet imbedded in the body would produce. For the reasons just indicated, the testimony of the physician that the spot on the radiograph to which his attention was called represented a bullet in the body was also competent.

Current Medical Literature

Medical Record, New York

August 7

1 *Who are the Unfit? C. E. Woodruff, U. S. Army.
2 Tuberculosis of the Pericardium cured by Incision and Drainage. C. L. Gibson, New York.
3 *Ocular Tuberculin Reaction. J. R. Hicks, New Brighton, N. Y.
4 *Brain Tumor with Unusual Symptoms. J. E. Dale, Fort Collins, Colo.
5 Mumps vs. Tetanus. D. I. Macht, Baltimore.
6 Unreliability of Measurements of Ancient Skulls. A. L. Benedict, Buffalo.
7 Tabular Report of Cases of Cancer Treated with Trypsin. W. S. Bainbridge, New York.
8 *Ivy Poisoning. A. W. Baird, New York.

1. **Who Are the Unfit?**—Woodruff claims that there is one form of unfitness which is causing dreadful disability wholly unnoticed—unfitness to climate when there is a migration to a climate markedly different from the ancestral one. Previous studies of the nervous and insane, he asserts, have shown that those most out of adjustment to this sunny climate, that is, the blonds, furnish a higher percentage of cases than they should, or than they do in cloudy places, like Scotland. The new studies of criminals and paupers show that the same factor is at work here too, among the myriad other causes of these unhappy types of human rejects. Similar studies among European criminals have not shown anything of this nature, because the populations are not migrants. Indeed, in Europe, it has always been customary to think of the criminal as brunette. In a visit to Clinton Prison, in New York State, where the worst classes of criminals are confined, and where he expected to see the place full of modern "black beards," Woodruff was astounded at the large number of blonds—some of them of very light type. It seemed as though the facts as to the brunetteness of criminals were the reverse of the popular idea on the subject. Of 279 white men whose eye color is mentioned, 144 had blue eyes, 40 gray, hazel and light brown, and only 95 dark shades of brown. The hair color of 253 was available for comparison and shows a general correspondence with the eye color. There were 19 with very light hair, 61 with light brown and brown, 61 dark brown, and only 112 black. The two extremes of very dark brunettes and very light blonds, such as the typical swarthy Italian and the yellow-haired Scandinavian, are in a decided minority, but the medium types tend strongly to blondness. It is safe to say, nevertheless, that blonds do not constitute anywhere near half of our population, which is notoriously brunette, with brown or gray eyes and dark hair in decided preponderance. The explanation of this local phenomenon is as follows: Criminologists are of the opinion that there is no criminal type, but that there is an instability of the nervous system or neurasthenia which is the basis of habitual crime. Hence, in America we find more nervous instability among the blond types and more of them drift into crime as a result. In many other ways, they prove their unfitness for these southern climates, notably an increased susceptibility to disease. Light affects the young far more than it does the parents. Hence blond adult immigrants may remain in fair health, but the deterioration begins in the next generation. Therefore we should not expect to find very many foreign-born among these blond criminals. The report of the superintendent of New York prisons shows that only 22 per cent. of the criminals in Clinton Prison are foreign-born and most of these foreigners are from brunette countries, like Italy, Poland and Russia. Very few come from blond countries, for only five were born in Scotland, one in Sweden, and none in Norway. The native-born, therefore, furnish the great majority of the blue-eyed professional criminals in New York.

3. **Ocular Tuberculin Reaction.**—The method of sterilizing the eye preparatory to using the tuberculin test as carried out by Hicks is as follows: For four days the patient's brow and face are washed with soap and water three times a day, and a 1/8000 solution of bichlorid of mercury is dropped into the eye after each washing. At the end of six days a culture is taken, just as in diphtheria, and incubated. If at the end of twenty-four hours or longer there are any colonies, the bichlorid solution is resumed for two days; then the eye is irrigated for two days more, twice a day, with physiologic saline solution to wash away the bichlorid and any organisms remaining. The next morning another culture is taken and incubated for twenty-four hours and cover slide preparations are made and examined, and if no organisms are found, the tuberculin test is made in the usual way. The eye after irrigation with saline solution is bandaged the afternoon before to keep foreign substances out. Hicks has failed to get any specific reaction in a number of cases when the test is applied in the above way, when without sterilization he has obtained the reaction in Bright's disease when there was no reason to suspect tuberculosis.

4. **Brain Tumor.**—Dale describes the case of a lad who suffered from brain tumor, but had none of the typical symptoms of cerebral compression. His symptoms indicated gastrointestinal irritation up to a few hours before death. The lad died of respiratory failure. The tumor was very small and was situated in the fourth ventricle, attached to its roof, to the right of the median line and directly over a point in the floor a little posterior to the center. It was an endothelioma.

8. **Ivy Poisoning.**—Baird has formulated the following treatment for ivy poisoning: (1) No scratching; (2) no ointments in the acute stage; (3) no bandages, for these tend to spread the poison to adjacent surfaces; if any protector is necessary, let it be a loosely applied dressing of absorbent cotton, kept moist at all times and changed at short intervals; (4) frequent and copious washings with lukewarm water and an unirritating soap; in handling the inflamed surface it is best to wear rubber gloves; (5) after the parts are washed, apply 2 to 4 per cent. warm solution of permanganate of potassium. This completely neutralizes any poison with which it comes in contact; the strength of the solution and the frequency of application are matters of judgment with the physician; (6) after the acute stage is past, ointments are permissible.

Boston Medical and Surgical Journal

August 5

9 *Etiology of Tumors Considered from the Standpoint of Congenital Tumors and Tumors Following Repeated Injuries. S. B. Wolbach, Albany, N. Y.
10 Surgical Significance of Pus, Blood and Bacteria in the Urine. E. A. Codman, Boston.
11 Superficial Dermatitis of the External Auditory Canal. C. J. Blake, Boston.
12 *Psychasthenia. A. H. Ring, Arlington Heights, Mass.

9. **Etiology of Tumors.**—Wolbach endeavors to present data which support the belief that the congenital tumors and tumors of infancy and early childhood most commonly take origin from isolated or misplaced cells. At least there is very positive evidence that certain tumors, such as the teratomata, hypernephromata, mixed tumors of the kidney and parotid and the retinal tumors arise from such errors of development. In the second part he endeavors to show that in the cases of *x*-ray carcinoma and a few other instances, such as bilharzia disease and Kangri carcinoma, there is a proved causal relationship between malignant tumors and antecedent pathologic processes. The more peculiar the source of the injury, the greater is the value of the evidence when the association is marked by a strikingly large number of cases. The similarity in the evolution of the skin carcinoma in widely different kinds of exposures points to a common underlying process whatever the nature of the injurious agent. In the cases of *x*-ray carcinoma and bilharzia carcinoma, there is a proved similar antecedent pathologic process. *X*-ray carcinoma is to be regarded as the first instance of an experimentally produced malignant tumor. Its occurrence following definite lesions of the skin, of a continuous and progressive character, places the whole subject of carcinomata following repeated injuries on a firm basis. It designates this field of investigation as the most promising one for research into the origin of carcinoma, because we have at least one and perhaps several examples of proved causal relationship.

The facts presented do not speak for belief in simple trauma as a cause for tumor production. They do indicate that long-continued progressive lesions of connective tissue supporting epithelium are responsible for the acquisition of malignant properties by the epithelium. Finally, it may be said that no series of experiments on animals, in the attempt to produce tumors, has ever been carried out which in any way approached duplication of those conditions found in man associated with the production of cancer. The element of time is, perhaps, the most important factor. Many years always elapse between the onset of the antecedent pathologic process and the occurrence of cancer. In the case of the *x*-ray, ten years is, perhaps, the shortest period.

12. **Psychasthenia.**—Ring believes that Janet, who coined the word "psychasthenia," intends to include under the term obsessions, manias of doubt, tics, agitations, phobias and the deliria of contact, states of anxiousness, neurasthenias and bizarre sensations of strangeness and depersonalization. These he would group together into a grand psychosis similar to hysteria and epilepsy. Psychasthenia, he says, is at base a disturbance of the feelings, the will and perception, and may range from mere eccentricities in the superficially normal through mild depression to melancholia and dementia. There are two types: (1) those in which the disturbance shows itself principally in motor fatigue, and (2) those in which the principal affection is in the sensory-motor and emotional sphere, the latter offering the less favorable prognosis. Phobias result from an unhealthy, prolonged feeling-tone of depressing ideas and may be conscious or subconscious. Doubts and indecision are evidence of fatigue of the higher centers which preside over formative and newly synthetized associations. The final judgment is thus rendered difficult or impossible and the victim finds himself in a state of vacillation and with a tendency to revert to the lower and simpler associations long formed. Weakened cerebral inhibition also plays its part. Obsessions and impulsions are the emotional result of the above factors and show themselves principally as a failure to inhibit the feeling-tone of ideas automatically repeated, yet the all-pervading asthenia checks the impulses short of accomplishment. Psychasthenia should be differentiated from hysteria, epilepsy, dementia præcox, manic-depressive insanity and paresis.

New York Medical Journal

July 31

13 *The Bacteriology of Gonorrhea. N. P. Rathbun and T. H. Dexter, Brooklyn.
14 *Leucocytes in Tropical Malarial Infections. P. T. Talbot, New Orleans.
15 *Achylia Gastrica and Insufficientia Pylori. A. L. Benedict, Buffalo.
16 *Does Zymosia Gastrica Solve the Soil Problem of Tuberculosis? M. I. Knapp, New York.
17 Herpes Simplex. F. C. Knowles, Philadelphia.
18 Symptomatology and Diagnosis of Pancreatic Disease. L. Louria, Brooklyn.
19 Tuberculous Infection through the Tonsil and Adenoid. J. A. Pratt, Aurora, Ill.
20 Nasal Tuberculosis Terminating in Tuberculous Meningitis. A. J. Huey, New York.

13. **Bacteriology of Gonorrhea.**—Rathbun and Dexter claim as the result of clinical observation and investigation (1) that there are numerous cases of uncured gonorrhea which have no subjective symptoms or apparent objective symptoms other than those which can be determined by cultures made from secretions from the genitourinary tract; (2) that freedom from pus cells in the expressed smear from a prostatic secretion is by no means an evidence of cure of chronic prostatitis; nor is the presence of pus cells in a smear from the expressed secretion an indication of gonorrheal infection of that gland, nor is the presence of a Gram-negative diplococcus in the smear of this secretion a positive indication of the existence of gonorrhea of the prostate. At present we have no means at our disposal by which we can positively assure a patient that he is cured of gonorrheal prostatitis. Our best prospects of determining that fact lie along the line of perfecting methods of distinguishing the gonococcus from other organisms which so closely resemble it, and which may be accomplished by further experimental work with various culture media and proved by experimental inoculations The authors found that the growth of the Gram-negative diplococcus on the blood serum which can not be transplanted to other media is strongly significant of the gonococcus, whereas Gram-positive diplococci, or Gram-negative diplococci growing on various other media, such as plain agar, potato, etc., are doubtful. The number of cases of uncured and incurable gonorrheal prostatitis is far in excess of what most clinicians are ready to believe.

14. Abstracted in The Journal, May 1, 1909, p. 1448.

15. **Achylia Gastrica and Insufficientia Pylori.**—Benedict attempts to show that there is such a condition as achylia gastrica and such a condition as insufficientia—or at least, relaxatio—pylori. They are absolutely different conditions, having in common only the element of depression of function, which may be functional in the ordinary sense or as secondary to an organic lesion. They are so different that there can be no question of correct nomenclature or interpretation of a single disease or symptom complex, so different that they may exist independently or may coincide in the same case. There is no characteristic, diagnostic, much less pathognomonic, symptomatology of either. The diagnosis must depend on actual investigation.

16. **Zymosia Gastrica and Tuberculosis.**—Knapp presents the results of the study of the gastric condition of 100 persons appearing at the New York Board of Health clinic for pulmonary tuberculosis. He found that each one of the 100 consecutive cases was one of zymosia gastrica. One patient showed zymosia gastrica many years before his pulmonary conditions developed. It would seem that this occurrence of sporulating, budding yeast is rather more than a mere coincidence, and that zymosia gastrica must bear a certain relation either to the development or to the progress of tuberculosis. Knapp assumes that zymosia gastrica may possibly be held responsible for the soil condition of tuberculosis and that it apparently constitutes some factor in the condition of tuberculosis.

Lancet-Clinic, Cincinnati

July 17

21 Two Cases of Gross Cerebral Hemorrhage. A. E. Stearne, Indianapolis.
22 Gallstones. R. J. Jones, Greenfield, O.
23 Uterine Disease—Chronic Endometritis, Endocervicitis. C. S. Ashfield, Cincinnati.

Kentucky Medical Journal, Bowling Green

July 1

24 Roentgen Ray. E. T. Bruce.
25 Standardization the Foundation of Professional Pharmacy. F. E. Stewart, Philadelphia.
26 Diagnosis of Acute Intestinal Obstruction. J. H. Blackburn, Bowling Green, Ky.
27 Leptomeningitis. G. T. Fuller, Mayfield, Ky.
28 Pain and its Indications. J. H. Chrisman, Owenton.
29 Model Management of a Case of Obstetrics. E. B. Houston, Hazel, Ky.
30 Some Obstetric Breakers. W. R. Burr, Auburn, Ky.
31 Eclampsia. M. C. Comer, Bedford.
32 Postpartum Hemorrhage. W. A. Haynes, Howell, Ky.
33 Ocular Disturbances during Pregnancy. A. O. Pfingst, Louisville, Ky.
34 The Heart in its Relation to Operative Procedures. H. N. Leavell, Louisville, Ky.
35 Ankylostomiasis. B. G. Allen, Somerset.
36 Medical Ethics. W. London, Franklin, Ky.
37 Effects of Suggestion on the Human Economy. G. Purdy, New Liberty.
38 Treatment of Epididymo-orchitis. E. L. Heflin.
39 Multiple Fractures. R. C. Falconer, Lexington.
40 Use of Drugs in Medicine. J. L. Atkinson, Campbellsville.

New York State Journal of Medicine, New York

July

41 *Voluntary Patients in State Hospitals for the Insane. A. W. Ferris, New York City.
42 *Epilepsy. W. H. Kidder, Oswego, N. Y.
43 *Suggestions from Physiology in Treatment of Renal, Cardiac and Vascular Diseases. W. M. Gibson, Utica, N. Y.
44 Leukemia; A Symptom, Not a Disease. H. G. Webster, Brooklyn, N. Y.
45 Gastroenterostomy. E. A. Vander Veer, Albany, N. Y.
46 *A New Plastic Operation for the Relief of Cicatricial Palatopharyngeal Contractures and Adhesions. J. O. Roe, Rochester, N. Y.
47 *Problem of Efficient Nursing for Persons of Moderate Means. W. O. Stillman, Albany, N. Y.
48 Descending Exercise in the Treatment of Disease. H. Stern, New York City.
49 *Nature of Foot and Mouth Disease. V. A. Moore, Ithaca, N. Y.
50 Renal Tuberculosis. W. S. Nelson, Utica, N. Y.
51 Nervous Symptoms of Chronic Diffuse Interstitial Nephritis. S. Baker, Utica, N. Y.

41. Abstracted in The Journal, Feb. 13, 1909, p. 581.

42, 43, 47, 49. Abstracted in The Journal, Feb. 20, 1909, pp. 654, 655, 657.

46. **Palatopharyngeal Contractures.**—In Roe's case, the fauces were so extensively lacerated during an attempt to excise the tonsils, about four months before, that when healing had taken place there was a complete synechia or adhesion between the soft palate and the pharynx. There was complete occlusion of the posterior nares, except for a very small opening through which an ordinary small silver probe could

be passed. The adhesion was so thick and the tissues so infiltrated with inflammatory deposits, the result of the extensive inflammation that followed the operation, that the obtaining of a healed opening at each side through this thickened tissue proved to be practically out of the question. As it was necessary to cover but one surface of this opening, the upper or palatal side was most available. A rather broad flap was taken from the inside of the cheek near the lower jaw, including sufficient submucous connective tissue to assure the vitality of the flap. This was then brought down and the end turned backward and upward around the lower border of the soft palate. which had been sufficiently denuded of its mucous membrane around its lower border to secure union. This flap was then stitched at the sides and also through and through along the upper border of the end of the flap that had been turned up behind the palate.

Complete union of the flap took place, and on healing there was no undue contraction at the site of these flaps, nor was there the slightest inclination for a readherence of the soft palate to the pharynx at any point, all of which was very gratifying. The surfaces from which the flaps had been taken were speedily covered with mucous membrane and soon all traces of it disappeared. The central portion of the palate was thickened. and this thickened tissue was utilized by cutting and stitching it into shape so as to form a very desirable uvula. As the levator palati muscles had not been sufficiently injured to destroy their function, by the construction of this new uvula the function of the soft palate in closing the posterior nares during deglutination and phonation was almost completely restored.

Southern California Practitioner, Los Angeles

July

52 Control of Disease by Prevention. W. J. Barlow, Los Angeles.
53 Pulse Counting by Nurses. J. C. Ferbert, Los Angeles.
54 Present Popular Interest in Psychotherapy and Religiotherapy. C. L. Allen, Los Angeles.
55 Diagnosis of Inflammations of the Colon and Appendix. D. Fulton, Los Angeles.
56 Diagnosis of Affections of the Biliary Tracts. R. Smith, Los Angeles.
57 Plague in Seattle. W. Wyman, Washington, D. C.

United States Naval Medical Bulletin. Washington, D. C.

July

58 *Treatment of Elephantiasis by Internal Administration of Tinctura Ferri Chloridi. P. S. Rossiter, U. S. Navy.
59 Syphilis. W. J. Zalesky, U. S. Navy.
60 Pathology of Epidemic Asthma. O. J. Mink, U. S. Navy.
61 Etiology of Heat Prostration. A. G. Grunwell, U. S. Navy.
62 Liver Abscess from the Point of View of Etiology and Prophylaxis; Pathology and Differential Diagnosis; and Treatment. G. B. Crow. J. A. B. Sinclair, and G. F. Cottle, U. S. Navy.
63 Appliances Improvised on Sick-bay Bunks. C. M. de Valin, U. S. Navy.
64 Fracture of Patella: Operation at Sea. N. J. Blackwood, U. S. Navy.
65 *Recurrent Nasal Hemorrhage. R. Spear, U. S. Navy.
66 *Traumatic Pneumonia. C. F. Sterne, U. S. Navy.
67 Liver Abscess. M. A. Stuart, U. S. Navy.

58. **Treatment of Elephantiasis.**—Dr. Dubriel du Broglio, of the French colonial medical service, originated a treatment of elephantiasis consisting of the internal administration of 30 drops of tinctura ferri chloridi three times daily, in combination with bandaging of the affected limbs and complete rest in bed. Rossiter determined to make the experiment of administering the tinctura ferri chloridi without bandaging and permitting the patient to follow his usual mode of life. In every case so treated, the patient has shown decrease in the size of the affected part within a few weeks, and the effect on the fever is apparent even sooner. Rossiter therefore concludes, as a result of these experiments, that tinctura ferri chloridi has a marked effect on the elephantoid process, decreasing the size of the affected parts and restoring function to an even greater degree. Its most marked effect, however, is on the attacks of elephantoid fever, these attacks being markedly lessened in severity, the interval between attacks being greatly lengthened, and in several of the cases the attacks have apparently ceased. In one case of prolonged elephantoid fever with very marked chyluria of three weeks' duration, the chyluria disappeared entirely within sixty hours under the administration of tinctura ferri chloridi alone. So far as can be judged from the number of cases treated, elephantiasis appears to be arrested by this treatment if continued for six to twelve months, and if some method can be devised in conjunction threwith to dispose of the elephantoid tissue already formed, Rossiter believes that a cure may be looked for.

65. **Recurrent Nasal Hemorrhage.**—Spear's patient sustained a fracture of the left nasal bone, the vomer and mesethmoid. At the time of the injury there was considerable hemorrhage from both nostrils. The hemorrhage was controlled by packing. There was severe hemorrhage on a number of occasions afterward. The nature of the hemorrhage was peculiar; the bleeding was profuse while it lasted. and stopped apparently when the blood pressure lowered. Several careful examinations of the nasal cavity failed to reveal the source of the bleeding, but in all probability the bleeding point was situated in the right side of the mesethmoid region. The blood either came from a small artery that had been partially torn by the bone fragments or may have come from a damaged plexus.

There was no hemophilia in the boy's history or in the history of his family. As the case progressed and the boy lost more blood he become more anemic. His condition was critical and it was imperative to control the bleeding. Both facial arteries were tied without success. It was noticed that pressure over the right common carotid stopped the bleeding, so under cocain anesthesia the carotids on the right side were exposed; the external was ligated and a ligature was placed around the internal, but was not tied. This procedure controlled the hemorrhage for thirty hours, when it recurred, but to a much lesser degree. Finally, both nares were plugged with strips of gauze supported by Kyle's long nasal splints. This procedure controlled the hemorrhage. The following day these splints were removed; the bleeding again started. but was controlled by placing two long plugs made of twisted cotton soaked in a solution of boric acid; these plugs were placed in the right nasal chamber well back and upward, on the mesethmoid, and held in position by one long Kyle nasal splint. These plugs were left in place for forty-eight hours, the nasal cavity being kept fairly clean by dropping a little boric acid solution into and about the splint every two hours. The plugs were gently removed and replaced by others of a similar character, which were also left in position for forty-eight hours. These were replaced by one plug which was left in for twenty-four hours. No bleeding occurred after the introduction of the cotton plugs.

During the progress of the case gelatin was given in large quantities by the mouth, as was also calcium lactate and injections of 30 c.c. of rabbit's serum, all with the idea of increasing the coagulability of the blood.

66. **Traumatic Pneumonia.**—In Sterne's case, a man was struck on the left chest wall by a large coal bag while coaling ship. He reported fifteen or twenty minutes after the accident, complaining of severe pain at the seat of injury. Physical examination revealed nothing, except tenderness over the area of chest struck. There was no evidence of external injury other than redness and tenderness. No signs could be elicited which would point to fracture of a rib, nor was there any constitutional disturbance, other than pain on respiration. The injury was therefore treated as a contusion. At 7 p. m. the next day he again reported at the sick-bay complaining of some headache, accompanied by persistent pain in the chest, with some difficulty of respiration. Temperature was 104, pulse 96, and respiration 26. He was put to bed and showed no signs other than slight dulness on the left side from the second to the sixth rib in the nipple line. The treatment consisted in the administration of calomel, in broken doses, a sponge bath, and the application of an ice cap.

On the morning of the second day he had a rather severe nasal hemorrhage, temperature had dropped to 100.5, pulse to 84, and respiration to 22. A painful cough developed, dry in character so that no sputum was available. Magnesium sulphate was administered in dose of 1 ounce with good result. The ice cap was continued and he was given two sponge baths during the day. At 1 p.m. his temperature was again 104, the pulse 96, and respiration 24. Physical signs were still negative. All through this case the physical signs were negative, but the temperature, pulse and character and frequency of the respiration with the rusty sputum were sufficient to make the diagnosis. The element of trauma is interesting, as it is a rare cause of pneumonia, and in this case was evidently directly responsible for the disease in view of the fact that the patient was previously perfectly well and had no history of exposure or any of the other well-known predisposing factors in the etiology of pneumonia.

Buffalo Medical Journal

July

68 Urogenital Tuberculosis. B. Lewis, St. Louis.
69 Guess Work in the Practice of Medicine. B. C. Loveland, Syracuse, N. Y.
70 An Interesting Case of Dermatitis Exfoliativa. W. A. Howe, Phelps, N. Y.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

June

71 Diet as a Prophylactic and Therapeutic. H. W. Wiley, Washington, D. C.
72 Therapeutics of Solution of Calcium Creosote. L. Kloipinski, Washington, D. C.
73 Treatment of the Stokes-Adams Syndrome. R. W. Wilcox, New York City.
74 Standardization of Materia Medica Products. F. E. Stewart.
75 The Adrenal Principle as the Main Active Agent in Pituitary, Testicular, Ovarian and other Animal Extracts. C. E. de M. Sajons, Philadelphia.

Detroit Medical Journal

July

76 Serotherapy of Epidemic Cerebrospinal Meningitis. C. H. Dunn, Boston.
77 Treatment by Incision and Wiring of Simple Intractable Fractures with Report of Cases. S. C. Graves, Grand Rapids, Mich.
78 Speech Defects in Children. E. B. McCrady, Pittsburg, Pa.
79 The Screw-Worm Fly with Report of a Case of Myiasis Narium. A. W. Blain, Detroit.
80 Aphasia, Somnolence and Mental Hebetude Following Nasal Operation. E. J. Bernstein, Kalamazoo, Mich.

Archives of Internal Medicine, Chicago

July 15

81 *Hyperalgesia of the Skin Overlying Active Lesions in Pulmonary Tuberculosis. W. C. White and K. H. Van Norman, Pittsburg, Pa.
82 *The Prevalence and Importance of Uncinariasis among Apparently Healthy Southern-Bred White Men in the United States Army. W. P. Chamberlain, Jackson Barracks, La.
83 *Disseminated Miliary Tuberculosis of the Skin. W. Tileston, Boston.
84 Problems in Immunity and the Treatment of Infectious Diseases. P. H. Hiss, Jr., New York.
85 The Clot Culture in Conjunction with the Agglutination Test in Typhoid. R. Lyons, New Orleans.
86 *Modification of the Sahli Butyrometric Test Meal. J. C. Friedman, Chicago.
87 The Blood in Pertussis. J. A. Kolmer, Philadelphia, Pa.

81. **Hyperalgesia of the Skin in Pulmonary Tuberculosis.**—White and Van Norman have observed that hyperalgesia of the skin to pain, heat and cold sensations is present over active tuberculous involvement of the lungs. It has a very definite distribution, corresponding very closely to the limits of active involvement in the lungs. With the arrest of activity hyperalgesia disappears. Hyperalgesia depends on involvement of the lung and not of the pleura.

82. **Uncinariasis Among Southern-Bred Soldiers.**—Chamberlain says that infection with uncinaria is very common among southern-bred soldiers during the first three years of service. In 100 men examined, 60 per cent. showed uncinariasis. Among new recruits the percentage of infections is at times as high as 85. Southern-bred soldiers with more than three years' service show a much lower percentage of infection, only 11 per cent. in 33 cases. The worms gradually die out, most of them during the first three years, and under the favorable sanitary conditions obtaining in the army at home reinfection occurs rarely, if at all. The symptoms produced by a light infection with hookworms are so slight that they can not be detected by the usual methods employed by the examining surgeon and the diagnosis must be made with the microscope. An eosinophile count of over 5 per cent. is strong evidence of infection with an intestinal parasite, but one below 5 per cent. is no evidence against uncinariasis.

The parasite in probably all cases is *Necator americanus*. In some cases, the worm probably lives several years in the intestines. In many light infections the ova are difficult to find, requiring the complete examination of five or six cover-glass preparations. Farm life is very important as a predisposing cause. Among 74 men who had farmed at some time, 81 per cent. were infected. Most of the men had gone barefooted in childhood, and over half reported having had ground itch, though usually not since childhood. Southern recruits are less well-developed physically than northern ones. Uncinariasis in childhood is a probable cause of this underdevelopment. Light infections do not materially affect the efficiency of the soldier, though the majority of men report that they feel more vigorous after treatment. Treatment of the light infections is of great importance in any attempt to stamp out the disease.

83. **Disseminated Miliary Tuberculosis of Skin.**—Tileston calls attention to the occurrence in infantile miliary tuberculosis of a skin eruption, which consists of scattered discrete papules, which at the beginning are the size of pin-heads, and are soon capped by tiny vesicles with cloudy or purulent contents. Later on, the vesicle ruptures or dries up, and its place is taken by a crust. It is this stage which is most characteristic. The lesion is then from 2 to 3 millimeters in diameter; that is to say, about the size of a rose spot in typhoid fever, and consists of a flat papule, only slightly elevated, of a dull red color, often glistening. The center is occupied by a crust, on the removal of which there is disclosed a minute but sharply defined dell or hollow, varying in size from the point to the head of a pin. Healing takes place in case the child lives long enough, leaving a tiny white scar surrounded by a halo of brownish pigmentation. The duration of the individual lesion varies from one to several weeks. The spots appear in crops, so that all the different stages may be present at the same time. Rarely a vesicular type of eruption is seen, with vesicles up to the size of a small pea, surrounded by a slightly elevated area of redness and infiltration. This form likewise shows, when in the crusting stage, the characteristic hollow in the center.

The distribution is fairly constant, the majority of the spots being situated on the buttocks, genitalia and adjacent portions of the thighs; *i. e.*, on the parts covered by the diaper. This is probably due to irritation by the feces and urine, with consequent lowered resistance of the skin. The abdomen, front of the chest, thighs and legs, and sometimes the arms, face neck, palms and soles may show a few spots; the back is usually free, except the buttocks. The eruption is not, as a rule, symmetrical and is seldom profuse, the total number of spots usually not exceding from twenty to thirty, while often only half a dozen are present. They never become confluent.

Out of 32 cases of tuberculosis in children, in the first three years of life, examined by Tileston, 7, or 21 per cent., have shown the eruption. In view of the fact that most of the children were seen only once or twice, the real proportion must be considerably higher. The list includes cases of tuberculosis of the bones, lymph nodes, lungs, intestines, meninges and peritoneum. All the children with spots who came to autopsy were found to have miliary tuberculosis. It is by no means unlikely, however, that a few spots may appear on the skin in cases with localized tuberculosis, as occurs in older children and adults. In general, the chronic cases are more apt to show spots, while in the acute ones the patients probably die before the eruption has time to develop. Thus out of fourteen patients with tuberculous meningitis, only one had spots. Two hundred children suffering from various diseases, other than tuberculosis, failed to show any eruption resembling the one under consideration.

The cause of the eruption is the tubercle bacillus. In 70 per cent. of the cases, tubercle bacilli were demonstrated within the skin lesions, sometimes in large numbers. In others the bacilli were so scanty that they were found only after a prolonged search. The association with miliary tuberculosis and the presence of tubercle bacilli in the capillaries leave little doubt as to the mode of origin of the process; it is embolic, analogous to the formation of rose spots in typhoid and to the pustular efflorescence of staphylococcus septicemia.

86. **Modification of Sahli Butyrometric Test Meal.**—The method proposed by Friedman, for the study of the gastric functions is a modification of the Sahli test meal, consisting of one-third condensed milk and two-thirds water, the object being to obtain a stable emulsion of fat. With a very little extra work one can calculate the amount of gastric juice in

the stomach at the time of aspiration, and so determine its real acidity as well as the gastric motility, etc. This yields definite standards for comparison, which enables one to make a more accurate functional diagnosis than is at present possible otherwise. Among the advantages of this meal over the Ewald and Riegel meals is the consideration that the conditions of most of the gastric functions may be determined by a single aspiration. Its advantages over the Sahli meal are its constancy of composition, the ease with which it may be prepared and administered, its strong secretory stimulating powers, and the stability of the emulsion.

Louisville Monthly Journal of Medicine and Surgery

August

88 The Question of Psychotherapeutics. J. J. Moren, Louisville.
89 Pernicious Anemia. W. F. Boggess, Louisville.

Albany Medical Annals

July

90 Medicine and the Medical Profession. A. Jacobi, Albany.

Journal of the Michigan State Medical Society

July

91 Non-Specific Infections of the Intestines. G. H. Thomas, Holland, Mich.
92 Causes of Obscure Fevers in Children. I. L. Polozker, Detroit, Mich.
93 Modern Treatment of Diffuse Suppurative Peritonitis. F. C. Kinsey, Three Rivers, Mich.
94 Appendicostomy. J. A. MacMillan, Detroit, Mich.
95 Value of Physics Applied to the Practice of Medicine. A. T. Godfrey, Holland, Mich.
96 Hypertrophic Stenosis of the Pylorus in Infants. W. M. Donald, Detroit.
97 Intestinal Obstruction. A. J. Herrington, Bad Axe, Mich.

Journal of Nervous and Mental Disease, Lancaster, Pa.

July

98 Nature of Nerve Force and the Deep Reflexes. S. W. Mitchell, New York.
99 Flaccid Paralysis or Extreme Hypotonia of the Muscles which Poise the Head, and Other Symptoms Indicative of a Cerebellar Tumor. C. K. Mills, Philadelphia.
100 Differential Diagnosis of Grave Hysteria and Organic Disease of the Brain and Spinal Cord, Especially Disease of the Parietal Lobe. C. K. Mills, Philadelphia.

Journal Medical Society of New Jersey, Orange

June

101 The Pancreas as a Possible Field for Surgery. E. M. Foote, New York.
102 The Cancer Problem in New Jersey; Necessity of Early Diagnosis. J. A. McGlinn, Philadelphia.
103 Needs of the Medical Profession in Essex County. W. P. Eagleton, Newark.
104 The Physician in Politics. W. E. Ramsay, Perth Amboy.
105 The Meddlesome Doctor. J. H. Bradshaw, Orange.

July

106 *Recent Advances in Medical and Surgical Work. D. St. John, Hackensack.
107 *Acute Unilateral Septic Infarcts of Kidney, and Acute Diverticulitis of the Colon. G. E. Brewer, New York.
108 Progress in Medicine. T. N. Gray, East Orange.
109 Differential Diagnosis of Scarlet Fever. D. E. English, Summit.

106, 107. Abstracted in The Journal, July 31, 1909, p. 402.

Western Medical Review, Omaha

July

110 True Conservatism. J. P. Lord, Omaha, Neb.
111 Fracture of the Thigh. A. P. Fitzsimmons, Tecumseh, Neb.
112 Report of Work Performed by the Nebraska State Board of Health for 1908. E. J. C. Sward, Oakland, Neb.
113 Knowledge Gained from the Clinical Findings of Today. J. E. Pulver, Omaha.

Surgery, Gynecology and Obstetrics, Chicago

July

114 *Method of Combined Exploration and Decompression for Cerebral Tumors which Prove to be Inoperable. H. Cushing, Baltimore.
115 Blastomycosis of the Skin. A. Primrose, Toronto, Ont.
116 Treatment of Tetanus by Chloretone. W. H. Hutchings, Detroit.
117 *Transfusion, with Note on Hemolysis. G. W. Crile, Cleveland.
118 Thoracic Surgery; Empyema. A. Vander Veer, Albany.
119 *Preservation of Dissections of Surgical Anatomy with Permanent Color of Muscles, Vessels, Nerves and Organs, by a New Method. E. Souchon, New Orleans, La.
120 *Prevention and Treatment of Sequels of Perineal Prostatectomy. J. E. Moore, Minneapolis.
121 *Resection of the Sciatic Nerve. K. A. MacKenzie, Portland, Oregon.
122 Choice of Time for Operation for Pelvic Inflammation of Tubal Origin. F. Simpson, Pittsburg, Pa.
123 Management of Labor Obstructed by Pelvic Disproportion. R. C. Norris, Philadelphia.
124 *Operative Procedures for Relief of Dystocia. H. A. Miller, Pittsburg, Pa.
125 *Radical Operation for Carcinoma of the Lower Lip. A. E. Hertzler, Kansas City, Mo.
126 *Herniotomy without Buried Sutures. E. M. Prince, Birmingham, Ala.

114, 120, 121. Abstracted in The Journal, July 31, 1909, pp. 407, 408, 409.

117, 119. Abstracted in The Journal, July 24, 1909, p. 320.

124. **Operative Procedures for Relief of Dystocia.**—Miller believes that in a perfectly healthy individual in whom there is no evidence of toxemia, it is justifiable to make an attempt to prevent the overgrowth of the child. In properly selected cases induced labor is less dangerous for the mother, carrying with it a lower mortality than either pubiotomy or Cesarean section. The induction of premature labor is probably the choice of procedures in cases in which the delivery can readily be accomplished at the thirty-sixth week or beyond, and in some instances might be indicated a week or more prior to this time. The proper time for interference should be determined by the Stone method of measuring the fetal head while still in the uterus, by careful pelvic measurements, and by repeated bimanual examinations by Mueller's method. It is extremely important to provide skilled care for the premature infant for at least two months after delivery, and the most essential part of this skilled care is that the child be breast-fed, by either the mother or a wet nurse. The method of delivery in any individual case should be determined before labor actually starts, as the maternal mortality comes largely from operations having been done when delivery by the natural forces supplemented by forceps operation have failed. Miller can not conceive of any condition in which craniotomy on the living child is justifiable.

125. **Carcinoma of Lower Lip.**—Hertzler advocates the removal of the glands and the gland-bearing tissue adjacent to the lip, in all cases, including the very early ones. The gland-bearing area would be the submental and the inframaxillary in the first link, and the subhyoid and the submaxillary in the second link, and finally, the deep cervical in the third. Hertzler believes that the first and second links should be removed in all instances. If these are not obviously involved, their removal, together with the gland-bearing tisssue in this region, is all that is required. Should they be obviously cancerous, then the third link, the deep cervical glands, on the corresponding side, or both sides, should also be removed.

The removal of this amount of tissue can best be made by an incision passing over either side of the point of the chin, curving over the inferior maxillary bone, extending back to the anterior border of the masseter muscle, hence downward to the point of crossing of the omohyoid and the sternomastoid muscles. The incisions pass on either side of the point of the chin. The object of this is to leave the skin attached at this point, for if the skin at this point is loosened it is difficult to keep the flaps in position over the point of the chin. When the lesion is extensive this point of attachment can not, of course, be preserved. The lymphatics pass on either side of this tissue and there is no reason for its removal. The submental space may easily be cleaned out by pulling the skin to either side. The character of the incision in the lip itself depends on the size of the lesion. As in the breast, the dissection should be begun at the point farthest from the growth and proceeded with toward the lesion. The dissection should begin, therefore, at the angle between the omohyoid and sternomastoid muscles. When the dissection is completed up to the chin, the tumor should be thoroughly cauterized before beginning the operation and protected by a wet formalin pack. The incision in the neck can be conveniently closed with a running suture of silk or catgut. Drainage should be provided for at the lower angle of the wound. For the closure of the incision in the border of the lip Hertzler has adopted a special plan. It is a double loop suture. The advantage of this suture is that the vermilion border is held in apposition, while the knots are all placed on the skin surface of the lip, where they cause no irritation.

126. **Herniotomy without Buried Sutures.**—Prince describes his method as follows: Make an incision one and a half inches above Poupart's ligament down to the fascia of the external oblique, freeing the anterior or external surface of this fascia from fat, etc. Then locate the external ring by stripping

down the intercolumnar fascia by which this ring is partially covered. Then make the incision through the external oblique on a grooved director passed into the external ring, or without the use of the director, as one prefers. This incision should be so made that the reflected portion of the external oblique above Poupart's ligament will be sufficient to cover the cord. The sac is dealt with in the usual way. The fascia of the external oblique is then dissected from the internal oblique muscle until its edge can be easily brought down to the edge of the internal oblique and transversalis muscles. Both ends of a suture of strong silkworm gut are threaded on a needle. Each needle is passed through the transversalis and internal oblique muscles, both emerging through fascia of the external oblique. Both needles are now passed under the cord. One needle is passed below, the other above Poupart's ligament to the skin surface. These sutures are then tied over a piece of rubber tubing or roll of gauze, which brings the two muscles and fascia of the external oblique in contact with Poupart's ligament. This transplants the cord on top of the fascia of the external oblique. Then make a slit in the fascia of the external oblique to receive the reflected portion of the fascia, which is turned back to expose Poupart's ligament. This reflected portion of external oblique fascia is then pulled into the slit and acts as a covering of the cord. When these sutures are tied the wound is completely closed. The sutures may be made to come out above the wound and tied over a roll of gauze, as the deep sutures, and the wound is then closed by a subcuticular suture. The stitches are usually left in for twelve days. It is essential to have a good quality of silkworm gut.

Medical Herald, St. Joseph, Mo.

July

127 *Public Health Problems of the Nation. W. Wyman, Washington, D. C.
128 *Anesthesia in Children. W. W. Stevens, Kansas City, Mo.
129 Autointoxication. A. E. King, Blockton, Ia.

127, 128. Abstracted in The Journal, May 8, 1909, pp. 1535, 1536.

St. Louis Medical Review

June

130 Operative Treatment of Hemorrhoids. W. H. Stauffer, St. Louis.
131 Abscess of the Liver. W. Bartlett, St. Louis.
132 Anesthesia. W. E. Leighton, St. Louis.
133 Acute Hemorrhagic Pancreatitis, Following Perforation of a Duodenal Ulcer. L. G. Bartels, St. Louis.

July

134 *Epidemic Meningitis Treated with Flexner's Serum. D. L. Harris, St. Louis.
135 Some Ophthalmic Practices seen in Vienna in 1908. W. E. Klokke, St. Louis.
136 Treatment of Placenta Prævia. H. Schwartz, St. Louis.
137 Study of Chemistry in Medical Schools. W. H. Warren, St. Louis.

134. **Epidemic Meningitis.**—Harris has observed the results of the serum treatment in 14 cases of cerebrospinal meningitis. Of this number, 2 patients died. The remainder recovered. Of those who recovered, the only permanent impairment was deafness in one case.

Southern Medical Journal, Nashville

July

138 *Progressive Pernicious Anemia with Report of Cases. J. A. Witherspoon, Nashville.
139 Diseases of the Female Breast. A. M'Glannan, Baltimore.
140 *Malaria: Special Reference to what is not Malaria Fever. J. P. Bates, Nashville.
141 Etiology and Treatment of Diphtheria. O. N. Bryan, Nashville.
142 Problem of the Neurotic. W. H. Witt, Nashville.
143 Eye Injuries and their Immediate Attention. C. Fox, Birmingham, Ala.
144 Surgical Intervention in Treatment of Neurasthenic States. C. M. Rosser, Dallas, Tex.
145. Medical Ethics and Commercialism. C. M. Emmons, Washington, D. C.

138. **Progressive Pernicious Anemia.**—Witherspoon urges that in all cases of pernicious anemia there should be a thorough examination of the stools, special care being used in seeking for the *Bacillus capsulatus aërogenes.* When this bacillus or the percentage of anaerobic bacteria found in evacuations from bowels is large, then after thorough trial at colonic irrigation, and failure to improve symptoms or to lessen the percentage of bacteria, the operation of appendicostomy is warranted.

140. Abstracted in The Journal, May 1, 1909, p. 1448.

Interstate Medical Journal, St. Louis

July

146 Surgery of Kidney Stone. M. H. Richardson, Boston, Mass.
147 Diagnosis and Treatment of Early Cases of Tuberculosis. L. F. Flick, Philadelphia, Pa.
148 Nature of Cancer and Recent Additions to the Methods of Treating Inoperable Cancers. F. J. Lutz, St. Louis.
149 Melena—Recovery. W. T. Doran, New York City.
150 Aids to the Diagnosis of Tuberculosis, Chiefly by Means of Finding the Tubercule Bacillus. A. E. Taussig, St. Louis.
151 Blood Pressure, J. S. Myer, St. Louis.
152 Aphasia. S. I. Schwab, St. Louis, Mo.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 24

1 *Treatment of Disease. W. Osler.
2 Hercules and the Wagoner. D. J. Williams.
3 Esophageal Diverticulum. W. Taylor.
4 Common Types of Sore Throat. A. S. Green.
5 *Wassermann Reaction in General Paralysis of Insane. J. H. Smith and J. P. Candler.
6 Pneumonia Migrans Involving Whole of Both Lungs Followed by Empyema: Recovery. J. Bannerman.
7 Causes of Obstruction Producing Cyanosis During Nasal Administration of Nitrous Oxid. F. Trewby.
8 Treatment of Chronic Inflammations of the Eye. C. G. R. Wood.
9 Hydatid Disease, Recurrence: External Rupture: Recovery A. W. Brodribb.
10 Intra-Abdominal Hemorrhage Associated with Labor. M. C. Barber.
11 Point in the Use of Kollmann's Urethral Dilator. A. MacLennan.
12 Unilateral Development of the Mamma in the Male. J. C. Fyshe.
13 Biotripsis. O. Baker.
14 Arsenic in Locomotor Ataxia. C. Wray.
15 Acute Tuberculous Arthritis. J. R. Keith.
16 Rigor Mortis in a Stillborn Child. C. Eglington.

1. **Treatment of Disease.**—Osler says that the student should follow most carefully the action of those drugs the pharmacology of which he has worked out in the laboratory. He should be sent out from the hospital knowing thoroughly how to administer ether and chloroform. He should know how to handle the various preparations of opium. Each ward should have its little case with the various preparations of the ten or twelve great drugs, and when the teacher talks about them he should be able to show the preparations. He should study with special care the action of digitalis on the circulation in cases of heart disease. He should know its literature. It should be taken as the typical drug for the study of the history of therapeutics. He should day after day personally give a syphilitic baby inunctions of mercury; he should give deep injections of calomel, and he should learn the history of the drug from Paracelsus to Fournier. He should know everything relating to the iodids and the bromids, and should present definite reports on cases in which he has used them. He must know the use of the important purgatives, and he should have a thorough acquaintance with all forms of enemata. He should know cinchona historically, its derivatives chemically and its action practically. He should study the action of the nitrites with the blood-pressure apparatus, and he should over and over again have tested for himself the action, or the absence of action, of strychnin, alcohol and other drugs supposed to have a stimulating action on the heart and blood vessels.

5. **Wassermann Reaction in General Paralysis of Insane.**—Smith and Candler examined a series of spinal fluids from cases of general paralysis and other diseases. The method employed was essentially that of Wassermann. They used ox blood corpuscles instead of sheep's. They examined 175 samples of cerebrospinal fluid, derived from 127 individuals Of these 127, 64 were cases of general paralysis, and in 59, or 92.1 per cent., a positive result was obtained, while in 5, or 7.8 per cent., the reaction was negative. These 64 cases include 7 from which the fluid was obtained only after death, and all of these gave positive results. It might be objected that the examination of such postmortem fluids could give no trustworthy results. In the case of cerebrospinal fluids, however (whatever may be the case with serums), this is not so. If the fluid is withdrawn within twenty-four hours after death from a body which has lain in the cold room during the in-

terval (as was done in all the authors' postmortem cases), the Wassermann reaction is not altered. Examinations were made of such fluids from over 30 control cases, with no positive results. The spinal fluid even of a general paralytic, which had been negative during life, remained so after death. Of 21 cases undoubtedly in the most advanced stages of the disease, over 90 per cent. gave the reaction, while of 16 cases, certainly in a middle stage, only 81 per cent. were positive. They also examined 9 cases (not included above), in which the definite diagnosis could not be made clinically, though it was considered possible that general paralysis might develop. These all gave negative results. Fluids from 63 cases in which the patients were not suffering from general paralysis were examined, in 32 of which the fluid was obtained during life. In no single instance was a positive reaction obtained. These cases included melancholia (9); senile mania (10); epilepsy (2); cerebral tumor (2); cerebellar tumor; syphilitic meningitis; lues cerebri; tuberculous meningitis; alcoholism (3); disseminated sclerosis; dementia præcox; posthemorrhagic and other softenings; and a few fluids received for diagnosis of tuberculous or epidemic meningitis.

In suspected general paralysis the authors claim that a positive Wassermann reaction with the cerebrospinal fluid is practically diagnostic. In only two other conditions is it ever obtained, namely, in tabes and in syphilis located in the central nervous system of the meninges. In tabes it occurs regularly, but with much less frequency than in general paralysis.

Lancet, London

July 24

17 *Desirability of Early Operation in Acute Cases of Appendicitis. G. R. Turner.
18 Modern Progress in our Knowledge of the Pathology of General Paralysis. E. Jones.
19 Intramuscular Treatment of Syphilis, with Special Reference to the Insoluble Preparations of Mercury. G. Pernet.
20 Investigation into the Action and Uses of Fibrolysin in Middle-Ear Deafness. J. G. French.
21 Fate of Damaged Joints. R. Warren.
22 Painful Heels. E. R. Morton.
23 Purpura Hemorrhagica, with Abdominal Crises Due to Intestinal Effusion. G. P. Mills.
24 Treatment by Radium of Lymphatic Obstruction (Cervical, Submaxillary, and Axillary), in a Patient Suffering from Filaria Nocturna. A. A. Warden.
25 District Medical Officers and Report of Royal Commission on Poor-Laws. M. Greenwood.
26 The Prism as an Aid to Diagnosis and Paralytic Diplopia. R. B. Ferguson.
27 Case of Ruptured Uterus with Perfect Recovery. R. N. Geach.
28 Spasmodic Torticollis Following Chorea. T. E. Lister.

17. **Early Operation in Acute Appendicitis.**—Turner says that if acute cases are treated by early operation, when once the condition is clearly diagnosed, the mortality of such early operations, although done during the attacks, should not be, and will not be much, if at all, greater than of those done between attacks. He attributes the present mortality of operations during attacks almost entirely to delay.

Annales de Dermatologie et de Syphiligraphie, Paris

June, X, No. 6, pp. 353-416

29 *Decortication and Thiersch Flaps to Remove Traces of Tattooing. (Détatouage par décortication.) W. Dubreuilh.

29. **Removal of Tattooing.**—Dubreuilh relates two cases in which he relieved men of disfiguring tattooing by shaving off the superficial layer of the derma. It is not necessary to cut deep, but merely peel the surface. Thiersch flaps applied on this healthy raw surface take hold and grow with remarkable facility. The superficial layer is sliced off with a razor; no grafts are required on regions abounding in hair and sebaceous glands, like the face and nose. The skin heals over without a scar or retraction.

Annales de l'Institut Pasteur, Paris

June, XXIII, No. 6, pp. 441-512

30 *Kala Azar in Children. (Le kala azar infantile.) C. Nicolle. Commenced in No. 5.
31 *Serodiagnosis of Hydatid Cyst Disease. (Séro-diagnostic de l'échinococcose.) Weinberg.
32 Methods of Staining Common to Actinobacillosis, Actinomycosis and Botryomycosis. P. Chaussé.

30. **Kala Azar in Children Near the Mediterranean.**—Nicolle states that twelve cases have been reported of a special infection affecting exclusively children under the age of 6, and encountered to date only in Tunis and southern Italy. The symptoms include pallor, emaciation, enlargement of spleen and liver, fleeting, painless edemas and extremely irregular temperature presenting several maxima during the course of the day, uninfluenced by quinin. A tendency to hemorrhages and purpura is also frequent. The infection runs a long chronic course, and in all the cases differentiated during life the disease proved fatal. The parasite seems to be identical with that of kala azar in India, except that it attacks only children. In three other children now in good health a retrospective diagnosis of the infection has been made, and these cases demonstrate that the little patients may sometimes recover. His research on animals has shown that "infantile kala azar" is a natural infection of the dog. The parasite was found in 4 out of 222 dogs examined at Tunis, but the infection in dogs does not induce as characteristic a syndrome as in children.

31. **Seroreaction in Hydatid Cyst Disease.**—Weinberg reports from Metchnikoff's laboratory at Paris 52 cases in which the diagnosis was confirmed by the findings of the complement fixation test. The blood was found to contain specific antibodies against echinococci; in 26 of the 27 cases with positive findings the operation revealed the parasites. In one case with negative findings the operation revealed a hydatid cyst and the test, twenty days later, induced a positive reaction. The test in hydatid cyst disease seems to be even more constantly positive than the similar test for syphilis, and it is proving an important aid in the clinic. In one case the clinical signs suggested hydatid cyst, confirmed by the pronounced eosinophilia of 7.5 per cent., but the test applied on three occasions gave constantly negative findings. The stools were then examined and quantities of eggs of the trichocephalus were discovered, explaining the eosinophilia, and the operation revealed merely gall-bladder inflammation. In other cases with negative findings in both stools and serum, the supposed hydatid cyst proved to be a hemorrhagic cyst in the pancreas, or abscess in the bile duct. In one case with 10 per cent. eosinophilia the test was negative and the liver hard, but certain findings in the serum were similar to those that had been noted with cancer of the liver, and this proved to be the trouble in this case. In all the other negative cases the test added another element to sustain the dubious diagnosis of some other affection. Examination of 26 other patients who had been operated on for hydatid cysts years before showed the persistence of antibodies in a large proportion, and it was found that in all these positive cases the cyst had been opened, while in the negative it had been removed unopened.

Archives Générales de Chirurgie, Paris

June 25, III, No. 6, pp. 551-660

33 Epithelioma in Testicle of Wolffian Origin. G. Potel and L. Bruyant.
34 Fractures of the Astragalus with Displacement of the Fragments. P. Mauclaire and P. Petiteau.
35 How Long should Bed Rest be Imposed after Operations? (Durée du séjour au lit des opérés.) J. de Fourmestraux.

Archives Générales de Médecine, Paris

June, CC, No. 6, pp. 321-384

36 Leucocyte Balance in the Bronchopneumonia of the Elderly. (La leucocytose et l'équilibre leucocytaire dans la bronchopneumonie des vieillards.) G. Etienne and M. Perrin.
37 Spring-knee. (Etude du genou à ressort.) Bar and Bertein.

Bulletin de l'Académie de Médecine, Paris

June 29, LXXIII, No. 26, pp. 689-720

38 *Diagnostic Importance of Antitryptic Power of Blood Serum (Pouvoir antitryptique du sérum sanguin et sa valeur diagnostique.) F. Widal and S. de Poggenpohl.
39 *Dysenteric Liver Abscess. (Abcès du foie dysentérique nostras.) E. Boinet.

38. **Diagnostic Importance of Antitryptic Power of Blood Serum.**—Widal obtained positive results in 13 out of 14 cases of cancer even when there was no cachexia, as in one case of epithelioma of the upper lip in which the antitryptic index was 1 to 7. In the one negative case the test was made on a moribund patient. In 8 cases suspected of cancer the reaction was negative, and the course of the cases confirmed these findings, the affection proving to be a cyst in the pancreas, tuberculous pleurisy, chronic mammitis, gumma of the lip, nervous spasm of the esophagus or gastric ulcer. This makes 176

cases on record in which this test has been applied, with positive findings in 91.4 per cent. In 64 other chronic affections—lobar pneumonia, typhoid fever, tuberculosis or nephritis—the reaction was positive in 11 per cent. The high antitryptic index in the 3 cases of typhoid fever may have been connected with the complications observed in these cases.

39. **Dysenteric Abscess of the Liver.**—Boinet describes twenty-one cases of abscess in the liver in France presenting the same characteristics as a tropical abscess. It may follow a mild dysentery which may not have attracted attention, and it may run a latent course simulating a tuberculous process in the lungs, pneumonia, pleurisy or a suppurative hydatid cyst. In acute suppurative hepatitis with multiple abscesses, or an abscess with necrosis, the general symptoms may suggest typhoid fever or severe jaundice and the actual abscess be overlooked. The principal complications of these bacillary liver abscesses are adhesion between the focus or foci and the colon; perforation into the air passages or pleura; pus collecting below the diaphragm, multiple abscesses in the left lobe of the liver, and postoperative bile fistula.

Revue de Médecine, Paris

June, XXIX, No. 6, pp. 425-504

40 Digestive Origin of Respiratory Affections. (Origine digestive des maladies de l'appareil respiratoire.) P. Londe.
41 Study of the Suprarenals. (Caractères macroscopiques des glandes surrénales dans leurs états physio-pathologiques.) A. Sézary.
42 *Local Hemolytic Jaundice. (Formation des pigments biliaires par hémolyse dans les séreuses.) G. Guillain and J. Troisier.
43 Colloidal Metals in Therapeutics. (Etude thérapeutique des métaux colloidaux.) L. Bousquet and H. Roger. Commenced in No. 4.

42. See abstract 52 in The Journal, April 24, 1909, page 1368.

Presse Médicale, Paris

July 14, XVII, No. 56, pp. 497-504

44 *Congestive Edema at Apex Simulating Tuberculosis. (De quelques congestions-œdèmes pulmonaires localisées aux sommets des poumons simulant la tuberculose, et de quelques congestions pulmonaires pérituberculeuses.) G. Caussade and P. Queste.
45 Ascarides Simulating Gastric Ulcer. (Ascaridiose intestinale ayant simulé un ulcère de l'estomac.) R. Gaultier.

44. **Edematous Congestions at Apex Simulating Tuberculous Process.**—The edematous congestions to which Caussade refers occur in the course of kidney and heart disease, but the tuberculin tests are negative and no tuberculous lesions are discovered at autopsy, although during life auscultation findings suggested an advanced tuberculous lesion. Their true nature is revealed by their changing position at times and their complete subsidence sooner or later in some cases, although in others they may persist indefinitely unless special measures are directed against the congestion. Two typical cases are cited of these apical congestions in the course of chronic nephritis and two with chronic mitral or aortic incompetency. Recurring hemorrhage from the lungs in these latter cases corroborated the diagnosis of tuberculosis, but the subsidence of the apical signs demonstrated that the hemorrhagic tendency was due to the heart trouble and not to tuberculosis. In another case of mitral insufficiency and nephritis the auscultation findings and repeated hemoptysis suggested tuberculosis, but the lungs cleared up under treatment of the heart and kidney disease and the findings became normal, confirming the negative findings of the tuberculin tests. In a youth of 16 with chronic adhesive pericarditis the auscultation findings seemed to reveal the presence of a cavity in one lung, but autopsy showed merely intense congestion of the right apex with not a trace of tuberculosis. When the edematous congestion surrounds a true tuberculous lesion, differentiation is delicate but very important, as the tuberculous lesion may be minute, while the perituberculous is very extensive. Two examples are given of cases of this kind, the prognosis being favorable if the perituberculous congestion is found to be variable or fleeting. In one of this group the edematous congestion developed after influenza and severe tuberculosis was diagnosed, but the signs all vanished in time under revulsive measures, and two years later the young man passed a rigid physical examination for a government position. The signs and auscultation findings in each of the above eight cases are given in detail.

Semaine Médicale, Paris

July 21, XXIX, No. 29, pp. 337-348

46 Biologic Classification of Neuroses and Psychoses. M. Klippel.

Berliner klinische Wochenschrift

July 5, XLVI, No. 27, pp. 1245-1292

47 Pathologic Anatomy of Bilharzia Disease. Goebel.
48 Tumor in Frontal Brain Simulating Syndrome of Tumor in Posterior Cranial Fossa. (Ein Stirntumor unter dem klinischen Bild eines Tumors der hinteren Schädelgrube.) A. Ruckert.
49 *Hemolysis in Paroxysmal Hemoglobinuria. (Hämolyse bei der paroxysmalen Hämoglobinurie.) A. A. Hijmans van den Bergh.
50 Pathology of Secretion of Gastric Juice. (Zur Pathologie der Magenschleimabsonderung.) E. Schütz.
51 *Etiology of Hypertrophy of the Prostate. A. Rothschild.
52 *Erotic and Sympathetic Epididymitis. L. Waelsch.
53 *Modern Obstetrics. (Moderne Geburtshilfe in Klinik und Haus.) Puppel.
54 Report on Collective Appendicitis Enquiry at Berlin, 1907. (Sammelforschung der Berliner medizinischen Gesellschaft betreffend die Blinddarmentzündungen des Jahres 1907.) A. Albu and J. Rotter.
55 *Medicolegal Certificates. (Darstellungsweise gerichtsärztlicher Gutachten.) H. Marx.

49. **Carbon Dioxid Responsible for Hemolysis in Paroxysmal Hemoglobinuria.**—Bergh announces that study of the blood of three patients with paroxysmal hemoglobinuria has shown that carbon dioxid has much to do with the hemolysis. A thin layer of the defibrinated blood of these patients in a shallow dish placed for two hours in a glass bell filled with carbon dioxid showed pronounced hemolysis when the temperature was reduced a few degrees below ordinary body temperature. There was no hemolysis when the body temperature was maintained, and no hemolysis in numerous other tests with blood from healthy persons at any temperature. This research was suggested by Hamburger's statement that the resistance of normal red corpuscles to dilute salt solution is materially reduced under the influence of carbon dioxid.

51. **Etiology of Enlargement of the Prostate.**—Rothschild gives a number of illustrations to sustain his assertions that the enlargement of the prostate is the result of a chronic inflammation, the inflammatory foci lying around the mouths of the excretory ducts and thus causing stenosis or occlusion of these ducts with retention of the catarrhal secretion, dilatation and cystic degeneration, the process and results similar to those of retention in any glandular organ. The chronic prostatitis in question is a very long drawn out process, extending over years and decades, and it may be not only clinically latent, but the naked eye may be unable to detect histologic changes in the gland. The microscope, however, will reveal the signs of submucous chronic inflammation in the posterior urethra and of catarrhal proliferation and desquamation of the epithelium in the follicular pouches and outlets of the prostate. Some prostates contain less glandular substance than others, and the effect of the inflammation is felt less on this account. The findings reported confirm the lack of any rational basis for treatment of enlargement of the prostate by castration or severing of the vas deferens or ligation of afferent arteries—all of which are now abandoned. But the anatomic findings suggest the importance of systematic treatment of chronic prostatitis in prophylaxis of hypertrophy of the organ. This is the task of the general practitioner, and he should not fail to institute a three or four weeks' course of massage two or three times a year for several years after subsidence of the acute phase of prostatitis. This will counteract the stagnation of the secretions and development of deposits of round cells at different points, while it will promote the circulation through the blood vessels and lymphatics and favor absorption of inflammatory infiltrates. Of course, after fibrous connective tissue processes have developed, massage is no longer effectual. It may be usefully supplemented by other measures to promote absorption, such as brine and mud baths, etc.

52. **Sympathetic Epididymitis.**—Waelsch reports a case of frequently recurring pains in the scrotum evidently from acute congestion in a chronically inflamed organ, the result of reflex disturbances in the circulation, sometimes from emotional influences. Tough infiltration in the epididymis and vas can be palpated, but tuberculosis, gonorrhea and syphilis can be excluded in this case; a tendency to internal inguinal hernia on each side can not be regarded as responsible for the recur-

ring pains. The patient was a man of 31 and no benefit had been derived from the most varied treatment during the five years since the first pains were observed; the attacks of pain had grown constantly more severe and the intervals shorter, except that some attenuation had been observed quite recently under the bromids. Waelsch also reports a case of what he calls erotic epididymitis, a form of the sympathetic affection in which the painful congestion is the result of erotic excitement. The congestion subsided under rest and moist heat, but an infiltration still persists.

53. **Obstetrics in the Clinic and the Home.**—Puppel pleads for better instruction of the general practitioner in the indications for obstetric operations and for expectant management of childbirth in the dubious cases. He is convinced that greater familiarity with the use of the inflatable bag will render operative measures unnecessary in many more cases.

55. **Medicolegal Certificates.**—Among the various points of Marx's advice is the warning that each certificate should be made complete, that is, the questions of the judge or other authority should be given along with the answers, and the latter should be couched in language to correspond, so that any third lay party reading the certificate at any time would be able to understand the whole matter and judge it for himself. Another important point is for the physician to weigh the morbid state in comparison with the normal capacity of the individual. The third factor of importance in making out the certificate is the medical judgment of the single event, the accident, etc., assumed to be responsible for the condition. Marx warns further against positive assertions, urging the use of "probably," "possibly" or "nothing conflicts with the assumption that," to modify the positive statements. It is especially necessary to avoid such assertions as "X is mentally sound" as the verdict after a single office examination. Such a positive assertion is permissible only after a long course of observation; the physician should state only that he had not been able to detect any signs of mental unsoundness during his examination.

Deutsche medizinische Wochenschrift, Berlin

July 8, XXXV, No. 27, pp. 1177-1216

56 *Opsonins and Pulmonary Tuberculosis. M. Wolff and H. Reiter.
57 Complement Binding in Relapsing Fever. (Komplementbindung bei Typhus recurrens.) S. Korschun and Leibfreid.
58 *Serotherapy of Incipient Senile Cataract. (Ueber Römers spezifische Therapie des beginnenden Altersstars.) O. Schirmer.
59 *Serum Reaction in the Insane. (Ueber die Much-Holzmannsche Kobragiftreaktion im Blute Geisteskranker.) A. H. Hübner and H. Selter.
60 Ileus after Subcutaneous Trauma. A. Schönwerth.
61 Syphiloma in Rabbit Testicle after Inoculation. (Hodensyphilome bei Kaninchen nach Impfung mit syphilitischem Virus.) D. Mezincescu.
62 *Improved Quantitative Test for Sugar in the Urine. (Verfahren zur quantitativen Bestimmung des Harnzuckers.) H. Citron.
63 *Spectroscopic Test for Occult Blood in Stool. (Neue spektroskopische hämochromogene Blutprobe der Faeces.) C. Karoly
64 Improved Joint for Artificial Knee. (Kniegelenk für künstliche Beine.) O. Vulpius.

56. **Opsonins and Pulmonary Tuberculosis.**—Wolff and Reiter are in charge of the policlinic for lung affections at Berlin, and they state that the opsonic index ranks just below the subcutaneous injection of tuberculin as the most delicate and reliable aid for diagnosis of tuberculosis. The opsonic index in health ranges from 0.85 to 1.15; a permanently low index suggests a chronic, possible stationary, tuberculous process, while a very low fluctuating index indicates progressive infection. They regard the ocular reaction as the most unreliable of the tubercle reactions; the statement that it indicates only active tuberculosis has not been confirmed by their experience.

58. **Organ Treatment of Cataract.**—Schirmer's experiments failed to confirm Römer's hypothesis in regard to the absorption of lens substance and its therapeutic reaction. He cites Königshöfer's negative experiences over ten years ago with such organotherapy. Börnstein has observed fatal anaphylaxis in rabbits fed with an alien albumin, which suggests the necessity for caution with these organ extracts.

59. **The Alleged Specific Reaction in the Blood of the Insane.**—Hübner and Selter have applied the cobra toxin hemolytic test in 82 cases, but their findings differ materially from those reported by Much. They were positive in less than 50 per cent. of the cases of dementia præcox and manic depressive insanity, while they proved positive also in a number of psychoses, neuroses and in organic brain and spinal cord affections.

62. **Improved Quantitative Test for Sugar in Urine.**—Citron regards the technic described as marked progress; even the novice is able to read off the percentage of sugar in the urine in a few minutes with automatic accuracy, and only a single dish is required for the test, a single heating, and no filtering. It is a modification of the iodometric modification of Fehling's quantitative test. The iodometric method consists in heating the urine with Fehling's solution, filtering, treating with sulphuric acid and potassium iodid, and titrating the iodin with sodium thiosulphate and starch. It is based on the principle that the sugar precipitates a proportionate amount of the copper in the Fehling solution and that the precipitated cuprous oxid remains behind on the filter. By the action of the sulphuric acid and potassium iodid on the filtrate, one atom of iodin is liberated for each molecule of the copper sulphate. The tedious decolorization of the Fehling test is avoided, and the iodin reaction in its place is much plainer. Only the copper still in solution—not that already reduced—induces the liberation of the iodin, and the cuprous oxid becomes quantitatively transformed into cuprous iodid. Ten c.c. of the potassium-sodium tartrate solution are placed in a porcelain dish and 10 c.c. of the copper solution are measured out and nearly all is added, the mixture thoroughly stirred. Then exactly 1 c.c. of urine is added, and when all is dissolved, the mixture is heated over a small flame for a minute and a half, to boiling, and then cooled by placing the dish in a vessel of cold water. (While it is cooling the starch solution is prepared.) Then 4 c.c. of a 25 per cent. solution of sulphuric acid are added, when a thick, viscid precipitate is at once thrown down. The solution of sodium thiosulphate is then added from a burette graduated for percentages, a line at a time, and a few c.c. of the starch solution are added. The fluid then turns deep blue or possibly a little more of the sulphuric acid solution and starch solution may be required. More of the thiosulphate solution is then added, a line at a time, until the fluid turns milk white and remains so even when it is stirred. The rest of the copper solution is then added and the rinsing water. If the fluid still remains white the percentage line on the burette is the index of the proportion of sugar in the urine. If a blue tint returns, more of the sodium thiosulphate is added, drop by drop, until a permanent milky tint results. Citron uses a special iodometric burette graduated for urine percentages and a special pipette graduated for 1 c.c. of urine, used with a syringe with a capacity of 2 c.c. The solutions used are: *a*, 34,639 gm. of copper sulphate dissolved in 500 gm. distilled water, to which 1 c.c. of sulphuric acid is added to prevent formation of copper carbonate; *b*, 173 gm. potassium-sodium tartrate, 50 gm. sodium hydroxid and 100 gm. potassium iodid dissolved in 500 c.c. water; *c*, a one-fifth normal solution of sodium thiosulphate containing also 0.1 per cent. sodium arsenate to make it keep better; *d*, a 25 per cent. solution of sulphuric acid, and *e*, the starch solution which he makes by dissolving in half a reagent glass of water a small piece, the size of a hazel nut, of a paste preparation used by photographers. The starch solution is heated to boiling and then cooled.

63. **New Spectroscopic Test for Occult Blood in the Feces.**—Karoly uses pyridin and ammonium sulphid for the test; the reduction is so complete that the test is ten times as sensitive as other spectroscopic methods. The feces are washed with ether and filtered; the residue is extracted with concentrated acetic acid and 0.5 c.c. are mixed with 1 c.c. pyridin; then from 1 to 3 drops of the ammonium sulphid are added. The fluid is limpid and gives the spectrum for hemochromogen. The test is a little less sensitive than the guaiac and aloin test, but more so than the benzidin test. These other tests can be applied for control, if desired, with some of the acetic acid extract.

Fortschritte der Medizin, Leipsic

June 10, XXVII, No. 16, pp. 593-640

65 Movable Cecum. (Coecum mobile.) H. Klose.

June 30, No. 18, pp. 673-704

66 *Fever and its Treatment. (Fieber und Fieberbehandlung.) L. Lichtwitz. Commenced in No. 17.

66. **Treatment of Fever.**—Lichtwitz reviews the history of the management of fever as it has varied with the prevailing conceptions of the nature of the high temperature in disease, and outlines the present accepted treatment. This is based on the conception that fever is a salutary reaction on the part of the organism, but that, like all such processes in nature, the reaction may be excessive and overshoot the mark. It is the physician's task, therefore, to watch over the fever, doing nothing if all is going well, but ready at any moment to intervene to keep the salutary reaction within due bounds. If the patient's consciousness is disturbed, the breathing becoming more superficial, the assimilation of nourishment suffering, then gentle antipyretic measures are in order. For this the specific drugs should be given the preference, quinin in malaria, salicylic acid in acute rheumatism, and in other fevers mild external applications of water, with more energetic measures in case of excessively high fever, with digitalis, camphor and caffein in case of collapse.

Jahrbuch für Kinderheilkunde, Berlin

July, LXX, No. 1, pp. 1-122

67 *Lactic Acid and General Metabolism in Infants. (Milchsäure und Säuglingsstoffwechsel.) M. Klotz.
68 *Congenital Tuberculosis. H. Rietschel.
69 Wet Nurses in Ancient Alexandria. (Die Amme im alten Alexandrien.) W. Schubert.

67. **Lactic Acid and General Metabolism in Infants.**—Klotz has found that small amounts of lactic acid, not more than 1 or 1.5 gm., seem to reduce saponification and promote the metabolism in general when administered to infants. The metabolic findings in six are tabulated in detail; some of the infants were healthy and others recovering from some acute gastrointestinal disturbance. Larger doses render the metabolism more sluggish.

68. **Congenital Tuberculosis.**—Rietschel relates the particulars of a case in which the physician delivered the child of a woman of 30 in advanced tuberculosis, wrapped it in a towel and placed it on a bed ten feet from the mother. In twenty minutes it was bathed in an adjoining room by the nurse who had arrived too late for the birth. The child was then taken at once to a foundlings' home, where it was received before it was forty-five minutes old. There were no signs of tuberculous infection at first, but they developed after a month or so, and the child died of generalized tuberculosis at the fourth month. Sitzenfrey has reported two similar cases in which infection from the mother after birth seems positively excluded, and yet generalized tuberculosis developed in from three to six months. Rietschel is inclined to attribute the infection to contamination during the stress of delivery, intrapartum infection. As young infants are unable to develop antibodies, such infection during birth is almost inevitably fatal, whether the child remains with its mother or not. When the tuberculosis does not develop until after the sixth month, the infection was probably acquired after birth. He is convinced that the intrapartum infection is much more common than generally recognized, and that there are no grounds for assuming a latency of the tubercle bacilli in the infant organism, which is one of the premises of Behring's theory of tuberculous infection in early infancy.

Münchener medizinische Wochenschrift

July 6, LVI, No. 27, pp. 1361-1408

70 *Clinical Importance of Determination of Antitrypsin in the Blood. (Bedentung der Antitrypsinbestimmung im Blute.) L. Jacob. Id. in Gynecology. G. Becker.
71 *Special Reaction in Blood in Umbilical Cord. (Besondere Reaktion im Nabelschnurblute Neugeborener.) F. Bauer.
72 *Etiology of Ophthalmic Hemicrania. H. Schneider.
73 *Trigeminal Neuralgia of Dental Origin. P. Preiswerk.
74 *Diagnosis of Lead Poisoning from the Blood. (Zur Diagnose der Bleivergiftung aus dem Blute.) A. Trautmann.
75 Simple Office Technic for Determining Salt and Urea Content of Urine. (Wie kann der Arzt im Sprechzimmer den Salz- und den Harnstoffgehalt des Harns feststellen?) Wunder.
76 Treatment of Fractures. (Zur operativen Behandlung der Knochenbrüche.) Mendler.

70. **Antitrypsin Index in the Blood.**—Jacob has been applying the antitrypsin test in 100 cases of various affections at Moritz's clinic at Strasburg. The findings show that the proportion of antitryptic ferment in the blood is much increased in a number of different morbid conditions. Constant in cachexia, it is found also in all conditions accompanied by changes in the white corpuscles and also in some cases without these findings. The reaction occurs in too many conditions to be regarded as of any importance for differentiation. Becker reports from Veit's clinic the findings in 135 gynecologic cases. The reaction was positive with carcinoma and also with anemia, chronic septic processes and also after delivery. The research at both clinics was with the Fuld technic.

71. **Serum Reaction in the Insane and in the New-Born.**—Bauer has found the same reaction which Much found in the insane and called the "psychoreaction," in the blood in the umbilical cord of 14 out of 17 infants examined, while there was no trace of the reaction with the serum of 25 older children.

72. **Etiology of Ophthalmic Hemicrania.**—Schneider has encountered a typical case in which the attacks followed some exposure to cold or to infection. If the findings in this case are confirmed by others, the symptoms can be ascribed to the action of toxins—not a specific infection, but a specific reaction on the part of predisposed individuals to "catching cold," etc.

73. **Trigeminal Neuralgia of Dental Origin.**—Preiswerk reports two cases in men in which non-erupted teeth caused a syndrome simulating severe trigeminal neuralgia.

74. **Diagnosis of Lead Poisoning from the Blood.**—Trautmann has been comparing the blood picture in 233 workers with lead, 100 anemic patients and 100 healthy individuals. The basophile granular red corpuscles were found in much larger proportions in the workers on lead, while in the anemic and the healthy they were below 100 per million. When over 100 per million are found in persons exposed to lead poisoning the latter is almost certain. In forensic cases he suggests 300 per million as the limit. Examination of the blood is thus able to reveal lead poisoning in its incipiency.

Therapeutische Monatshefte, Berlin

July, XXIII, No. 7, pp. 353-408

77 *Treatment of Gastric Ulcer with Ferric Chlorid-Gelatin. (Behandlung des runden Magengeschwürs mit Eisenchlorid-Gelatine.) Bourget.
78 *Chronic Gastrointestinal Dyspepsia and Chronic Dyspeptic Diarrhea in Children. (Chronische Magen-Darmdyspepsie und chronische dyspeptische Diarrhoen des Kindesalters.) R. Schütz.
79 Milk of Thyroidectomized Goats in Treatment of Exophthalmic Goiter. B. Galli-Valerio and G. Rochaz.
80 Treatment of Falling Out of the Hair. (Behandlung des Haarausfalls.) Hübner.
81 *Rubber Gloves in Obstetrics. (Die Gummihandschuhe in der Geburtshilfe des praktischen Arztes.) Mende.
82 Campaign against Malaria in Europe. L. Sofer.
83 *Chloral as Deodorizer in Gangrene of the Lungs. A. Siegmund. Id. Langgaard.

77. **Ferric Chlorid-Gelatin Treatment of Gastric Ulcer.**—Bourget states that he has been constantly successful with his ferric chlorid method of treating round gastric ulcer, the ulcer promptly healing in fourteen days or less, and he has never witnessed any mishaps from it in nine years of experience. The objection has been made to the method that it requires the use of a stomach tube which some shrink from using with gastric ulcer, but he has never had any trouble from this cause, although he has used the stomach tube thousands of times. Nevertheless, he has modified his technic so as to dispense with the use of the stomach tube for introducing the 1 per cent. solution of ferric chlorid. This is accomplished by mixing the chlorid with a gelatin. He dissolves with gentle heat 100 parts gelatin in 100 parts water and 100 parts glycerin, and when fully dissolved adds 50 parts of liquid ferric chlorid. The mixture is warmed and stirred to a homogeneous mass and cooled in the form of dice, each containing 1 c.c. He allows the ulcer patient at 8 a. m. some milk and zwieback; at 10 a. m. one of the chlorid tablets is taken and in half an hour from 100 to 150 gm. of an alkaline drink. This is made by dissolving in 1 liter of cold water one of ten powders made from 8 gm. sodium bicarbonate, 4 gm. sodium phosphate and 2 gm. sodium sulphate. The noon meal is rice cooked in milk, followed at 3 p. m. with another chlorid gelatin tablet, followed half an hour later with 150 gm. of the alkaline drink. At 6 p. m. rice, at 9 another chlorid tablet and at 10 p. m. 150 gm. of the alkaline

water. The pains rapidly subside and healing is soon complete, he says, under this treatment. In the severe cases with much hemorrhage he rinses out the stomach at once with the 1 per cent. ferric chlorid solution and then follows with the gelatin. In every instance the hemorrhagic tendency was promptly arrested, and he has never had a recurrence of bleeding. Test tube experiments have shown that the ferric chlorid-gelatin tablets are digested by the gastric juice. The chlorid cauterizes the ulcer and the iron helps to restore the hemoglobin lost in the hemorrhage.

78. **Chronic Diarrhea in Children.**—Schütz refers to the diarrhea in children, induced by imperfectly digested food, "dyspeptic diarrhea;" the undigested food passes into the intestines in such form that it sets up irritation. The diarrhea is the admirable defensive reaction on the part of the bowel, and no attempt should be made to check it with drugs, as they do not remove the cause. Treatment should be directed against the causal digestive disturbances and the diet regulated to exclude such articles as examination of the stool shows to be the ones which the stomach or intestines are unable to cope with and normally digest. The food should be such as leaves no waste, and any food which escapes normal digestion becomes useless waste and ballast which tax the bowel and irritate it. The aim should be to establish the balance between the functional capacity of the gastrointestinal tract and the diet, such a balance as adults find on an ordinary mixed diet. His experience with fifteen children presenting typical examples of this dyspeptic diarrhea has demonstrated the importance of regulation of the diet based on examination of the stool so as to exclude from the diet such articles as are seen to cseape the action of the digestive processes. Starch insufficiency usually righted itself first in his cases, and he never found it necessary to exclude all carbohydrates. A strictly fluid diet may be necessary in the severer cases, and this is one of the most potent means of conquering diarrhea, he emphasizes, no matter what the underlying disturbance. One child of 5 with severe starch and fat dyspepsia and diarrhea for years gained about 10 pounds in six weeks when the diet was regulated along these lines. Some of the children had severe relapses whenever they attempted to return to ordinary diet. They had to do without vegetables and butter for two years, and even at the end of four years an attempt to eat coarse bread, raw fruit and unsieved vegetables caused the return of the dyspeptic diarrhea. Not until after the fifth year could they eat ordinary mixed diet, but they thrived on the restricted diet and weighed even more than the average for their years. Lavage of stomach and bowel is a valuable adjuvant in many cases.

81. **Rubber Gloves in General Obstetrics.**—Mende has devised a method of keeping rubber gloves sterile and unimpaired in their elasticity and impermeability and always ready for use, and urges their advantages. If for no other reason, gloves are useful on account of the peace of mind of the obstetrician, as they spare the general practitioner all worry for fear the disinfection of his hands has not been complete. The gloves are first scrubbed with warm water, inside and out, and then rinsed and examined for any defect. They are then transferred to a pot of boiling water with tight cover and allowed to boil for five minutes—no longer—and then held up by the fingers with forceps until thoroughly drained, then placed in a preserve jar filled two-thirds full of glycerin which has been previously heated to boiling point and had a little mercuric chlorid added in the proportion of 1 or 2 per thousand. The jar is thoroughly scrubbed and sterilized beforehand and the cover and rubber ring are fitted on air-tight. The gloves are drawn on the hand under water. The fluid enters the glove and opens out the fingers, making it very easy to draw on the glove. The main point in the management of the gloves is not to boil them for more than five minutes and not to leave them in any fluid except the glycerin a moment longer than is necessary. The jars stand wear well; Mende has never had one break even when his carriage or sleigh was overturned.

83. **Chloral as a Deodorizer.**—Siegmund calls attention to the prompt deodorizing properties of chloral, especially for a mouth wash and for the sputum cups in cases of gangrene of the lungs. Specimens kept in a weak solution of chloral have been used for years for demonstrations without odor. Langgaard has a specimen of fish which has kept perfectly for forty years in a glass jar filled with a solution of chloral.

Virchows Archiv, Berlin

July, CXCVII, No. 1, pp. 1-192

84 Changes in Bones of Young Animals on Food Poor in Lime and Rich in Oxalic Acid. (Ueber die bei jungen Tieren durch kalkarme Ernährung und Oxalsäure-Fütterung entstehenden Knochenveränderungen.) H. Götting.
85 Cleft Palate. (Wolfsrachen vom Standpunkte der Embryologie und pathologischen Anatomie.) G. Schorr.
86 Nerve Pigment and the Neuron Theory. E. Neumann.
87 Origin of the Intralobular Epithelial Bile Capillaries. (Beitrag zur Organologie der embryonalen "Leberzylinder.") A. Jaeger.
88 Nodose Periarteritis. Id.
89 Study of Movable Spleen and Enlargement of Spleen. (Zur Kenntnis der Wandermilz und der Splenomegalie.) F. Orsos.
90 Multiple Diffuse Myeloma with Numerous Metastases of Calcification in Lungs and Other Organs. (Myelomatosis ossium.) T. Tschistowitsch and H. Kolessnikoff.
91 Case of Acute Lymphatic Leukemia with Generalized Skin Lesions. R. Rodler-Zipkin.
92 Clinical Anatomic Study of Congenital Soft or "Hole" Skull. (Der angeborene Weich- oder Lückenschädel.) E. Wieland.

Wiener klinische Wochenschrift, Vienna

July 8, XXII, No. 27, pp. 949-988

93 *Serum Reaction in the Insane. (Verhalten verschiedener menschlicher Sera und Blutkörperchen bei der Hämolyse durch Kobragift.) J. A. Hirschl and O. Pötzl.
94 *Diagnosis by Elimination of Drugs in Sputum. (Sputumdiagnose.) F. Falk and F. Tedesko.
95 *Operative Treatment of Trigeminal Neuralgia. E. Hulles.
96 *Operative Treatment of Carcinoma of the Larynx. H. Koschier.

93. **Serum Reaction in the Insane and Others.**—Hirschl and Pötzl report a number of tests of the hemolytic reaction to which Much has recently called attention as specific for the serum in certain forms of insanity. Their experience with fifty cases has confirmed the peculiar high resistance to hemolysis by cobra venom in cases of dementia præcox of the catatonic and hebephrenic forms.

94. **Diagnosis by Means of the Sputum.**—Falk and Tedesko report the conclusions of research which show that salicylic acid is eliminated in the sputum in pneumonia, while there is no such elimination in bronchitic affections. Patients taking 2 gm. (30 grs.) of sodium salicylate gave positive or negative findings according as the morbid process was in the lungs or bronchi. Positive findings were also obtained in pulmonary tuberculosis, more pronounced in the acute cases, but in none so extensive as in pneumonia and pneumonic gangrene. No other drugs seem to pass into the sputum in this way, and they suggest that this property of being eliminated in the sputum renders sodium salicylate peculiarly appropriate in treatment of pneumonic processes, as it insures local action at the points of least resistance. The other drugs tested were methylene blue, antipyrin, guaiacol, etc. They describe the colorimetric technic followed in testing for the salicylic acid.

95. **Operative Treatment of Trigeminal Neuralgia.**—Hulles reviews von Eiselsberg's surgical experience with 63 cases of trigeminal neuralgia during the last ten years with the ultimate outcome. His conclusions are that drugs may relieve and banish the pain temporarily, but are unable to produce a permanent cure. Peripheral operations are almost certain to be followed by recurrence, the interval about the same as with medicinal treatment. Recurrence is also frequent after resection at the base of the skull; excision of the Gasserian ganglion is the only certain cure. If the case is very severe and all three branches are involved, the latter operation should be done without wasting time on the others. If not so severe, injections of alcohol, repeated at need, may prove sufficient or resection at the base of the skull in case only two branches are involved.

96. **Treatment of Carcinoma of the Larynx.**—Koschier tabulates the details of 28 cases of cancer of the larynx in which he operated during the last ten years and reviews series published by others. In 18 cases with an interval of over three years since the operation, 8 of the patients are free from recurrence to date, including 4 out of 5 treated by laryngofissure; 2 out of 10 treated by partial laryngectomy, and 2 out of 3 treated by the total operation. Scarcely more than a fourth of all the cases observed were operable, although

incipient cancer in the larynx induces hoarseness for months, but the patients seldom consult a physician for this alone. On the other hand, some physicians overlooked the malignant disease and merely prescribed a gargle or treated the patient with a course of sprays for months.

Zentralblatt für Chirurgie, Leipsic

June 26, XXXVI, No. 26, pp. 929-952

97 Simple Apparatus for Artificial Respiration and Aspiration of Air from Chest. (Einfache Apparate für künstliche Atmung und Aspiration von Luft aus der Brusthöhle.) W. D. Dobromyssloff.

July 10, No. 28, pp. 985-1008

98 Nail Extension for Fractures. (Zur Codivilla'schen Methode der Nagelextension am Knochen.) A. Anzoletti.

Zentralblatt für Gynäkologie, Leipsic

July 3, XXXIII, No. 27, pp. 929-958

99 Congenital Multiple Scar Formations in the Face. (Ueber angeborene multiple, symmetrisch gruppierte Narbenbildungen im Gesicht.) O. Kalb.
100 Placenta Prævia. Pankow.
101 *Decapsulation of the Kidneys in Eclampsia. (Zur Nierendekapsulation bei Eklampsie.) P. Alsberg.
102 Use of Michel Clips in Vaginal Panhysterectomy. (Verwendung der Michel'schen Klammern bei der vaginalen Totalexstirpation.) M. Stolz.

July 10, No. 28, pp. 959-1008

103 *Constricting Belt Ineffectual for Postpartum Hemorrhage. (Anwendung des Momburg'schen Schlauches bei Postpartumblutungen.) A. Rieländer.
104 *Acute Peritonitis during Puerperium Cured by Operation. (Fall von akuter Peritonitis in puerperio durch Operation geheilt.) H. Kritzler.
105 Improved Technic for Tamponing Uterus and other Cavities. (Technisches zur Tamponade von Uterus und Wundhöhlen.) Flatau.
106 Combined Version and Metreurysis. (Kombinierte Wendung und Metreuryse.) A. Rieck.

101. **Decapsulation of the Kidney in Eclampsia.**—Alsberg reports four cases in which favorable results were obtained by decapsulation of both kidneys in threatening eclampsia. In two cases the convulsions ceased at once and in the others they become very much milder, although persisting for a short time. One patient was a primipara of 18 with seven convulsions between delivery and decapsulation, but none afterward. The diuresis increased materially in all the cases after the operation, although in only one case did the kidney seem to be in the "glaucoma condition." He regards the operation as indicated when the convulsions are frequent and growing worse, the coma profound, the pulse failing and anuria impending.

103. **Momburg Belt in Postpartum Hemorrhage.**—Rieländer reports the application of the constricting belt technic in nine cases of postpartum hemorrhage from atony, placenta prævia or laceration of the cervix. No effect was apparent on the hemorrhage, while the general condition suffered to a greater or less degree, the pulse failing, and in one case diarrhea and retention of urine followed the application of the belt. The reason for this failure of the belting technic to arrest postpartum hemorrhage is possibly to be found in the fact that the stomach and intestines are not empty as when a patient is prepared for an operation. Another factor may be the high location of the fundus of the uterus, which renders it impossible to apply the rubber tube around the waist, so that it has to be pushed up close to the costal arch.

104. **Operative Treatment of Acute Peritonitis During Confinement.**—In Kritzler's case the peritonitis was evidently the result of rupture of an old encapsulated appendiceal abscess. The patient was apparently moribund from the peritonitis, but recovered promptly after laparotomy with provision for drainage and thorough rinsing out of the abdominal cavity, with an artificial anus, injection of atropin to stimulate peristalsis and stimulants. The case encourages intervention even in the most apparently hopeless cases. The procedure relieves the tension of the abdominal wall and may transform the prognosis.

Policlinico, Rome

July 4, XVI, No. 27, pp. 837-868

107 Hemolytic Power of the Bile. (Potere emolitico della bile.) G. Egidi.
108 *Efficacy of Quinin in Whooping Cough. (Chinino nella pertosse.) L. Andalo.

108. **Quinin in Whooping Cough.**—Andalo has been giving quinin in an epidemic of whooping cough, and states that the disease seemed to be aborted in every case in which quinin was given in large doses systematically for several days in succession and the drug retained. The pertussis was of an unusually serious type, both on account of its intensity, the number of complications observed and of adults affected. His experience suggests an actual causal efficiency of the drug. He has always found exceptional tolerance for quinin in children, no appreciable disturbances having been noted in a number of children in an endemic focus of malaria who took by mistake, for malaria, 6 and 7 gm. of quinin bisulphate. For pertussis he did not hesitate to inject in the course of a day 0.5 gm. of acid quinin hydrochlorid for infants and 1 gm. for children up to the age of 5. On cessation of the tendency to vomit he gives the drug by the mouth and keeps it up for eight or ten days, by which time the disease has usually completely subsided. He relates a number of instances to show the prompt relief from the quinin. One patient had pertussis during confinement, but all symptoms vanished the sixth day under 1.5 gm. of the quinin daily.

Riforma Medica, Naples

June 21, XXV, No. 26, pp. 701-728

109 Certain Albumoses and Peptones which Fail to Give the Characteristic Reactions. (Di alcune albumosi e peptoni che non danno le reazioni finora ritenute caratteristiche.) F. D'Onghia.
110 Inoculation of Rabbit Eye with Syphilis. (Innesti dei prodotti sifilitici nell'occhio del coniglio.) V. Chirivino.
111 Woody Phlegmon. (Il flemmone ligneo.) P. Capasso.

Nordiskt Mediciniskt Arkiv, Stockholm

XLI, Surgery, No. 3. Last indexed July 3, p. 88.

112 *Surgical Treatment of Gastric and Duodenal Ulcer. (Beiträge zur Chirurgie des Magen- und Duodenalgeschwürs.) K. Dahlgren. Commenced in No. 2.
113 *Sarcoma of the Rectum. (Zur Kasuistik des Rektalsarkoms.) E. Key.

112. **Operative Treatment of Gastric and Duodenal Ulcers.**—Dahlgren's monograph of 172 pages discusses a number of points of interest from his own and others' experience, with summaries of 88 case histories. Among the points emphasized is the necessity for excision of a "callous" ulcer and duodenal ulcer as the only means of cure and prevention of cancerous degeneration. He is convinced that gastroptosis is in certain cases the primary pathologic factor and that it is amenable to gastropexy. A laparotomy may be indicated even for uncomplicated gastroptosis without ulcer, much dilatation or cicatricial stenosis if symptoms indicate a kinking of the bowel and internal or bandage treatment has failed to relieve. Gastropexy is preferable to gastrojejunostomy in such cases, as it avoids the liability to the vicious circle and peptic ulcer. He does not approve of jejunostomy for ulcer except for perforated ulcer with stenosis and extreme debility, rendering a gastrojejunostomy too risky. Gastrostomy is preferable, but he would restrict it to the second place. In case of postoperative paralysis of the bowel, he empties the intestine by an incision, milking out the contents until it is so empty that it subsides spontaneously into the abdomen as the lips of the wound are held apart. To prevent adhesions he pours a large quantity of sterile oil into the abdominal cavity afterward, having found this very effectual. The abdominal incision must be made large enough to enable the mesentery to be drawn out with the intestine without incarceration, and the intestines must be kept constantly moist and warm with hot compresses and salt solution repeatedly poured over them.

113. **Rectal Sarcoma.**—Key has encountered four cases and cites one from Ekehorn's practice; the patients mostly succumb to recurrence in a few months after operation.

Norsk Magazin for Lægevidenskaben, Christiania

July, LXX, No. 7, pp. 571-664

114 Abnormal Reaction to Diphtheria Antitoxin. (Anafylaktisk shock.) A. de Besche.
115 Research on Blood, Blood Pressure and Changes in Pulse during Application of Suction Mask. (Undersøgelser over blodblodtryk- og pulsforandringer under Kuhn's lungesugemaske.) A. Tillisch.
116 Height of Norwegians. (Om der norske folks legemshoide.) H. Daae.

Ugeskrift for Læger, Copenhagen

May 27, LXXI, No. 21, pp. 557-598

117 *A Few Operations on the Kidneys. (Nogle Nyreoperationer.) H. Kaarsberg.

June 3, No. 22, pp. 599-628

118 Value and Composition of Certain New Remedies, Etc. (Værdien og Sammensætningen af nogle Lægemidler og Arkana.) H. P. Madsen.

July 1, No. 26, pp. 713-750

119 *Early Differentiation of Pulmonary Tuberculosis. (Bidrag til Lungetuberkulosens tidlige Klinik.) C. A. Blume. Commenced in No. 23.

117. **Operations on the Kidneys.**—Kaarsberg reports two cases of trauma of the kidneys in one of which the lower part of the kidney was torn as if cut off with a dull knife and yet there was no trace of injury of the skin. The man had fallen under a horse. In another case nephrotomy was done on the kidney left after nephrectomy; complete recovery followed removal of a few calculi. In a fourth case the patient succumbed to heart failure after nephrectomy in puerperal pyonephrosis. This last experience has confirmed him in the view that surgical treatment should be undertaken earlier in such cases.

119. **Early Differentiation of Tuberculosis.**—Blume analyzes his experiences with 110 cases of pulmonary tuberculosis in adults in which the diagnosis was made by discovery of tubercle bacilli in the laryngeal secretion. The patients had little or no cough and irregular or no expectoration, and differentiation was possible only by examination of the laryngeal mucus. Only 1 bacillus was found in 8 cases, from 2 to 5 in 65, from 6 to 10 in 12, and from 50 to 100 in 3. The larynx was generally congested, but there were no subjective disturbances in the majority, merely a little hoarseness in a few. In 12 men and 12 women there were signs of anemia, and the general weakness first suggested tuberculosis; in 10 other men and 3 women pains in the chest were the first symptom, and at least 4 had been under treatment on this account for supposed rheumatism or gout. He discusses the anatomic origin of the pain, and cites some typical examples of each group. In a third group of 15 men and 20 women nervous and psychic symptoms predominated in the clinical picture of the incipient tuberculosis. The physical findings were negative or dubious, and the nervous symptoms were evidently of toxic origin; a course of tuberculin treatment cured these symptoms completely in some of the cases. The tuberculous process may generate toxins both during a progressive and a retrogressive course, as he shows by several examples. He agrees with the view that exophthalmic goiter may in certain cases be due to the tuberculous toxin, reporting a case in a man of 20 supposed to be suffering from gastric catarrh and exophthalmic goiter. Tubercle bacilli were discovered in the laryngeal secretion taken directly from the larynx, and treatment directed against the tuberculous infection had a favorable effect on both the stomach and the other affection. In a fourth group symptoms on the part of the stomach predominated in 9 men and 22 women, vomiting or paroxysmal pain, evidently the work of the tuberculous toxin causing arrosions, inflammation or hypersecretion. The experiences related with patients in this group throw light on many puzzling cases of stomach affections; gastrosuccorrhea under these circumstances may be a defensive reaction on the part of the stomach to the tuberculous toxin. He has witnessed marked benefit on the stomach symptoms in many cases from antituberculosis treatment. He also calls attention to the combination of the tuberculous toxin and the toxin from some other infection as liable to induce a stormy reaction on the part of the stomach. In one such case the patient, a man of 24, was taking the usual course of tuberculin treatment when suddenly symptoms developed suggesting perforation of the stomach, but subsiding as operative intervention was being considered, and explained by the onset of symptoms of follicular tonsillitis. The unsuspected incubation phase of the tonsillitis caused another infectious toxin to be superposed on the tuberculous toxin, the resulting syndrome deceptively simulating perforation of the stomach, although the pre-existing tuberculosis was known in this case. This intensive form of reaction may simulate croup, spasm of the pylorus, appendicitis and kidney colic, or the heart may feel the effect most prominently, with resulting transient tachycardia, or there may be vertigo or entire loss of consciousness. In one of his cases an annually recurring winter cough seemed to be vicariously substituted one year by kidney colics. Bladder colics were observed in one little girl.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

JAHRESBERICHT ÜBER DIE PSYCHIATRISCHE KLINIK IN MÜNCHEN, für 1906 und 1907. Paper. Pp. 183, with 4 illustrations. Price, 3.60 marks. München: J. F. Lehmanns Verlag, 1909.

DIATHESIS AND OCULAR DISEASES. By A. Maitland Ramsey, M.D., Fellow of Faculty of Physicians and Surgeons, Glasgow. Cloth. Pp. 184, with 17 illustrations. Price, $2.00. New York: William Wood & Co., 1909.

MYELOISCHE METAPLASIE UND FÖTALE BLUTBILDUNG UND DEREN HISTOGENESE. Von Dr. med. Heinrich Fischer, Sanatorium "Untere Waid" bei St. Gallen (Schweiz). Paper. Pp. 140. Price. 4 marks. Berlin: Verlag von Julius Springer, 1909.

THE MALARIAL FEVERS, HEMOGLOBINURIC FEVER AND THE BLOOD PROTOZOA OF MAN. By Charles F. Craig, M.D., Captain, Medical Corps, U. S. Army. Cloth. Pp. 477, with illustration. Price, $4.50. New York: William Wood & Co., 1909.

HISTORY OF YELLOW FEVER. By George Augustin, Assistant Secretary Louisiana State Medical Society. Cloth. Pp. 1194, with illustrations. Price, $6.00. New Orleans: Published for the Author by Searcy & Pfaff, 724 Perdido Street, 1909.

CLINICAL LECTURES ON NEURASTHENIA. By Thomas Dixon Savill, M.D., Physician to the West End Hospital for Diseases of the Nervous System, Welbeck Street, London. Cloth. Pp. 226. Fourth Edition. Price, $2.00 net. New York: William Wood & Co.

LECTURES ON HYSTERIA AND ALLIED VASOMOTOR CONDITIONS. By Thomas Dixon Savill, M.D., Physician to the West End Hospital for Diseases of the Nervous System, Welbeck Street, London. Cloth. Pp. 262, with 21 illustrations. Price, $2.50 net. New York: William Wood & Co., 1909.

ARBEITEN AUS DEM PHARMAZEUTISCHEN INSTITUT DER UNIVERSITÄT BERLIN. Herausgegeben von Dr. H. Thoms, Professor und Direktor des pharmazeutischen Institutes der Universität, Berlin. Vol. VI. Comprising the work for 1908. Cloth. Pp. 304, with 4 illustrations. Berlin: Urban and Schwarzenberg, 1909.

PRINCIPLES OF SURGERY. By N. Senn, M.D., Ph.D., LL.D., C.M., Late Professor of Surgery, University of Chicago. Fourth Edition. Revised by E. J. Senn, M.D., Formerly Associate Professor of Surgery in Rush Medical College, and E. Friend, M.D., Instructor of Surgery in Rush Medical College. Cloth. Pp. 706, with 231 illustrations. Price, $5.00, net. Philadelphia: F. A. Davis Co., 1909.

GYNECOLOGY. Edited by E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, and C. von Bachelle, M.S., M.D., Assistant Professor of Obstetrics, Chicago Polyclinic and College of Physicians and Surgeons. Vol. IV. The Practical Medicine Series. Under the General Editorial Charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Cloth. Pp. 225. Price, $1.25. Chicago: The Year Book Publishers, 1909.

THE PRACTICE OF ANESTHETICS. By Rowland W. Collum, L.R.C.P., M.R.C.S., Anesthetist to St. Mary's Hospital, Paddington, and GENERAL SURGICAL TECHNIQUE, by H. M. W. Gray, M.B., C.M., F.R.S.C., Surgeon and Lecturer on Clinical Surgery, Royal Infirmary, Aberdeen. Edited by James Cantlie, M.A., M.B., C.M., F.R.C.S., Surgeon Seamen's Hospital Society. The Medico-Chirurgical Series No. 1. Cloth. Pp. 382, with 39 illustrations. Price, $3.00 net. New York: William Wood & Co.

New Patents

Recent Patents of Interest to Physicians

926462. Bath and complexion brush. W. R. Blowers, Toronto, Ont., Canada.
926384. Electrotherapeutic apparatus. B. Y. Boyd, Chicago.
926245. Massage instrument. W. H. Coon, Rochester, N. Y.
926103. Bed pan. J. M. Crater, New Germantown, N. J.
926197. Water-bag syringe. G. E. Kim, Pittsburg, Pa.
926579. Operating table. J. Laughlin, Ledyard, Iowa.
926671. Respirator. W. F. Merryman, Denver.
926280. Preparing concentrated hydrated magnesia. W. S. Morrison, Oakland, Cal.
927125. Massaging device. K. Davis, Wilkes-Barre, Pa.
927132. Disinfectant holder. P. Duenwald, Irvington, N. J.
927135. Making acetate of lime. R. W. Erwin, St. Louis.
926993. Thermometer. R. W. Mattox, West Tocoi, Fla.
926999. Producing digestible substances from keratin, C. Neuberg, Charlottenburg, Germany.
926960. Syringe. E. T. Pearl, Passaic, N. J.
927278. Water-purifying apparatus. G. Pfeiffer, Jr., Merchantville, N. J.
926961. Disinfectant apparatus. F. D. Raforth, Dubuque, Iowa.
927007. Medicine timer. A. J. Scritchfield, Janesville, Wis.
927629. Vapor bath apparatus. B. Andersen, Kansas City, Kans
927764. Sterilizer. R. P. Barnstead, Boston.
927519. Ozone-generator. T. Friedlander, Chicago.
928038. Atomizing solid medicaments. G. Fusch, Hanover, Germany.
927785. Knee warmer. D. L. Galbraith, Bay City, Mich.
928043. Electrical vibrator. M. K. Golden, San Francisco.
927786. Massage tool. H. A. Grass, Chicago.
927531. Toilet chair. W. F. Hedstrom, Los Angeles, Cal.
928051. Invalid's chair. E. E. Higgins, St. Paul, Minn.
927973. Knee-joint for artificial limbs. J. H. Jepson, Minneapolis.
927575. Spring-top powder box. G. F. Miller, Brooklyn.
927881. Method of and apparatus for atomizing, etc. A. Sala, Mexico, Mexico.
928011. Surgical instrument. W. A. Whitlock, Ukiah, Cal.

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Address

THE SCOPE OF PREVENTIVE MEDICINE

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH OF THE AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, 1909.

J. H. WHITE, M.D.
Surgeon United States Public Health and Marine-Hospital Service
NEW ORLEANS

There is—there can be—no higher specialty in medicine than that for which this Section stands, and we must present this to the public in such unmistakable terms that full recognition shall be accorded both to the sanitarian and to the profession as a whole, for neither can stand alone, as I hope presently to show. It is sheer waste of ability and time for the members of this Section to tell each other what they already know, and even the general distribution of new matter by the pioneers of the Section can not, in the nature of things, be so broadly useful as the same character of work would be, and is, in our truly great medical Section. Our greatest function, it seems to me, lies in the fact that we are the connecting link between that great medical body which handles the vast majority of the diseases we would prevent and the general public, the victim of those diseases.

This being an undisputed fact, we should have in mind constantly the two duties which follow this fact as naturally as the day follows the night. We must impress on the public the vast import to them of preventive medicine; we must show them that health means wealth and happiness, to the first very frequently and to the last always a necessary adjuvant.

In last year's Address on Medicine Dr. Thayer very properly said that but for sanitation there could be no Panama Canal; and is it not equally a fact that but for the incessant labor of men poorly paid, or paid not at all, every aggregation of people calling itself a city, even in the temperate zone, would be a focus of endemic disease, and cities of a million inhabitants unspeakable pest-holes, while such as New York, London, Paris, Berlin could not exist?

So much for the value to mankind of our work. These facts are reasons strong enough to justify us, and we shall continue to push forward, always seeking better results, whether recognized or not, content to serve our people as best we may, leaving our reward to their own sense of justice—and oh, the pity of it!—to be so often rewarded by abuse.

We should, for the better advancement of our work, make every possible effort to place the utilitarian aspect of that work before our law-makers and insist that they at least appropriate as much for the protection of their wives and little ones as for that of their swine, cattle and poultry. They might justly have claimed in the past that we had not shown ability to protect them, but this can not be said now.

It is something more than accident that last year Burrell and Thayer in the general orations and Drs. Edsall, Evans, Hurty and others advocated a campaign of education of our people. Such coincidence of thought means that we are ourselves awake and shall awaken our people to their duty to themselves and shall make it plain to them that no man has a right so to keep his house or so to live his life in a civilized community as to jeopardize his neighbor's health or happiness. It means that *we* shall teach all our people that the duty of keeping clean in a physical sense is as high as that of moral cleanliness and a prerequisite to a justified claim of "civis Americanus sum."

The practitioner of medicine saves lives one at a time, and right noble is his calling. You save lives by thousands. Is it not infinitely wiser to prevent the pollution by sewage of a stream supplying a city of a million than to fight that pollution in the bodies of 10,000 innocent victims of filth, or even to attempt the repurification of 100,000,000 gallons of that filth-laden water every day? Is it not better far to prevent the pollution of our food, houses, vehicles and streets by tuberculosis than to spend millions on treatment and then see our loved ones die by tens of thousands?

Is it not cheaper to spend a hundred millions of dollars and rid our country of every anopheles and stegomyia than to see business wither at flood-tide under the blighting grip of yellow fever, and our kindred and friends perish from the pest, while malaria takes its yearly tribute of thousands of lives in our country and destroys earning power to the extent of probably $50,000,000 annually and perhaps double that?

Shall we not vaccinate all our people at a cost of 25 cents each rather than leave some hundreds to die annually and some other hundreds of thousands to be branded with scars, a living shame to the community?

All these things we must bring forcibly and clearly before our people, and to do this we must cultivate our relations with the family physicians. They are closer to the people than we can ever be, and if we arouse their activities we will assure our ends. We must keep in close touch with them, and, indeed, we should enlist as many of them in this Section as possible, because without their help we can do nothing, and without the presence of some of their brightest and best, which, I am thankful to say, we have, at these meetings, we can not keep in as intimate association with them as we must. Fortunately, many of these able men are directly interested in sanitary science and are part and parcel of this Section, thus giving us the very opportunity we seek and should gratefully embrace to further arouse their interest to create an epidemic of sanitary enthusiasm on their part.

We must enlist the interest of our brethren, the pediatrists and the internists and get them to see and know the pitfalls in the path of the women and children under their care. We must lead them to take enough interest to play the part which a good old gentleman of the old school contemptuously called "dry nurse to the family."

We must start with the little ones, and, after seeing that their mothers are instructed in the hygiene of food and clothing, remove the notion that the children must of necessity have measles, whooping-cough, etc., and the sooner the better, by showing them that these diseases are ideal foundations on which to build future woe in the shape of tuberculosis.

We must teach parents that the sanest weapon with which to fight tuberculosis in their offspring is a good, sound body in which every atom of resisting power is developed by robust health to its maximum efficiency, that the development of the child's physical well-being is as sacred a duty as the development of its mind or morals, and is indeed the only proper foundation for intellectual vigor; that the boy whom they fain would bring up to be the grand man of the future must have sound lungs, stomach, eyes, teeth, etc., and good muscular development to enable him to meet his competitors on equal terms; that only in a healthy child can they realize all their hopes.

We must follow this teaching throughout, enlisting the aid of all branches of the profession, encouraging with all our might the tendency toward supervision of eyes and mouth of public school children, and every other similar movement; holding up the hands of men like Evans, who would not be content with mortality statistics in tuberculosis, but wants to find the morbidity as well, in order that medicine may work its rightful end and heal the sick. Finally, there is another and a high duty before us—the duty of doing what we can toward bettering health administration all over the country.

The time has passed, if it ever existed, when by virtue solely of the degree of M.D. a man is fitted to assume the duties and vast responsibilities of health officer. Although unfortunate, it is too true that even with special education we can not be sure of the innate ability to apply the knowledge held. We can, at least, be sure that we are not doing anything so utterly absurd as we have been doing under the old system of appointment, with merit only as an accidental qualification.

It is undeniable that some of these round pegs in square holes have adjusted themselves to these important positions and have proved brilliant successes, but these cases are exceptional and only go as parallels to the fact that a brilliant soldier like Napoleon can occasionally be a brilliant law-giver, not at all indicating that any son of Mars can also rival Lycurgus.

Existing health bodies, national, state and municipal, must be upheld until they can be improved—mark you, not replaced, but improved. We are not and never will be successful radicals and the whole tendency of our people for two thousand years has been, not toward elimination and substitution, but toward amendment, first, last and always.

To this conservative trait we owe the stability of northern European and American governments and the vast sense of security resident in the breast of every citizen of these governments. Fifteen hundred years intervene between the Saxon *gau* and the New England town, and yet they are the same in all essentials. The villager has simply improved his individual status and the primal idea of all having a hand in the government remains the same.

Very slight, indeed, are the formal differences between the ideal health organizations and the existing bodies. A little change in the manner of making appointments; a little better training of personnel; a little fuller understanding by the public of what we seek; a little more care in filling the posts of gradually receding incompetents with well-drilled men, and the end is attained without friction or ill-feeling.

This way, as I see it, lies our destiny. Shall we follow it? Shall we make preventive medicine a very real power in the profession? Or shall we be content to consider it a side issue?

Original Articles

THE LIMITATIONS IN PUBLIC HEALTH ADMINISTRATION *

HENRY BIXBY HEMENWAY, A.M., M.D.
EVANSTON, ILL.

A potent cause of unsatisfactory results in public health work is found in the vague ideas often entertained among officials, private physicians and the people generally, relative to the powers and duties of health departments. There is often a clearer perception of the object to be attained than of the means to that end. Very few physicians have more than a hazy notion of the science of sanitation. Education in this line is emphatically lacking, and the importance of the subject is little recognized. The Council on Medical Education of the American Medical Association recommended that out of a course of 4,100 hours only 120, or less than 3 per cent., should be divided between this great subject and medical economics and medical jurisprudence. Considering the fact that this council speaks for the leading American medical schools, it is not strange that we find great ignorance among our professional brethren as to the objects to be sought, and the steps to be taken, in sanitation.

There is inherent in the Anglo-Saxon mind a love of liberty; but liberty is not license. Professor Burgess, in his "Comparative Constitutional Law," sets forth clearly and at some length the fact that true liberty is only found under a constitutional government, and that for this purpose government exists. Thus, in the fourteenth amendment to the Constitution of the United States, we find the provision that no state shall "deprive any person of life, liberty or property, without due process of law." Under military law this provision may be laid aside. Sometimes it is true that for sanitary reasons, as in the presence of a pestilence, it may be necessary to declare martial law, but such a process must be reserved for extreme necessity. It is repugnant to all our institutions. Arbitrary or autocratic methods in health administration arouse an opposition which defeats the object sought. The health official is not a despot, but a servant, whose duty it is to preserve the health of the community in conformity with the laws which have been properly enacted.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In the United States the national government has only such powers as were conferred on it by the people of the several states. Essentially the state is supreme, and there are reserved to it by the tenth amendment to the Constitution all those powers not given to the nation or prohibited by the Constitution to the state. The only authority of a sanitary nature which the nation has must be found in the regulation of commerce. We frequently hear the suggestion that the national government ought to pass a law regulating the practice of medicine, for example, so that the requirements might be uniform in all parts of the land; and to make transfers from state to state less troublesome. Though such a law might be desirable, as a practical fact it is at present impossible, for the simple reason that Congress has no power to pass such an act.

A similar problem is found in the preservation of interstate rivers and lakes from pollution. The people might, especially in the presence of an epidemic, permit the government to step in actively to purify a river, but its legal power might be very questionable. This power must rest somewhere; if not in the national government then it remains with the state. Through its power to regulate commerce the government has a degree of authority over navigable waters. It is, therefore, constantly spending large sums for the deepening of rivers and harbors. This leads to another practical problem of power and limitations. An act for the deepening of rivers usually provides that it be done by contract at the least possible expense to the government. The contractors who have been dredging the Chicago River have been dumping the slime and filth from the bottom of the river into the lake, and the water-supply of the city has been thereby threatened with contamination. The War Department, which has charge of the dredging, can not order the dredgings taken further into the lake, for that would increase the cost of the work. No national statute is violated by dumping near the cribs. Neither has the national government the power to pass such a law. It may, however, have inserted into the appropriation bill a provision governing such contracts, so that the contractor may be paid for the extra transportation, and under such conditions dumping near a crib might be a violation of contract.

There is another way by which this object may be gained. By the acts creating the Territory of Illinois and the State of Illinois, and by the constitutions of the state, the eastern boundary of the northern part of the state is the middle of Lake Michigan. By the law of the state (Chapter 34, Section 3) also, the jurisdiction of Cook and Lake counties extends to the midle of the lake, whereas (Chapter 24, Section 71) the jurisdiction of a city like Chicago extends over the waters of the lake only three miles beyond the limits of the city. Although Section 256 of Chapter 24 of the Revised Statutes of Illinois provides that: "The jurisdiction of such city, town or village to prevent or punish any pollution or injury to the stream or source of water for the supply of such water works shall extend ten miles beyond the corporate limits," we have the opinion of Attorney-General John W. Griggs to the following effect: "While an ordinance of the city of Chicago may, as to all persons subject to its jurisdiction, forbid the deposit of any heavy substance in the waters of Lake Michigan within eight miles of the shore in front of that city, it can not control or limit the power of Congress over the navigable waters of the United States, nor dictate where it shall or where it shall not deposit, within such waters, material removed in the improvement of one of its harbors." It will be noticed that Mr. Griggs' opinion is relative to the power of a city, not of a state. The power of the state is not there discussed. It is quite true, as Mr. Griggs states, that the proper "remedy is by appeal to the good sense, discretion, and fairness of the Secretary" (of War), for pacific measures may often attain the desired result more quickly than by a resort to force. As a basis of appeal, however, the law of the state should be more potent than that of the city, and in the light of such cases as Wilson vs. Blackbird Creek Company (2 Peters, 245) it would seem that in case of necessity action by the state might prevail in the courts, even against the national powers.

The Blackbird Creek Company, being so authorized by the State of Delaware, constructed a dam by which the navigation of the stream was interrupted. The primary object was to reclaim a marsh, thus increasing the value of the property, and to improve the health of the inhabitants. Wilson was the owner of a sloop, licensed and enrolled under United States statutes. He injured the dam, and, being sued by the company, he denied the right of the state thus to interfere with commerce. Chief Justice Marshall delivered the opinion sustaining the power of the state, although it "stops a navigable creek and must be supposed to abridge the rights of those who have been accustomed to use it." In Gilman vs. Philadelphia (3 Wallace's Rep., 713) the opinion of Mr. Justice Clifford, Wayne and Davis concurring, refers approvingly to the Blackbird Creek case, saying that it "treated the erection of the dam as one adapted to reclaim the adjacent marshes and as essential to the public health, and sustained the constitutionality of the law authorizing the erection, on the ground that was within the reserved police powers of the state." This expression is the more significant for the reason that this dissenting minority held that the Blackbird Creek case did not apply in the Philadelphia bridge case, because there was no question of sanitation involved in the erection of a bridge across the Schuylkill river. The majority of the court had upheld the powers of the state to erect such a bridge, basing their action on the Blackbird Creek decision.

When two constructions of a statute are possible, one of which is constitutional and the other not, we are bound to choose that which is. An act of Congress which refers to a regulation of commerce may be construed in harmony with the sanitary powers of the state; or, in line with the opinion of Mr. Griggs, above mentioned, as against, and superior to such sanitary control by the state. In the latter case Congress would in reality assume jurisdiction over sanitary matters which it does not possess. Such a construction would make the act unconstitutional, on the ground that Congress had exceeded its authority. We are forced, therefore, to reject a construction which makes the power to regulate commerce necessarily paramount to state sanitary statutes, and to accept the view that the state still has sanitary jurisdiction over the officers and agents of the national government.

Neither county nor state may do anything which would interfere with navigation without the consent of the War Department, but it is their manifest duty to protect their citizens by passing and enforcing suitable laws for the preservation of the purity of the water-supply, and such laws the nation is bound to respect.

So far as the decisions of the ultimate tribunal on constitutional interpretation now stand, the following propositions seem to be established: (1) The several states have power to pass laws regulating the internal police of their own territories, which territories include navigable rivers and harbors, as well as unnavigable streams, and the land itself. These police measures . . . are simply a part of the general system by which each state endeavors to protect the good morals, lives, health, persons and property of its inhabitants.[1]

It is generally admitted that quarantine regulations are controlled by the states. I have found no case to the contrary. As Pomeroy says:[1]

> This entire class of statutes establishing police regulations is within the purview of state legislation, whether Congress has legislated for the same or similar purposes or not. Among them may be mentioned laws establishing quarantine, licensing and controlling pilots. . . .

In the case of Gibbons vs. Ogden (9 Wheaton's Rep., 203) Chief Justice Marshall says of inspection laws:

> They form a portion of that immense mass of legislation which embraces everything within the territory of a state not surrendered to the general government; all which can be most advantageously exercised by the states themselves. Inspection laws, quarantine laws, health laws of every description, . . . are component parts of this mass. No direct general power over these objects is granted to Congress; and, consequently, they remain subject to state legislation.

So in Barbier vs. Connoly (U. S. Reports, 2 Peters, 102) we find the police power of the state to include "to prescribe regulations to promote the health, peace, morals, education and good order of the people."

The authority of the states to pass health laws, as in opposition to the power of Congress to regulate commerce, has been discussed in many cases before the Supreme Court of the United States, and whenever it has appeared that the statutes or regulations have been really in the interest of health the authority of the state has been sustained. Several statutes have been declared unconstitutional on the ground that, though nominally health regulations, they were not so in fact, but they were restrictions of commerce. Such was the ruling in the Railroad Company vs. Husen, 5 Otto, 465, in which the State of Missouri attempted to exclude cattle from certain other states, and in the Passenger cases (7 How., 283); yet in these the sanitary power of the states was recognized. In the Passenger cases Mr. Justice McLean said: "In giving the commercial power to Congress the states did not part with that power of self-preservation which must be inherent in every organized community" (p. 400). On the other hand, in Smith vs. St. Louis and Southwestern Railway Co., 181 U. S., p. 248, which, like the Husen case, referred to the quarantine of cattle, it was held that "quarantine law as construed and applied in this case is not in conflict with the Constitution of the United States. The prevention of disease is the essence of a quarantine law. Such law is directed not only to the actually diseased, but to what has become exposed to disease." In Morgan's Steamship Co. vs. Louisiana Board of Health, 118 U. S., p. 455, we find:

> The system of quarantine laws is a rightful exercise of the police power for the protection of health which is not forbidden by the Constitution of the United States. While some of the rules of that system may amount to regulations of commerce with foreign nations or among the states, though not so designed, they belong to that class which the states may establish until Congress acts in the matter, by covering the same ground or forbidding the states. Congress, so far from doing either of these things has, by the act of 1799 (Chap. 53 Rev. Stat.) and previous laws, and by the recent act of 1878 (20 stat. 37) adopted the laws of the states on that subject, and forbidden all interference with their enforcement.

In Jacobson vs. Massachusetts (197 U. S., 11) Mr. Justice Harlan says on page 25:

> The authority of the state to enact this statute is to be referred to what is commonly called the police power—a power which the state did not surrender when becoming a member of the union under the Constitution. Although this court has refrained from any attempt to define the limits of that power, yet it has distinctly recognized the authority of a state to enact quarantine laws and health laws of every description, indeed all laws that relate to matters completely within its territory, and which do not by their necessary operation affect the people of other states.

This power was upheld, even though it stopped navigation, as in Leovy vs. United States (177 U. S., p. 621), in which the right to erect a dike was upheld for public health, and in Manigault vs. Springs (199 U. S., p. 473), with reference to a dam on Kinlock Creek, and in *Compagnie Francaise de Navigation à Vapeur* vs. Louisiana State Board of Health (186 U. S., p. 380) a steamship company was forbidden to land its passengers at certain points in the State of Louisiana then under quarantine, although those passengers were not diseased, nor had they been exposed to disease, so far as was shown, and though they had sailed from European ports, in accordance with treaties made between the United States and European nations.

If the sanitary authority rests primarily in the states, does it not necessarily follow that it is the duty of the states to enact and enforce such laws and regulations as shall be best fitted to preserve the lives and health of the citizens? Does not a neglect to do so expose the state to a liability for damages? The object of laws is not the punishment of offenders, but the preservation of the persons and property of the citizens from injury. After an epidemic has despoiled a community, the state can not restore lives lost, or compensate for sickness. The duty of the state is to prevent the epidemic. Methods must change with increase of knowledge. Modern sanitary science is giving many aids for the control of disease far more efficient than the ancient quarantine. Health administrators may rightly be expected to keep informed, and to communicate to legislative bodies the knowledge of these advances, and suggestions for their application. The special responsibilities for each branch of government must be recognized by all.

It must be remembered that the state has no authority to pass any retroactive law, or one which will impair a contract. In the case of dredging contracts already existing which have been based on the right to dump in the vicinity of the cribs, a new law prohibiting such dumping might be held as an impairment of contract. In the case in question, however, Illinois has a statute in the criminal code (Chapter 38, Section 202) providing that "whoever wilfully and maliciously defiles, corrupts or makes impure any spring, or other source of water, or reservoir . . . or aids and abets in any such trespass, shall be fined not exceeding $1,000, or confined in the county jail not exceeding one year." If that statute applies here, such dumping is illegal, and, therefore, a contract based on a presupposed violation of this statute would not be impaired by making the penalty greater, or more clearly stating the prohibition.

It is proper here to ask the question whether or not the discharge of sewers into the lake is not also a violation of this same statute, providing they are so located

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1. Pomeroy: Constitutional Law, Sect. 329.

as to contaminate the water supply of the city. Probably this question may be answered only by a court decision.

Just as the national government may not enact legislation further than the people of the individual states have granted authority, so cities, towns, villages and counties are restricted to the powers expressly given by the states. The unit is the state, not the city. Still we sometimes hear it stated that the city has complete power to control sanitation within its limits. The specific powers of a city may vary in different states, but the general statement is the same for all. Again, turning to Illinois for an example, we find a clear statement in the case of Jenkins vs. Board of Education. The relator, Louise Jenkins, was refused admission to the John Fiske School in Chicago because she had not been vaccinated, the board of education basing its refusal on an ordinance of the City of Chicago. In its decision the court says: "Not only has the legislature never prescribed vaccination as a condition to the enjoyment of the legal right to attend public schools, but they have never conferred on cities the power to do so," and again in the same decision: "The health commissioner is a purely ministerial officer and has no legislative powers whatever."

American governmental bodies are based on the triple system, legislative, executive and judicial. These should be distinct. The wording of the different constitutions vary, but the theory is the same in all. That of Illinois, for example, provides that "no person, or collection of persons, being one of these departments, shall exercise any power properly belonging to either of the others."

Health departments are executive in their character, and they should be so restricted in their operations. It is true that in many states a city or village council may be given the duties and authority of a board of health. Such provision is no exception to the general independence of the three branches. The council is legislative whether in or out of the board of health, and the health officer or commissioner is the executive.

Sanitary laws, like those of other nature, should be passed by legislative bodies; state boards of health, so far as I know, have nowhere in this country legislative powers. They may make rules and regulations for carrying into effect the statutes enacted, but such rules have not the standing or the permanence of statutes, and it is a mistake to attempt to depend on such regulations when a statute can be secured. To give uniformity and strength, so far as possible the sanitary statutes should be passed by the state legislature, rather than depend on the enactments of cities. The state statutes should require a certain form of health administration in every city of the state. That makes it possible without delay to communicate with the proper official. An illustration of what is not advisable may be found in the Illinois statutes on this point. There is no provision for compelling the appointment of either a city commissioner of health or board of health, but either are permitted. Neither is there any statement of the qualification for such officials.

If the requirement that contagious diseases should be reported depends on municipal enactment there is immediate confusion. One city requires whooping-cough reported, but not tuberculosis, and there may be a variation also in other requirements. Such laws should be passed by the state, specifically mentioning each disease to be reported, and stating by whom, to whom and when such reports should be made. It is unfortunate that a very large proportion of practitioners do not yet realize that it is as important to report malaria and typhoid fever as it is to restrict smallpox. The determining what diseases should be reported should not be left to the individual judgment of a health officer or to the uncertain ruling of a court. Statistics to be valuable must be on a uniform basis and complete. The personal equation must be eliminated as much as possible.

There is a great difference between a mandate and a request. It is unfair to the practitioner to require him to comply with a rule which he may not easily find. He may be expected to comply with state statutes, but he should not be punished for failure to comply with a ruling of a health officer, or of a court, when such rulings are not easily within his knowledge. On the other hand, for due reason clearly stated, a health officer may request the reporting of a disease not mentioned in the statute, and the request would be generally complied with by the citizens if it were reasonable. Such reports would form a basis for study, and by proving their value the request might pave the way for the statute.

Statutes to be effective must be definite. While it may be necessary sometimes to leave something to the judgment of the executive, the essential requirements must be clearly stated. Suppose the statute simply requires the reporting of "infectious diseases," without mentioning their names. A physician failing to report malaria might deny its infectious character, and legally his opinion is as good as that of the health official. Only a court decision could settle the dispute. On the other hand, it may be left to the health official to determine to some degree the form of the report. His form may include a statement of water- and milk-supply, school attended and other important data, but unless such data are mentioned in the statute both official and practitioner must recognize that the giving of such information is largely an act of courtesy on the part of the reporter.

Not only is an executive health official denied legislative powers, but he is prohibited from acting in a judicial character. He may, and must, often decide questions of interpretation, but his decision is personal, not official. He may not legally determine what diseases shall be reported. Neither may he judicially decide that any statute is being violated. He may prosecute or begin action, but only a court may give a judicial decision.

According to the statutes of some states, the state board of health also has charge of licensure for medical practice. I am not aware of any judicial decision on this point, but it seems that such a provision is unconstitutional on the ground that boards of health are essentially executive, while the work of license boards is judicial, and entirely foreign to the work of a health department. The license board passes judgment on the standing of a medical school, or the educational and moral qualifications of a candidate, basing its action on the evidence presented. Prosecutions for violations of practice laws might properly be brought by a health department, but when the prosecutions are brought by the same body which issues the license the condition easily gives rise to a suspicion of legalized blackmailing.

One great limitation to all health work is ignorance. Administration can not advance far beyond popular knowledge. The model department of health must be primarily an educator. It must educate itself by making original investigations. Others may equally well make bacteriologic experiments, but health officials have a peculiar advantage for the collection and analysis of statistics. Since statistics form a very large portion of the foundation of public sanitation, it follows that to be a good statistician is a most important qualification for a health official. Then, too, there are certain problems which attract the attention of the sanitarian, which may totally escape the consideration of others. For example: Though plankton (pelagic flora and fauna, distinguished from coast and bottom forms) has been studied in its relation to fish culture, its sanitary relationship is not as yet known. It is quite likely that some forms may be pathogenetic either directly or by their effect on food fish. On the other hand, potamoplankton especially may prove a most important aid in sewage destruction.

The health department must also educate physicians and the laity to an appreciation of the known facts of sanitation, and to arouse a popular interest in the subject. With such a sympathetic interest it will be much more easy to secure suitable legislation, and to enforce the laws without unnecessary friction. On the other hand, when the legislation is far in advance of the popular education the executive must encounter great opposition in its enforcement. It is the lack of this sympathetic assistance which sometimes causes great annoyance. Frequent cases of a contagious disease occur, without an apparent connecting link, because many of the cases are unreported. A limitation here is caused by the unwillingness of people to submit to quarantine. Perhaps that unwillingness arises from financial necessity. The problem suggested is very largely sociologic, and the question to be answered is, how far the community is justified in establishing quarantine. Has the community a moral right to quarantine a family, unless it provides for the support of the family during the time?

A question as to the rights of an individual who is apparently healthy forms another limitation to the health official. Statutes should be passed giving the health official a right to make an examination of the person and discharges of a supposed disease-carrier, typhoid or diphtheria, for example, and to restrict the liberty of all such persons, prohibiting them especially from all occupations in which they would handle food materials, as in dairies, bakeries, restaurants, etc.

Sometimes a health official assumes authority which he does not possesss. Sanitary regulations relative to destruction of rats and insects should be based on statutes, but time may be saved sometimes by issuing an order unsupported by the law. It rarely is necessary to declare martial law. In the absence of specific laws it is usually safer to depend on moral suasion than to strain the force of authority. The facts should be clearly stated to the people that the responsibility for conditions and lack of statutory aid may be placed where it properly belongs.

While it is within the province of a health department to treat disease, it is questionable whether or not such treatment should go beyond protection against the spread of the disease. Unnecessary interference with private business arouses an opposition which does much to limit the usefulness of a health department. Physicians hesitate to report cases if they are to be deprived of the care of their patrons.

In a similar manner it is often necessary that the community should furnish free antitoxin for the purpose of restricting disease. If, however, the antitoxin is given free to all, the legitimate business of manufacturers and merchants is stifled. It is difficult to see any more excuse for supplying free antitoxin to all than for supplying clothing or bread for all.

It is not presumed that the foregoing is a complete discussion of the subject, but it is intended rather as a suggestive outline, to call attention to a much-neglected feature of our work. No reference is made to the limitations in school inspection, that great field for preventive medicine which must largely depend on wise legislation for authority. Neither have we called attention to the physical limitations, dependent on the nature of the soil and its former occupation, or on other conditions largely beyond control. It is a simple matter to construct a rat-proof town, but San Francisco has found it no easy task to exterminate those vermin from old buildings poorly constructed. And there is another great limitation so common as to be well recognized—that of finance. If we have not enough to do all we should like, we are obliged to select that which is most necessary.

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ABSTRACT OF DISCUSSION

Dr. J. W. Clemmer, Columbus, Ohio: This paper treats of fundamental principles in sanitary administration, and nothing could be of more importance in the public health service. At bottom this service rests on legal authority. A public sanitarian should know the legal provisions on which to ground public service. Sanitary authority primarily rests on a grant of the state; this grant may delegate authority to local boards of health to create such rules and regulations which on publication will have the force and effect of city ordinances. The state law may be specific in defining sanitary provisions in all matters of public health interests. In Ohio, large and general powers for sanitary administration are conferred on local boards of health. In turn, these boards create sanitary laws or ordinances for the regulation of the public. In this way the state confers not only police powers, but judicial powers on health boards. The Supreme Court of Ohio has recently confirmed the decisions of the lower courts in a case from Cincinnati in which a sanitary official, in carrying out a regulation of the board of health demanding the confiscation and destruction of milk kept for sale above a certain temperature, arrested and successfully prosecuted a dairyman under this regulation. From this it appears that all the courts of Ohio have confirmed a ruling of the health board in a specific matter of public health regulation. Such powers of administration applicable to other affairs give all the authority desired. The constitutionality of such enactment of the legislature, conferring such powers on appointive bodies, may be questioned, but the fact remains that the results of such a law in Ohio are satisfactory.

Trauma and Gastric Ulcer.—W. Oettinger reports in the *Archives des Maladies de l'Appareil Digestif*, iii, 1909, page 61, three cases in which a gastric ulcer developed after a contusion of the epigastric region, and the causal connection he regards as beyond question. He sifts the literature on the subject of ulcer consecutive to external trauma of the stomach region, and calls attention to occult hemorrhages in the stool as an important aid in diagnosis of gastric ulcer. Chemical tests of the stomach functioning in his cases after the trauma showed excessive glandular activity, and the fasting stomach contained a few c.c. up to 90 c.c. of gastric juice, free from admixture of food. This may be due to excess of glandular functioning, transient pyloric spasm or muscular atony, or all combined, and all these factors favor development of an ulcer. Hematemesis may be observed at once after the accident or after several days, or it may not occur, and the major classic symptoms of ulcer, paroxysmal radiating pain, vomiting of food, etc., are not the rule, but the exception, he says, in gastric ulcer. Diagnosis is possible, however, by investigation of the secretory and motor functioning and search for occult blood in the stool, and he expatiates on the importance of an early diagnosis before irreparable destruction of tissue. His patients were men between 28 and 38, and the accidents had occurred while driving or autoing.

MOLLUSCUM CONTAGIOSUM

REPORT OF AN INSTITUTIONAL EPIDEMIC OF FIFTY-NINE CASES*

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The term "molluscum" ("molluscis") was first used as descriptive of a dermatologic condition by Ludwig,[1] in 1739. The word was probably intended as a synonym for "mollis," describing certain soft tumors. Alibert,[2] Biett,[3] Cazenave[4] and Schedel,[5] on the contrary, attribute the origin of the term, used by Bateman,[6] to some resemblance existing between the cutaneous tumors and the knots on the bark of the maple. The disease was first described by Bateman in 1817, who gave a very good clinical description. The nomenclature of dermatology in the earlier days of this science of medicine was exceedingly chaotic. Several cases were reported as molluscum contagiosum shortly after Bateman's communication, but the most of these were, probably, fibroma molluscum. Alibert treated of molluscum contagiosum under the name of "mycosis fungoides." Bazin[7] described the disease under the term of "acne varioliformis." Erasmus Wilson[8] wrote of the condition under the heading of small sebaceous tumors. Duhring,[9] in 1881, used the title of "molluscum sebaceum." Unna in his book, "The Histopathology of the Diseases of the Skin," called the disease "epithelioma contagiosum." The terms employed by the various writers on this subject show the extensive and diverse titles used as descriptive of the condition.

Ever since this disease was first described the contagiousness has been discussed; Stelwagon's excellent paper[10] on the subject, in which are enumerated all the household and institutional epidemics on record, speaks strongly in favor of the contagious theory. Household and family epidemics will not be mentioned in this paper, but all of the institutional cases that have been obtainable will be described in some detail.

INSTITUTIONAL EPIDEMICS ALREADY RECORDED

Caillault's Cases.[11]—A girl, aged 8, was admitted to a hospital ward, with numerous tumors on the face, the eyelids and the shoulders. Fourteen out of the thirty children in the same ward finally became affected.

Ebert's Cases.[12]—A girl, aged 14, was admitted to a hospital with tumors on the face. The disease spread to three children who occupied the nearest beds and who came in contact with the patient and each other.

Liveing's Cases.[13]—Nine cases were observed in a school. A few months after the first case was noticed, the eight other patients were attacked.

Mittendorf's Cases.[14]—An epidemic was seen at a home for children. The disease was introduced by a little girl; an attendant noticed lesions on the eyelids at the time of her admission. A few weeks later several of the other girls developed similar lesions. Three months after the arrival of the first patient at the home, twenty-seven children had the disease. Another epidemic was observed at a nursery and hospital for children. Forty-one of the children were attacked within two years after the first case had been noted.

Jackson's Cases.[15]—A small outbreak occurred in the children's pavilion of a hospital. A week after the first case came under observation, 2 others developed; a week later another appeared; and the next week 2 additional cases—6 in all.

Allen's Cases.[16]—A child, with a few typical lesions on the face, was admitted to an asylum. Forty-two children were attacked by the disease a few months after the first child entered the institution. Five new cases subsequently developed, making a total of forty-seven. Another epidemic was described by Allen, also in a children's hospital. A little girl was brought in with a few characteristic tumors on the face; a boy playmate soon developed lesions of the same type; five other children were attacked by the disease.

Stelwagon's Cases.[10]—The first series, consisting of four cases, was seen in a children's hospital. The disease was discovered in one of the crippled infants, and a short time afterward three other patients, in the same ward, were attacked. The second epidemic occurred in a home for children; there were thirteen cases in all among about a hundred children. The third outbreak was noted in the last-named institution about a year later, the former patients having been cured. It consisted of twelve cases.

Tommasoli's Cases.[17]—This epidemic consisted of fifty-six cases in a children's asylum in the city of Sienna.

Graham's Cases.[18]—A little girl was brought to a home for infants with mollusca on the face. Two months later four children developed the disease. The lesions continued to appear on the other children; in four years' time fifteen cases were noted.

AUTHOR'S CASES

During the last year 59 cases of molluscum contagiosum have been seen in St. Vincent's Home out of about 350 children.

Sex.—Thirty of the patients were girls and the other twenty-nine were boys.

Age.—Five of the cases occurred at 7 years of age; 7 at 6 years; 11 at 5 years; 18 at 4 years; 14 at 3 years; and the 4 remaining cases at the age of 2 years.

Location of Lesions.—More than one area was involved in 27 of the cases. The eyelids were attacked in 22 cases; the chin in 16; the cheeks, right, left or both were involved in 11 cases; the forehead was the area of predilection in 11; the nose in 9; the cutaneous surface of the lip in 5 cases; the neck, anterior surface, in 5; the posterior surface of the neck in 3 cases; the left ear in 2; the dorsal surface of the right hand in 4 cases; the middle of the back in 1 case; and in 1 case, the left thigh was the site of attack. In 1 case, the vermilion border of the lower lip was involved by two small, pinhead-sized lesions. Two of the patients reported by Allen also had mollusca on the mucous membrane of the lip. A severe conjunctivitis was produced in one of the cases by a molluscum on the edge of the eyelid causing friction. Similar instances have been reported by Steffen[19] and also by Muetze.[20]

Number of Lesions.—One lesion was present in 19 of the cases; two in 12 cases; three also in 12 cases; four mollusca in 4 cases; five lesions in 2 other cases; six in 4 cases; 1 patient had seven lesions; and in 5 children there were, on each, twelve mollusca. The lesions were mostly from small to large pinhead in size; one molluscum was, however, pedunculated and cherry-size.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Ludwig: Quoted by Erasmus Wilson, p. 301.

[2] Alibert: Quoted by Erasmus Wilson, Diseases of the Skin, 1842, p. 309.

[3] Biett: Quoted by Erasmus Wilson.

[4] Cazenave: Quoted by Erasmus Wilson.

[5] Schedel: Quoted by Erasmus Wilson.

[6] Bateman: Delineations of Cutaneous Diseases, 1817.

[7] Bazin: Quoted by Pye-Smith, Diseases of the Skin, 1893.

[8] Wilson, Erasmus: Diseases of the Skin, 1842, p. 301.

[9] Duhring: Diseases of the Skin, ed. 2, 1881, p. 121.

[10] Stelwagon: The Question of the Contagiousness of Molluscum Contagiosum, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 50; 1889, p. 60.

[11] Caillault: Traité pratique des maladies de la peau chez les enfants, Paris, 1859, p. 94.

[12] Ebert: Jahrb. f. Kinderh., 1870, iii, 152.

[13] Liveing: Lancet, London, 1878, ii, 495.

[14] Mittendorf: Quoted by Stelwagon, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 52.

[15] Jackson: Jour. Cutan. and Genito-Urin. Dis., 1891, p. 338.

[16] Allen: Jour. Cutan. and Genito-Urin. Dis., 1886, p. 239.

[17] Tommasoli: Quoted by Stelwagon, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 50.

[18] Graham: Jour. Cutan. and Genito-Urin. Dis., 1892, p. 89.

[19] Steffen: Klin. Monatsbl. f. Augenh., 1895, p. 457.

[20] Muetze: Arch. f. Augenh., 1896, xxxiii, 302.

EXPERIMENTAL INOCULATION

Whenever the opportunity offers experimental inoculation should be tried, in order to determine, if possible, the incubation period of the disease. Several authors (Retzius,[21] Paterson,[22] Vidal,[23] Stanziale,[24] Pick,[25] Haab,[26] and Nobel[27]) have reported favorable results. Several others (Stelwagon,[10] Allen[16]) have been unsuccessful in the attempt.

Retzius reported a successful inoculation on himself. A small quantity of the molluscum material was rubbed into the upper chest; this area was protected by a watch-glass. A pinhead-sized lesion appeared four to five months after this experiment; the growth progressively increased in size during the next three months. The lesion then gradually disappeared. Microscopic examinations of the pressed-out contents were corroborative of the clinical diagnosis.

Paterson, after several attempts, finally succeeded. The contents of the tumor were inserted into the follicles, in a tender part of the skin; such as the angles of the mouth, axillæ, mammæ, etc.

Vidal recorded a successful result, Pantry, one of his assistants, performing the experiment. A positive result was determined in three months.

Stanziale's experimental inoculation also had a successful termination. The substance of the molluscum was rubbed into the sound skin of the inner surface of the arm and forearm; three months later a hempseed-sized lesion developed. Forty days later this tumor had become pea-sized.

Pick, of Prague, was extremely successful in his experiments; nine out of twelve inoculations succeeded. The skin over Scarpa's triangle, in a boy of 11 and a girl of 9, was used in the inoculation. The twelve inoculations were made just within the epidermis. The lesions did not begin to develop until the tenth week; two weeks afterward they were excised, and were found to correspond microscopically with molluscum.

Haab succeeded in inoculating himself, after rubbing the contents of a freshly extirpated lesion into the skin of the forearm. Nothing was noticed for six months, when a characteristic hempseed-sized lesion developed, resembling, clinically and microscopically, a typical molluscum growth.

Nobel's reported favorable result was performed on a patient already attacked by the disease, one of the lesions on the patient acting as the inoculating material. Characteristic lesions did not develop for nine weeks.

Inoculation experiments were attempted in two children, each aged 4, the one a boy and the other a girl. These two children had not been exposed to the disease. In the first case the inoculation was made on Nov. 8, 1908; a small area on the right upper arm was excoriated by a scalpel until oozing of lymph occurred; the contents of a molluscum from one of the affected patients was then rubbed in, antiseptic precautions being observed. Five weeks later a small, conical, yellowish, elevated lesion was noted in the inoculated area; this lesion looked typical of a beginning molluscum. In a few weeks' time, however, the lesion dried up and disappeared. No other phenomenon has occurred in this area.

The second subject was inoculated on Nov. 24, 1908. Two small areas were abraded on the outer surface of the upper arm; the contents of the molluscum was rubbed into one of these; a few drops of a sterile salt solution mixed with some of the contents of a molluscum lesion was rubbed into the other. Unfortunately the arm became somewhat infected and the result has been absolutely negative. The areas inoculated were covered by vaccination shields. The incubation period of the disease can not be stated because the successful results so far obtained have varied between a few weeks and many months. The incubation period, from the time of admission of a child into the home until the disease was acquired, was approximately, in several cases, a year and one-half.

PATHOLOGY

The microscopic picture of the pathologic changes that occur in this disease is quite characteristic, with the lobulated appearance, the fibrous capsule, and the diagnostic molluscum bodies. The origin of the growth, and particularly the molluscum bodies, has been, and still is, a much discussed and unsettled question. The subject has been so fully described in the excellent paper[28] of C. J. White and W. H. Robey, Jr., that only a few of the important points will be emphasized here.

Engel,[29] in 1844, regarded the tumor as an enlarged sebaceous gland; Rokintansky,[30] and also Hebra,[31] some years later, agreed with Engel. In 1865 Virchow[32] stated that the new growth was a lobulated, glandular epithelioma arising from the hair follicle. Retzius stated that the tumor did not rise from the hair follicle, but owed its origin entirely to the epidermis. Boeck[33] denied the sebaceous origin of the new growth, because fat could not be detected in its cells.

White considered that the source of the growth was the rete layer. Crocker[34] believed in the follicular origin of the tumor. Benda[35] stated that in some cases the tumor arose in the hair follicle. Caspary[36] believed that the tumor had its origin in the rete cells. Patterson, in 1841, was the first to mention the so-called molluscum corpuscles or bodies. MacCallum[37] limits the term "molluscum corpuscle" to the peculiar body inside of the epithelial cell. Kaposi[38] beieved that the peculiar molluscum bodies arose from the transformation of cell protoplasm. Vidal inferred from the jelly-like translucency of the bodies that they were the product of a colloid degeneration. Geber[39] sketched the evolution from the rete cells. Unna[40] believed that the bodies were only the result of colloid or hyaline degeneration of the prickle cells.

C. J. White, in the most elaborate paper written recently on this subject, considers that the bodies are simply keratin, identical with the horny layer, except in the shape of the individual cells. He states that the growth arises from the rete, and that there is an extraordinary metamorphosis of rete cells into normal keratin. Several biopsies were made in these cases; the microscope proved the clinical diagnosis.

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[21] Retzius: Deutsch. Klin., 1872, p. 39; 1871, No. 50.

[22] Paterson (quoted in Duckworth's paper, St. Bartholomew's Hosp. Rep., 1872, viii, 64): Edinburgh Med. and Surg. Jour., 1841, p. 280.

[23] Vidal: Progrès méd., 1878, p. 478.

[24] Stanziale: Gior. internaz. d. sc. med., 1890, p. 321.

[25] Pick: Monatsh. f. prakt. Dermat., 1892, xv, 133.

[26] Haab: Correspondenzblatt für Aerzte, No. 8, 1886; quoted from article by Stelwagon, Note 10.

[27] Nobel: Arch. f. Dermat. u. Syph., 1893, p. 929.

[28] White, C. J., and Robey, W. H., Jr.: Jour. Med. Research, 1902, new series, ii, 255.

[29] Engel: Ztschr. d. k. k. Gesellsch. d. Aerzte zu Wien, 1844.

[30] Rokintansky: Pathologische Anatomie, 1856, p. 79.

[31] Hebra: Lehrbuch der Hautkrankheiten, 1872.

[32] Virchow: Berl. klin. Wchnschr., 1865, p. 34.

[33] Boeck: Vrtljsch. f. Dermat. u. Syph., 1875, p. 23.

[34] Crocker: Diseases of the Skin, 1893, p. 479.

[35] Benda: Ztschr. f. Dermat., 1895, p. 195.

[36] Caspary: Vrtljschr. f. Dermat. u. Syph., 1882, p. 205.

[37] MacCallum: Jour. Cutan. and Genito-Urin. Dis., 1892, p. 93.

[38] Kaposi: Vrtljschr. f. Dermat. u. Syph., 1877, p. 333.

[39] Geber: Vrtljschr. f. Dermat. u. Syph., 1882, p. 403.

[40] Unna: The Histopathology of the Diseases of the Skin, transl. by Walker, 1896, p. 795.

BACTERIOLOGY AND CULTURAL EXPERIMENTS

Angelucci,[41] in 1881, described a bacterium, the *Bacterium lepogenum,* which, he maintained, was the cause of the tumor. Neisser,[42] in 1882, denied this and put forward the theory that the cause of the tumor was a gregarin and asserted that the peculiar bodies were the shells of these organisms. Graham[18] stated that he had found a micrococcus in his cases, which grew on potato and in bouillon, produced fermentation in milk, and was stained by Gram and Gabbet's methods. Robey, after extensive cultural experiments, came to the conclusion that the organism found was the *Staphylococcus epidermidis albus* of Welch, the normal inhabitant of the deeper layers of the skin.

Cultural experiments were made in these cases and two organisms were found. The first was a non-motile bacterium, size 0.5 to 1.0 by 1.0 to 2.0 microns, aerobic and facultative anaerobic. It grows abundantly at either room temperature or at 37.5 centigrade. It was negative to the Gram test. All of the differential tests were carried out and the organism was classed as the *Bacterium aerogenes.* The organism was probably present because of some slight contamination at the time of making the molluscum cultures. The second was a round, slightly oval coccus, divided in all planes, about 0.8 microns in diameter; Gram's method gave a positive result. Careful experiments were carried out on all culture media, and numerous tests were employed to determine the proper classification. This organism apparently is the *Micrococcus salivarius;* it was isolated by Biondi from the saliva. It resembles markedly the *Micrococcus epidermidis albus,* but differs from it in one chief way, in its activity regarding gelatin; the *Micrococcus albus* liquefies it in about two to three days, the *salivarius* not at all. These two organisms resemble each other so closely that it is only fair to suppose that they are in some way related; possibly two forms of the same micrococcus.

It is to be hoped that the etiologic factors of the disease will be elucidated, and that the pathologic origin of the growth and of the so-called molluscum bodies will be positively determined.

SUMMARY

Molloscum contagiosum usually attacks the face, in a great majority of the cases on, or in close proximity to, the eyelids. Children are more susceptible to the disease than adults.

It is very difficult to explain the present or other epidemics on any other theory except that the disease is contagious.

The cause of the disease is, unfortunately, still to be determined; although a micro-organism, usually a coccus, has been found in a few cases.

The incubation period is undetermined; from the experiments so far carried out, from a few weeks to many months.

The skin apparently does not have to be broken for the infection to occur, but this point is still undecided.

In closing I wish to express my thanks to Dr. Thomas Cope, pathologist to the St. Vincent's Home, for the careful cultural experiments; to Dr. C. Y. White, former pathologist to the home, for pathologic sections, and to Dr. Kolmer, resident physician in the same institution, for inoculation tests.

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ABSTRACT OF DISCUSSION

Dr. George Pernet, London, Eng.: One point not mentioned is that molluscum contagiosum may be found in certain birds, such as pigeons and buntings. In one instance two women contracted the disease from a pet pigeon. One case was in the practice of an ophthalmologist, and was recorded by him. The patient was in the habit of fondling the pigeon, and suffered much from the disease, especially about the eyelids. Since that time, when these patients come to me, I always inquire whether they have handled birds of this sort. I find that curetting the lesions with a sharp fenestrated curette is one of the readiest methods of getting rid of them, instead of splitting them up.

Dr. Louis A. Duhring, Philadelphia: The photographs that I saw did not show the usual formation of the tumors, in that there was no distinctly defined umbilication. It is well known that this umbilication is not always manifest, and apparently it was absent in some of these tumors. I have seen cases of this disease for many years in my own city and elsewhere, and I am always on the lookout for it in the hospitals with which I am connected, but I have found that it is a rare disease outside of asylums and institutions. Notwithstanding the facts relating to contagion, I have never been convinced of the contagiousness of the disease, and the many experiments that have been made still seem to leave that an open question. Its epidemic character is, of course, to be recognized, especially in institutions. The treatment of molluscum contagiosum may be made extremely simple. Perhaps the easiest method is to touch the lesions with a drop of acetic or trichloracetic acid, or to incise and express the contents.

The pathology of this affection, as described by Dr Knowles, is in accord with the studies that have been reported by Dr. White of Boston. I could never see that the disease was parasitic, rather it seemed to be due to elaborate changes in the epidermis, which have been so well described by Dr. White and by others. The affection has also been observed in birds and certain animals.

I think that records of epidemics of the kind narrated should be reported, and in the course of time we shall have much valuable material from which to draw conclusions. The question of the possible contagious character of the disease is one of importance, and one about which we ought to express ourselves if we have had any experience touching on that subject.

Dr. Marcus Haase, Memphis: I recall one case in an English boy, 19 years old, who had a linear group of three lesions on the anterior aspect of one leg. Having had my attention called to the fact that this disease might be transmitted through birds, I questioned him along that line, but he said he had never handled birds.

Dr. William A. Pusey, Chicago: As a student, I was taught to expect molluscom contagiosum as a common affection, but I have found it rare. I certainly see in Chicago ten cases of blastomycosis, for example, to one case of molluscum contagiosum.

Dr. F. C. Knowles, Philadelphia: In regard to the occurrence of this affection in birds, and various other phases of the subject, I did not take the time to refer to them, as the literature is very extensive, and I had to stick to the subject under discussion. In the pictures that I passed around, it was my endeavor to bring out the umbilication of the lesions. Most of the lesions were absolutely typical in every way, including the umbilication.

St. Vincent's Home, where the epidemic reported by Dr. Stelwagon occurred, is a sister institution to the one referred to in my paper, and the children are sent there as they grow older. It was apparently a continuation of the same epidemic. As a rule, I see about ten or fifteen of these cases every year in the hospitals with which I am connected, but during the past year I have seen over 100 cases, including the 59 reported in this paper. In Dr. Hartzell's service at the University of Pennsylvania Hospital, I have had an opportunity of seeing, during the last few months, an epidemic of over 30 cases; the students in the college department were attacked. This is the largest number I have seen in one year.

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[41] Angelucci: Internat. Med. Congress, 1881.
[42] Neisser: Monatsh. f. prakt. Dermat., March, 1882

THE COMPARATIVE VALUE OF THE INTERNAL ADMINISTRATION, INUNCTIONS AND INJECTION METHOD OF ADMINISTERING MERCURY IN THE TREATMENT OF SYPHILIS *

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In presenting this article I realize the magnitude of the subject and my inability to do it full justice in the time allotted to me. Hence I shall endeavor to discuss the merits of each method impartially and estimate their comparative value, more from my own personal experience in their employment than from the opinions of authors, and I shall quote only when I deem it necessary, as such information any of us can obtain by consulting text-books.

Mercury still stands the premier of all remedies in the treatment of syphilis, and in the light of recent research its position has been reinforced and greatly strengthened. The brilliant work of Schaudinn, Metchnikoff, Neisser and Wassermann has proved that mercury is still our chief remedy, and that the reasoning of all our great clinicians has been correct in regard to its action.

The serum treatment is still in its infancy, and even if one is developed that will cause a more rapid disappearance of syphilitic manifestations than mercury it will require years to prove its superiority and to establish it as a remedy on which we can rely.

INTERNAL ADMINISTRATION OF MERCURY

The ingestion method, or mercury administered by mouth, is one of the oldest methods, and one used more generally by the profession than any other. I fully realize the storm of criticism that may follow my condemnation of this treatment, especially since it is the one favored by our greatest syphilographers.

Fournier calls it the "true method of the treatment of syphilis," and I cheerfully acknowledge him the greatest living authority on syphilis to-day. He prefers internal treatment to all other methods as routine work, and his writings, in addition to Ricord's, are responsible, I believe, for the popularity of the protoiodid pill—the hydrargyri iodidum flavum of the Pharmacopeia. In this country White, Keyes and Taylor are also partial to the protoiodid for routine treatment.

Jonathan Hutchinson considers his gray powder with opium as superior to all other forms of administration.

Keyes, in advocating the internal treatment, prefers the protoiodid pill, to be administered according to his method, which he calls his "tonic treatment," and a great many American physicians have adopted his system.

It is right here, though, that I presume to take issue with these eminent authors, and say that the internal, inunction and injection methods should be employed in the treatment of every case of syphilis; or the internal and inunction combined; or the internal and injection combined; depending on the condition of the patient, his surroundings, etc., as to which is the most advantageous or convenient under the circumstances as they exist. I am opposed to depending on the internal administration alone, as in my experience its action is so feeble and so slow on the syphilitic manifestations, disappointing and discouraging to the patient, on account of slow progress. Its irritating effect on the gums, as it produces stomatitis much earlier than when using either of the older methods; its irritating effect on the stomach and bowels, especially when anything like an adequate dose is given; its uncertain action, being the slowest of all the methods in appearing in the urine; and the frequent outcropping of symptoms while under its influence, have led me to depend on it only when the patient is free from all manifestations of syphilis, and it is desired to keep him slightly under the influence of mercury, as a matter of precaution, when he is being allowed to rest between the periods of his heavier courses of medication. As a rule, the gums will become inflamed, and gastrointestinal symptoms develop long before any material improvement has occurred in the symptoms of the patient, and in most of the grave tertiary lesions that I see the patient gives a history of indifferent treatment or a two or three years' course of internal medication. At least 95 per cent. of the patients with secondary syphilis who consult me have been on pill treatment from one to six months. They generally show numerous symptoms in the form of mucous patches, secondary rashes, sore throat, or some of the other symptoms coincident with the secondary stage. It is not unusual, inaddition, that their gums are sore and inflamed from mercury, and the treatment has been so impotent that they come to the springs for relief, even against the advice of their home physicians. Immediate change for the better is noticed as soon as they are put on the inunctions or injections of mercury, and within a period of three or four weeks as a rule they are free from all manifestations and apparently fully restored to health. It is such cases as these that create numerous converts to the Hot Springs treatment. A large percentage do not remain long enough, return to their homes, and shortly resume internal treatment, and it is not unusual for me to receive letters from them in a period of from two to three months, stating that recurrent secondaries have developed. Now, to my mind, any treatment that will allow symptoms to develop when under its influence (of course, excluding malignant syphilis) is inadequate and should not be depended on exclusively. In some cases of old tertiary lues, in which there is pronounced anemia and cachexia, I have seen beautiful results from internal administration of mercury, combined with iodid of potassium, the old "mixed treatment," so called; but in the early secondary period its action is too slow and in the presence of any grave lesion it is absolutely impotent. In my locality I see numerous cases of tertiary syphilis, involving the nervous system, and a great number of them give histories of three years' internal treatment, especially those that have developed parasyphilitic conditions. These clinical pictures, with which I am so often confronted, have naturally caused me to consider this method of very feeble therapeutic value. The objections of some that it is not scientific because we can not tell how much is absorbed can also be said against the inunction method; but this objection is of very little importance, it seems to me, as it is of minor consequence how little or how much mercury is absorbed, just so we get the therapeutic result; no two people absorb mercury alike; no stereotyped dose can be exactly laid down for all cases. The doses must be varied according to the individual, and it is of little consequence only so that we are careful not to overmercurialize our patient.

When giving mercury by mouth, I prefer a pill containing biniodid of mercury and the iodids of arsenic

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

and gold; it is non-irritating and has been productive of good results. Another pill to which I am very partial is one recommended by Dr. Bernheim, of Philadelphia, in a paper read before the Mississippi Valley Medical Association in 1898, and which he calls "pill enteric." His formula, which I have slightly modified, contains:

½ grain metallic mercury,
½ grain hydrated wool fat,
½ grain purified ox-gall.

This pill produces less gastrointestinal disturbance than any I have ever used and is as potent in its effect as any of the salts of mercury.

INUNCTIONS OF MERCURY

This is the oldest method of administering mercury, and was employed as far back as the fifteenth century. The description by Fournier of the barbarous manner in which it was applied in those days engendered a prejudice against mercury that reaches down to the present day in the minds of the laity, and is fostered and kept alive by patent-medicine vendors and quacks. It is the ideal way of administering mercury, and would be far superior in routine treatment to any other method we possess if its application were not disagreeable and associated with so many objections.

First, the most important objection, I consider, is that it betrays the patient's secret, and if he is married or living with his family it is practically impossible to administer it without detection. A great many object to it because it is more or less filthy apparently, especially when the mercury cycle is used, and if great care is not exercised in protecting the skin it frequently produces a severe dermatitis. I have seen patients in whom the treatment was absolutely interdicted on this account, the skin being so tender that one application would produce a most violent dermatitis. In one unique case of mine a single inunction of mercury produced a severe edema of the side on which the rub was applied. The rub was applied to the outer surface of the right thigh; the next day the patient's right leg, arm, scrotum and penis were intensely red and edematous.

Patients at home object to the treatment, not only on account of its publicity, but because one can not feel very clean when being constantly anointed every day on different parts of their anatomy, and wearing a suit of underwear stained with the ointment. A very important factor in securing results from this method is to have the ointment properly applied; it should be applied by a trained rubber or masseur. This is the reason that in most cases this treatment is left to be administered at the different thermal resorts that are noted for the treatment of lues on this continent and in Europe; this is why our results are superior to those obtained at home, when the ointment is applied by the patient.

Among the advantages of the inunction treatment I will first mention that it is not painful and it is free from danger. It is potent and intense, and the stomach is left free for other medication. As it is quick and potent in its action, it produces immediate and rapid improvement of the patient, and the disappearance of all syphilitic manifestations. A very marked change for the better is produced within a few days. It does not affect the gums nearly so quickly as the internal administration, but when stomatitis does occur, if the mouth has not been frequently inspected and kept clean, it is liable to be more severe and to last longer. Occasionally early in the course, but generally after several weeks' rubbing, the patient will suddenly develop a mercurial intoxication in the form of acute enterocolitis, with severe griping pains and profuse diarrhea, and the stools may contain a little blood. This condition can generally be relieved within forty-eight hours; the patient can resume his treatment without any further discomfort, and he will generally finish his course with no recurrence.

Frequently these attacks are brought on from indiscretion in diet, and are not due to mercurial poisoning.

In my eighteen years' experience at Hot Springs, and in treating over six thousand cases of syphilis in private practice, I have employed inunctions extensively, and the longer I use them the more partial I have become to them and convinced of their merit; but there is one defect which occasionally causes failure in the treatment and which I have observed a great many times. It is not due to any fault of the method, but to the idiosyncrasy of the patient. There are some patients who, on account of the peculiar texture of the skin, do not absorb mercury. You may rub them over a long period and not witness any response to treatment by improvement of their symptoms, the physiologic action of the drug, or manifestation of mercury in their urine. These patients, of course, if one changes to injections, will immediately respond and show marked signs of improvement. Such cases, I think, are frequently mistaken by physicians, who believe the phenomenon to be a demonstration of the superiority of injections over inunctions; and, of course, in these particular cases, injections are superior. But it does not demonstrate that injections are better for all, as the fault is to be found in the resistance of the patient's skin, and not in the method.

I could cite a great number of such cases from my case books, but I do not care to take up space with case records. The only place I have seen this fact mentioned in literature is in the new work, "System of Syphilis,[1]" in the chapter on the treatment by inunctions, etc., in which the statement is made that in some cases no mercury was eliminated by the urine, although the skin had been thoroughly anointed, so that it seems as though some skins were impervious to this method of administration.

Ehrmann first drew attention to this important fact in connection with the elimination of mercury after inunctions. He showed a patient at the dermatologic congress held at Vienna in 1901 whose urine was free from mercury, although he had been rubbed with mercurial ointment on twenty occasions.

Mracek, at the same meeting, told of a patient who was still covered with the maculopapular syphilid, although he had received four hundred inunctions of mercury. In spite of this energetic treatment, he never had any mercury in the urine, and the syphilitic signs actually increased while he was under treatment. The technic of this method of administering mercury is very important in promoting good results; also the quality of the ointment used; I have used a great variety of ointments, and prefer Squibb's 50 per cent. ointment.

At Aix-la-Chapelle, the mercury cycle is used; that is, different portions of the body are selected every day for the rubbings until the whole surface is anointed. This is the method generally in vogue throughout this country by physicians in our large cities. The Hot Springs method is confined to applying mercury on the back, and sometimes on the hips, and outer surface of the thighs. It was first instituted at the Springs forty years ago, and physicians practicing there still employ it, and have never seen any advantage or reason for making a change. Our results are as good and gratifying, and the physiologic effect just as rapid as when the other method is used, and it has the advantage of being much cleaner, pleasanter, and more agreeable to the patient.

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[1] System of Syphilis. Edited by Power and Murphy, Oxford Med. Pub. Co., London, Chapter 13, Vol. ii.

Our technic is as follows: After a warm bath the patient sits astride of a chair, and the attendant spreads the ointment on the back, using a rubber mitt to protect his hand. The ointment is thus rubbed in with a long, sweeping, circular motion, the attendant exercising a firm pressure, but not sufficient to produce too much warmth, as hard rubbing produces irritation. After he has finished, a thin gauze athletic shirt is pulled down over the surface to protect the other undergarments, or else a mercurial pad is used, which is impervious, and is much preferred by many patients. This pad was recently invented by Dr. Randolph Brunson, of Hot Springs, for the purpose of obtaining quicker constitutional results, as the outer covering of the pad is made of an impervious fabric, which produces a slight moisture and softening of the skin, and thereby promotes a more rapid absorption of the ointment. If the pad is used, it is worn constantly throughout the entire course. If the mercury shirt is used, it is changed every ten days or two weeks, as the patient keeps it on constantly, not removing it even when he retires. He gets constant absorption from contact, as considerable mercury becomes deposited on the shirt. Before the inunction is applied the attendant washes the back thoroughly with some good antiseptic solution. The one I prefer is the 1 to 2000 biniodid of mercury, or equal parts of liquor antisepticus U. S. P., and saturated solution of boric acid. This latter formula is very soothing, as there is always plenty of infection on the surface of the skin, and sterilization of the back will add largely to the prevention of any irritation; any hairy portion of the back should be shaved before a course of rubs is instituted. If the patient seems to have a specially irritable skin, in addition, I have the back oiled with a solution of ichthyol and oil of sweet almond. This does not interfere with the action of the mercury, and generally keeps the back in excellent condition.

Now as to the comparative value and potency of the inunction and injection method: From my experience, I am convinced that the inunctions are just as powerful in their action as any of the soluble preparations of mercury, and in some cases much more so; also the effect of the inunctions is much more lasting, and recurrent symptoms do not occur near as early as they do after a course of soluble injections. I have been using injections for ten years, and during that period have had ample opportunity to compare the two methods, as during this time about 75 per cent. of my luetic cases were on the inunctions and 25 per cent. on injections. With few exceptions, I have not been able to see any advantage soluble injections have over the inunctions. The symptoms are not relieved any faster, and, if anything, the improvement in the inunction cases has been more rapid. In addition, the injections are generally more or less painful. To some patients they do not seem to cause any discomfort, while others will rebel against them bitterly. There seems to be a great difference in patients' susceptibility to the pain-producing property of mercury. I have yet to use an injection, containing mercury of sufficient quantity to be of benefit, which would not cause more or less pain. I have had a great number of patients under my care who have recently been to a northern resort in this country where the soluble injections of mercury are largely used. After being conducted through a course of inunctions, they invariably become disciples of the inunction treatment. Patients who do not thrive on the inunctions and improve more rapidly on injections of soluble mercury do so, as I said before, on account of lack of absorption, and still there are others that improve on account of constitutional idiosyncrasy, and I have frequently observed the reverse occur, and had them improve rapidly on the inunctions when injections had failed. There is a great difference in patients' susceptibility to mercury; some require an enormous amount to produce the desired result, while others require very little. One patient, who was suffering with a large gumma on his forehead, had been rubbing for six weeks before coming under my care, and taking large doses of iodid of potassium. The treatment made no impression on the tumor, but, in fact, it was growing larger, and he showed no symptoms of mercurialization. I gave him thirty-six injections of salicylate of mercury, one grain each, every other day, with complete disappearance of the tumor, and still no evidence of mercurial depression or tenderness of the gums appeared. I allowed him to rest two months, and gave him twenty injections of modified gray oil, one grain each. At the expiration of this course, his gums became slightly inflamed, or "touched" as we express it. I saw him eighteen months later and he was in excellent health.

Another patient whom I had under my care four years ago, with cerebral syphilis, took 136 inunctions and twenty-six injections of one-fourth grain each, of succinimid of mercury, coincident with the rubs. At no time was the course interrupted, nor did he show any pronounced symptoms of mercurialization; as to the merits of this treatment in his case I recently received a letter from him, stating that he is in perfect health. These cases, of course, are rare, while now, at the other extreme, we occasionally encounter patients who can not stand mercury at all, even when their condition indicates that they are sadly in need of it. I have seen one inunction of mercury produce a severe mercurial intoxication; in another case two inunctions produced similar results. Frequently these poor unfortunates have a tendency to malignant syphilis, and can not tolerate specific treatment and show no response to it; they tax our ability to the limit.

The theory that was advanced in Germany a few years ago, that no absorption occurred from the rubbing of mercury, but that the medicament was taken in entirely by inhalation, has always appeared to me absurd. This has been proved a fallacy by the experiment of shaving the back of a rabbit and rubbing the mercury in the exposed part of the skin; a section of the skin was then examined under the microscope, and globules of mercury were found in the sebaceous and sudorific glands.

Likewise, we all know that rubbers would be susceptible to mercurial poisoning if this theory was correct, as they are exposed to the so-called fumes while constantly rubbing it. I know bath-house attendants at the Springs who have been rubbing mercury for thirty years, and have never shown any signs of mercurial poisoning, nor have I ever heard of one. I have a man in the rubbing department of my office who has been rubbing on an average of from ten to twenty patients a day for ten years; the room is kept at a temperature of from 80 to 85 F., and he has never shown any symptoms of mercurialization in the slightest degree.

INJECTION METHOD

The injection method of administering mercury, according to Fournier, was first "introduced by Hebra in 1864, but it did not really enter into practice until after the publication of Lewin in 1867." It grew into popularity much more rapidly on the continent of Europe than in America, and I think the writings of Taylor and J. William White in Morrow's "System of Genitourinary Diseases and Syphilis," condemning it, had considerable to do with retarding its adoption by Americans, and subduing our enthusiasm; especially as White's article contained letters from a large number of our most prominent specialists in those days, and they all condemned it as inferior and dangerous. In the last twelve or fourteen years, it has rapidly grown into favor in this country, especially injections of the soluble salts of mercury. Hundreds of papers have been written on the subject, and I fear some writers have allowed their enthusiasm to warp their better or more matured judgment. The marvelous claims for it by some I consider very much overdrawn and I do not consider it a treatment that should be adopted in all cases, as advocated by some.

If a great many of these same zealous enthusiasts had had the same experience with the inunctions, I firmly believe that their opinions would be very much modified, and of more value. The injection method has many attractive advantages: first, it is clean; it is secretive; it absolutely conceals the patient's condition from every one but his physician; but the large volume of advantages that are claimed for it by the numerous advocates would fill several chapters.

Colonel Lambkin, in "System of Syphilis," vol. ii, gives as a brief list of the most important points to consider as I have found. They are as follows:

1. It is convenient to the patient.
2. It insures the patient's getting regular treatment.
3. It leaves the stomach free for the reception of other medicines.
4. It insures more accurate doses.
5. The absorption of mercury is much more certain.
6. It does not interfere with the gastrointestinal system.
7. There is less chance of toxic symptoms, especially of stomatitis.
8. Both therapeutic intensity and physiologic effect are much more marked when the mercury is introduced by this method than by others.
9. I will add that some writers have stated that we get a greater amount of effect from a smaller amount of mercury than when using any other method.

I will briefly analyze the various claims: Nos. 1, 2 and 3 I admit and pass on without further discussion, only to say that the same can be said about inunctions.

4. The dose may be more accurate; but what advantage is this, if no two persons require the same dose? And frequently the dose has to be changed at different periods in the same patient.

5. The absorption of mercury is much more certain. This will depend, though, on its not becoming incapsulated, as it frequently does. Often we see patients, especially those who have been taking injections of the soluble salts of mercury, with their buttocks a mass of nodules even a year or so after they have received the injections; that these nodosities all contain mercury is beautifully illustrated in the two cases cited by Fournier. I have also seen these nodules suddenly absorbed and producing very sore gums.

6. As to the claim that it does not interfere with the gastrointestinal system, this is a grave mistake, as I have seen very severe mercurial intoxication produced from the injections, and the fatal cases that had been reported from the insoluble salts generally show marked disturbance of the gastrointestinal tract.

7. As to there being less chance of toxic symptoms, this is also a grave error. A number of deaths have been reported from injections of insoluble preparations of mercury. Dr. Fuller, in his article on the "Salicylate of Mercury,[2]" speaks about the possibility of producing an oil embolism that may manifest alarming symptoms, though not fatal.

Fournier relates numerous deaths that have occurred from injections of calomel, and I presume all have seen Lessère's recent report of the number of deaths and accidents that have occurred from injections of insoluble salts and gray oil.

Bartsch, of Breslau, has recently published several cases of poisoning with fatal results, two of which are especially interesting; one patient, a young woman of 24, died from four injections of a 10 per cent. solution of salicylate of mercury. Another, a woman of 40, died after four injections of calomel; both patients had severe diarrhea and mercurial colitis.

As to the injections being less liable to produce stomatitis, when the latter does occur, it is generally much more severe and lasts longer than when using the other methods.

8. I admit that the therapeutic intensity and physiologic effect is much more marked and lasting when the insoluble preparations are given, but not so when the soluble are given, as they are inferior to inunctions in most cases.

9. As to securing the greatest effect with the smallest amount of mercury, I consider this of minor importance. It seems to me a matter of very little consequence how much mercury you use, so long as it does not injure your patient, and he improves while under its administration.

The soluble preparations I have used are the succinimid, bichlorid, biniodid, sozoiodolate, albuminate, benzoate, and cyanid. I prefer the cyanid and the succinimid, as they are the least painful. The bichlorid I consider superior to them all, but it is so painful and prone to nodulation that a great many patients will not submit to the treatment. I have modified and greatly reduced the pain from injections of bichlorid by the following formula:

℞.	gm. or c.c.	
Bichlorid of mercury	|5	gr. vlll
Phenol (carbolic acid)	|5	m. viii
Physiologic salt solution	31|	℥i

The dose is from fifteen to thirty minims (1 to 2 c.c.) every other day. This is my original formula, although it has been appropriated as original by two writers in different parts of this country, but they received the formula indirectly from me. There is no danger from the carbolic acid in this preparation, and it greatly reduces the pain of the injection.

INSOLUBLE PREPARATIONS

This is the most intense and potent method we have of administering mercury, but, as it is not free from danger, it should not be adopted as a routine and used without discrimination and care; hence, it should be reserved for selected cases, especially those in which it is desired to produce a profound mercurial impression. The one that ranks at the head of them all, I presume, is calomel, but with it I have never had any experience, although I was deeply impressed with the article read before this section last year by Dr. Klotz. I have been deterred from its use by the literature on the subject, as the majority admit that it is very painful, besides being the most dangerous. I have never had a case in which I deemed it necessary to resort to its use. My experience has been confined to the emulsion of salicylate in 10 per cent. solution of liquid petrolatum, as advised by Fuller and Gottheil. I used this preparation in a number of cases for about one year, and had some very excellent results, one in particular I have mentioned above, but, on account of the volume of the injection, and a number of patients complaining of it being painful, I changed to the modified gray oil, as suggested to me by Dr. Heidingsfeld. The original gray oil, or oleum cinereum, as invented by Lang, I had previously tried and discontinued, likewise on account of the great pain it produced.

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[2] Med. Rec., New York.

About three years ago Dr. Heidingsfeld gave me his formula, which was a modification of Lang's, and consisted of pure hydrated wool fat and bidistilled dental mercury, equal parts by weight, making a 50 per cent. ointment, of which one minim approximately represented one-half grain metallic mercury. His previous modification of Lang's oil I had tried, and stated to him that I found it very painful. In this previous formula he used liquid petrolatum and also sterilized his wool fat; he had discovered that if he did not sterilize the wool fat and depended on the mercury to render the oil sterile it caused very little discomfort and was almost painless. Sterilizing the wool fat causes some chemical change with which I am not familiar, but it is a clinical fact that it does render the injections much more painful. I have been using this preparation now for the last three years, and am much pleased with its results and its powerful action on syphilitic lesions; very few patients have ever complained of pain from the injection. Some will complain of pain and soreness a day or so after the first two injections are given. After that their hips seem to become inured and cause them very little discomfort. The dose is from two or three minims, as suggested by Dr. Heidingsfeld.

Dr. L. E. Schmitt, of Chicago, uses as high as five minims, but I prefer the small dose, and give the injections more frequently. This oil being so thick (the appellation "gray ointment" would be more descriptive), there is practically no danger of producing an embolism, and the small quantity injected is an important factor, I think, in rendering it less painful. A preparation used in England is called "mercurial cream." With this, liquid paraffin is added to the base, as in Lang's latest formula; this is used largely in the British army, and admitted, by the writers who advocate its use, to be very painful.

Colonel Lambkin has modified the formula, and uses palmitin as a base, adding camphoric acid and absolute creosote to render it painless and sterile. He uses the same combination with calomel injections, and says that it renders the injections of both absolutely painless.

His description of his experiences with these preparations is, indeed, very attractive, and I intend giving them a trial.

I have administered over six hundred injections of Heidingsfeld's modified gray oil, and have had only two superficial abscesses, both in women with fleshy hips. They were caused by withdrawing the needle too soon and allowing a thin column of mercury to follow the needle into the subcutaneous tissue. In addition, the needle was not sufficiently long to deposit the mercury in the muscular tissue.

The technic of these injections is very important. In the first place, the needle must be long enough to insert the oil well into the muscles, as it is a very stiff ointment; after inserting the needle, considerable pressure must be exerted to expel the oil into the tissues. Likewise, the needle should be allowed to remain at rest before it is withdrawn, fully twenty to thirty seconds, so that the mercury has ceased oozing from the end of the needle, thus avoiding the accident I spoke of above; if any mercury is deposited immediately beneath the skin, it is liable to form a very sore and painful nodule that may possibly terminate in a superficial abscess. Great surgical care and cleanliness must always be carried out in giving these injections.

I employ this preparation in all cases that have failed to respond to the soluble injections or inunctions, in cases in which I desire a quick and intense action of mercury in the presence of all serious lesions, especially of the nervous system, when desiring to give the therapeutic test, and in cases of patients who object to frequent visits to the office. Injections are given every other day, every third day, twice a week, or once a week, depending on the mercurial energy I wish to exert. My results have proved to me that it is the most intense and desirable method of administering mercury in severe cases, and a treatment to which a patient rarely, if ever, objects. Cases in which the other methods have failed will respond to these injections, and my results, as a rule, have been all that I could desire, and most gratifying to the patient. The method is not nearly so liable to produce mercurial intoxication as are the soluble injections, but there is one important factor to keep in mind always: At the first suggestion of tenderness of the gums or any other toxic symptom, the treatment must be stopped, as there still remains considerable mercury in the tissues, and if you are not very careful you are likely to have very severe stomatitis with pronounced physical and nervous prostration. I have had the gums become inflamed a month or six weeks, and in one case two months, after the course of injections had been finished, E. L. Keyes has made the same observation.

SUMMARY

Now, to recapitulate as briefly as I can, in comparing the three methods:

As stated before, I consider that all methods should be combined at different periods during a full course of treatment. A course of treatment in the early inception of syphilis, I think, should start either with inunctions or injections and be followed by internal medication, instead of the pill or internal treatment being given first, and followed later by injections and rubs, as advised by most modern text-books. The brilliant results to be obtained in the prevention of future accidents in any case, I think, are to be accomplished in the first year's treatment, and we should attack the disease energetically, and when the system is being flooded with the syphilitic virus. The more rapidly we can overwhelm and cause the extinction of the spirochete, with a treatment that is not injurious to the system, the better is our selection. Hence I have formulated the following routine to be pursued in cases of syphilis as they ordinarily run:

First Year.—Two courses of either inunctions or injections, covering a period of two months each; after each course of treatment a month's rest should be allowed and then internal medication two months during the interim up to within a month before resuming the second course, whether inunctions or injections, making four months' rubs, four months' internal treatment, four months' rest.

Second Year.—Two courses of rubs or injections six weeks each; two courses of internal treatment, eight weeks each; two courses of rest, six weeks each, and two of four weeks each, making a total of three months' heavy rubs or injections, four months' pills, and five months' rest.

Third Year.—Treatment every other month, alternating between the internal and more intense methods.

Fourth Year.—Six weeks of inunctions or injections.

Fifth Year.—Four to six weeks of inunctions or injections. The above treatment is given in tabular form:

TABLE OF COURSE OF TREATMENT FOR FIVE YEARS

First year.

2 months' inunctions or injections.
1 month's rest,
2 months' internal treatment,
1 month's rest,
2 months' inunctions or injections,
1 month's rest,
2 months' internal treatment,
1 month's rest,
Giving 8 months' treatment, and 4 months' rest.

Second Year.

6 weeks' inunctions or injections,
8 weeks' rest,
8 weeks' internal treatment,
4 weeks' rest,
6 weeks' inunctions or injections,
8 weeks' rest,
8 weeks' internal treatment,
4 weeks' rest,
Giving total, second year, 7 months' treatment, 5 months' rest.

Third year.

1 month inunctions or injections,
1 month rest,
1 month internal treatment,
1 month rest, continuing so throughout the entire year, alternating from internal to injections or rubs
Thus giving the total during the third year of 6 months' treatment, and 6 months' rest.

Fourth year.

6 weeks' inunctions or injections.

Fifth year.

4 to 6 weeks' inunctions or injections.

Then one course of treatment of one month each, for the next five years, thus carrying our patient up to or through the parasyphilitic stage. I do not contend that every patient absolutely needs this protracted treatment; no doubt, a good number escape, and live to a ripe old age, after a very indifferent course, of one or two years' treatment following infection. Undoubtedly some recover spontaneously, but there is a large percentage of those who do not enjoy such luck, as my home is a Mecca for so many of these unfortunates; I am constantly confronted with numerous cases of early neglect and insufficient treatment.

Fournier states that at least 50 per cent. of tertiary lesions involve the nervous system, and this does not include all the parasyphilitic lesions. Hence, I think it better to treat a little too long than to stop one day too soon. I have patients who have been under my care for fifteen years who visit the Springs annually and take a course of three weeks of inunctions. Most of them have shown no signs of syphilis for ten or twelve years. Still they do this as a matter of precaution; the treatment seems to do them no harm and they enjoy excellent health; as the cure of syphilis is so uncertain, I feel more secure under these precautions and the patient feels likewise. I am a positive believer in the cure of syphilis, but I make this statement with qualifications, as I believe that, with few exceptions, the organism of every patient who has ever had syphilis is indelibly stamped with it for life; and that a proper course of three to five years' treatment following the infection will cure the average patient, provided he leads a proper life, but that there is always that apprehension that in the future, if some intercurrent trouble develops, that will create *the locus minoris resistentiæ,* his old malady may manifest itself in the form of a grave or serious accident.

In my experience I have seen it return thirty, thirty-eight and forty years after infection; during the intervals, the patients enjoyed excellent health and responded rapidly to treatment, which proved the diagnosis.

The important points which I wish to emphasize in this paper are:

All three methods should be used in treating any case of lues, as previously described.

When first instituting treatment after infection, either inunctions or injections should be employed, followed by internal medication, instead of treatment with pills, first followed by more heroic methods, as advised by most of the leading writers.

The inunctions, from my experience and observation, on an average, are superior to the soluble injections, and more lasting in their effects.

The insoluble salts are too intense and profound to be employed in routine, and should be held in reserve for rebellious cases and for cases in which rapid and pronounced mercurialization is desired.

Finally, the long course of treatment I have advised should be pursued in all cases.

The six cardinal points in the therapeutics of syphilis are to keep a close observation of the weight, kidneys, bowels, stomach, gums and nervous system; especially the latter, as some patients will never manifest any evidence of mercury in the form of stomatitis, and the first evidence you have is a profound and acute nervous prostration.

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ABSTRACT OF DISCUSSION

Dr. William S. Gottheil, New York: I advocate a conservative eclecticism in the treatment of syphilis. We should never forget that when we introduce mercury into the human system we are incorporating a substance that is poisonous, and that may have untoward and unexpected effects. Death has occurred from administration of mercury in any form, by ingestion and by inunction; it has occurred from injections of soluble as well as of insoluble preparations of this drug. Injections of gray oil have been responsible for more accidents than any other preparation. I am not prepared to say that this is because it is more dangerous than the others; perhaps it is because it has been more largely used.

There is a distinct reaction after the injections; the metallic antitoxin acts exactly like the organic diphtheria antitoxin in this respect. I have studied this more especially in the case of physicians who were under treatment. There are chills, malaise, pains in the limbs, and a temperature that may rise to 104 F. and over. This reaction may be so severe as to constitute a valid contraindication to the mode of administration. There are also other contraindications. Some patients are so thin and have such small gluteal muscles that the injury of the injection causes them too much trouble; and occasionally we meet one so very stout that the longest needle will not reach through the layers of fat into the center of the muscle mass, and painful indurations result. I have found, however, that women stand the injections remarkably well, provided that a sufficiently long needle is used; and I always keep some on hand for the purpose.

Dr. W. B. Trimble, New York City: I thought Dr. Gottheil advocated the use of the injection treatment, above all others, and as a routine measure in every case, I disagree with this view, as I do not think it the method of election in every case of syphilis. If it were necessary to select one form of treatment to the exclusion of all others, I do not think I would hesitate in choosing the inunction plan. The soluble preparations that I usually employ are the succinimid and the benzoate.

Dr. Alexander S. Wolf, St. Louis: It appears to be a comfortable and convenient arrangement for both physician and patient to have a nurse or an attendant rub the blue ointment into the skin of the patient, but such a luxury can be had only by the wealthy. Such a procedure, however, is not rational, and for the rich as the poor we must insist on self-inunction treatment as the one which under necessary instructions for the patient—and in this regard our young generation of physicians must be instructed thoroughly in the school—will alone be of benefit. While the poor patient will abide by our directions without any further deliberation, the well-to-do patient who has heard about inunctions carried out by a nurse, must be enlightened as to the necessity and rationality of self-rubbing. You need only to impress on his mind that it is better for his health and the result of the treatment, if a good deal of the ointment will remain in the skin of his own hand than in the leather of the nurse's glove.

Dr. Louis E. Schmidt, Chicago: In discussing this subject of the comparative value of the different methods of treating syphilis, we should do so in connection with our present knowledge of serum reaction. I have had about 60 cases of syphilis in which practically the same line of treatment has been carried out, mostly by the injection method with gray oil. I want to bring out the result of the Wassermann test in these cases. In some cases, the test was negative after only eighteen months of treatment, while others gave a marked reaction after four or five years of treatment. I have had patients under my observation and treatment for three, four and five years, and still the test is positive. What am I to do in such cases? Am I to continue vigorous treatment for ten years or more if the reaction continues positive, and in those cases that give a negative reaction after only eighteen months of treatment, can treatment be discontinued or pursued less vigorously? I believe the test should be repeated every six months, and if it remains negative, continue to leave the patient untreated. However, as the test is still so new, I am inclined to believe that a mild mixed treatment should be kept up.

Dr. E. C. Hay, Hot Springs, Ark.: One point I would like to emphasize is that the insoluble injections should not be repeated too rapidly, in order to avoid the possibility of mercurial stasis, as alarming or even fatal symptoms may develop if not detected in time from a sudden absorption of a large quantity of mercury. This condition can generally be recognized by keeping a close watch over the urine for the elimination of mercury. In regard to the inunction method, I am not in favor of having the patients rub each other. In my experience, it has been better to employ a trained rubber for that purpose, one who can do the work more thoroughly than the patients could do it for themselves.

Municipal Playgrounds.—Playgrounds, places for the youngsters to play and develop their young lungs by exercise, are becoming one of the big items in the budget of a city. Chicago, for instance, has spent eleven million dollars on a system of playgrounds and recreation centers, containing outdoor and indoor gymnasiums, swimming pools, wading pools, shower baths, swings, slides, ball fields and rooms for lectures and social meetings. New standards have been set up in neighborhoods that knew them not, and the benefit is accounted so great that the cost of $2.00 per $1,000 assessed valuation of the property benefited is regarded as an ideal investment of the city's income.—*Hygiene and Physical Education.*

INOCULATIONS OF POLYVALENT STAPHYLOCOCCIC SUSPENSIONS IN STAPHYLOCOCCIC INFECTIONS OF THE SKIN *

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DETROIT

Now that time has allowed the smoke of enthusiasm to clear away, we should be able to take an accurate reckoning of the value of artificial immunization of patients with staphylococcic infections of the skin.

Two years ago, before this Section, I reported a series of staphylococcic infections of the skin treated by bacterial inoculations. The conclusions at that time were not unlike those of other investigators along this line of treatment. Autogenous suspensions were found more efficient than monovalent stock suspensions, and inoculations guided by opsonic estimations were found more effectual than those that were not so guided.

Owing to the time consumed in isolating the invading organism and standardizing the suspensions, and the difficulties in making opsonic estimations, opsonic therapy has evoked criticism. The purport of this paper, then, is to discuss the simplifications which assist in placing opsonic therapy on a practical basis. So much progress has been made over our previous knowledge that we are now able to obtain as good results, in selected cases, with polyvalent stock suspensions as with the autogenous. Laborious opsonic estimations are unnecessary as a guide to reinoculations. Experience has proved to me that inoculations of a polyvalent stock suspension, made at intervals indicated by clinical symptoms, produce as good results as when controlled by opsonic indices.

For some time bacteriologists have noted minute differences between cultures of the same species obtained from different sources, although the morphology of the organism shows the typical form on ordinary culture media. A suspension, then, made from a number of strains of the same organism, obtained from various patients suffering from the same disease, is the stock suspension employed. The object of this is to embody the varying properties of a number of strains.

Polyvalent suspensions of staphylococcic strains have been and are being used by many investigators, but, to my knowledge, no large number of strains obtained from the same disease has been employed. My polyvalent suspensions have contained no less than twenty different strains, which have been increased to forty by mixing two or more suspensions. These strains are kept growing slowly, at room temperature, in darkness, and are transferred as infrequently as possible to keep them alive. By this method the virulence of the strain is probably less lowered than might be the case if the strain was frequently transferred. New strains are occasionally being added which give varying ages to the suspensions as well as varying virulence. Such a suspension is as easily prepared and standardized as an autogenous one, and retains its activity, as far as can be determined clinically, for at least six months. Here, then, we have a stock suspension which is ever ready and can be used when the patient first appears, with a saving of days of time over the method of preparing autogenous bacterial suspensions.

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From comparisons of opsonic indices, in a large number of like infections taken in the laboratory prior to using stock suspensions, we are given further valuable knowledge, not only in estimating the size of the dose to administer, but when to reinoculate. The dose of the first inoculation should be of sufficient size to cause only a slight languor, which means a four to eight hours' negative phase after the inoculation. From 100 to 150 millions is the appropriate initial dose, varying as clinical indications denote. In the immunization of animals toward a given toxin, the dose given must be of gradually increasing strength, to a certain standard, the frequency and size of the dose to be governed by the temperature of the animal and other clinical manifestations, and later by potency tests. The same is true of human artificial immunization with bacterial suspension, the doses varying in size and intervals. Within six times twenty-four hours after the initial dose, the patient's resistance, as proved by opsonic estimations, will have dropped after its positive phase to within nearly what it was when the first dose was administered. Then the second dose should be given, which should be from 200 to 250 millions, and the third from 300 to 400 millions. It is seldom necessary to increase the dose to more than 600 millions. The spacing of the first three doses six days apart (six times twenty-four hours) is of importance, and further doses should be given as clinical manifestations indicate. One of the first indications of a lowered resistance and recurrence is a tenderness in the already healed scar, as in boils.

The rebellious types of the following diseases are those to be considered: furunculosis and carbuncle, impetigo contagiosa, sycosis staphylogenes, and pustular acne. In selecting from this group of diseases, we are considering only the rebellious ones, thereby excluding the possibility of spontaneous recovery, consequently putting this therapeutic measure to the crucial test.

What is more annoying than the persistently recurring lesion in what is termed the chronic "boiler," or the sycosis condition which presents itself with a history of years of existence? The patient who returns almost annually, usually during February or March, with a multiple furunculosis has a lowered resistance to staphylococcic infection. We have heretofore reasoned that the condition of such a patient was below normal or he would not be afflicted with such infections. Our medical advice has been governed by such suppositions, and tonics, diet and specific medications, the action of which has never been clearly known, have been prescribed. We had no accurate means of determining the patient's resistance to the infection, or whether our treatment raised his resistance, until Sir A. E. Wright published his most ingenious technic, by the application of which we are able artificially to immunize patients by bacterial inoculations. The further proof that the patient's resistance is not only low during such infection but in the process of artificial immunization, lies in the fact that the patient's resistance shows a prompt rise, as indicated by laboratory indices which are confirmed clinically. The lowered resistance of the patient may not be due wholly to deficiencies in the blood substances or lack of opsonins, but partially to abnormal development or lack of tonicity of the skin structure. General lowered resistance to the staphylococcic family, due to constitutional diseases, will not be considered.

The predisposing qualities of such skin structures to infection must be considered and corrected, or the raising of the patient's resistance will often fail to cure.

Many abnormal conditions in the skin structure predispose to a more easy access of this type of infection into the deeper structures of the skin; for example, the thin, oily skin with the gaping sebaceous ducts not only allows easy entrance of the organisms, but such a skin supplies them with an abundance of food in the excess sebaceous material. The walling-off of such an infected area is Nature's means of preventing systemic infection. This process in the infection of the carbuncle or boil is so thorough that the infected area must necrose in order to rid itself of the infection. This process of defense not only practically stops leucocytosis, but prevents the toxins from entering the blood stream, except in limited quantity, which results in the formation of protective substances and only partial immunization. Protective substances are not generated in sufficient quantities to prevent reinoculation; hence the continuance of the infection. The toxins of such an infection must enter the blood stream in safe quantities in order that protective substances may be elaborated to the degree of immunization. While the natural forces of resistance are spending their best efforts in walling off the infection, unable to produce immunizing substances from lack of specific toxic material, our assistance in artificial immunization is of unquestionable value at this time, which is demonstrated clinically.

One can readily see the utter uselessness of attempting to raise the patient's resistance to a given organism when the protective substances or leucocytes are unable to reach the organisms because of the stagnation of circulation in the area of infection. The absolute necessity for other therapeutic means here presents itself to the more successful management and cure of this type of infection. The drawing off of such stagnant fluid by excision and evacuation of the furuncle or carbuncle and the application of heat, or Bier's hyperemia, cupping to encourage bleeding, is advisable. Such means not only draw off the stagnant infected blood and lymph, but produce increased circulation of blood and lymph through the infected area. At this time the assistance brought about by a general raising of the blood resistance may be effected by bacterial inoculations.

In no other staphylococcic infections of the skin have there been such uniformly gratifying results as in multiple furunculosis and carbuncles. This method of treatment has a scientific basis and is rapidly replacing the older methods. It has been possible, in a number of instances, to compare the efficiency of the polyvalent suspensions with that of autogenous suspensions, observations being assisted by patients, who were physicians. Rarely has a new lesion developed after the first inoculation has been administered. A partially developed lesion can often be dwarfed, and within forty-eight hours all pain and discomfort to the patient will have subsided.

In order to ascertain just what percentage of the cases were recurrent, I recently reviewed the histories for the last two years of patients given polyvalent suspensions: I was surprised to find that there had been only three recurrences out of twenty-eight cases of multiple furunculosis. It was also of interest to note that the three patients who suffered recurrences were those to whom no more than two inoculations had been administered. Undoubtedly, only partial immunization had been effected. Previous to this treatment, at least 90 per cent. of these cases had been the chronic recurrent type, and for a period of two years there have been no recurrences of cases who were given four or more inoculations.

Comparing our knowledge of immunization brought about in other infectious diseases, at least four inoculations seem necessary to insure against recurrence.

It is important to instruct the patients when inoculations are given to take precautions against fatigue. The negative phase will then be less pronounced, and the positive phase prolonged. The beneficial effects of inoculations can be completely destroyed by prolonging the negative phase by fatigue, alcoholism, menstruation, or any intemperate indulgence, and new lesions may develop.

CONCLUSIONS

Polyvalent staphylococcic stock suspensions administered in appropriate doses have a decided therapeutic value in a group of localized, rebellious infections of the skin. Their administration is practically without danger, bringing about prompt cessation of the active infection and immunizing the patient against a recurrence of the infection for a more or less prolonged interval.

Clinical observations act as guides to the time for reinoculation and the size of dose to be administered.

The appropriate standards for size and frequency of doses have been previously established from opsonic estimations on laboratory patients with like infections, and are not necessary for each specific case.

Failure to immunize the patient artificially may be due to an abnormal condition of the skin, non-specific bacterial suspensions, or incorrect dosage.

Much time is saved in the use of stock suspensions by the elimination of opsonic indices and by the assistance derived from other therapeutic measures.

Less suffering, less deformity, less danger of systemic infection, and less liability to recurrence are the advantages derived from the use of bacterial suspensions as a therapeutic agent.

I am especially indebted, and wish to express my thanks to L. T. Clark, B.S., of the Research Laboratory of Parke, Davis & Co., for bacteriologic assistance and suggestions.

Washington Arcade.

ABSTRACT OF DISCUSSION

Dr. M. L. Heidingsfeld, Cincinnati: I have been more than favorably impressed with the results which I have secured from vaccine treatment in furunculosis, acne, sycosis and various forms of dermatologic affections complicated with secondary impetiginous infection. I have been induced to take up this form of treatment, largely by the favorable results which I have obtained in genitourinary work with gonococcus vaccine. I have had no experience with polyvalent stock vaccine, as my work has been entirely limited to monovalent vaccine as supplied by various wholesale drug houses and with autogenous preparations. I believe that the vaccine treatment will have a future field of great value and usefulness in a host of dermatologic affections of infectious nature.

Dr. John A. Fordyce, New York City: I would like to put on record two cases of infection of the skin in which the autogenous vaccines were used with good results. One was a case of vegetating dermatitis, with abscesses, in which the *Staphylococcus albus* was found. An autogenous vaccine was used for a number of months, and the patient improved remarkably, many of the abscesses disappearing. The patient gained eighteen pounds in weight, but finally reached the stage where improvement ceased. The second case was one of general infection with the *Staphylococcus aureus*. There were vegetations of the scalp and lower extremities, and from these lesions cultures of the organism were made. An autogenous vaccine was used, and the patient improved very much.

Dr. A. Ravogli, Cincinnati: I had a case of sycosis folliculitis, which proved extremely obstinate, and in which I resorted to injections of vaccines of the *Staphylococcus albus* and *S. aureus*. The injection was followed by a very marked reaction. The patient developed a temperature of 102.5 F., which lasted about twelve hours, perhaps longer. Following this, the eruption began to improve, the pustules almost drying up. Then there was a recurrence of the pustular lesions and a second injection was given. In spite of the fact that the dose was increased, the reaction was not so marked as in the first instance. Following this the pustules again partly dried up, and the patient left the hospital, but returned in a worse condition than before. Further injections were tried, but as they did not prove beneficial, they were stopped, and external remedies were substituted.

Dr. Alfred Potter, Brooklyn: We have had some experience with the vaccines in Dr. Winfield's service at the King's County Hospital in Brooklyn in the treatment of pustular and pemphigoid conditions. In one case of bullous eruption, of the hemorrhagic type in which we isolated a bacillus of the colon type, the patient was apparently going to die, but recovery took place under the vaccine treatment.

Dr. Henry H. Hazen, Washington, D.C.: In the dermatologic department of the Johns Hopkins Hospital we have used vaccine treatment in about twelve cases a week. In one case, that of a student with an eruption of the nose resembling pustular acne, we first tried the staphylococcus vaccine without effect, then a vaccine made from the acne bacillus also without effect. A culture was made, showing an unidentified bacillus, and under the use of a vaccine prepared from this rapid improvement resulted. I believe that one reason why we frequently have poor results from a stock vaccine is that the eruption is due to a different organism. I feel that if stock vaccines do not work we should make a culture from the lesion and prepare our vaccine from this.

Now, a word as to the use of Bier's hyperemia in conjunction with the vaccine treatment. The reason for using a vaccine is as follows: The lesion is so localized that the toxins from it do not enter the general circulation sufficiently to stimulate the body cells to the production of the necessary amount of antitoxin. Vaccine, however, enters the general circulation and causes the production of antitoxin. Now, if the necessary amount of toxin can not get to the body, it is also probable that the necessary amount of antitoxin can not get to the lesion, but a cup will bring much more serum to the part, hence more antitoxin.

Dr. H. R. Varney, Detroit: In testing the clinical value of this suspension, I confined its application to the treatment of furunculosis in order to determine, so far as possible, its efficiency. My experience with the use of the stock vaccine in acne has not been uniformly good. The infection is too often secondary to an abnormal condition of the skin, and while one may get temporary improvement, recurrences are most likely to take place. The most important question in connection with this discussion is: Can we simplify our technics so as to use a stock suspension? In the report which I made two years ago I stated that autogenous vaccines were more efficacious than the stock vaccine. In one of my cases (that of a physician who has long been a sufferer from boils) I had a special autogenous vaccine made. This was tried, with several recurrences, but the patient had not further recurrence after three inoculations of the *Staphylococcus aureus* suspension composed of 23 strains. I am strongly in favor of aiding the vaccine treatment by increasing the blood supply to the parts by the Bier hyperemic cupping method.

The age of the vaccine is a very difficult point to determine. The fact that one patient responds as readily to a vaccine that is six months old as another does to a freshly made vaccine does not throw much light on the value of the age of the vaccine, and *vice versa*.

Traveling Cooking Schools.—In Germany, to teach peasants how to cook cheaply and well, traveling cooking schools are sent about. When we secure a national health department this can be looked forward to in this country—as well as traveling schools of instruction on many other subjects related to the health of the people.

CHLOROFORM RATHER THAN ETHER ANESTHESIA IN TUBERCULOSIS *

JOSEPH WALSH, M.D.
PHILADELPHIA

Ether has been the anesthetic for so many years along the northeastern coast of the United States that it is almost heresy to even discuss it; yet experience seems to show that it is either very irritating to the lungs or stimulating to a tuberculous process in the lungs and hence should not be used when there is question of pulmonary tuberculosis. Surgeons generally admit that ether is irritating to the lungs and yet they not only continue to administer it in cases of pulmonary tuberculosis, but also very rarely discuss the matter.

Wood's "Text-Book on Therapeutics" (thirteenth ed., 1906) recommends with Hewitt that in extreme emphysema, in chronic bronchitis attended by expectoration and dyspnea and in advanced pulmonary phthisis, chloroform or some other mixture containing chloroform should be employed. He adds that acute pulmonary disease especially contraindicates ether.

During the past six years I have never allowed my own patients with pulmonary tuberculosis to be operated on under ether when it was possible for me to prevent it. Moreover, all except one have been operated on under chloroform, and I have never seen any bad results that could possibly be attributed to this anesthetic.

During the same period I have seen a number of patients manifesting active tuberculosis of the lungs following operation, which activity appeared from a study of the history to be due either to the operation itself or to the ether anesthesia. The common operations in these cases were for enlarged glands of the neck, fistulas, appendicitis, enlarged tonsils and adenoids.

The following represent several cases taken from my records without selection which I had opportunity to examine and watch for some time before and after an operation with anesthesia:

ETHER ANESTHESIA

Case 1.—*History.*—A woman, aged 27, had four attacks of appendicitis before I saw her Sept. 12, 1906. Her brother had at the time advanced tuberculosis of the lungs. She showed a very small lesion slightly active at the right apex and some wasting, weighing only 109 pounds when her normal weight was 129. In the next three months she improved to practically perfect well-being and on Dec. 11, 1906, was operated on for appendicitis under ether anesthesia. I have never been able since to get her in as good condition as she was before the operation, and in the meantime the lesion at the right apex has increased so that it is now definitely down to the second rib.

Case 2.—*History.*—A case of Dr. Stanton's which I also saw several times and which is quite typical is as follows: A woman, aged 25, was perfectly well till she developed ischiorectal abscess. The ischiorectal abscess was operated on one year ago under local anesthesia and later a radical operation was done under ether. Within three days the temperature had risen to 103 F., she began to spit blood, and since, tuberculosis of the lungs, which was then first noticed, has greatly advanced. She is now in a practically hopeless condition.

CHLOROFORM ANESTHESIA

Case 1.—*History.*—A woman, aged 21, was first seen Nov. 4, 1902. She had an infiltration of the upper half of the upper lobe on each side and coarse moist râles all over both lungs. She expectorated profusely and her sputum contained an innumerable number of tubercle bacilli for a year and a half after I first saw her. While those signs remained practically the same, but after she had definitely increased in weight and was in pretty good constitutional condition she developed, Sept. 7, 1903, an abscess of the breast (probably tuberculous), which was opened and radically cleaned out under chloroform anesthesia without the slightest bad symptom following. The patient came to my office ten days later and continued her treatment, and for the past two years she has been entirely well, without active physical signs in the chest, and without any cough or expectoration. On account of the intense irritation already manifested in both lungs I should have expected this patient to do very badly under ether.

Case 2.—*History.*—A woman, aged 29, was first seen on Jan. 24, 1905. On May 23, 1905, she developed tuberculosis, apparently having contracted it from her husband, who was in an advanced stage. Her lesion was at the right apex and was definitely apparent and active. She became entirely well, and in January, 1908, developed appendicitis. She was operated on under chloroform, was out of the hospital in fourteen days, and since then has manifested no pulmonary irritation. In this case the lung condition was apparently cured or at least quiescent when she underwent the operation.

Case 3.—*History.*—A woman, aged 25, was first seen Feb. 16, 1903. She had infiltration of the top of both lungs extending to the second rib with some dissemination. She went to the White Haven Sanatorium, became entirely well and was a nurse there for two years, when she developed pneumonia. It took a year to get over the pneumonia and its toxic effects. Three months later she developed acute appendicitis, for which she was operated on under chloroform anesthesia. She was out of the hospital in two weeks and has never had any symptoms since.

Case 4.—*History.*—A woman, aged 24, was first seen Aug. 18, 1904. She had markedly enlarged right cervical glands, cavity at the top of the right lung and infiltration of the upper half of the left upper lobe. Was operated on for the enlarged cervical glands shortly after I first saw her under chloroform anesthesia. She became sufficiently well to enter the Phipps Hospital Training School, where she remained for a year, when she broke down from overwork and eventually died. The chloroform anesthesia, however, appeared to have rather a good than a bad effect.

NITROUS OXID GAS ANESTHESIA

Case 1.—*History.*—A man, aged 18, was first seen in March, 1908, at the White Haven Sanatorium. History showed that pulmonary symptoms first developed in April 1907. The physical signs were those of tuberculous infiltration of the upper half of the right upper lobe. About three weeks after admission to the sanatorium he developed a large ischiorectal abscess which was opened. A radical operation was performed under nitrous oxid gas on Aug. 1, 1908. The abscess was very large, making the operation correspondingly serious. He continued to improve exactly as before the operation, never showed the slightest activity after the operation and left the White Haven Sanatorium with the "disease arrested" at the end of September, 1908, and since then has remained in perfect condition.

The mere statement of the cases makes it appear that chloroform might even be somewhat curative, and this has been asserted by some, especially Holmes and Woodcock of London. I am not ready, however, to advocate chloroform in the cure, but do believe that in case of necessary operation with anesthesia, chloroform should be the anesthetic and not ether. Moreover, chloroform should be administered, not only in all cases of tuberculosis of the lungs, but in all cases in which tuberculosis of the lungs may be suspected, like, for instance, cases that manifest tuberculosis elsewhere, as in the cervical glands, in the ischiorectal region, etc.

732 Pine Street.

Peritonitis Patients.—E. C. Rich, in *Denver Medical Times and Utah Medical Journal*, says that it is a well-established fact that patients with peritonitis stand short operations well, but long ones very badly.

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* Read before the Fifth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis, Washington, D. C., May, 1909.

ANATOMY AND PHYSIOLOGY OF THE TONSIL *

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CHICAGO

The tonsils are two masses of lymphoid tissue placed one in each tonsillar fossa and projecting into the oropharynx. They are oblong in shape with the long axis vertical. They are from 1.75 to 2.5 cm. in length and from 1.5 to 2 cm. in transverse diameter. In children under the age of eight they are usually larger, from 2.5 to 3 cm. in long axis by 1.5 to 2.5 in transverse diameter. They are covered by stratified epithelium of the mucous membrane and their pharyngeal surface is marked by small apertures which indicate the openings of the crypts. The epithelial lining of the crypts is reflected from the surface covering.

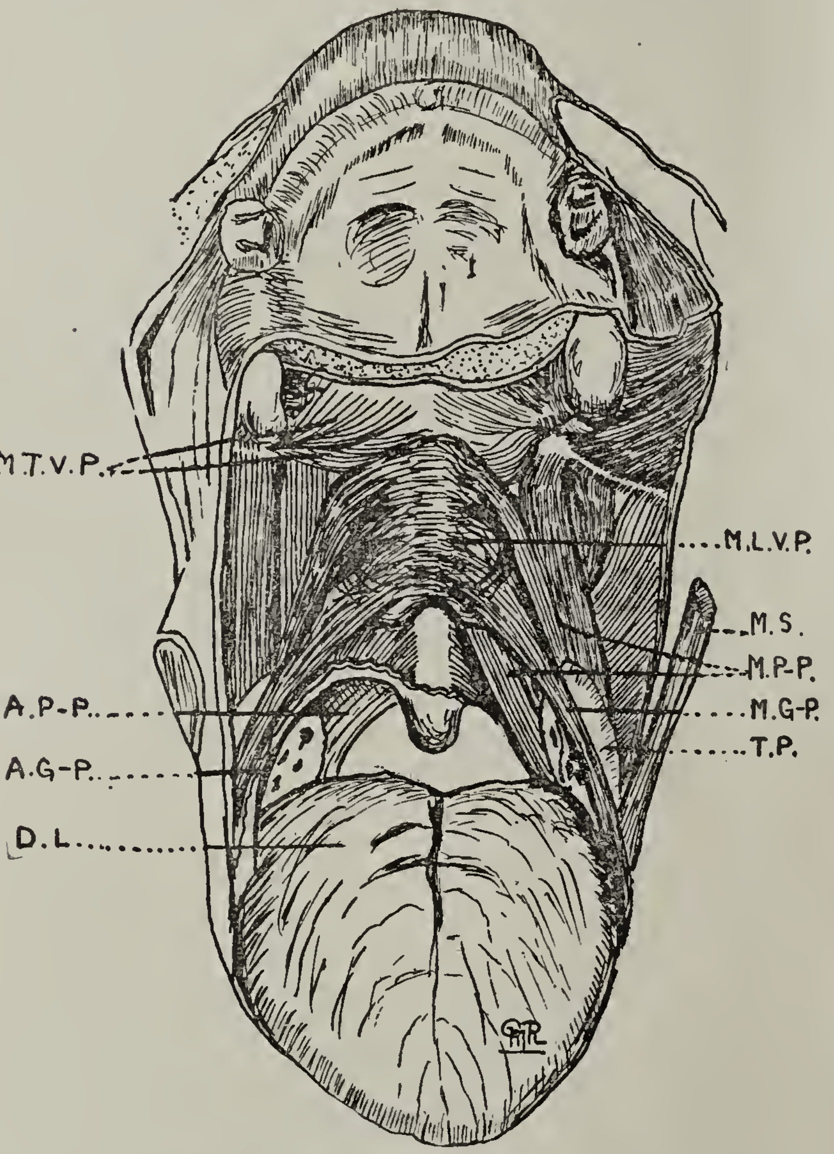

Fig. 1.—Showing anterior pillar (after Toldt) : M. L. V. P., M. levator veli palatini ; M. S., M. styloglossus ; M. P.-P., M. pharyngopalatinus ; M. G.-P., M. glossopalatinus ; T. P., tonsilla palatina ; M. T. V. P., M. tensor veli palatini ; A. P.-P., arcus pharyngo-palatinus ; A. G.-P., arcus glossopalatinus ; D. P., dorsum linguæ.

The tonsils are composed almost entirely of lymphoid tissue which at intervals is aggregated into lymph nodes in which the lymph cells are more intimately arranged than elsewhere. The lymphoid tissue is surrounded by a dense capsule of connective tissue and the gland is divided into pockets by the trabeculæ, which are composed of connective tissue. The tonsil is part of the lymphatic circle which surrounds the oropharynx, called Waldeyer's ring.

In the neighboring part of the pharynx near the Eustachian tube, the upper part of the pharynx and the base of the tongue, there are masses of lymphoid tissue similar in structure to that of the tonsil, which also contain crypts.

FORMATION OF THE TONSIL

The tonsil makes its appearance about the fourth or fifth month of gestation. At birth it is a gland from 0.5 to 1 cm. in its long axis and from 0.25 to 0.5 cm. in lateral dimension. It develops as the child grows, reaching its full size between the sixth and eighth year of life. After this period it begins to atrophy and has disappeared by the twelfth year. At birth it is enclosed in the tonsillar fossa, being completely covered by the plica tonsillaris. Shortly after birth this membrane disappears, leaving the inner surface of the gland exposed to the oropharynx.

It is small at birth as compared with the thymus or thyroid gland. It is formed in the fetus by an invagination of the hypoblast which forms the capsule and the trabecular pouches or areas. The epiblast extends down into these trabecular areas and forms the crypts around which lympathic tissue develops.

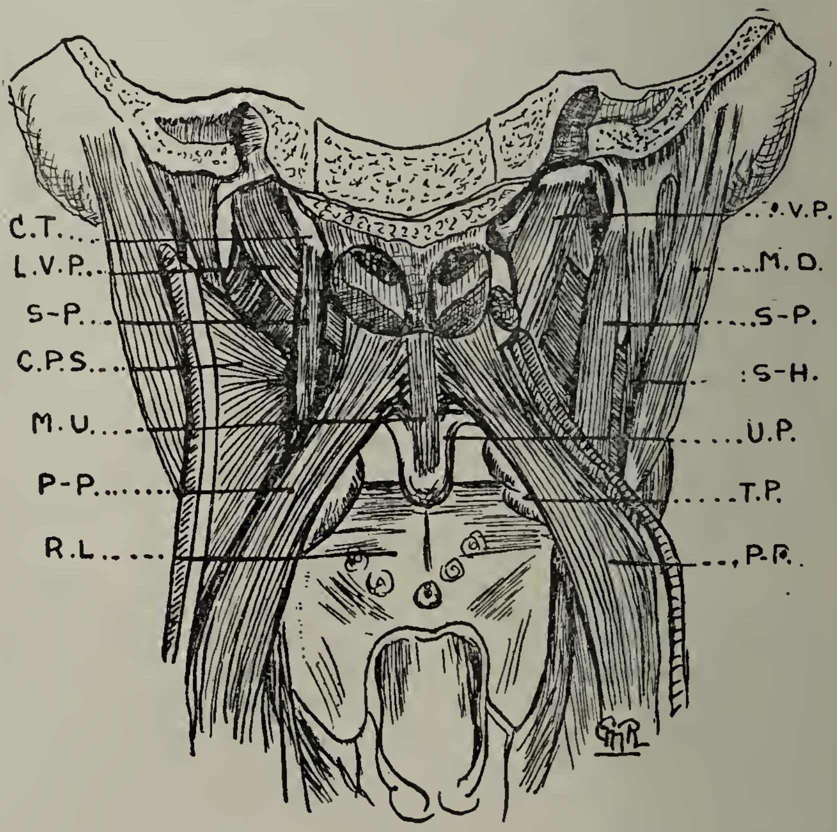

Fig. 2.—Showing posterior pillars (after Toldt) : C. T., cartilago tubæ ; M. L. V. P., M. levator veli palatini ; M. S.-P., M. salpingopharyngeus ; M. C. P. S., M. constrictor pharyngis superior ; M. U., M. uvulæ ; M. P.-P., M. pharyngopalatinus ; R. L., radix linguæ ; M. T. V. P., M. tensor veli palatina ; M. D., M. digastricus ; M. S.-P., M. stylopharyngeus ; M. S.-H., M. stylohyoideus ; U. P., uvula palatina ; T. P., tonsilla palatina ; M. P.-P., M. pharyngopalatinius.

ANATOMIC DESCRIPTION

The tonsil is situated between the anterior or glossopalatine fold and the posterior or palatopharyngeal fold. It is covered externally by the superior constrictor muscle. It does not completely fill the tonsillar fossa, there being a space above which is known as the supratonsillar space, or fossa, and it is sometimes found in unusual positions.

One case is reported in which the gland occupied a position on the posterior pillar just under the Eustachian tube. In two other cases the tonsil was attached to the posterior pharyngeal wall behind the uvula. In these cases the gland was pedunculated but contained well-defined crypts.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Palatal Pillars.—The anterior pillar is formed by the palatoglossus muscle, which is attached above to the aponeurosis of the velum and has its insertion in the tongue. Its action is to constrict the isthmus of the fauces and holds the tonsil back in place. The free edge is often attached to the tonsil by inflammatory adhesions from repeated attacks of tonsillitis. It may vary considerably in thickness and appear as a rough red membrane, with the outline indistinct or irregular. In other types it may appear so thin as to be almost transparent. At times the anterior pillar is found attached to the posterior pillar by a thin membrane which may be complete or partial, which is the remains of the plica tonsillaris (Fig. 1).

The Posterior Pillar.—This tissue is formed by the mucous membrane fold in which is contained the palatopharyngeus muscle. This muscle arises in the soft palate with fibers from its fellow of the opposite side. It passes partly above and partly below the levator palati and azygos uvulæ muscles. After forming the posterior pillar of the fauces the internal fibers are inserted into the pharyngeal aponeurosis and the external fibers pass forward to be inserted into the posterior border of the thyroid cartilage. The action of this muscle is to contract the isthmus of the fauces and to lift the soft palate. During inspiration the two pillars meet or nearly meet in the median line, thus shutting off the oral cavity from the respiratory tract (Fig. 2).

Plica Tonsillaris.—Some authors divide this membrane into two parts, the plica supratonsillaris and the plica triangularis. In truth the plica supratonsillaris is only a remaining part of the plica tonsillaris. The term plica triangularis should be discontinued because this membrane is not triangular in shape. Plica tonsillaris gives a better understanding of the correct significance of the membrane, which at birth is a normal embryonic tissue but which should completely disappear before the second year. If present after this age it is an abnormal remnant. When the plica tonsillaris does persist it is a continuation of the edge of the anterior pillar and may join the two pillars above, forming a band or fold over the upper part of the tonsil. The most common manifestations, however, are those tonsils which have the anterior edge covered by this membrane to a greater or less extent. It is impossible in many cases to define the edge of the anterior pillar.

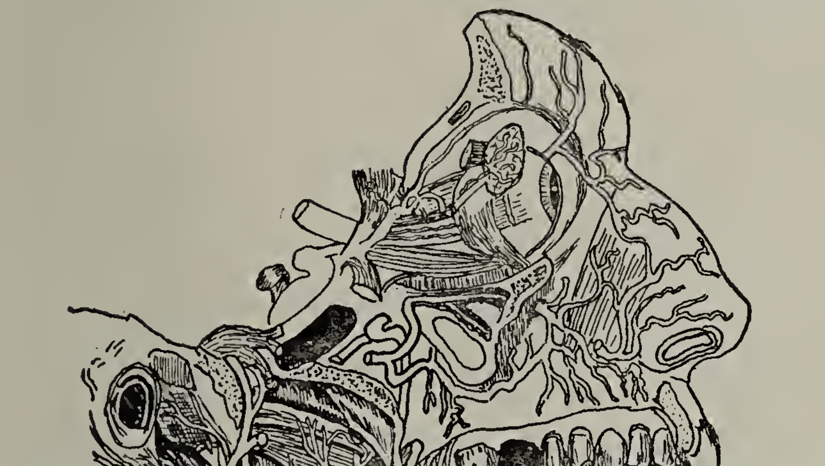

Fig. 3.—A. P. D., A. palatina descendens; A.-T., A. tonsillaris; A. M. E., A. maxillaris externa; A. L., A. lingualis; A. P. A., A. palatina ascendens. (Modified after Toldt.)

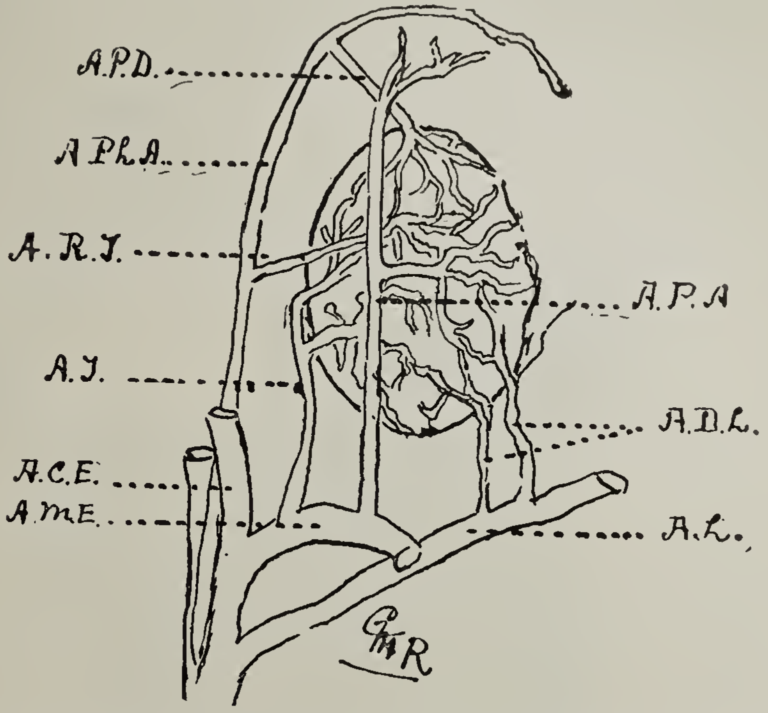

Fig. 4.—Schematic circulation circle of tonsil: A. P. D., A. palatina descendens; A. Ph. A., A. pharyngea ascendens; A. R. T., A. ramus tonsillaris; A. T., A. tonsillaris; A. C. E., A. carotis externa; A. M. E., A. maxillaris externa; A. L., A. lingualis; A. D. L., A. dorsalis linguæ; A. P. A., A. palatina ascendens.

In 1906 I read before this Section a paper describing the common types of this membrane, mentioning, among others, a case in which the membrane completely covered the tonsil in an adult.[1]

Supratonsillar Fossa or Recessus Palatinus.—The supratonsillar fossa is a triangular, conical space with the apex outward, and when normal represents a considerable cavity above the tonsil. Its walls are formed by the anterior and posterior pillars, while the floor is formed by the superior surface of the faucial tonsil. It varies in size in different individuals and may differ from the fossa of the opposite side. It may extend downward and outward, external to the tonsil, or up and outward into the soft palate. There may be sinuses extending off from this space in one or more directions. This fossa is of importance from the fact that there are crypts emptying into this space and when the communication with the pharynx is imperfect or absent a collection of caseous material may be extruded from the tonsil, held in this space. This condition is the great cause of the infections which pass through the gland into the cervical lymphatics, and also the cause of the different types of quinsy from decomposition of this extruded material held in the supratonsillar space.

CAPSULE OF THE TONSIL

The tonsil has a capsule extending from the free edge of the pillars covering the external surface of the gland which furnishes support as well as an investing covering. This capsule is composed of connective tissue about 1 mm. in thickness and is smooth on the external surface. From this capsule bands of connective tissue called the trabeculæ are given off, which extend to the inner surface of the gland dividing it into spaces called the trabecular areas. In these trabecular bands lie the vessels, nerves, mucous ducts and lymph channels.

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[1] Faucial Tonsils, The Journal A. M. A., 1906, xlvii, 1725.

In some of the lower animals we find muscular tissue in these bands, but not in human beings.

Trabecular areas are supposed to be separate and distinct spaces, although Beck has injected bismuth paste into one crypt and has seen it communicate with four or five other trabecular spaces.

The youngest patient was eight years of age, while all the others were adults. This communication between crypts is at variance with my experience and I am inclined to the belief that the phenomenon observed by Beck is pathologic.

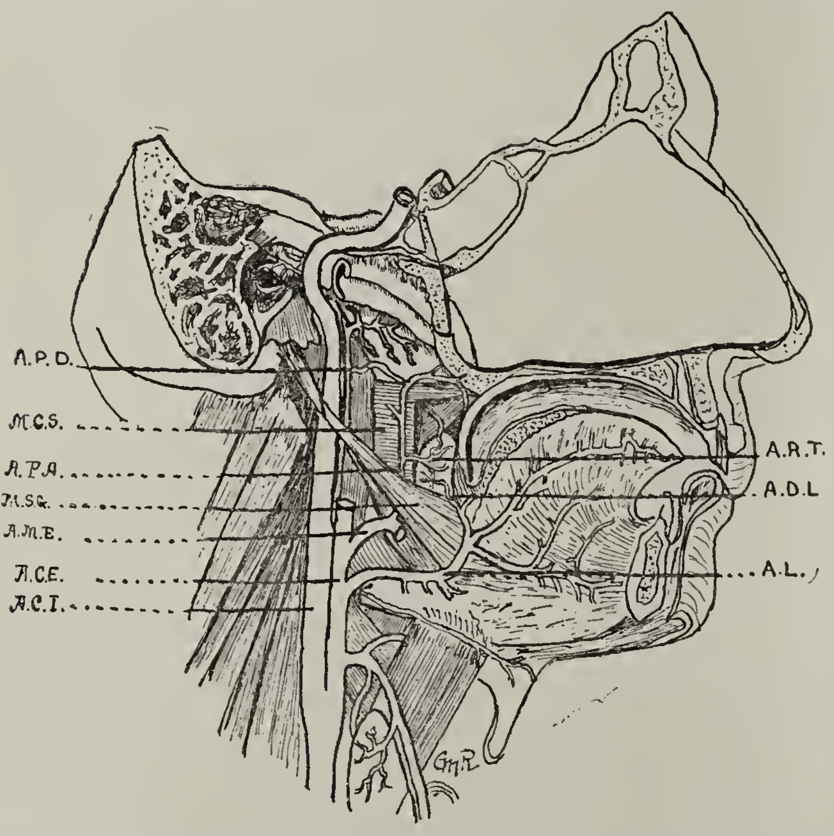

Fig. 5.—A. P. D., A. palatina descendens; M. C. S., M. constrictor superior; A. P. A., A. palatina ascendens; M. S. G., M. styloglossus; A. M. E., A. maxillaris externa; A. C. E., A. carotis externa; A. C. I., A. carotis interna; A. R. T., A. ramus tonsillaris; A. D. L., A. dorsalis linguæ; A. L., A. lingualis. (After Toldt.)

CRYPTS

The crypts vary in number and length. Some authors place the number at from fifteen to eighteen. I have seen many tonsils which had as few as four or eight. The number depends upon the size and condition of the tonsil examined. In the upper half of the tonsil the crypts are longer, usually extending downward and outward to the capsule on the external surface of the gland. Those opening below the middle of the gland extend outward or outward and upward. They are much shorter than the upper crypts. The upper crypts, especially those which empty into the supratonsillar fossa, are usually filled or partially filled with caseous material, while those emptying directly into the pharynx are seldom found with material in the crypt. This fact is easily explained by remembering that when swallowing the tonsils are squeezed by the palatal and superior constrictor muscles. This empties the crypt of material if there be no obstruction at its mouth, in which case the material cannot escape from the pressure of the obstruction.

If there be a tonsil which fills the supratonsillar fossa or a plica tonsillaris covering over the crypt walling the supratonsillar fossa off from the pharynx the material in the crypt can not be expelled, or if expelled is held in the supratonsillar fossa, and in this case it follows the line of least resistance, which usually is deeper into the crypt. Thus there may be a crypt, or number of crypts, enlarged at the distal end, or branching sinuses may be produced. This would perhaps account for the bismuth paste finding its way into three or four different crypts, as seen by Beck.

The crypt is lined by stratified epithelium. This membrane is much thinner than the surface membrane, and some observers assert that it disappears in the extreme depth of the crypt. At places in pathologic glands this crypt lining is very thin, from the presence of great numbers of lymphocytes, which seem to separate the lining membrane cells. The subepithelial tissue is also lost in the crypt, the lymphoid cells coming in direct contact to the crypt wall.

BLOOD VESSELS OF THE TONSILS

The blood supply of the tonsil is derived from (a) the tonsillar artery, which is a branch of the external maxillary near its origin from the external carotid; (b) from the ascending pharyngeal, which is given off from the external carotid just above the bifurcation of the common carotid; (c) from the ascending palatine, a branch of the external maxillary; (d) from the dorsalis linguæ by one or two branches from the lingual.

These arteries supply the tonsil and tonsillar space as follows:

(*a*). The tonsillar artery is given off from the external maxillary, a branch of the external carotid (Figs. 3 and 4). It passes upward and forward under the jaw and the internal pterygoid muscle and under the styloglossus into the loose fatty tissue of the pharyngomaxillary space. At or below the middle of the tonsil the artery gives off a branch which passes to the buccopharyngeal fascia which covers the superior constrictor muscle externally. Here the artery divides into a superior and an inferior branch. These two branches pass through the superior constrictor muscle and divide on the capsule of the tonsil into numerous ramifying branches, which enter the tonsil along the trabecular bands. In hypertrophied tonsils this artery is sometimes large and may cause troublesome hemorrhage.

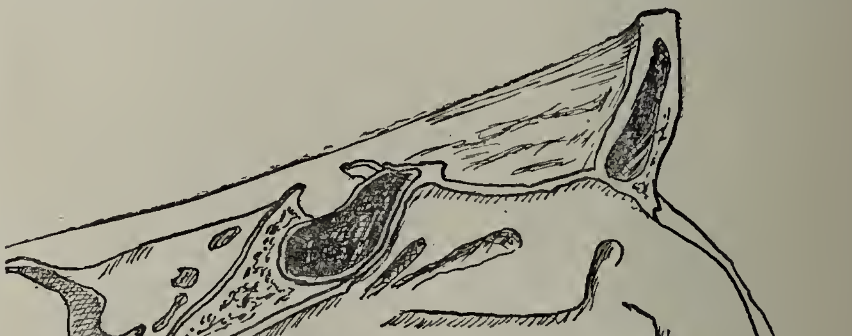

Fig. 6.—T. P., tonsilla palatina; A. P. A., A. palatina ascendens; P. T. A., pillaris tonsilla anterior; R. T., ramus tonsillaris; M. L. V. P., M. levator veli palatini. (After Toldt.)

(*b*). The ascending pharyngeal is a small branch of the external carotid. It is a long, slender vessel, deeply seated in the neck beneath the other branches of the external carotid and the styloglossus muscle. It arises from the back part of the external carotid near the origin of the vessel and passes up to the under surface of the base of the skull, ascending the neck between the internal carotid and the side of the pharynx, lying on the rectus capitis anticus major muscle. It gives off a tonsillar branch opposite the tonsil which passes forward on the superior constrictor muscle, which it pierces and then divides into ramifying branches on the tonsil.

It also sends branches to the Eustachian tube and soft palate. Above the edge of the superior constrictor muscle it gives off the descending palatine which passes under the constrictor muscle and anastomoses with the ramifying branches of the tonsillar or ascending palatine artery (Figs. 3, 4, 5).

(*c*). The ascending palatine, a branch of the external maxillary, passes up between the styloglossus and stylopharyngeus to the outer side of the pharynx, after supplying these muscles, the tonsil and the Eustachian tube (Figs. 5, 6). It divides near the levator palati into two branches; one follows the course of the tensor palati, supplying the soft palate and palatine glands, the other passing to the tonsils, which it supplies, the branches anastomosing with the tonsillar artery when present and descending palatine branch of the ascending pharyngeal.

(*d*). The dorsalis linguæ arises from the lingual artery at the anterior margin of the hyoglossus muscle, ascending to the dorsum of the tongue. It supplies the mucous membrane of the tonsil, the palatine pillars and the epiglottis, anastomosing with its fellow from the other side and the ascending palatine or tonsillar artery (Figs. 4, 7, 8).

ANATOMIC RELATIONSHIPS

The tonsil is in relation in front, with the anterior pillar; internally, with the oropharynx; above, with the supratonsillar space; externally, with connective tissue external to which lies the superior constrictor muscle of the pharynx. "The pharyngomaxillary space lies external and behind the tonsil. The "pterygopharyngeal space[2] is an irregular conical space, more or less triangular in cross section (Fig. 9). It contains a varying amount of fatty areolar tissue, in which lie the ascending palatine and tonsillar arteries. It is bounded externally, by the internal pterygoid muscle; internally, by the wall of the pharynx; posteriorly, it communicates with the fatty tissue of the pharyngomaxillary space which lies adjacent to the posterolateral wall of the pharynx. In the pharyngomaxillary space lie the internal and external carotid arteries, the internal jugular vein with its branches, the vagus and hypoglossus nerves and the styloid muscles. The tonsil rests on the medial side, and is therefore separated by the fascia and fat of the space from the pterygoid muscle and mandible against which it is pressed."

The internal carotid lies backward from the tonsil at a distance of 1.5 cm. and the external carotid backward and outward at a distance of 2 cm. They are therefore separated from the tonsil by the superior constrictor and the stylopharyngeus and to some extent the styloglossus muscle (Figs. 1, 2, 9).

The Eustachian Tube.—The Eustachian tube lies just above and a little behind the tonsil at a distance of 1 to 1.5 cm. and in cases of hypertrophy of the gland upward and outward it often extends along the course of the tube, causing tubal occlusion or inflammatory reaction by continuity of tissue (Fig. 2). This is a frequent cause of tinnitis aurium.

CERVICAL LYMPHATICS

The tonsil has for its afferent lymphatics the deep branches from the nose and some branches from the tongue. The efferent branches empty into both superficial and deep cervical chains through the peritonsillar glands which lie external to the internal jugular and in close relation to it. (This chain encircles the jugular.) These glands can be demonstrated in children as the glands commonly removed by surgeons for tuberculosis. The lymph from this chain of glands is emptied into the jugular trunk, which, with the lymph from the subclavian trunk, is emptied directly or by means of the thoracic duct into the vena cava. There are numerous anastomotic branches between these glands, and the flow of lymph is not always in one direction. It may flow in any direction, seeking the line of least resistance through these anastomotic branches. This accounts for infection being carried differently at different times. If the current were constant in its direction infection would travel in one direction only.

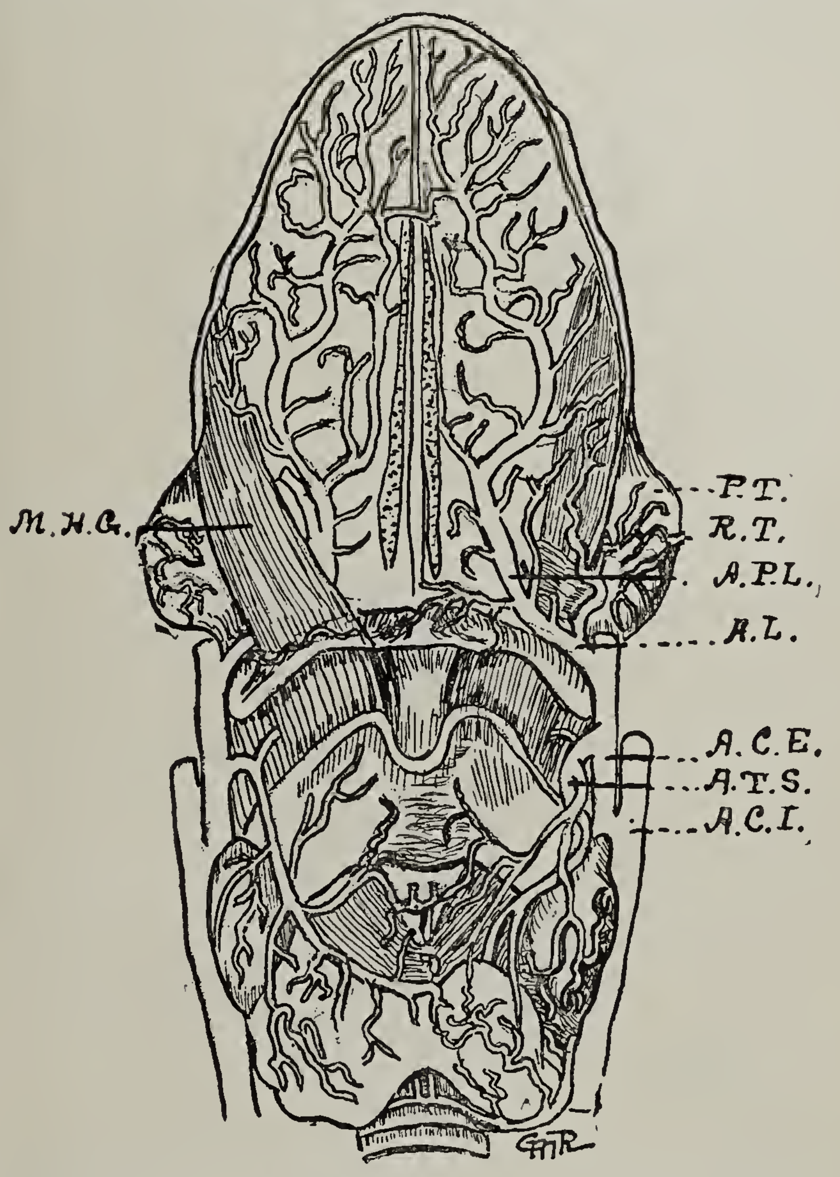

Fig. 7.—M. H. G., M. hyoglossus; P. T., tonsilla palatina; R. T., ramus tonsillaris from A. palatina ascendens; A. P. L., A. profunda linguæ; A. L., A. lingualis; A. C. E., A. carotis externa; A. T. S., A. thyroidea superior; A. C. I., A. carotis interna. (After Toldt.)

PHYSIOLOGY OF THE TONSIL

The true function of the tonsil has to do with early life and at birth the gland is so small as to be unimportant. It attains its full development by the sixth or eighth year and then begins to atrophy. By the age of twelve or fourteen it has completely disappeared or shows as a hypertrophied or a cicatricial mass between the palatine pillars. Any tonsil which is visible to any marked degree later than this may be considered as a morbid growth due to disease.

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[2] Wilson: Anatomy and Physiology of the Tonsil, The Journal A. M. A., May 26, 1906, xlvi, 1593.

It has been stated by some writers that children with adenoids and enlarged faucial tonsils are backward mentally. In a report of examinations of school children those of certain ages were compared both as to the presence of lymphatic growths and the grade obtained in school. It was determined that at the age of six 40 per cent. of children had adenoids and tonsils; those at the age of eight, 32 per cent.; those at the age of ten, 20 per cent., and those who had reached the age of twelve had 15 per cent. Therefore, if children of six years of age be compared with those of eight, we will find 8 per cent. more having adenoids and tonsils than those at eight years. Children at eight years will have 12 per cent. more than those at ten, while those at ten will have 5 per cent. more than those at twelve years. The backward student will have a less percentage than his associate in school who is younger and brighter in his school work. This statement must be modified, however, because students of eight years will be few in number and of these few probably all will show the presence of adenoids and tonsils, which might prove the child with these growths was really backward.

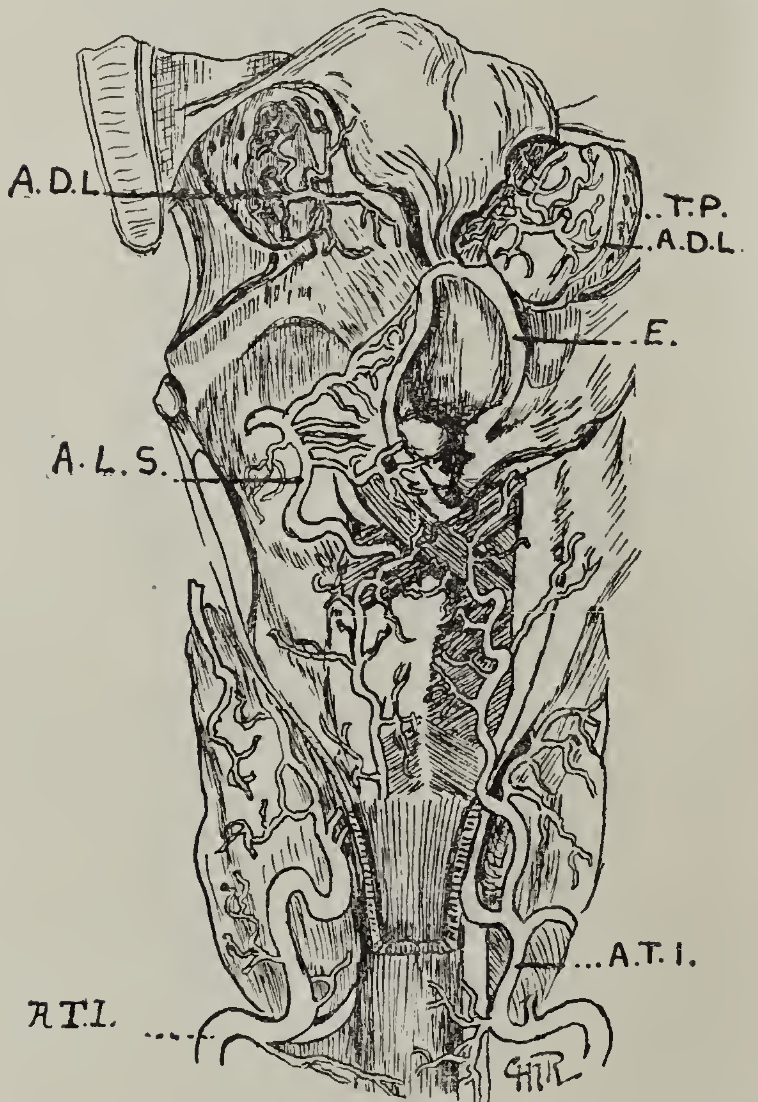

Fig. 8.—A. D. L., A. dorsalis linguæ; A. L. S., A. laryngea superioris; E., epiglottis; T. P., tonsilla palatina; A. T. I., A. thyroidea inferioris. (After Toldt.)

Clinically, nearly all children at six have adenoids and tonsils; at eight, probably 85 per cent.; ten, 35 per cent., and at twelve, about 15 per cent.

It has always been understood that the tonsil was responsible for most of the diseases of childhood and many of the circulatory, respiratory, as well as nervous diseases.

It is probable when the child has a pathologic condition of this structure that all kinds of infections may occur. The tonsil can be infected by cultures applied on the investing membrane and more easily by introduction of bacteria into the crypts where the mucous lining is less of a barrier on account of its thinness. Various infections may be traced to the tonsil as a portal of entry, but this phase of the subject is not in the scope of this paper. Some authors claim the tonsil as a part of the digestive tract, basing their view on the idea that in respiration, unless the gland is pathologically hypertrophied, the tonsil is cut off from the ingoing current of air; because when the mouth is closed in the act of respiration the tongue is pressed back and the posterior pillars contract so that they nearly, if not quite, meet in the middle line. This presses the faucial tonsil against the base of the tongue and covers it by the posterior pillars, so that the ingoing current of air does come in contact with it.

It is said that the lymphocytes pass into the stomach, having escaped from the tonsillar crypt, and in the stomach become the salivary follicles aiding in digestion. It is also said that particles of food are forced into the tonsillar crypt during deglutition and here act as irritants, being partially at least digested in this place, or produce, as a result of their influence on the tonsil, the production of antibodies or antitoxins.

In contradiction to this theory it is found that if pieces of healthy tonsils are ground with water and the solution filtered the fluid produced will have no effect on albumin or beef broth, showing the absence of enzymes in the product of the tonsil, and therefore that the digestive function is *nil*. The same fluid placed in a test tube with typhoid or the commoner forms of germs all have a like turbidity, showing the bactericidal property wanting.

One author has the idea that the endothelium in the crypt undergoes a transformation into lymphocytes which enter the tonsil from without inward, but this has never been proved to the satisfaction of others.

We are told by Stöhr that the true physiologic function of the tonsil lies in the lymphoid nodules. In these nodules the center, which is termed the germ center, breaks down, changing the lymphoid tissue into lymphocytes. These lymphocytes are migratory cells and escape into the crypt in quantity through the mucous membrane lining, and thus find their way to the surface of the gland, carrying with them digested bacteria and effete material—phagocytosis.

It is known that the presence of lymphocytes exercises no influence on bacteria unless aided by some more developed leucocyte. If there is inflammation or infection in a gland it is the function of the eosinophiles to pour out opsonins, after which the lymphocytes will march up in quantity, surround, digest and carry off the residue. It is probable that the eosinophile is a product of some organ other than the tonsil, so the tonsil can not be considered an organ of destruction for bacteria, as it cannot do this without the assistance of some other tissue, probably the spleen or bone marrow in which the eosinophile is formed, which seems essential to the phagocytotic function..

So far as I can learn, the physiology of the tonsil, as we know it, has been limited to the study for the most part of pathologic glands, and has not included the so-called normal tonsil, which marks its decline after the sixth or eighth year.

If the tonsil in a normal state is removed *in toto* there is no disastrous after effect, as in the case of the thyroid. On the other hand, the individual is improved in health; in the young this is simply from the fact that respiration is carried on in a proper way by not being impeded by a mass which acts as an obstruction.

After the age of six or eight years, when the function of the tonsil begins to disappear, the general condition of health is invariably improved by the removal of the gland. It is a common occurrence for these patients to gain one or two pounds a week after removal of the glands. This is produced in one of two ways; first, by the removal of an obstructing mass to respiration; second, by removal of an infecting focus.

It is probable that the lymphatics of the nose, nasopharynx and oropharynx, have some function with the formation of the face and the accessory cavities of the nose, and therefore it appears to me that their function is an ancestral or developmental one. This is reasoned from the fact that they are present *ad maximum* during the time when such changes are taking place. Thus at birth the superior maxilla is only partly formed. The orbit is well formed, as is the mouth, but the mouth lies almost in direct contact with the lower border of the orbit, the rudimentary teeth being the only tissue separating the two cavities. The body of the sphenoid bone is not developed, the sphenoidal sinus being a small cavity not more than 2 or 3 mm. in diameter; the ethmoidal cells are mere depressions in the middle turbinal; the frontal sinus can not be seen, as the two frontal plates have as yet not separated, and the antrum of Highmore is only a small slit 3 or 4 mm. in length, situated between the nasal cavity and the infraorbital foramen, just inward and below the orbit, while the nasal bones are simply small projections in the beginning of formation.

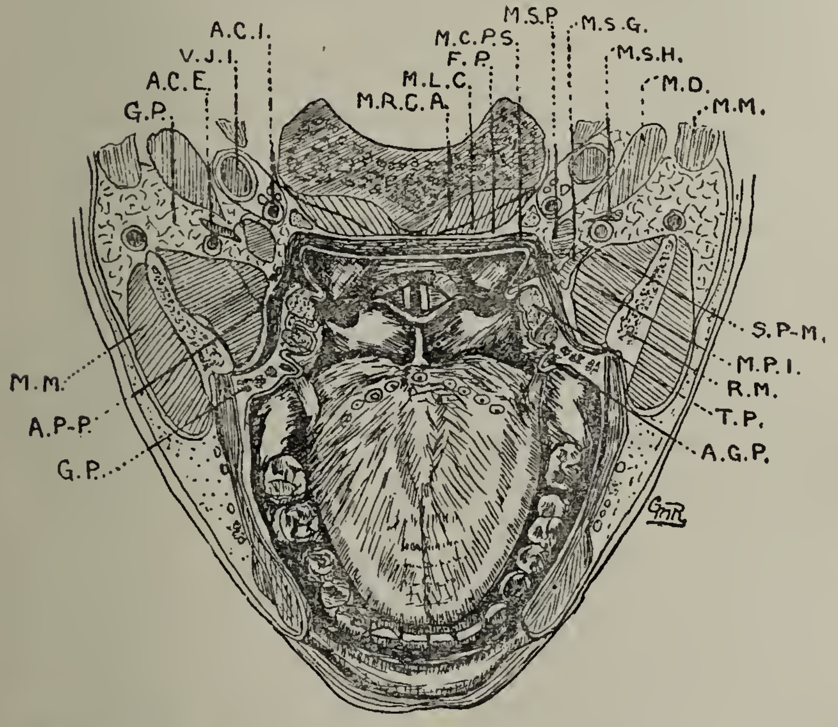

Fig. 9.—Showing relation of parts after Toldt): A. C. I., A. carotis interna; V. J. I., vena jugularis interna; A. C. E., A. carotis externa; G. P., glandula parotis; M. R. C. A., M. rectus capitis anterior; M. L. C., M. longus capitis; F. P., fascia prævertebralis; M. C. P. S., M. constrictor pharyngis superior; M. S. P., M. stylopharyngeus; M. S. G., M. styloglossus; M. S. H., M. stylohyoideus; M. D., M. digastricus; M. M., M. masseter; S. P. M., spatium pharyngomaxillaris; M. P. I., M. pterygoideus interna; R. M., ramus mandibulæ; T. P., tonsilla palatina; A. G. P., arcus glossopalatinus; A. P. P., arcus pharyngopalatinus.

It seems to me that the lymphatics of the nose, nasopharynx and oropharynx were occupied with the process of katabolism after the blood had at least in part finished the process of anabolism. In this manner the broken-down tissue finds its way into the deeper lymphatics of the nose and from thence through the postpharyngeal, tonsillar and submaxilliary glands into the general lymphatic current. It may also be possible that the tonsils are stimulated by this process into producing some substance which is given to the blood, which in turn regulates some function which is active at this period of tissue formation and absorption.

It is evident that if we are to ascribe any function to the glands it must be one which is active during the first part of the child's life or between the first and sixth or eighth year, at which period the gland has already passed its height of usefulness in the economy and is beginning to disappear by atrophy.

It is claimed that the tonsil, in particular cases, has come to have a function in modulating the voice. This, however, I look on as a mere matter of education, and the singer or speaker would have come to modulate the voice just as well without this gland as with it. On the other hand, we have all seen cases in which voice was increased in tone and volume by the removal of these growths. The richness of quality and volume of tone is often added to 100 per cent. after the enucleation, provided the pillars remain intact and are not bound down or together by cicatricial tissue. I have observed four patients in whom there was loss of voice who were relieved by removal of the tonsils. These individuals are usually affected in one register, more frequently the middle.

The removal of tonsils in the adult can not be studied in this connection, however, as the presence of such growths is a pathologic phenomena.

I still believe that tonsils after the sixth or eighth year of life are pathologic in their character and as such are productive only of detrimental influence in rendering the individual unable to cope with infections of various kinds, and thereby working a hardship to the general economy.

It is true that I am making a rather sweeping statement as regards the function of this gland and one which may bring much criticism by the members of the profession, but it seems to me the investigations so far as published by the various writers are of little value, having been observed from an erroneous viewpoint.

100 State Street.

CONDITIONS OF THE FAUCIAL TONSIL WHICH CALL FOR OPERATIVE INTERFERENCE*

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The conditions of the faucial tonsil which call for operative interference may be divided into two classes: (1) Simple hypertrophy causing interference with respiration; (2) diseased conditions of the tonsils themselves causing local or constitutional infection.

SIMPLE HYPERTROPHY

While tonsils have been removed from time immemorial—it was certainly done by the ancients—it is only of late years that much study has been given to the evils of mouth breathing and attention drawn to the improvement in the health and morale of children after proper breathing has been restored.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

It is by no means unusual to see children who are irritable and often possessed of vicious traits become gentle and kind, dullards to show a new vivacity and the slovenly youth to awaken to a sense of order and decency. Witnessing these results, we often hesitate to mention the lasting effects and often marvelous changes subsequent to tonsillar operation, lest we be considered too enthusiastic.

This subject, however, has been taken up by educators and public health officials and has their hearty approval. One of the earliest to note the improved morale of children whose tonsils had been successfully removed was Dr. John J. Cronin, at that time chief of the department of child hygiene of the Health Department of New York City.

In the efforts to stamp out trachoma all defects among school children were noted, and a large number of children were found with hypertrophied tonsils, usually associated with an adenoid growth. These children were advised, by postal cards sent to the parents, to see their physicians, and so it came about that a large number of school children appeared in the various dispensaries of the city. At first the school nurse or inspector of the department accompanied them, but afterward the parents brought the children, and a large number were operated on. Among them were one class of children from a school where those who were continuously deficient were sent, so that it was known as the school for defectives. The principal of this school noticed, to her surprise, that some of these children improved wonderfully in their studies, as well as in deportment, and she became an enthusiastic advocate of an operation that would help these especially unfortunate children to become useful members of the community. Some of the children showed an improvement of 100 per cent. over their former ability to work and in behavior.

A brief report from Cronin's[1] description as to what happened subsequently may be of interest:

> There was a special class of defective children, composed of backward and incorrigible children, truants and so-called impossibles examined by an inspector who devoted his entire time to diseases of children. Of 150 children, 13 had defective vision and the remainder had an adenoid or enlarged tonsil or both. Special effort was made during six months to have these children operated on. Parents were neglectful (often too poor to lose the time to go to the hospital for operation, frequently not having car fare to travel the distance), and only 56 of these were attended to.
>
> It was thought justifiable to get what scholastic results would be obtained if these children were operated on collectively. Written consent was readily obtained from the parents to perform the necessary operations, and on June 21, 1906, 81 children were operated on in the afternoon by my two assistants, Dr. Yankauer and Dr. Ballin and myself.
>
> Six months later 76 of these children were re-examined and without exception they had all been promoted and were doing well in advanced grades.

To meet the exigencies of the examination by the medical inspectors of schools certain rules have been formulated for their guidance. It must be remembered that no previous history is obtainable, and also that no further examination than depressing the tongue with a wooden spatula (which is immediately thrown away) is permissible. Hence, only such tonsils as interfere with proper respiration, thus retarding development, are considered in the recommendation for removal. Full notes of the condition found are made, a notice of the recommendation of the inspector is mailed to the parents or guardians of the child and evidence is subsequently required that a physician has been consulted. When there is neglect the school nurse often interviews the parents and tries to convince them of the need of the child. Occasional complaints have arisen that children were refused instruction unless they were operated on, but investigations show these to be apparently unfounded. This public work of such vast importance has now been taken up throughout the civilized world and none of us will gainsay its appropriateness and lasting value.

DISEASED CONDITIONS OF TONSILS CAUSING INFECTION

Passing to the second classification I shall deal first with such affections of the tonsil itself that indicate the need for extirpation and secondly with constitutional disturbances associated with and dependent on a diseased state of the tonsil. The most common of all these in the first category is acute lacunar or follicular tonsillitis, with its onset of high fever and general disturbance, sore throat and deposit on the tonsillar surface, the latter often making a clinical differentiation between it and diphtheria impossible without a bacteriologic examination.

It is most common in children, and recurrences of the attack are the rule. In some children the recurrences are so frequent as to make them lose much time from their school work for many months of the year.

I recall the history of two brothers in my practice who had had so many attacks of tonsillitis of this variety that they were rarely free from attacks for two consecutive months. A physician previously consulted invariably injected antitoxin as a precaution, and they dreaded his approach. Extirpation of both tonsils with adenoids has cured the boys completely.

Peritonsillar abscess is practically a disease of adult life, although, through the courtesy of Dr. Sara Welt, I have recently seen this affection, in which streptococci were found, in a child of ten months. Cornet[2] reports a case of this affection in a child aged nine months. Here also recurrence is the rule, unless the tonsil is effectively removed.

Milder degrees of inflammation in the tonsillar crypt occur often—a raw surface is left and particles of food become attached and undergo putrefaction. If persistent these conditions are apt to give rise to much annoyance, and the remedy lies in operative procedures. One of the most persistent of affections of the tonsil is mycosis leptothrica, or hyperkeratosis, "characterized by white projections from the crypts and orifices of the lymph follicles on the posterior and lateral pharyngeal walls and on the lateral glosso-epiglottidean folds" (Wood). This does not, as a rule, create much discomfort and becomes a source of annoyance chiefly when discovered by the patient.

I saw a young woman with this affection, who had been mistakenly quarantined for diphtheria, and when the bacteriologic report was negative the suggestion of tuberculosis was made. She came in great excitement but left in high glee with a paper marked "mycosis leptothrica" to show her attending physician. In this case a complete cure was obtained by extirpation of the tonsillar mass in a much more rapid manner than the tedious one of cautery to the individual growths. We are accustomed to view this affection among the minor ones, but Metzner[3] reports a case with fatality.

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[1] Jour. New York Inst. of Stomat., December, 1907, ii, 272.

[2] Bull. de laryngol., otol. et rhinol., 1903, vi, 35.

Cartilage and bone formation of the tonsil are by no means frequent and cases have been recorded of recent years by Reitmann,[4] Compaired,[5] Newcomb,[6] Genter,[7] Ruckert,[8] Schweitzer,[9] Carter,[10] Halkin,[11] Landa,[12] Scheven,[13] and Anders.[14] The latter reports a tonsillolith weighing 147 grains. Schweitzer[9] found bone and cartilage foci in 11 of 33 bodies examined. There were several such in one and the same tonsil and a transition of the foci into connective tissue was often noted. It is not a congenital disturbance, but is due to a metaplasia of the connective tissue into cartilage and bone as a result of previous inflammation. Microscopically there is found atrophy of the lymph adenoid tissue and connective tissue proliferations. Total extirpation is advisable.

Of the benign growths occurring in the tonsil, in which complete extirpation is advisable, Mancioli[15] and Glas[16] have presented monographs. The latter records five cases, two of fibroma, one polyp of mucous glands, two teratoid new growths, and one a lymph vessel ectasia. Primary sclerosis is described by Glas[17] and Steiner.[18] Papillomata, true and false, are presented by Yearsley[19] and Tweedie[20] showed a tonsil apparently composed of a mass of papillomata. Blanc[21] reports a polyp of the tonsil and a dermoid polyp is reported by Angier and Lavrand.[22] Teratoid growth of an interesting nature is noted by Iwata[23] and Fullerton.[24] Lipoma of the tonsil is recorded by Theisen,[25] Deile,[26] Zolki,[27] and Sommer.[28] Epithelial cysts of the tonsil are recorded by Degny,[29] and Wright[30] in his usual thorough manner describes cysts in lymphoid tissue. A lymphoid tumor extirpated and cured is reported by Lavrand.[31] Excision of a tonsil affected with primary syphilis has been done by Wroblewski,[32] a procedure I hardly feel warranted in advising. Greene[33] has removed diseased tonsils and adenoid tissue to rid the throat of diphtheria bacilli. The malignant diseases of the tonsil, endotheliema, epithelioma, sarcoma, lymphosarcoma, and carcinema, require more than extirpation of the tonsil and do not belong to the conditions under discussion.

The subdivision of this second class is constitutional affections entering the system by way of the tonsil and produced by tonsillar disease.

Ten years ago I presented my views and those of others on the tonsils as portals of infection,[34] and stated that certain forms of infectious diseases follow closely on tonsillar affection, the same micrococci existing in the former as in the latter, and hence are mentioned as being tonsillar in origin. The list of diseased states that follow the various forms of angina has become formidable and we should regard the tonsillar affection with the import its existence requires. A year ago I[34] stated that infection in rheumatism and gout enters the system by way of the mouth, the opinion of the majority being that the chief point of entrance is the tonsil. A careful study of the voluminous literature of the subject does not change in any way the opinion then expressed, and for the requirement of the matter under discussion we quote from Adler:[35] "I would most emphatically endorse the position taken regarding the treatment of the tonsils, viz., that inflamed tonsils are a source of danger to the individual possessing them and that recurrent tonsillitis constitutes a positive indication for the ablation of the tonsils."

The masterly essay of Wood[36] on the importance of the upper respiratory tract in the etiology of cryptogenetic infections, especially in relation to pleuritis, is so recent and contains so full a reference to the important literature of the subject that repetition would be superfluous. He calls attention to the following affections associated with or dependent on tonsillar disease: Tuberculosis of the lungs with and without tuberculosis of the tonsils, rheumatism, general infection, nephritis, tenosynovitis, endocarditis, bronchitis, pneumonia, pleurisy, appendicitis, jaundice, phlebitis, meningitis, parotitis, skin and eye lesions.

The relation of angina tonsillaris and appendicitis has been discussed editorially in THE JOURNAL of the American Medical Association,[37] and Weber[38] reports a case of these conditions occurring.

P. K. Brown[39] refers to a case of nephritis after tonsillitis and says that the kidney complication is more frequent than is generally known, and he mentions three other cases, apparently traceable to diseased tonsils. These are acute mania, septicemia, and leukemia. The *New York Medical Record*[40] quotes Hougarde as describing six cases of acute nephritis associated with hypertrophied tonsils. One was mentioned as showing the good effects of a tonsillectomy on the nephritis. H. B. Gardner,[41] writing on secondary effects on the system which may be produced by chronic enlargement of the tonsils, says the hypertrophied tonsils may be a causal factor for varicose veins of the leg and hernia. Regarding the relation of the tonsil to hyperthyroidism I quote from a recent article on "Some Relations of the Thyroid Gland" by S. P. Beebe.[42] He says:

> In another group of cases there is fairly good evidence that the disturbance of any infectious disease, notably tonsillitis and typhoid, has been the primary event in the abnormal thyroid physiology. It has been customary to explain these cases by supposing that the thyroid is called into unusual activity in order to combat the toxemia in the disease and that from this beginning the vicious circle is continued. There is no doubt that hyperthyroidism often follows tonsillitis, but Beebe believes this may follow as a result of a vasomotor dis-

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[3] Berl. klin. Wchnschr., 1889, No. 29, p. 653.
[4] Monatschr. f. Ohrenh., 1903, xxxvii, 321.
[5] Arch. internat. d. laryngol., Paris, 1904, xviii, 155.
[6] Med. News, New York, Sept. 24, 1904, p. 581.
[7] Vrach. Gaz., 1904, x, 789.
[8] Virchow's Arch. f. path. Anat., 1904, clxxvii, 387.
[9] Diss., Freiburg, 1905.
[10] Med. Rec., New York, Feb. 4, 1905, lxvii, 174.
[11] Bull. Acad. roy. de méd. de Belgique, 1905, xix, 383.
[12] Rev. de med. y. chirurg. de la Habana, 1907, xii, 495.
[13] Arch. f. Laryngol. (Fraenkel's), xx, 1907, 20.
[14] THE JOURNAL A. M. A., April 11, 1908, l, 1191.
[15] Arch. ital. di otol., 1902, xiv, 471.
[16] Virchow's Arch. f. path. Anat., 1905, clxxxii, 91.
[17] Wien. klin. Wchnschr., 1903, xvi, 890.
[18] Pest. med.-chir. Presse, 1903, xxxix, 380.
[19] Med. Times and Hosp. Gaz., 1903, xxxi, 257.
[20] Proc. Royal Soc. Med., Laryngol. Sect., 1907, p. 70.
[21] Rev. hebd. de laryngol., 1906, i, 136.
[22] Jour. Soc. méd. de Lille, 1903, i, 457.
[23] Dai Nippon Ji-Bi-In-Ko-Kwa-Kwal Kwal Ho, Tokyo, 1906, xii, 101.
[24] Brit. Med. Jour., 1907, ii, 963.
[25] Albany Med. Ann., 1903, xxiv, 37.
[26] Arch. f. Laryngol. u. Rhinol., 1903, xiv, 399.
[27] Ztschr. f. Ohrenh., 1903, xliv, 222.
[28] Arch. f. Laryngol., 1907, xix, 523.
[29] Bull. et mém. Soc. Anat. de Paris, 1903, series 6, v, 487.
[30] Laryngoscope, Sept., 1905, 681.
[31] Rev. hebd. de laryngol., 1904, l, 113.
[32] Gaz. lek., Warsaw, 1904, series 2, xxiv, 10.
[33] Laryngoscope, 1908, xviii, 660.
[34] THE JOURNAL A. M. A., Dec. 2, 1899, xxxiii, 1381.
[35] THE JOURNAL A. M. A., Dec. 9, 1899, xxxiii, 1491.
[36] Ann. Otol., Rhinol. and Laryngol., December, 1908, xvii, 355
[37] May 11, 1907, p. 1602.
[38] München. med. Wchnschr., 1902, xlix, 2171.
[39] THE JOURNAL A. M. A., June 15, 1907, xlviii, 2024.
[40] Med. Rec., New York, May 12, 1906, lxix, 757.
[41] Lancet, Sept. 30, 1905, ii, 963.
[42] Therap. Gaz., Dec. 15, 1908, p. 844.

turbance rather than to suppose that the altruistic action of the thyroid has continued to an ungovernable condition.

In all of these conditions cure is often found to follow tonsillar removal, but the surest and safest guide will be, bearing in mind the many lasting conditions that follow on a diseased state of the tonsil, to study these organs carefully and by prompt extirpation prevent the inroads of these dread disorders.

With this presentation of the subject I feel warranted in presenting the following conclusions:

Unusual hypertrophy, including the submerged and degenerate variety, recurrence of inflammatory affections, including benign growths, or evidence of a diseased state of the tonsil prejudicial to health, makes it imperative on physicians to advise thorough extirpation of the tonsil.

25 East Seventy-seventh Street.

REMOVAL OF TONSILS*

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Without going into the consideration of anatomic details, I will proceed at once to the discussion of some of the various methods of dealing surgically with diseased tonsils. The complete removal of all tonsillar tissue that is at the time or is liable in the future to become diseased, with the incurrence of the minimum danger from hemorrhage or infection, constitutes an ideal to which we should strive in our operative technic. Any procedure short of this falls short of the ideal. At the same time circumstances arise which will not permit of the more thorough-going methods, in which case we adopt one of the procedures for the destruction of the lacunæ. The best of these consists in slitting the lacunæ which may be reached by means of a bent knife, and afterward cauterizing them with nitrate of silver fused on a copper probe daily until as many as possible are made to heal open. This is followed by benefit in a great number of cases, but is never permanently satisfactory. The use of the cautery (ignipuncture) for this purpose or for destroying or removing tonsillar tissue, is not nearly so satisfactory as the cold methods, inasmuch as the pain at the operation and the reaction is very much greater and the results are not so satisfactory. If the tonsil is to be removed we may proceed in various ways.

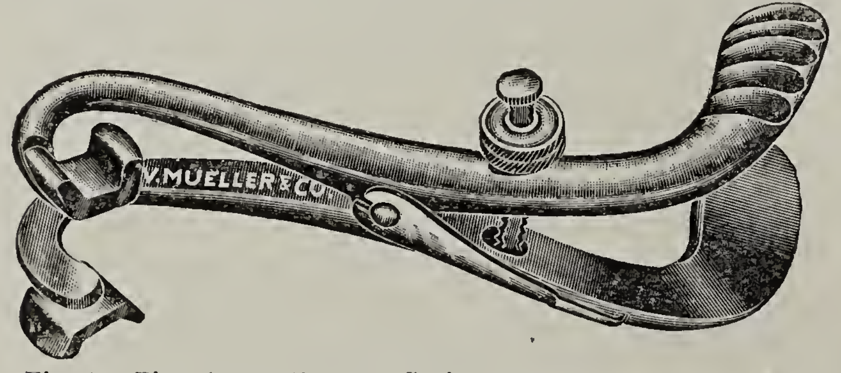

Fig. 1.—Pierce's mouth gag. Spring ratchets are apt to get out of order or slip; they do not allow the slight adjustments of the screw that is used for the setting mechanism of this gag.

In all cases there should be a period of preparation. It is a great mistake to underestimate the gravity of tonsillar excision. It is not an operation that should be performed at the office; it is necessarily a hospital operation, whether performed under a general or local anesthetic. The patient should preferably be sent into the hospital the day before the operation is to be performed. A careful history should be taken and general physical examinations made, together with a microscopical and chemical examination of the urine. Tonsils should not be operated on while in a state of inflammation, as this is the cause of the majority of severe hemorrhages following their ablation. Women and girls should not be operated on while menstruating. Special care should be taken to detect the status lymphaticus and to elicit a history of hemophilia; and on inspection we should be careful to note the presence of pulsations in or about the tonsils. This leads me to say that we can only partially ascertain what we wish to know regarding the tonsils by inspection, which should always be supplemented by palpation. In this way we can ascertain deeper pulsations, the extent of the tonsils as well as the presence of bony or other deposits in the tonsil, and the presence of a projecting styloid process.

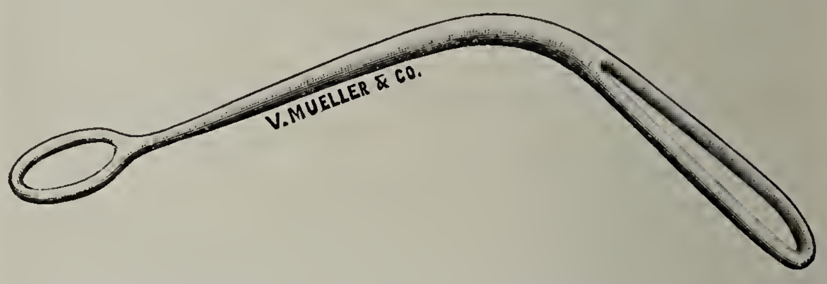

Fig. 2.—The advantage of this tongue depressor is that it does not crowd the tongue backward, thus interfering with respiration, as does the broad depressor.

A course of calcium chlorid for a week preceding the operation has an influence in reducing the hemorrhage at the time of operation. If there is doubt as to the coagulability of the blood, its index may be ascertained. The bowels are emptied by a cathartic the night before, and if necessary by an enema in the morning; no food is taken on the day of operating if the operation is performed in the morning and only a very light breakfast if performed in the afternoon. A hypodermic administration of a dose of atropin a half-hour before the operation in adults and older children, or of belladonna in young children, will decrease the amount of secretions during anesthesia.

ANESTHESIA

General Anesthesia.—This should be employed in all young children and in nervous adults. If adenoids are to be removed at the same time, as is usually the case, I am strongly of the opinion that deep narcosis is urgently to be advised. For this purpose, ether is used on account of its unquestionably greater safety over chloroform, although it has some disadvantages. The administration of the anesthetic may be by means of a pipe introduced around the corner of the mouth, the ether fumes being pumped from a receptacle by means of a double rubber bulb, or a closed mask may be used. The closed mask does very well if the anesthetist will

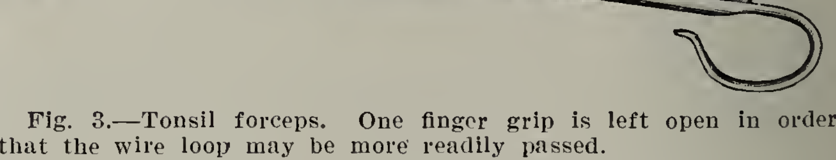

Fig. 3.—Tonsil forceps. One finger grip is left open in order that the wire loop may be more readily passed.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

reapply the anesthetic whenever the operative procedures are interrupted, if only for an instant. The open or gauze mask is not nearly so satisfactory as the closed one, because with the former a deep anesthesia is very much more difficult to maintain. The advantages of deep, tranquil anesthesia can not be too strongly insisted on. There is greater safety for the patient; the operation proceeds much more rapidly, and with greater exactness. It must be remembered that the deep pharyngeal reflexes are among the last to disappear, and we may proceed with an operation on the mastoid or with an amputation of a limb at a much earlier stage than is best for a tonsil or any throat operation.

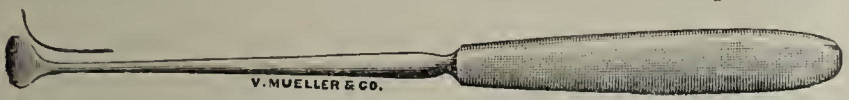

Fig. 4.—Pierce's tonsil knife.

In order to aid in the abolition of the deep pharyngeal reflexes, after the patient has become relaxed, we may swab the tonsillar regions with a 10 per cent. cocain in 1 to 1000 adrenalin solution. Occasionally, we may have cases in which ethyl chlorid may be a sufficient anesthetic, but these are rare. There can be no dissecting done, and the tonsillar tissue must be of that pedunculated type which may be properly removed by means of a tonsillotome. Nitrous oxid is less satisfactory than ethyl chlorid.

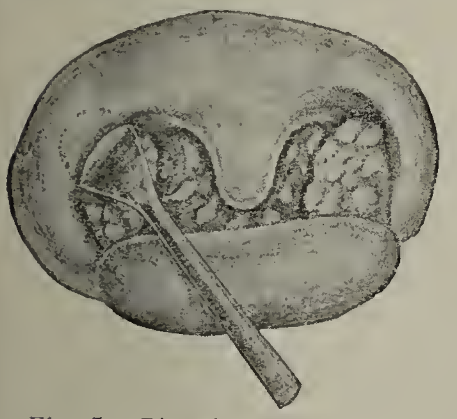

Fig. 5.—Pierce's tonsil knife being inserted into the supratonsillar space.

LOCAL ANESTHESIA

This is reserved exclusively for older children and adults who can be controlled. The tonsil, posterior and anterior pillars, posterior wall of the pharynx, and arch of the velum are painted over with a 10 per cent. cocain solution. This is also rubbed into the crypts and supratonsillar space, by means of cotton wrapped on a bent cotton applicator. The cocain solution is followed by adrenalin solution, 1 to 1000, applied over the same area, and when a surface anesthesia has been procured, a 1 per cent. cocain solution, containing two drops of 1 to 1000 adrenalin to the ordinary hypodermic syringeful is injected on each side at three points, namely, at the base, at the middle, and at the upper confines of the tonsil, ascertained by means of palpation; from three to five drops at each point is sufficient. I have found local anesthesia in tonsillar work, except in those cases of pedunculated growth, more or less disappointing. Especially is this true in cases in which there has been considerable previous inflammation, and in which the submerged tonsil is encased in plastic fibrous tissue. This is particularly true when the snare is used, so that it is better to use a cutting instrument, the knife or scissors, such as the Robertson, in removing tonsils under local anesthesia.

When the general anesthesia is complete, a mouth-gag is inserted in the left side of the mouth well back. The mouth gag may become a source of great annoyance if improperly tended. If the jaws are opened too wide, respiration is interfered with, especially in young children, and its constant or inopportune displacement is exasperating. If there are but two assistants the anesthetist should have full charge of the mouth gag from the beginning to the end of the operation and should be held responsible for its proper manipulation (Fig. 1).

POSITION OF THE PATIENT

The position of the patient is an important matter. Doubtless, operators become accustomed to various positions as they become accustomed to different instruments, but after an experience extending over a number of years with the various positions, I have adopted the one to be described. The patient is placed on the right side, with the right arm crooked beneath the body, and the right leg semiflexed. The right side is chosen as throwing less of a burden on the heart of the patient. A sand-bag is put under the head which is drawn over close to the edge of the table. Another large sand-bag is shoved snugly against the back in order to keep the patient from rolling backward, or better, a nurse is employed to keep the patient balanced on the right side. In this position, safety is insured against the danger of blood or excised tissue getting into the larynx.

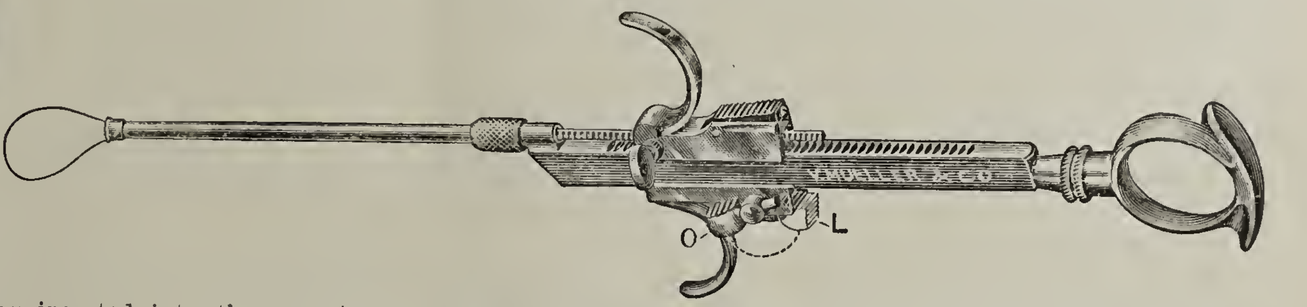

Fig. 6.—Pierce-Mueller tonsil-snare. The new snare consists of a flat steel bar having at its distal end a strong steel cannula with reinforced end. Notches are cut in the upper side of the steel bar and the lower side is milled out and contains the threaded rod for écraseur attachment. On this steel bar runs a carriage supplied with two half-curved finger-holds. In the upper portion of this carriage is an arrangement like a windlass and by pulling back the carriage (with wire-carrier and snare loop) this windlass drops into the notches in the bar and securely locks it, and prevents it from receding and letting loose the object once grasped.

On the lower side of this carriage is a lever in connection with a chuck, and this (when pulled backward) grips into the threaded rod which rests in the milled out part of the flat bar and converts the snare into an écraseur.

This new snare has none of the many springs of the older models of this type and there is very little chance for the instrument's getting out of order.

To load this snare push the carriage forward as far as it will go, by pressing on knurled lever A, set the wire-carrier so that the two holes only for the wire will show and place the ordinary snare loop in the wire-carrier. After placing the loop over the tonsil you may either pull right through, or, as the carriage locks itself by means of a ratchet, you can stop at any point. In order to set the snare as an écraseur, pull the lever below the carriage from O (open), to L (locked), then turn the ring at the end of the flat bar until the tonsil comes off. To put snare in position for reloading, unlock it and push forward on lever A.

TECHNIC

The operator is seated so that his line of vision is on a line with the patient's mouth. This position may be acquired either by raising the table on blocks, or by the operator sitting on a low stool. The light is thrown into the field of operation by means of a mirror, reflecting the light on a movable bracket, or by means of an electric lamp of some form carried on the operator's head. A small tongue depressor (Fig. 2) is introduced, and the tonsil seized in a vulsellum forceps, the extremity of which is bent nearly at right angles to the shaft

(Fig. 3). One jaw is fastened in and beneath the base of the tonsil, and the other as far as possible into the supratonsillar fossa. By means of a knife the tonsil is freed from the supratonsillar roof and from the upper two-thirds of the anterior and posterior pillars. Various forms of knives have been used for this purpose. In the last three years I have used exclusively one which I have designed and found very satisfactory (Figs. 4 and 5). It is introduced with the blade upward into the supratonsillar space, and carried in this position first beneath the anterior pillar, and then downward along the posterior pillar. The tonsil is then twisted out of its bed. Frequently no more detachment is necessary. The whole tonsil up to its capsule can be dislodged. If this is not the case, however, by means of a scraping motion away from the gland the tonsil is dissected loose from its attachments, following along the line of demarcation, between the tonsil and the peritonsillar tissue. The moment the tonsil is delivered from the supratonsillar space, the snare is applied, being careful to get above and below the tonsil (Fig. 6). At this point it is essential to see that the uvula has not been included in the loop. In order to guard against this accident, it is well, before applying the snare, to secure the tip of the uvula with a long hemostatic forceps.

When the tonsil is secured within the loop, this is tightened and allowed to remain while the left tonsil is freed. This is loosened from the upper portion of its bed in the same manner, and when the snare is tightened, we proceed with the complete removal of the right, and then follow with the left, as soon as the hemorrhage from the right has stopped. This means of hemostasis is successful in diminishing hemorrhage. If the hemorrhage continues unduly, pressure for a few minutes with a piece of gauze held in a hemostatic forceps will nearly always arrest it (Fig. 7). If properly done, the entire tonsil has been enucleated. If, however, from imperfect technic there remain portions of the tonsils, especially in the supratonsillar space, they must be thoroughly removed by means of either the snare or the tonsillar punch. Blood during the course of operation is carefully removed by an assistant by means of cotton torpedoes carried in long hemostatic forceps. Intelligent sponging is of the greatest assistance; done otherwise it may more interfere with than aid the operator.

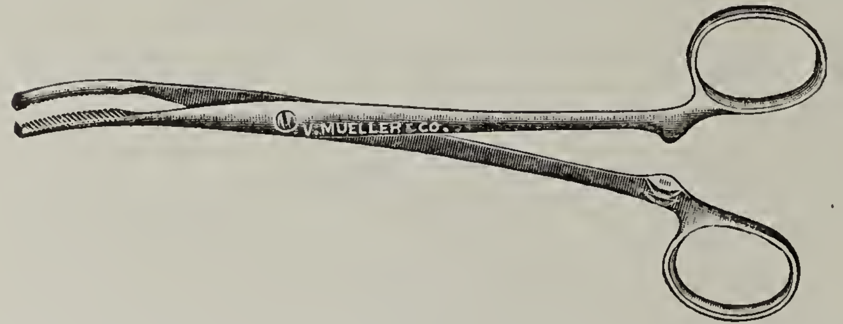

Fig. 7.—Long forceps used for sponges, which is also an effective tonsillar hemostat.

If local anesthesia is employed, the assistant should be stationed to the left, a little behind the operator, the instrument table being to the right. With a general anesthesia these positions are reversed if there is but one operating assistant, as he must manipulate the tongue depressor. If there are two operating assistants, and this is more to be desired, one should stand to the right and attend to the tongue depressor and mouth gag, while the other assistant sits behind and a little to the left of the operator and presides over the sponges and instruments—anticipating the operator's needs.

At least two assistants are necessary for the expedition and successful removal of tonsils under general anesthesia, one for the anesthetic, the other to sponge, hold instruments and attend to tongue depressor. Both require special training. The anesthetist should be able to recognize the stage of anesthesia at which the operation is best performed and to keep the patient constantly in this stage. This requires, especially in case the closed cone is used, constant vigilance, the anesthetic being reapplied whenever the operator's procedures are interrupted. Nothing is so annoying in tonsillar work as an improper anesthesia—it causes delay, adds danger and tends to render the work imperfect.

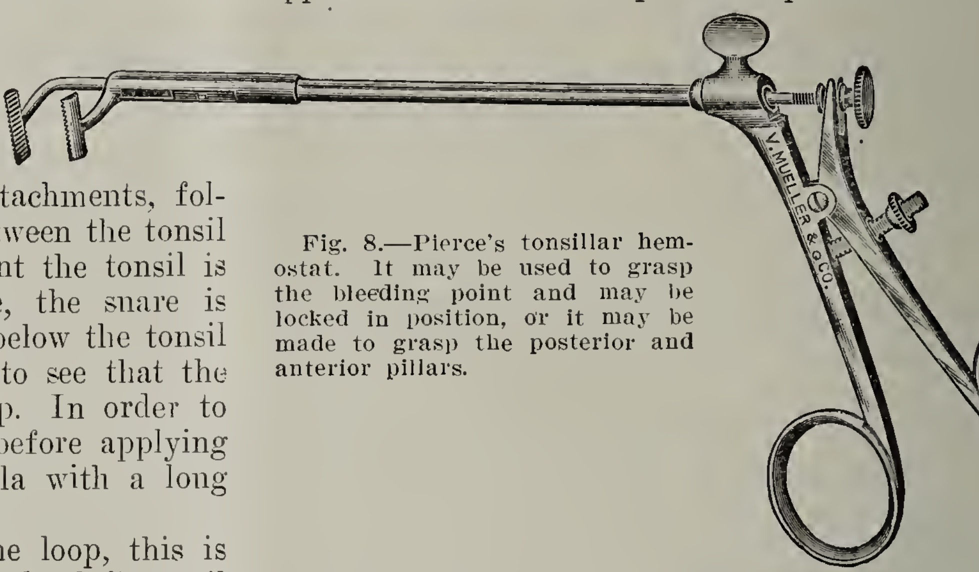

Fig. 8.—Pierce's tonsillar hemostat. It may be used to grasp the bleeding point and may be locked in position, or it may be made to grasp the posterior and anterior pillars.

Do not be too hasty in allowing the patient to be removed from the operating-room. Carefully inspect the field just before the patient's removal for hemorrhage, and for the presence of tonsillar tissue that might have been overlooked at the operation. In case pressure does not control hemorrhage, careful search should be made for bleeding points. These are usually found at the middle third of the wound, and consist of the tonsillar artery or the venous plexus situated at this point, and may be controlled by (a) torsion with hemostatic forceps; (b) putting in a figure-of-eight stitch; (c) sewing the anterior and posterior pillars together with a pledget of gauze held down on the tonsil by means of the stitches or by means of Pierce's tonsillar hemostat, held *in situ* (Fig. 8). The Mikulicz compressor is a most cruel instrument, and should scarcely be employed. The pain it causes is excruciating and, if left on for any considerable time, it is liable to form a slough which may be so extensive as to form a fistula from the pharynx to the exterior or cause dysphagia and paralysis. Hemorrhages from tonsillar operations do not come from the external or internal carotid. These vessels are safely out of the way. There may, however, be a loop of the lingual thrown up into the base of the tonsil. In this case severe hemorrhage results, but it can be controlled either by means of a hemostat or a deep ligature. Chevalier Jackson's experience with tonsillar hemorrhage must be unique, as I have not yet seen a case which demanded ligation of the external carotid.

I have employed the method described for the past six years in cases of large, globular imbedded tonsil. For pedunculated tonsils, which project into the oral cavity, I do not hesitate to recommend the old Matthieu tonsillotome. The work is done rapidly, neatly and completely if the instrument is properly used. Instead of a snare, Casselberry is very dextrous in the use of the Matthieu tonsillotome, from which the fork and tripping mechanism has been dismounted. It is surprising how this instrument, after the tonsil has been detached from the pillars and the supratonsillar space, will follow the capsule; but in my hands it is more cumbersome than the snare, and does not so surely follow the capsule. The snare, when properly placed, really peels the tonsil from its bed. For long, thin, small tonsils, which are occasionally the seat of cholesteatomatous disease and cause fetor *ex ore*, the scissors are better adapted, after the method of Robertson, particularly when local anesthesia is employed.

After the operation, the patient should be kept in the hospital and in bed for from twenty-four to forty-eight hours. Food during this time should be liquid or semi-solid, without condiments. A gargle should be administered the day after the operation, and continued until the wound has entirely healed. For this purpose I recommend the following:

℞.	gm. or c.c.		
Salicylic acid	10		ʒiiss
Spirits of nitrous ether	15		℥ss
Alcoholic solution formal. (1-10)		or	
Alcohol, āā	30		℥i
Oil of gaultheria			
Oil of caryophyl, āā	15		ʒss
Glycerin, q. s. ad.	120		℥iv

Sig.: Half a teaspoonful to half a glass of hot water, and gargle every two or three hours.

If pain is complained of, an ice-bag may be applied to the neck. Allowing the patient to chew bits of ice is not to be recommended, as the motion of the pharynx in swallowing and sucking is liable to perpetuate bleeding.

ADENOID OPERATIONS *

FRANCIS R. PACKARD, M.D.
PHILADELPHIA

The preliminary report of the Anesthesia Commission of the American Medical Association[1] shows the splendid results which the profession may confidently expect from its labors, and indicates likewise the vast scope of the field on which it has entered. It would seem presumptuous on my part to undertake any individual efforts in the study of the anesthesia problem at the present time, when we know that the whole subject is being so carefully and thoroughly studied. My justification for the following remarks, however, is to be found in the fact that, in operations within the nasopharynx and throat, there are certain peculiar problems which present themselves forcibly to the operator and render it imperative for him to understand them thoroughly, not only from the standpoint of the effect of the anesthetic on the safety of the patient, but also with a view of facilitating the proper performance of the operation.

As a general premise to the remarks in the following paper, I would state that, in my opinion, tonsil and adenoid operations in children and young persons below the age of 18 should practically always be done under a general anesthetic. In patients over 18 years of age, if they have sufficient self-control and their cooperation can be secured, I prefer to operate with local anesthesia by cocain.

There are certain general statements which may be regarded as true of all operations in which a general anesthetic is employed:

1. The personal equipment of the anesthetist is by far the most important factor in any operation under a general anesthetic. This would include his experience and judgment and all the other factors which go to give him a claim for ability to administer the drug. This personal equipment of the anesthetist is of so much importance that, to my mind, it almost overshadows the question of which is the safer anesthetic to use, and although, as I shall state further on, in my opinion, the dangers of chloroform are so much greater than those of ether, if the anesthetist is used to administering chloroform, and I feel that he could give it bettter than he could administer ether, I would prefer him to use the anesthetic which he was accustomed to giving.

2. The patient should be under observation or control, whenever possible, for at least twelve hours before the operation, and after it until he has completely recovered from the effects of the anesthetic. It is very hard, particularly in children, to be sure that patients will refrain from food before taking an anesthetic. Twice I have nearly lost a patient because of his having eaten shortly before the operation. In one case a child stopped breathing because a piece of bacon became impacted in the larynx. In the other case a child's tonsils and adenoids had been removed, when he was observed suddenly to turn blue. No obstruction was found in the larynx, but artificial respiration, with the administration of oxygen, was maintained for fifteen minutes before the child took a natural breath. He then vomited an enormous quantity of undigested food. These cases illustrate the two ways in which the ingestion of food before the administration of an anesthetic is a source of danger: (1) by the lodgment of a piece of vomitus in the larynx, (2) by pressure on the diaphragm from a distended stomach.

3. Operations under general anesthesia should be done, whenever possible, in a hospital or in the patient's home and not in the physician's office. The extreme risk of allowing the patient to go out just after recovering from ether or chloroform has been repeatedly demonstrated.

4. If the operation is performed in a house or elsewhere than in a hospital, oxygen and other restorative means should be provided beforehand. I now always make it a practice, when operating in private houses, to have an oxygen apparatus at hand, and I believe that at least on one occasion when a child took ether badly its life was only saved by the use of oxygen. A tracheotomy tube and the few other instruments necessary for the performance of a tracheotomy are always carried in my bag when operating at a patient's home. In a case which occurred in the practice of one of my colleagues a piece of tissue from the throat completely occluded the larynx and the operator was obliged to perform an immediate tracheotomy in order to save the child.

5. Although there is a very prevalent impression in the profession that mixed anesthesia, in which the narcosis is started with one anesthetic and maintained with another, is dangerous, this would seem to be contrary to the facts according to available statistical tables. Thus W. Estell Lee[2] analyzed the statistic of the anesthesias at the Pennsylvania Hospital for a period of five and one-half years. In that period ether was given alone or in combination 5,592 times, and there were three deaths occurring in this number. All these fatalities occurred

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] The Journal A. M. A., Nov. 7, 1908.

[2] Ann. Surg., November, 1908.

among the 1,444 cases in which the ether was given alone. The same statement applied to the deaths which occurred under ethyl chlorid in the institution. Ethyl chlorid was given as a general anesthetic, alone or in combination, 5,575 times, with five fatalities. All these deaths occurred among the 947 cases in which the ethyl chlorid alone was administered. In carefully examining other large compilations of statistics, such as Gurlt's, one is impressed with the same fact.

There are several reasons which render the subject of anesthesia in tonsil and adenoid operations one of the greatest importance:

(*a*) Children who suffer from pathologic conditions of the faucial and nasopharyngeal tonsils are apt to present the condition which the French term "*lymphatisme*" and which we generally term the "status lymphaticus." The sufferers from this diathesis are notoriously bad subjects for the administration of any general anesthetic. W. Humes Roberts[3] summed up the views which are now generally accepted by pathologists in regard to that condition, namely, that there is a general enlargement of the lymphatic structures associated frequently with hyperplasia of the thymus gland and accompanied by a hypoplasia of the circulatory apparatus. Sudden death may occur in patients who suffer from this diathesis from very slight causes, such as shock, emotional or physical, frights or slight injury. Dr. Roberts reports four cases of death from the administration of chloroform for the removal of tonsils and adenoids, in Los Angeles. In the only case in which autopsy was permitted there was a marked status lymphaticus.

(*b*) The mechanical obstruction to proper respiration offered by the presence of adenoids and enlargement of the faucial tonsils is such that the inhalation of the anesthetic is interfered with so that its administration is prolonged and the amount necessary sometimes very large. This difficulty is also increased by the presence, in the throat in most of these patients, of great quantities of mucus. In several cases I have tried to overcome this difficulty by the administration of small doses of atropin some hours before the ether. The results, however, were not very satisfactory, as the dose necessary to induce dryness of the mucous membrane was found to be too large to be consistent with safety.

(*c*) Another difficulty encountered in the administration of a general anesthetic in these cases is the problem of not interfering with the operator. To obviate this I have my patients very thoroughly anesthetized before I undertake to do any work. After the operation has begun it takes so short a time to finish it that if the patient is completely under at the start, he seldom requires the further administration of the anesthetic before its conclusion. The best method of giving ether or chloroform, in my opinion, is the so-called drop method on gauze, except in patients who require any prolongation of the anesthesia, when I have the anesthetist change to the vapor method, passing the ether through warm water in a wash bottle by means of a bulb compression apparatus. The one designed by Dr. Pynchon, of Chicago, has proved satisfactory for this purpose.

The position in which the patient should be placed during the operation has been, and still is, a subject on which opinions differ largely. I always operate with the patient in the dorsal decubitus, with the head dropped somewhat over the end of the table. There is no doubt in my mind that the upright position adds greatly to the danger of ether and chloroform, and also that in the upright position the amount of blood and mucus which flows into the larynx or esophagus must be greater than when the head hangs lower than the body. Again I believe that the upright position adds to the risk of a piece of detached tissue entering the larynx and possibly causing dangerous obstruction. The danger of an aspiration pneumonia is by no means imaginary and no pains should be spared to lessen such a mischance.

As to the anesthetic for use in the operations on tonsils and adenoids, I have no hesitation in declaring my decided preference for ether. Some years ago Dr. Hinkel,[4] of Buffalo, read a valuable paper before the American Laryngological Association, in which he showed that there had been nineteen fatal cases from the administration of chloroform, one from A. C. E. mixture, and none from ether in these cases. I know personally of two unreported cases of death from chloroform and of not a single ether fatality in Philadelphia, in which the anesthetic was given for the removal of tonsils and adenoids. When it is considered that in Philadelphia ether is used in an overwhelmingly larger number of cases than chloroform, this seems a significant fact. I am aware that many will reply that in places where chloroform is more generally used there are fewer deaths, but I believe that only men who are familiar with its administration would dare use it in a city where its use is so generally deprecated. Statistics the world over show that the deaths from chloroform vastly outnumber those from ether; thus Gurlt[5] reports the following statistics:

	Cases.	Deaths.	
Chloroform	201,224	88	1: 2,286
Ether	42,141	7	1: 6,020
Chloroform and ether	10,162	1	1: 10,162
A. C. E. (Billroth's)	5,744	1	1: 5,744
Ethyl bromid	8,967	2	1: 4,483

Seitz's figures, reported by W. J. McCardie,[6] are as follows:

Pental	1 death in	200	anesthesias
Chloroform	1 death in	3,000	anesthesias
Ether	1 death in	5,000	anesthesias
Ethyl bromid	1 death in	8,000	anesthesias
Ethyl chlorid	1 death in	16,000	anesthesias

W. H. Luckett[7] gives the following statistics:

	Cases.	Deaths.
Chloroform	4,263	1
Ether	4,673	0
Chloroform to ether	141	0
Ether to chloroform	116	0
Chloroform and ether	164	0
Cocain and chloroform	6	0
Cocain and ether	10	0
Cocain	706	0
Nitrous oxid	142	0

We should remember, as I have before stated, that tonsil and adenoid patients show a distinct tendency to take any anesthetic badly, rendering it imperative that the safest possible should be chosen.

Nitrous oxid anesthesia is of such short duration that its usefulness is decidedly limited. I have had no opportunity to try it used in conjunction with oxygen so as to prolong its effect.

Ethyl bromid has resulted fatally in so many cases in proportion to the number of times it has been used

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[3] The Status Lymphaticus, with Particular Reference to Anesthesia in Tonsil and Adenoid Operations, Trans. Am. Laryn., Rhin. and Otol. Soc., 1908.

[4] New York Med. Jour., Oct. 29, 1898.

[5] Statistics for 1890 to 1894 inclusive, in the Verhandl. d. deutsch. Gesellsch. f. Chir., Berlin, xx, xxi, xxii, xxiii, xxiv.

[6] Lancet, April 4, 1903.

[7] Medical News, New York, 1897, lxxi, 770.

DEATHS ATTRIBUTABLE TO THE USE OF A GENERAL ANESTHETIC IN THE REMOVAL OF TONSILS AND ADENOIDS

No.	Reporter.	References.	Operation.	Age.	Sex.	Anesthetic.	Remarks.
1	R. C. M. C. Smith	*Lancet*, 1892, i, 1158	Adenoids removed by Lowenberg's forceps.	11	M.	Chloroform..	Death from failure of respiration, cyanosis, no pulse, no heart sounds on auscultation.
2	Anonymous	*Brit. Med. Jour.*. 2, 18, 1893	Adenoids	10	F.	Chloroform..	Autopsy: Bronchi filled with blood.
3	Anonymous	Report of *Lancet* committee, *Lancet*. 4, 1, 1893.	Adenoids	....	M.	Chloroform..	Death from syncope.
4	T. W. Bailey	*Brit. M. J.*, 1893, i. 860	Adenoids	3	....	Chloroform..	Respiration ceased before operation was begun.
5	H. Tilly	*Brit. M. J.*, 1893, ii, 384	Adenoids	11	M.	Chloroform..	Chloroform given for two minutes.
6	Anonymous	Yorkshire *Mercury*, 9, 22, 1893..	Adenoids	9	F.	Chloroform..	
7	Anonymous	*Lancet*, 1893, ii, 817	Adenoids	9	F.	Chloroform..	Death a few minutes after beginning chloroform.
8	Anonymous	*Brit. M. J.*, 10, 14, 1893.	Enlarged tonsils..	10	....	Chloroform..	Chloroform given twice.
9	Anonymous	Marylebone *Mercury*, 12, 23, 1893.	Enlarged tonsils..	12	....	Chloroform..	
10	T. J. Wood (Gowring's case.)	*Brit. M. J.*, 1894, i, 649	Adenoids; Lowenberg's forceps.	7	F.	Chloroform..	Under the influence of chloroform 1½ minutes. Tracheotomy and inflation of the lungs by catheter—no pulse perceptible.
11	Anonymous	*Brit. M. J.*. 3, 29, 1894	Adenoids	7	F.	Chloroform..	Autopsy: Trachea and bronchi filled wtth blood.
12	Halloway.,	Private information	Tonsils and adenoids.	Under 10 yrs.	....	Chloroform..	
13	Halloway	*Brit. M. J.*, April, 1895	Enlarged tonsils..	4	M.	Chloroform..	Chloroform, fl. ʒii, given on a towel. Patient in upright position.
14	Edmund Owen..	*Archiv. of Pediatrics*, 3, 1895....	Removal of postnasal growths.	7	F.	Chloroform..	
15	Anonymous	*Lancet*, 1, 4, 1896	Hypertrophied tonsils.	20	F.	Chloroform..	Death early in the operation.
16	Anonymous	*Brit. M. J.*, 7, 10, 1897	Adenoids	16	M.	Chloroform..	Autopsy: nothing to account for collapse.
17	W. J. McCardie.	*Clin. Jour.*, London, 1898, xii, 69-73.	Tonsils and adenoids.	5	F.	A. C. E. mixture and chloroform.	Began with A. C. E. mixture, partial return to consciousness, so was given chloroform before removal of adenoids. Death by "stoppage of the heart."
18	Dr. Dunn of Chicago.	Refer. to by Hinkel in *Laryngoscope*, St. Louis, 1898, v, 50.	Adenoids	Child.		Chloroform..	Personal communication by Dr. W. E. Casselberry of Dr. Dunn's case.
19	F. W. Hinkel	*Laryngoscope*, St. Louis, 1898, v, 50.	Adenoids	8	M.	Chloroform..	Respiration and pulse ceased simultaneously.
20	J. A. Stucky	*Amer. Pract. and News*, Louisville. 1899, xxvii, 171-173.	Tonsils and adenoids.	15	M.	Chloroform..	Death nine hours after operation; no hemorrhage. Growths removed by tonsillotome and curette.
21	Anonymous	*Med. Press and Circ.*, London, 1899, N. S., lxvii, 48.	Adenoids	14	M	Chloroform..	Under influence of anesthetic 8 or 9 minutes; ʒiss used in 25 minutes. Most concentrated vapor was 0.18 per cent.
22	F. A. Simmons..	*New York Med. Jour.*, 8, 27, 1894.	Tonsils and adenoids.	10	M.	Chloroform..	Circumcision was done first and then tonsils and adenoids were removed. At last sweep of the curette the heart ceased; cyanosis, death. Autopsy: Large thymus, no blood in bronchi, heart stopped in systole.
23	Anonymous	*Hospital*, London, 1906-7, xli, 176-178.	Tonsils and adenoids.	5	....	Ethyl chlorid.	
24	T. D. Luke	*Lancet*. 1906, 1233-1236	Adenoids	14	M.	Ethyl chlorid.	Under anesthetic for ½ min. Just as he returned to consciousness he turned pale and both pulse and respiration ceased. Autopsy: Cardiac syncope.
25	L. W. Littig, case No. 11, on table. Reported by F. S. S.	*Iowa M. J.*, Des Moines, 1907-8, xiv, 457-466.	Tonsillotomy.	8	M.	Chloroform..	Tonsillotomy followed circumcision At end of operation patient was dead.
26	W. H. Roberts..	Tr. of Amer. Laryn., Rhin. and Oto. Soc., 1908, p. 512.	Removal of tonsils.	13	M.	Chloroform..	After completion of operation pulse became irregular, breathing shallow, face suddenly blanced. Artificial respiration: gasped two or three times; expired. No autopsy.
27	W. H. Roberts..	Ibid	Adenoids	3 (child).	....	Chloroform..	Breathing suddenly stopped and it was found that heart had ceased beating. No autopsy.
28	W. H. Roberts..	Ibid	Adenoids	....	....	Chloroform..	No particulars given on request for them.
29	W. H. Roberts..	Ibid	Tonsils and adenoids.	12	F.	Chloroform..	Apparently normal events during operation and administration of anesthetic. When operation was completed marked pallor was noticed and cessation of breathing; not noticed whether heart had ceased beating or not. No autopsy.

that I never considered it right to employ it. It undergoes decomposition very easily and rapidly, and when decomposed is a very dangerous poison.

Ethyl chlorid I have used many times, especially in conjunction with ether, at the Pennsylvania Hospital. Although it is a rapidly acting anesthetic and gives rise to practically no unpleasant after-effects, its use is attended by at least one great drawback. If administered for any length of time it induces great rigidity of the jaws, which seriously interferes with the introduction of the gag. It also seems to me that it does not lessen the sensitiveness of the mucous membrane as do ether and chloroform. The patient is apt to cough and gag even when apparently unconscious.

I have appended to this article a list of the deaths attributable to the use of general anesthetics in the removal of tonsils and adenoids. By it will be seen that out of 29 fatal cases 26 deaths were attributable to chloroform, 2 to ethyl chlorid and 1 to a combination of chloroform and A. C. E. mixture. The oldest patient was a woman of 20, the youngest a child of 3. Of the cases in which sex was stated, there were 12 males and 9 females.

I desire to express my indebtedness to Dr. E. J. Stein, of Philadelphia, for much valuable assistance in the compilation of the bibliography accompanying this article. Although Dr. Stein made a careful search of French and German literature, he was unable to find any deaths recorded as the result of the use of a general anesthetic in operations on tonsils or adenoids.

POSTOPERATIVE TONSILLAR BLEEDING

ITS SURGICAL CONTROL, WITH MENTION OF CASES *

LEE COHEN, M.D.
BALTIMORE

The operation on the faucial tonsils at this time may be said to be in a transitional stage from that of incomplete to complete removal. The importance of this subject prompted me to make known some of my ideas and experiences connected with the operation. My first intention was to discuss the entire subject in a general way, and the ideas of a number of the leaders in this Section were asked for in a circular letter addressed to them. I desire here to express my appreciation of their hearty and prompt replies. Our Executive Committee, realizing the magnitude and great importance of the tonsil operation, very wisely decided that a symposium would best serve the purpose of bringing forth a comprehensive and general discussion. I have, therefore, the honor of saying a few words about postoperative tonsillar bleeding.

Hemorrhage from the removal of the faucial tonsils varies greatly, the primary bleeding when all goes favorably amounting to less than an ounce. In some cases, however, the bleeding reaches alarming proportions. The term "alarming proportions" is difficult to define, since a loss of blood which some operators would look on with indifference might cause others great concern. Again a loss of from four to six ounces of blood in some cases might be considered alarming if the patient were frail or young, whereas in a strong, robust individual a loss of this amount of blood could work no material harm other than prolonging convalescence.

Generally speaking, female patients beyond puberty bear loss of blood better than males because of their propensity for more rapid blood-making. When confronted with a freely spurting vessel it is impossible to determine how great may be the loss of blood should it not quickly and effectually be controlled. I can recall my feeling of dismay when first brought face to face with a real bleeding of this kind, but that first case of extreme bleeding proved to be a blessing in disguise, for it forced me to adopt measures whereby I may now feel reasonably secure from any very serious effects of tonsillar bleeding.

I am told by such men as Welty, Stucky, Richards, Robertson, Todd[1] and others that the loss of blood following a complete removal of the tonsil in its capsule is less than after the old method of tonsillotomy with the guillotine. On the other hand, Jackson, Thomas, Vaughan and others,[1] while advocating such complete removal, claim that the loss of blood is greater therefrom.

A fact worthy of note is that, of the 54 cases of alarming bleeding tabulated by Smith[2] and Wright,[3] the tonsillotome in some one of its many forms was employed in 34; and it was also used to remove the tonsils in at least 3 of the 6 fatal cases found by them in the literature from 1868 to 1904, the method of removal in the other 3 fatal cases not having been mentioned. In the 4 more recent fatal cases, reports of which I have been able to collect, the tonsillotome only was employed.

My experience has been that there is a greater tendency to bleed in tonsillectomy than in tonsillotomy, because, in the former, vessels are cut before they subdivide into the terminal filaments and nearer to the source of the large arteries from which they are given off. But I have adopted the complete removal because of the better results thereby obtained, and in performing this operation I have learned how bleeding can be controlled, so that I now feel that the loss of blood from my complete operation is generally much less than it formerly was in performing tonsillotomy.

Two of my cases which I wish to report will illustrate clearly the difference between the old and nonsurgical method of controlling hemorrhage and the more recent and effectual one.

Case 1.—*Operation.*—A. K., a healthy woman, aged 23, was operated on by me in my office on Jan. 28, 1908, at 4 p. m., under local anesthesia. Both tonsils, which were perhaps the largest I have ever seen, were removed *en masse* with the knife and vulsellum. Bleeding from both sides at the time of the operation was quite profuse, the bleeding on the left side being effectually stilled by pressure with cotton soaked in Monsell's solution. On the right side I was obliged to use Boetcher's hemostat.

Postoperative Hemorrhages.—The patient was removed from my office to the Hebrew Hospital in the evening with the clamp still in position. The hemostat was removed at 10 p. m., the cotton pledget being left in position for nearly three days. No bleeding on removal of cotton. The following, or fourth day, patient left hospital. Nine days after the operation, at midnight, there was a slight bleeding from the right side, this being easily controlled by the use of ice internally and externally. There was no further loss of blood until the following afternoon at 3:30, when it was again necessary to make use of the pressure hemostat. The patient was then sent back to the hospital, and on attempting to remove the clamp at 11 p. m., hemorrhage recurred, making it necessary to replace it. The following morning, February 8, at 2 a. m., a slight bleeding was again noticed, but it was controlled easily by pressure and the use of ice. At 4 o'clock the same day there was again a slight loss of blood, at which time a heavy silk suture was passed deeply through the upper portion of the tonsillar pillars, over the point from which the bleeding seemed to come. For the following twenty-four hours there was no bleeding, and the patient's condition was very satisfactory. Late the next afternoon, February 9, twelve days after the operation, very active hemorrhage commenced, in spite of the suture. Mere pressure had no effect, so the hemostat was again placed in position, bleeding being controlled after a few minutes. At 7 p. m., the clamp slipped, and before it could be replaced a pus basinful of blood was lost.

Control of Hemorrhage.—The patient now being quite weak, we realized that some very radical measures must be adopted at once to avert a fatal issue. She was therefore placed on the operating table at 7:30 p. m., firm pressure being made over the common carotid artery to prevent further bleeding. A roll of iodoform gauze about the size of the tonsil removed, saturated with 1 to 1,000 adrenalin chlorid solution was placed in the tonsillar fossa, and firmly held with a large Kelly clamp by an assistant. A continuous suture was then placed in the pillars of the fauces from the soft palate down to the base of the tongue, a curved Hagedorn needle, placed at a right angle in a plain needle-holder, being used for this purpose. No anesthetic was used for this operation, on account of the weak state of the patient. The time consumed in the work was about half an hour. The pulse was small —about 160 to the minute, and the general condition of the patient was very bad. Two salt infusions of about a pint each were given, one at once and another during the night. There was not a drop of blood lost from this time on. The suture was removed four days later and the gauze pledget allowed to remain one day longer. The tonsillar fossa on removal of the gauze looked very clean, and the patient steadily improved, leaving the hospital in excellent condition on February 21, fifteen days after her last admission.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Personal communications in reply to questions.

[2] Smith, Harmon: Alarming Hemorrhage Following Tonsillotomy . . . . Laryngoscope, 1904, p. 121.

[3] Wright, Jonathan: Hemorrhage After Amygdalotomy . . . , New York Med. Jour., 1890, lii, 234.

The lessons learned from this case have been most valuable: First, I believe the secondary bleeding was directly caused by the sloughing process following the primary use of Monsell's solution in the tonsillar fossa. I would never again sanction the use of this agent in controlling hemorrhage from the tonsillar region. Second, by permitting repeated recurrences of the bleeding over so long a period of time the patient's life was almost lost. In a similar case I would adopt radical measures at once. Third, had the primary bleeding in this case been managed in the same surgical manner that we employ to-day, we should have been spared all our trouble and anxiety and the patient the danger and discomfort to which she was subjected.

A very interesting case, and one which was managed in a manner somewhat like my own but which ended fatally, has been reported by Damianos and Hermann[4] of Vienna. There are many points in this case worthy of note, and I therefore take the liberty of giving it in detail:

Case 2.—The patient, a strong, robust man, aged 23, was operated on in one of the dispensaries, with Fahnstock's tonsillotome, on the afternoon of Oct. 9, 1901. An hour and a half later he was brought into the Vienna surgical clinic bleeding profusely from what appeared to be an artery of large caliber. Digital pressure, within and without, over a period of an hour and a quarter, controlled the hemorrhage for about an hour. When it recurred a Mikulicz-Störk compression clamp was applied until the following morning. No further bleeding occurred for three days. On October 13 it was again necessary to apply the clamp to stop bleeding. Removal of the clamp twenty-four hours later, the 14th, was followed by more bleeding, necessitating its further immediate use. No further hemorrhage occurred until the 16th—two days later—when it was once again necessary to make use of the compression clamp. Its removal twenty-four hours later was not followed by bleeding, but there were signs of sloughing at the points where the pressure had been too continuously made by the clamp. A fistula leading from the throat within, through the skin, permitting fluids to escape on swallowing, made its appearance on the 18th, a day later. On the night of the 22d, following an intense paroxysm of coughing, a profuse hemorrhage occurred, the patient losing almost a liter of blood within a few minutes. This was controlled by prolonged digital pressure, but the patient sustained another, though smaller, loss of blood during the night. The following morning, the 23d, the common carotid artery was ligated, but the patient died at 4:30 o'clock in the afternoon, sixteen days after the operation, not having been able to withstand the great loss of blood. Autopsy showed that a small artery arching off from the external maxillary, and running directly into the base of the tonsil, had been severed. A sound could be passed through this vessel from the external maxillary artery to the point in the tonsillar base where it had been cut.

It is clear in my mind that had this bleeding vessel been caught with the artery forceps and ligated with catgut or silk before the loss of blood was so great, the patient's life could have been saved.

To illustrate how such serious bleedings can be averted when the proper measures are used to control primary bleeding, I shall now report a more recent case occurring in one of my patients at the Hebrew Hospital:

Case 3.—*Operation.*—M. H., a man aged 36, height 5 feet, waist measure 45 inches and weight 185 pounds (all conditions promising for much bleeding), was operated on by me under local anesthesia, Dec. 31, 1908, at 4 p. m. There was no difficulty in the removal of both tonsils *en masse* in their capsules, with the knife and vulsellum, without injury to the pillars of the fauces or exposure of muscle tissue. There was practically no primary bleeding, and the patient was required to keep in an upright position for several hours.

Postoperative Hemorrhage.—There was but the occasional expectoration of blood-stained saliva until about 9 o'clock in the evening, when the patient began to bleed profusely. He was then taken to the operating room and placed on the table. Bleeding from both tonsillar fossæ was found, more profusely from the right, however. A large spurting artery situated deep in the fossa of the right side, near the base of the anterior pillar, was pumping a steady stream across the opposite side of the throat. The bleeding was so profuse that pressure with several sponges seemed to have but little effect.

Control of Hemorrhage.—This vessel was then caught with the Jackson hemostat as quickly as possible and tied with catgut. There was another bleeding vessel of considerable size situated in the supratonsillar fossa of the same side, and this was also clamped and ligated. The patient lost perhaps in all about eight ounces of blood. Though this controlled the major part of the bleeding, there was still a tendency to ooze. The cause for this was soon found and one more artery of small size, situated deeply about the middle of the right posterior pillar, was caught and tied, also two small veins on the left side, one high up in the supratonsillar fossa, and the other in the bottom of the fossa just above the tongue. There was no further loss of blood, and the patient made an uninterrupted recovery, leaving the hospital on the third day after the operation.

From the profuse bleeding in this case we may say with certainty that had the same measures been employed to control it here as in Case 1 the outcome would have been as serious as in the former case, if not more so.

Many reasons have been offered as to why bleeding is great in some cases and slight in others. There can be no doubt that hemorrhage is more likely to occur in older subjects, but I have been forced to ligate vessels in a number of very young children. Severe hemorrhage has also been said to occur oftener in men than women. In my own experience, however, I can find no basis for this belief.

Hemophilia has been thought in many instances to be the cause of alarming hemorrhage. While no one will dispute the seriousness of an attempt to remove the tonsils in cases in which a real hemorrhagic diathesis exists, there are but few authentic cases of postoperative tonsillar hemorrhage where real proof of hemophilia can be produced. In the 150 cases collected from the literature by Damianos and Hermann,[4] only five, from the history, were thought to be hemophiles. In but two of the eight fatalities, reports of which were collected by the same authors, could this form of dyscrasia be suspected.

Among the fifty-four cases tabulated by Smith[2] and Wright,[3] three patients, all of whom recovered, were said by the operators to be hemophiles. I doubt whether even three patients would have recovered had they been real hemophiles. An undoubted hemophile was the patient whose case was reported by Dr. R. H. Johnston[5]—a boy, aged 17, who died fourteen days after three tonsillar crypts had been cauterized with the galvanocautery, from an almost continuous bleeding starting on the ninth day.

Dr. Chevalier Jackson[6] reports a case in which he saved the life of a patient after tonsil operation, performed by another physician, by ligation of the external carotid artery. Subsequent developments showed undoubted hemorrhagic diathesis, the patient bleeding to death from epistaxis at a later period.

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[4] Damianos and Hermann: Tödliche Nachblutung nach Tonsillotomie . . . , Wien. klin. Wchnschr., 1902, p. 225.

[5] Rev. hebd. de laryngol., 1906, xxvii, 545.

[6] Jackson, Chevalier: Ligation of External Carotid Artery . . . , New York Med. Jour., 1907, p. 308.

I believe that in many of the so-called hemophiles the bleeding is due to a blood vessel having been opened by cutting and not securely tied. In the Vienna case a family history of bleeding had been elicited from the patient, and, had the autopsy not proved the vessel to have been cut, this could undoubtedly have been reported as a case of hemophilia.

Cutting of either pillar of the fauces has been mentioned as a frequent cause of hemorrhage; many believe this to be the most common cause. This is probably true in those cases in which operation is done with the guillotine. In the new methods by dissection, hemorrhage is always greater when muscular fibers are exposed.

In order to have a clear understanding of the method which I employ, it will be better to follow the plan of the operation as we perform it at the Hebrew Hospital. As to the method itself nothing original is claimed. We simply apply the principle used to control bleeding in all general surgical operations—namely, to catch and tie every vessel showing a tendency to bleed profusely.

The operation performed is essentially that described by Dr. T. Chew Worthington,[7] with some slight modification in the technic. The tonsil is removed by dissection *en masse* in its capsule, with a modified Seiler septum knife, a two-pronged vulsellum being used to pull the gland out of its bed. Patients above 14, and occasionally under that age, are operated on when sitting under local anesthesia. A 0.25 per cent. solution of cocain in 1 to 6,000 adrenalin chlorid solution is injected into the region after the application of a 10 per cent. solution of cocain to the surface. Very little discomfort is complained of by the patient when thus anesthetized. Operations on children, and at times adults who insist on it, are done under ether anesthesia, the patient lying on the back, with the head of the table considerably lowered, so that the blood can not easily enter the larynx; 1 to 6,000 adrenalin solution is also injected before operating. The right tonsil is first removed, the tongue being depressed by an assistant. One or more large gauze sponges held in eight-inch Kelly static forceps and ligated with ordinary No. 2 catgut or clamps are then placed in the fossa and held there gently but firmly. The anesthetist is now directed to anesthetize the patient again fully. This being accomplished, a careful inspection of the fossa is made by holding back the anterior pillar with a pillar hook. Any spurting vessel is caught at once with Jackson's hemoblack silk. While we prefer catgut in most cases because we never hear from it again, it is sometimes easier to use silk. On several occasions, however, in which silk was used in the supratonsillar fossa it became encysted and gave rise to such irritation that we were obliged to pick it out. This does not occur when it is used lower down because it sloughs off during the process of healing.

At times, in spite of much blood pouring down the center of the fossa from above, there is no spurting vessel visible until the supratonsillar fossa is everted by means of a couple of pairs of long dressing forceps. In turning out the fossa we must not be misguided by the cessation of hemorrhage, for often the pressure made during this process is sufficient to close the mouth of the vessel. By lessening somewhat the pressure of the dressing forceps we have often been enabled to find the mouth of the spurting artery. It is from an artery high up in this situation, generally a branch of the descending palatine, that we have most trouble, and there is no doubt in my mind that this artery was responsible for the serious bleeding in Case 1. Ligation of the tonsillar artery has also been found necessary a number of times. Ballenger[8] has found bleeding from this vessel to be more frequent than from any other, whereas Jackson[9] sees the bleeding oftener from the upper vessel, as we likewise maintain. Occasionally it is also necessary to tie a vein or two of the tonsillar plexus.

All bleeding vessels having been controlled, a gauze sponge dusted with Squibb's surgical powder is packed into the fossa to control any oozing, and thus we have our field of operation absolutely free from blood for the removal of the left tonsil.

The second tonsil is removed in the same manner, and after all bleeding is controlled we remove the adenoid vegetations if their removal is called for. Here, too, we control the bleeding with a gauze sponge held firmly in the postnasal space by means of a Kelly clamp. Often no more than one-half to an ounce of blood is lost from the triple operation, and but a small proportion of this comes from the tonsils. Generally speaking, there is more primary bleeding when ether is given than when only local anesthesia is employed.

Many assert that the ligation of bleeding vessels is impossible in the small space afforded us in this region. I do not wish to imply that it is always easy to ligate vessels deep in the fossa; on the contrary, in a small mouth, when the vessel happens to be one the posterior pillar or deep down near the base of the tongue, where the bite of the forceps must necessarily be short, we frequently have to resort to a gauze packer to slip our loop over the end of the clamp. But in most instances we tie the vessels with comparative ease.

It may be argued that the ligature is not always necessary; that torsion will often suffice. Granted that this is true in a number of cases, I believe that by the use of the ligature we not only reduce primary hemorrhage to a minimum, but that we are also secured absolutely from recurrent or secondary bleeding; I have experienced such occurrences only when the vessel was not tied. In one case I was obliged to use ether anesthesia in an adult, several hours after the tonsils had been removed under cocain, in order to catch and tie the spurting artery. This could doubtless have been accomplished with little difficulty during the operation before the effects of the cocain had worn off.

An absolute necessity in catching and ligating the vessels is to have able assistants, as one assistant should evert the pillars while the other sponges and depresses the tongue, leaving both hands of the operator free to catch and tie vessels. This is one of my main reasons for no longer removing tonsils outside of the hospital.

An important point, in my opinion, is that the patient should not be removed from the operating table to his bed until all signs of bleeding have disappeared and the throat is perfectly dry. By so doing we avoid the swallowing of blood by the patient in a semiconscious state, as so frequently happens after the return to bed. Casselberry[10] reports the death of a boy, 3 years of age, after the removal of one tonsil, where the primary bleeding was apparently insignificant and was thought to have ceased; yet a few hours later the child was found in a hopeless condition, the blood having been swallowed. (This patient was not operated on by Dr. Casselberry, but by some other physician whose name was not mentioned.)

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[7] A Simple Method of Excision of the Faucial Tonsils, The Journal A. M. A., May 25, 1907, xlviii, 1761.

[8] Clinical Anatomy of the Tonsil, Tr. Am. Laryng. Assn., 1906, xxviii, 121.

[9] Tonsillar Hemorrhage and its Surgical Treatment, Ann. Surg., December, 1907, xlvi, 821.

It is quite generally recognized that in the presence of hemorrhagic diathesis the clotting capacity of the blood is increased by the calcium salts. In the removal of the posterior turbinal ends, in a number of cases, I have operated on the one side with, and the other side without, the preliminary administration of calcium, and in nearly every case there seemed to be much less bleeding when these salts were given.

Just how great may be the effect of these preparations on tonsillar bleeding it is, of course, difficult to say with certainty, but as it is impossible to tell in what cases hemophilia may exist, it has been my custom for a couple of years past to administer calcium, usually in the form of the lactate, for forty-eight hours prior to every tonsillectomy. One thing is certain: it can do no harm.

Regarding the injection of adrenalin preparation, there is a diversity of opinion. Some operators believe that its use predisposes to secondary bleeding. I recall no instance when the bleeding could be ascribed to the use of this agent, and it seems to me that the advantage offered during the operation, of a less bloody field with our landmarks unobscured, more than compensates for any slight tendency to secondary bleeding thought to follow its use.

This method of controlling bleeding has been used by me for the past ten months in both private and dispensary patients, with the utmost satisfaction. During this time styptics have been given up entirely and the pressure hemostat, formerly often applied, to the great discomfort of the patient, has fallen entirely into disuse.

In conclusion I would say that many obstacles arising at times in the management of some of my cases have been easily overcome through the efficient aid of Dr. Charles Bagley, Jr., and his assistants at the Hebrew Hospital.

1622 Madison Avenue.

ABSTRACT OF DISCUSSION

ON TONSIL SYMPOSIUM (PAPERS BY DRS. ROBERTSON, MAYER, PIERCE, PACKARD, AND COHEN)

DR. FRANK C. TODD, Minneapolis: It is evident that the profession is appreciating the fact that the incomplete operation performed with the tonsillotome has now no place in modern surgery. The removal of the entire tonsil in its capsule leaving intact its bed of muscular tissue and the faucial pillars uninjured gives the best ultimate results. But if the muscle tissue is torn or otherwise materially injured or the pillars are greatly damaged, or portions of the tonsil remain to form adhesive bands between the pillars and to continue the disease process, then the results are not the best that can be secured and may even bring about such cicatricial contraction as to interfere with the normal action of the muscles thereby causing discomfort and disturbance. Yet it is evident that considerable traumatism to these structures may take place and the results be good, even though not ideal. As throat surgeons, however, it is our duty to try to bring about ideal results and so to perfect our technic as to accomplish this end.

While the methods now in vogue differ materially, I can not help but observe that we are coming closer together and experience is bringing us to a method which will be, I believe, more or less universally adopted. A considerable experience has taught me the wisdom of avoiding the use of sharp instruments and particularly scissors and the method which I am using is similar to that described by Dr. Pierce. Dr. Cohen calls attention to the fact that it is not only desirable to stop bleeding on account of the danger to life, but for the sake of losing as little blood as possible, even though that danger does not exist. Dr Cohen quotes some as having claimed that the complete removal of the tonsil in its capsule results in less hemorrhage than following tonsillotomy with the guillotine, while he states that some others claim that the loss of blood is greater. This is undoubtedly due to the difference in the technic of various operators and I believe those who have performed the operation a great deal have worked out a more bloodless method. It will be interesting to secure the testimony of operators some years later when we have determined what may be considered the best method of performing this operation.

In regard to the use of calcium salts to prevent bleeding, I herewith quote an article recently published in THE JOURNAL of the American Medical Association, entitled "Pharmacologic Fetishisms" by Wilfred N. Barton, M.D., Washington, D. C. "The salts of calcium are supposed by many physicians—perhaps a majority—to increase the coagulability of the blood. As a matter of fact, they have no influence on coagulation time (Robertson, Illman, Duncan). Nor is it quite clear from a pharmacologic standpoint why they should ever have been expected to do so. Almost all of the calcium taken internally is passed through the bowel unchanged, owing to its extreme insolubility and impermeability. Then, too, it should be remembered that there is almost never any deficiency of calcium in the adult tissues. Treating with calcium internal hemorrhages in which the coagulability of blood is not reduced seems the height of folly. The calcium ion is useless in therapeutics."

Recently it has been called to my attention that the formation of a fibrous clot could be stimulated effectively by applying gelatine and I am now using it for that purpose in the nose as well as the throat. It seems to be effective but I do not feel that my experience is as yet of sufficient value to present the results at this time. One point which I wish especially to emphasize, however, is that of the position of the patient during general anesthesia. To do this operation properly and quickly a good view of the field of operation is required. The positions usually utilized, with which you are familiar, do not afford so good a view as the one which I here advocate, nor have they several advantages which will become evident to you on using this position. This I have learned not alone from my own experience, but from those who have witnessed the operation done in this position. The advantage of the position is not only the good view obtained, which can also be enjoyed by other observers, but there is absolutely no danger of the blood entering the larynx and the blood does not as easily obscure the field of operation. All assistants are out of the way and the first assistant can effectively sponge the blood and hold the tongue depressor.

DR. CHEVALIER JACKSON, Pittsburg: I think we shall all file away this morning's symposium and the discussion which has followed and study it over carefully. I question very much if there will ever be any one way of doing tonsil operations that will be followed by every one, but if we can break down that Chinese wall we have all put around ourselves with regard to the tonsil operation we can learn much. I thought I knew how to do the operation but two years ago I went to Fall River and saw Dr. Richards doing the work and I went home a wiser man. I found that I had not been getting the tonsils out completely. I was surprised when I found how easily one could determine by feeling in the fossa whether he had cleaned it out. When my former patients return now I take out the rest of the tonsils. One patient came back and I looked in the throat and said, "Why, this is one of the most beautiful results from the tonsil operations I have ever had." She said "Yes, after Dr. Dickinson fixed it up; he operated two months ago." I began to find out then how Dickinson did it and found that he had a good many good points in technic. We can all learn if we are willing. Every one who has seen Dr. Pierce operate knows the skilful manner in which he handles instruments. The snare he has shown is one of the best I have seen. I can heartily endorse Dr. Cohen's paper. There is no reason why we should use ice for the arrest of tonsillar hemorrhage when we know that we can control it in a surgical manner. I think ligation is at times necessary, though for the smaller vessels torsion is sufficient. It is difficult of course; every thing worth doing is difficult.

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[10] Chicago Med. Recorder, 1893, iv, 1.

In regard to Dr. Pierce's remark as to the uniqueness of my experience in ligation of the carotid, I have been also called to task by St. Clair Thompson in the same way. My position was unique for the reason that as consultant I saw these cases after everything else had been tried and the patient was moribund. I ligated the external carotid in a case in which previously caustics had been used and when the slough began to separate there was oozing again and had the carotid not been tied the patient would have bled to death. Changes in the blood in typhoid fever, diphtheria, erysipelas and other diseases may bring about a temporary condition similar to hemophilia.

As to instruments, we all have our own, of course, and we work with them until to us they are the best.

Dr. F. Gurney Stubbs, Chicago: I think the conclusions we will all draw from this symposium on the tonsils is that laryngology is advancing. One of the chief criticisms that has been levelled at the laryngologist is that he is somewhat provincial: that he is inclined to shut himself up in his own field ignoring the general principles of medicine and surgery. This has led the laryngologist into many errors and it is a sad commentary that at this late day, before a section on laryngology we should have to have called to our attention such a simple surgical procedure as picking up an artery with the clamp if it is bleeding. Probably the reason the tonsil operation has been brought into such bad repute is that every Tom, Dick and Harry in the medical profession has felt that the tonsillotome is all that is necessary for this operation. The papers which have been read to-day thoroughly cover the ground. It remains for each of us to work out his own technic.

We can not get away from the paper on anatomy; that is fixed. Of course, we may have an anomaly in which an artery is not where we expect it to be, but that is extremely rare. In considering the anatomy we must bear in mind that the source of disease, which is one of the indications for operation, is in the crypts and those of us who have for a number of years been shelling out the tonsil in its capsule, with the side toward the muscular tissue smooth and shiny, have been able to put a blunt probe down in the crypts and find that the bottom of these crypts is nothing more or less than this thin capsule. That is why when a tonsillotome is used and half the gland cut off the crypts go on with the disease just the same as before the operation. All that has been accomplished is to make more room in the throat. That important factor was not lost sight of in the indictions for enucleating tonsils.

As to the pathology of the tonsil, and its function, the hypothesis of Dr. Robertson appeals to me as most rational, especially as to the function of the tonsil being past at the sixth or eighth year, and if not previously inflamed tends to atrophy, the same as the adenoid.

As Dr. Jackson has just said, each one of us will probably work out a technic which varies a little from the other man's and it all depends on how familiar we become with that technic and how dextrous. Personally in the last five years I have been removing the tonsil *en masse* in its capsule. We have a body to enucleate which is held in position by no ligments; it simply rests between the faucial pillars held there by a reflexion of the mucous menbrane of the throat over it. Consequently by taking a knife, it doesn't matter what kind, we can easily cut through the mucous membrane and with forceps draw the tonsil well toward the median line in the throat and as soon as we have done that we see that it is attached only by loose connective tissue. Then with blunt dissection you go around it until you get over the line of greatest circumference. From then on it is a question of how to proceed. Some keep on using the knife claiming that when you are so far there is no use discarding the knife for another instrument. Personally I use a snare at this stage and with one contraction of the hand it shells the gland out very quickly. But, of course, that is a matter of preference. The whole operation of removing a tonsil should not take more than two or three minutes.

The question of bleeding then confronts us. In the last five or six years I have never encountered a spurting artery which necessitated a ligature. I think, however, that we should confront the matter as a surgeon would in other conditions. When the tonsil is enucleated in the manner I have described it is easy for you to see the blood vessels of any size that are cut and they are in loose connective tissue which allows them to contract readily. For a second after the removal of the tonsil there may be a rush of blood but as a rule the snare (and that is why I prefer it) crushes the ends of these vessels. As soon as the tonsil is out I take a piece of gauze in artery forceps and hold it in the fossa for a minute and then remove it. If there should be a spurting vessel, catch it up and treat it surgically.

Dr. W. E. Casselberry, Chicago: To secure data bearing on the superiority of results in tonsillectomy, the degree of safety of ether anesthesia for this operation in children and the readiest means of controlling hemorrhage, I have collected my records of 610 cases of patients operated on in private practice which for comparison of results may be divided as follows: (1) Tonsillotomy by the older methods embracing about 40 per cent. with ultimate recurrence of symptoms in one out of five cases; (2) tonsillectomy, not quite complete, in 20 per cent. with few actual recurrences but with many minor complaints from retention of secretions in the few follicles which escaped removal; (3) modern total tonsillectomy, in 40 per cent., with practical freedom from recurrence, in all cases.

Total tonsillectomy is an ordeal through which few adults are able to sit quietly for both tonsils at one time, and as the after-soreness is considerable, an interval of a week between the two is my customary recommendation excepting, of course, when a general anesthetic is given which is always necessary in young children and sometimes in adults to insure the quietude which this operation demands. When done in two sittings, it is reckoned statistically as one operation; 245 cases, nearly all of double tonsillectomy and adenectomy, most of the patients children under 14 years of age have been satisfactorily operated on under complete ether anesthesia without any fatality or other accident excepting threatened respiratory syncope twice which yielded promptly to artificial respiration, and without any subsequent pneumonia or nephritis or any permanent detriment. Midway during the preliminary etherization the throat is sprayed sparingly with a 2 per cent. cocain solution with adrenalin 1 to 2,000, an expedient which accounts for a more satisfactory quietude of the throat with avoidance of delays than is commonly credited to ether. Safety is likewise promoted by a special position of the patient which, while guarding against aspiration of blood, expedites the operating by diminishing the delays caused by bleeding. The right abdominal position which I now use throughout for the heavier patients and in part for all patients, differs from the usual lateral position in that the patient lies, not strictly on the side, but on the abdomen and antero-lateral surface of the chest and shoulder, the right arm being drawn from below backward across the table. which prevents him from rolling off. The face is first directed upward for convenience in removing the right tonsil but at the first free flow of blood the face is rotated downward, which I call the bleeding position, in which as bleeding lessens without waiting for it to stop, one can proceed unembarrassed by the blood flow, to enucleate the left tonsil, provided the operator kneels to direct a good headlight from below upward into the throat. However for smaller children who can be turned quickly and neatly I still prefer the dorsal position with head and shoulders raised, for the first tonsil, turning at the critical moment to the bleeding position for the second tonsil and returning again to the dorsal position for the adenoid.

Hemorrhages requiring supplementary means of control, in children, have been less than one per cent., whereas in adults all methods represented, none proving exempt, they have been 8 per cent., or if stated in terms of single adult tonsils 10 to 25, the ratio figuring the same since the use of adrenalin as before it, and the same for tonsillectomy as for tonsillotomy; but the cleanness of the socket after total enucleation renders it easier to find a bleeding vessel. These hemorrhages were all arterial and continued from 1 to 10 hours, showing no tendency to stop till controlled by the following means: In 8 cases by galvanocauterization; in 1 case by actual cauterization; in 1 case by solid silver nitrate cauterization; in 3 cases by hemostatic forceps; in 3 cases by Mikulicz' compressor; in 1 case by digital compression.

DR. C. F. WELTY, San Francisco: All tonsillar hemorrhage comes from remaining tonsil tissue. To describe just how this comes about, and why it is so I will have to describe the technic of the way I operate. I have stopped doing cocain operations entirely. The patient is sent to the hospital the night before, the bowels emptied and no breakfast allowed in the morning. A half hour before operation a ¼ grain morphin with a 1/150 atropin is given hypodermically; children in proportion, governed by the weight of the patient, and no morphin given to children under four years of age. The patient is placed on the back; primary anesthesia of nitrous oxid is given until they are completely under, and then ether until the patient ceases to struggle or the irritation is overcome; then the mouth gag is applied and the head drawn toward the right, the operator sitting on a chair. I have been using Dr. Rupert's cannula in the mouth. At this stage the throat is apt to be filled by mucus which is cleared away and a 1 to 1,000 solution of adrenalin is injected into the mucous membrane around the tonsil, about ½ dram. Then with any kind of a knife the mucous membrane is severed just where it attaches to the tonsil; and this is a very important step. My assistant holds the tongue and that is all; I take care of the hemorrhage myself. I use one anatomic forceps and one nasal forceps with an acute angle. I can change my hold of the tonsil with this very easily without causing hemorrhage. This incision through the mucous membrane is all the cutting that is done. Then I introduce the anatomic forceps and sweep it around and generally find that with a single sweep the tonsil is out in the throat. Sometimes it takes longer and sometimes the adhesions must be cut. Then the snare is put on and the operation finished. There may be a rush of blood, when a sponge is put in and held there for a minute or so, being changed as soon as it is saturated with blood, and being held with considerable pressure. If the bleeding does not stop in a short time I look for the bleeding vessel and grasp it with the forceps, allowing them to remain on for a few seconds and then taking them off. If it continues to bleed I suture the pillars at once. I never allow a patient to leave the table while bleeding. I have 250 such cases to report, with one severe bleeding, and in that case the tonsil was not sufficiently removed.

DR. GEORGE L. RICHARDS, Fall River, Mass.: There are two types of these tonsils—the large ones which stand out in the throat, and the smaller submerged ones in which the capsule has considerable fibrous tissue running down into the tonsil. In order to get any tonsil out completely you must do the operation extracapsularly. Dr. Jackson has kindly referred to me in connection with the finger nail operation; I did not originate it. There is a point where the line of cleavage between the capsule and fossa allows the finger nail to go through. It has one advantage over the blunt instrument and that is that you have the sense of touch, and you can get up into the supratonsillar fossa and get the velar lobe and bring it down into the throat. As soon as the tonsil is out in the throat I apply the forceps and then detach with the tonsillotome or snare. You can operate with any type of instrument with which you are familiar, but the main thing is to do the operation extracapsularly.

The question of tonsillotomy or tonsillectomy is not yet settled. One-third of the operators are still doing tonsillotomy, thinking the complete unnecessary. They have not studied the literature of rheumatism and kindred infections which have their portal of entry in the tonsils or they would change their minds. I agree with Dr. Welty as to hemorrhage occurring because of incomplete operation, though this is by no means always the case. Robertson showed us at the New Orleans session how to get the entire tonsil out and showed then that hemorrhage was sometimes due to incomplete operation. But the majority of cases reported in the literature do not seem to have been due to that cause. The six cases reported by Heuking came from injury to the pillars. It may be that this is sometimes the case, and it is as apt to be due to the tonsillotomy as to the tonsillectomy operation. It is easy to cut one of the pillars longitudinally and that is the worst bleeding to stop. One advantage of the finger method is that bleeding from this point is less apt to occur.

DR. J. F. BARNHILL, Indianapolis: I wish to subscribe to most that has been said concerning thorough work in tonsil dissection, but I do not believe the time has yet arrived when we should say that all tonsils should be removed by tonsillectomy. It has been said over and over again that we do not know what the function of the tonsil is, and until we do know that it has no function we should not in every case remove it *in toto*. In the kind of tonsil that Dr. Mayer has spoken of as the projecting tonsil it is not always necessary to remove it by dissection. I wish to defend local anesthesia for tonsil dissection. In the great majority of cases it is not necessary to subject the adult patient to general anesthesia for the purpose of total enucleation of the tonsils. With our modern means, and with modern remedies at hand, we may with local anesthesia now state to the patient that we can dissect out his tonsils without the least pain. The tonsils may immediately be dissected loose and removed together with their capsules. I do not have any one hold the tongue except the patient himself. There is a good psychic influence in this aside from the benefit you have of having every one out of the way. They may say they can not hold his tongue down, but you tell them that all others have done so and they will succeed nearly always better than any assistant could.

In regard to hemorrhage, of course everyone should be prepared to meet the emergency. I do not believe that it is always necessary to tie these vessels. Many of the vessels that spurt only slightly will check quickly and we do not hear from them again; nevertheless, I agree with Dr. Cohen that we should be surgeons and therefore prepared to do the work surgically when it is necessary.

DR. MARK D. STEVENSON, Akron, Ohio: The surgery of the tonsillar fossa, outside of the removal of mechanical obstruction, is primarily for the removal of retention spaces. There is little benefit obtained, either locally or to the general economy, if spaces remain after tonsillectomy due to pouch formation from scar contraction, or too free granulation or folds in the pillars, the harm depending on the amount of retention. To prevent pouch formation it is usually best to sacrifice the plica triangularis and sometimes a part of a very large overhanging anterior pillar. I also use a high table but I sit on a low stool. The patient lies on his side with his upper shoulder resting against a sidepiece which is placed on the table, and which comes to within a short distance of the head of the table. The patient's head is lower than the neck, and his face points downward and toward the operator so that blood or vomited matter readily runs out of the mouth. I think that in Dr. Todd's position a port of the already too small breathing space would be filled with blood. After complete enucleation of the tonsil, I find it very difficult and sometimes impossible to seize bleeding vessels with an ordinary hemostatic forceps, so I have had a forceps made pivoted with small sharp teeth on the end which readily seize the vessels in the moving pharyngeal muscles. It is slightly larger a short distance from the end than at the end, making it easier to slip the ligature down to the tissues in ligating a vessel. I do not find it difficult to ligate vessels during the operation but very difficult afterward when the patient is nervous and weak. One-half hour before operating a small dose of bromids is given to quiet patients when a local anesthetic is to be used. After removing a tonsil under general anesthesia steady pressure of gauze in the fossa usually quickly stops all bleeding. I prefer to use a knife alone or a knife and snare under general anesthesia, but under local anesthesia when it is important not to pull the tonsil which causes pain, especially that complained of in the Eustachian region, I much prefer the scissors and use three different shapes, one curved on the flat, another on the edge, and a third especially bent to cut free the base of the tonsil which usually lies considerably below the level of the tongue, and is difficult to cut with ordinary scissors. Under a general anesthetic the finger is one of the most useful instruments but I never employ it under local anesthesia. In dissecting the pillars free, the finger also makes a useful tongue depressor, and in addition, backward pressure can sometimes be made against the tonsil so that the knife does not draw it far from its fossa which causes after pain toward the ear.

Dr. Percy Fridenberg, New York City: As to tonsillar hemorrhage, ligation of the bleeding vessel is a counsel of perfection. Undoubtedly the surgical procedure described is the best, but in some cases we can not apply that procedure as we would desire; for instance, if we are called to see a case in which bleeding has been going on for some time it is almost impossible to find the vessels and catch them up and ligate them. In a case of severe tonsillar hemorrhage, as in epistaxis, the extreme restlessness and fear, the anxiety of the patient, often attended with shock and collapse or attacks of syncope, may make it impossible to get near the bleeding point until the action of the heart has been depressed, preferably by narcotic. This alone, by quieting the patient will sometimes stop the bleeding, and may be the only way of preparing for the surgical procedure which has been advised. When you are called in haste to such a case, and see blood everywhere: the patient spitting and coughing blood, the surrounding attendants "sweating blood," it is no easy matter to ligate a torn tonsillar vessel. In these instances we have to have recourse to measures which are not all we would wish, and among these measures I would mention a good strong hypodermic of morphin and digital compression.

Dr. F. E. V. Shore, Des Moines, Iowa: If we are to be so perfect in our surgical technic, and do these operations as surgeons would, it is surprising to me that one would discard the knife in a portion of the operation and use the snare to complete the work. I should as soon expect the general surgeon to use the snare in removing the appendix or for amputating a limb. It is certainly non-surgical and when the operation can be finished just as well without danger without changing the instrument, I can not see why we should not use the knife. Personally I have always used a sharp knife with a round point as sharp as it is possible to get it. It doesn't necessarily follow that I use the sharp edge at every step of the operation. As soon as I have divided the membrane, I dissect it up from the tonsil, separating the loose tissue until the tonsil is free. I do not believe it is a surgical procedure to run the finger down the throat. It is certainly not as aseptic as to use the knife which can be done just as well. I always precede the operation with the use of adrenalin.

There is one other point and that is as to the anesthetic. I must confess that I am not in harmony with the majority of the members as to the preferable anesthetic. I have operated in about the same number of cases that Dr. Casselberry mentioned, have used chloroform and in but two cases have I had difficulty. In one of these instead of using adrenalin I used adrin which I understand is twice as strong as adrenalin. In the other case, I used 10 per cent. solution of cocain applied to the throat. Both patients were children and there was temporary collapse. In a large number of cases, the status lymphaticus spoken of is really a status anestheticus. The anesthetist is at fault. Chloroform is safe if the anesthetist is familiar with his work. I never have hemorrhage any more. The patient must be prepared as for general operation, work done by preference in early morning before the patient has partaken of food or liquids. When the chloroform is administered, the patient should be in recumbent position with same after-care. I had some very severe hemorrhages in my early operations but have had none since adopting the routine method of ligation of the spurting vessels and in adults stitching the pillars. I remove the stitches in twenty-four hours.

Dr. O. Tydings, Chicago: Beginning this work some years ago, I first used the guillotine, then the blunt pointed curved bistoury, and later the cautery, for the entire removal of the tonsil. In 1902 I began the use of the knife and snare. I would separate the pillars and free the tonsil from adhesion with sharp knife occasionally using a blunt dissector until I could engage the tonsil in the loop of the snare. I spoke of this method five years ago and was reminded that the blunt dissector had been used 1,000 years before. I still have occasional use of my blunt dissector. I think Dr. Welty has struck the keynote as to the cause of hemorrhage, as our experience at the Chicage Eye, Ear, Nose and Throat Hospital shows. Dr. Stubbs, who spoke kindly of my knife, and I do two-thirds of the throat work at that institution; he reports no hemorrhages. I have had six cases of hemorrhage reported to me in the past seven years, three of which I saw. I did nothing in either case as the hemorrhage had been arrested before my arrival. There are many means by which we can control hemorrhage; one is by producing an artificial hyperemia, by constricting the limbs, by lowering blood pressure with an injection of morphin or anything to divert the current of blood from the parts. That all are not so easily arrested is evidenced by the following: A few weeks ago I was called up by a gentleman to know what to do for a case of hemorrhage. I told him what I would do but he did not heed the advice as he had succeeded without it. When a man leaves part of the tonsil and goes back after it with a punch to remove it, he is not doing clean surgical work. The cases of hemorrhages that I have been called on to treat have been other physicians' patients in whom there had been a partial removal of the tonsil. I may run across one of these severe bleeders some day, but I haven't yet; but I certainly should not feel alarmed, if I did, if I had an ordinary pair of forceps in my hand.

Dr. Oscar Wilkinson, Washington, exhibited a curved needle by which, after packing the fossæ with gauze, one could stitch the two pillars together. By putting in two or three stitches over the packed cavity one will not have any trouble in controlling the hemorrhage.

Dr. W. W. Carter, New York City: The snare is the method I usually employ in removing the tonsils. I was surprised to hear from Dr. Wright a few days ago that probably in nine-tenths of the tonsils removed by the snare there were found to be, on the outside of the tonsil so removed, striated muscular fibers. I believe this is due to two things: first, failure to follow the line of cleavage between the tonsil and fossa in separating the tonsil prior to applying the snare; second, to pulling the muscular tissue into the snare loop before bringing it home. I have seen within the last six months three cases in which the proper action of the posterior pillars has been interfered with by the removal of a portion of the muscular tissue by the snare. There was regurgitation of liquids through the nose. I wish to warn, therefore, against the use of the snare when the tonsil has not been properly liberated from the surrounding tissue, and from too great traction being made on the tonsil before bringing the snare home.

As to the use of the hemostat, I believe that it has its use, but that it is one of emergency, and should be limited to the time it takes to get hold of proper forceps, needles and sutures for stopping the hemorrhage in a strictly surgical manner. The amount of traumatism following the use of the tonsillar hemostat has been observed by me on several occasions. I saw a case recently in which the cellulitis following was sufficient, I am afraid, to cause the death of the patient. The proper method for stopping hemorrhage is to ligate the bleeding vessel, and this principle should be adhered to as strictly in throat surgery as in other parts of the body.

Dr. Joseph White, Richmond, Va.: I have operated for the removal of tonsils considerably more than one thousand times and never had a fatality and have only seen twice what I considered a very dangerous hemorrhage. In one case, I had to ligate the external carotid artery; in the other digital compression for six hours stopped the bleeding. I have not met with any other annoying or dangerous hemorrhage, and if you want a perfectly dry field you have nothing to do but make digital compression on the carotid against the spinal column. Most of the cases of bad bleeding are in adults and not in children, and compression on the carotid in this way will give you a dry field. When you release the pressure you can see the bleeding point and grasp it with a hemostat and the best one I have used for this purpose is Jackson's. Most cases of bleeding have been associated with nephritis, and the urine should be examined before operation in every case.

Dr. D. J. McDonald, New York City: I wish to speak of the question of backward children. As one looks at the matter of the discussion here to-day and notes the advances being made in this new field we must come to the conclusion that whatever method we employ we should be perfect in our operation. We know that thousands of dollars are lost to the city of New York, where there are eight hundred thousand children, because of these conditions. So that it is a matter of great importance to the community at large it behooves us to stir ourselves in order to better these conditions and save the community from excessive taxation. I have followed out the line of work of Dr. Richards, which can be done without a great surgical armamentarium. There are, of course, dangers connected with every operation. We could show that at least 40 per cent. of the troubles of childhood are due to these conditions. Let us do the work thoroughly, no matter by what method, and save the state, the nation and the child.

Dr. N. L. Wilson, Elizabeth, N. J.: I believe that any tonsil which needs to be removed should be thoroughly removed by a tonsillectomy. I have had more pain, more infection and more bleeding from tonsillectomy, but I believe that if the work is to be done at all it should be done in this thorough manner. I do not believe in giving morphin as it abolishes the reflexes which are so important. As to adrenalin, the majority of physicians I find use it too strong. It should not be used in a strength of more than 1 to 7,000 or 1 to 10,000. Just as good a hemostatic effect is obtained with the weaker solution. The question of light has been to me a very serious one. At the present time I am having one constructed for me on the plan of the Todd transilluminator. Ether is my choice as a general anesthetic, cocain and adrenalin for local anesthesia. The nurse is always instructed to watch the patient, and if she observes frequent swallowing to notify the doctor to examine the throat for bleeding.

Dr. Otto Glogau, New York City: In the April number of *American Medicine* I called attention to the importance of nasal examination in these cases. This is often neglected. It is necessary, especially for this work of education, to tell the school inspectors to pay more attention to the nasal condition of these children, as the correction of some primary nasal defect will avoid unnecessary removal of lymphoid tissue. Tonsillectomy may be indicated in some cases in which the patient or the parents are tuberculous or rheumatic. We do not yet know perfectly the function of the tonsils. Formerly the surgeons removed the whole thyroid but they do not now. When it is known that after the age of 12 or 14 years the tissue shrinks up why should we remove it thoroughly if the only symptoms are the interference with breathing? In most cases a well-performed tonsillotomy will give enough relief. The chiefs themselves in the dispensaries do not do this work and it may be dangerous if the young men should perform tonsillectomies. Besides a tonsillotomy, if done *lege artis*, takes a very long time and can only be performed under general anesthesia. Therefore at least in dispensary work tonsillotomy will be the only available method.

Dr. C. M. Robertson, Chicago: A great deal of hemorrhage is from the palatine and tonsillar arteries which are given off from the external maxillary, sometimes very close to the external carotid. There is likely to be a hemorrhage necessitating ligature, because the vessel is cut so short that the blood clot is forced out of the vessel by the pressure of the blood current.

Dr. Emil Mayer, New York City: In regard to my own portion of the subject I tried to emphasize the fact that not every tonsil that comes to us is grist for our mill. A child who does not present symptoms of obstructed breathing and has not had any previously existing tonsillar disease should be left alone until such time as the tonsils have had a chance to atrophy or until they become enlarged sufficiently to justify an operation. I was pleased to have Dr. Pierce make a suggestion which I shall surely follow—that of seizing the uvula with forceps and holding it out of the way to prevent its being engaged in the snare.

That anesthesia should never be given in a physician's office is absolute and positive; death after death has been reported from following this procedure. Chloroform is dangerous. These operations are done for the promotion of the welfare of these children and are not operations of necessity or emergency and, therefore, it is the more tragic if anything happens and we should be very cautious. In the adult both tonsils should not be removed at the same time.

In regard to the use of instruments: We have had instruments for the separation of the pillar; sharp instruments have been shown, and blunt ones, and we have seen some of the fingers: now I have something to show you which is in between these. I have taken the curved tonsil separator and had the edges serrated; with this the tonsil is readily enucleated. As to why we discard the knife at the final stage, that is a perfectly simple thing. We discard it in the lower portion because we have almost enucleated the tonsil and we come to the point of greatest danger and the snare enables us to complete the operation without danger. While we do not have hemorrhage we have a bloody surface and I would like Dr. Cohen to tell us how he ties these vessels. I think it is not so simple as has been expressed. As to the statement that the chiefs of clinic allow the younger assistants to do tonsillectomies, if the gentleman will visit my own clinic he will find that this is not so. My competent assistants do that kind of work and to each man is assigned a patient to be operated on and there is a check on him in the punching of the card to show who has done the operation. The junior is not allowed to do it until he has had long experience and has shown by his ability to do other things his dexterity in doing the more difficult operations; it is the last thing he is given to do.

Dr. Norval H. Pierce, Chicago: Dr. Mayer has expressed my ideas so much better than I could, that there is not much left for me to say. Regarding tonsillectomy versus tonsillotomy, Chicago I believe has been the battle ground. We have had some very warm discussions there and I was, and still am, a disbeliever in the removal of the tonsils as at one time advocated by some of my colleagues, For instance, in the early days of the work a gentleman showed me some specimens of tonsils encased in the lateral wall of the pharynx and of which he was very proud but which showed that he did not do a tonsillectomy, but a pharyngotomy; he took out pharyngeal tissue with the tonsil and not a little of it, either. I was called to see a patient after such a pharyngotomy. The patient was suffering with profound sepsis from which he recovered after a long illness and to this day he has a torticollis. It is very important to keep within a safe distance of the muscular tissue surrounding the tonsils and I think the snare does that better than any other instrument or method, not excepting dissection by the classical finger, described most beautifully by no less a gentleman than our esteemed colleague Celsus, who lived, as you know, some time before the present advocates of that method.

Dr. Lee Cohen, Baltimore: I should like to correct a seemingly prevalent, false impression that I have had an unusual number of severe bleedings. In ten years, I have had about eight cases, which I considered more or less troublesome. Perhaps some other operator would not have looked on these as very severe. Only in the two cases reported have I had any great difficulty in controlling the hemorrhage. The ligature is used not only to guard against serious bleeding but to reduce the loss of blood to the minimum, so that in frail children, convalescence may be hastened. As to the difficulty in seeing the vessels in case of profuse hemorrhage. This can always be satisfactorily overcome by packing the fossa with from two to four gauze sponges held in Kelly clamps, the pressure from which stops the bleeding for the time being. By removing one sponge at a time, beginning from below, we are enabled to inspect the fossa in sections, and thus the bleeding point can be seen with ease.

The method of tying is as follows: The hemostat being held by an assistant, a loose single loop of No. 2 catgut is tied around the shank of the forceps and slipped down to the lower end by means of the left index finger, while the other end of the catgut is held in the right hand, no part of which need enter the patients mouth. By bending the forceps over, or as expressed by Dr. Finney of Baltimore, by "rocking" it, the loop is pushed over the end of the hemostat, where it is held by the index finger, while the right hand draws the knot tightly. The clamp is now removed and the tying completed. With catgut, three loops should be used. Though incomplete removal may be the cause of severe hemorrhage, I can not agree with Dr. Welty, that it is the sole cause. In both severe hemorrhages reported by me, the tonsils were removed completely, with capsule intact, leaving a clean, smooth fossa. As to the removal of each tonsil separately, as suggested by Dr. Mayer, this may be advisable when a great deal of blood is lost from one side. When bleeding from the one is completely controlled by the ligature, however, before the other is excised, I can see no need of twice incapacitating the patient. I always remove both at one sitting.

There are two minor causes, which have appealed to me: One is foul breath when nothing but decomposing tonsillar secretion can be found to account for it. Another is pain referred to the ear, but in reality due to secretion pent up in the supratonsillar fossa. Tonsillectomy promptly relieves both conditions.

TRIFACIAL NEURALGIA *

FREDERIC V. HUSSEY, M.D.
PROVIDENCE, R. I.

One has only to glance over the literature covering the subject of trifacial neuralgia to realize the state of mind in which the medical profession has been in regard to the pathology and treatment of that most painful affection. It is well known that the more uncertainty there is as to the etiology and pathology of a disease the more varied is the treatment and the less uniform are the results. Rarely do we see anything approaching specific treatment of a disease unless the inciting cause and the resulting reaction are known.

The suffering occasioned by trifacial neuralgia has been such as to have excited for years the interest of physicians in the endeavor to find some means of permanent relief. The treatment of the disease has varied according as the ideas of the cause and pathology have varied, and it does not seem probable that the treatment will ever be uniform until a definite knowledge of such pathology is established. It is not the purpose of this paper to present any new information on the subject as the result of original research, but rather to endeavor, if possible, to arrive at some definite conclusions on the nature of trifacial neuralgia from an examination of the already existing literature on the subject.

For a long time it has been known that certain constitutional states of the body can produce a neuralgia of the trigeminal nerve. This is occasionally seen in such diseases as diabetes mellitus, malaria, syphilis, exhaustion, chronic nephritis, rheumatism, gout, lead poisoning, *et cetera.* As long ago as 1891 Dana[1] called attention to the fact that patients suffering from trifacial neuralgia very frequently have associated with that condition one of general arteriosclerosis. This led him to believe that arteriosclerosis was the chief cause of neuralgia. This view has been supported at times by others, notably by Putnam,[2] who published in 1891 ten cases in which he found an endarteritis and a general fibrosis; and by Horsley,[3] who had already advanced the same idea in 1887. Later, in 1897, the same surgeon, in discussing the pathology of trigeminal neuralgia, stated that he had not found any more degenerative changes than could be accounted for by the age, condition and habits of the patients.

Cushing[4] admits that arteriosclerosis is a persistent condition, but asserts that it follows the neuralgia and is a result of the pain. In support of this view, he cites a case in which, before operation, the blood pressure averaged 190 mm., rising to 200 mm. during the paroxysms. Since operation the average pressure has been 140 mm. The condition of heightened blood pressure is brought about, he thinks, by constantly recurring afferent impulses, which, like hard work, lead to changes in the vessels. Undoubtedly the condition of arteriosclerosis can produce trifacial neuralgia, and in these cases the use of the vasodilators to the proper degree will relieve the pain. It is easily conceivable, also, that the constantly recurring paroxysms of pain can aggravate an already existing arteriosclerosis, so that after operation an improvement will be seen in the blood pressure.

Tumors of the base of the brain, of the skull and of the Gasserian ganglion itself, may cause a neuralgia of the fifth nerve, as can also irritative conditions about the nose and mouth. Porcher,[5] in 1903, reported six cases in which the neuralgia was due to localized inflammation in the nose, antrum of Highmore or teeth. In two of the six cases, the Gasserian ganglion had already been removed by well-known surgeons, with a recurrence of the pain. Both patients were cured by proper drainage of the antrum of Highmore.

In 1905, Snow[6] reported 20 cases in which the neuralgia was due to intranasal pressure or a collection of pus within some of the accessory sinuses. He said he had seen "many cases of the acute form of tic douloureux accompany a cold with sinus accumulation and pass away with abatement of the inflammation or proper drainage of the nose." Somers,[7] in a paper in 1906, mentions the nose as a frequent and often unrecognized cause, and states that hypertrophy of the turbines, especially the middle, not infrequently produces both supraorbital and infraorbital neuralgia. He also calls attention to inflammation of the frontal, ethmoidal, sphenoidal sinuses and of the antrum of Highmore, as causes of trifacial neuralgia.

In the mouth, impacted third molars, carious teeth, pulp nodules found in the pulp chamber, and decayed roots entering the antrum of Highmore and producing antrum disease, frequently bring about a neuralgia of the fifth nerve. It is also well known that mere exposure to cold or damp weather is sufficient to start up attacks in some patients.

The type of lesion induced by the foregoing causes, which are irritative in character, is probably either a degenerative one or a peripheral neuritis which may be ascending in character, and may secondarily involve the Gasserian ganglion. But the number of cases of tic douloureux coming under this division is small and there remains by far the greater majority in which no constitutional or local irritative cause can be found. This gives some grounds for thinking there may be two types of neuralgia; one in which the lesion consists primarily of a neuritis of the peripheral branches which may be ascending in character, and another in which the primary lesion appears in the Gasserian ganglion.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] Dana: Med. News, New York, 1891, lviii.

[2] Putnam: Boston Med. and Surg. Jour., August, 1891.

[3] Horsley: Tr. Odont. Society, Lond. 1887.

[4] Cushing: Johns Hopkins Hosp. Bull., 1907, xviii.

[5] Porcher: Tr. Am. Laryngol. Assn., 1903.

[6] Snow: Tic Douloureux and Other Neuralgias from Intranasal and Accessory Sinus Pressures, New York Med. Jour., 1905, lxxxi.

[7] Somers, Lewis S.: Nasal Disease and Neuralgia, The Journal A. M. A., 1906, xlvii, 741.

The first group might be said to include the minor neuralgias in which the pain is not so intense, or the attacks so paroxysmal. The second group includes the major neuralgias in which the lesion is primarily central. These neuralgias are characterized by their paroxysms which tend to recur more frequently and to become progressively worse and by the associated facial tic.

Is there a definite pathology to be found in these cases of major neuralgia?

Rose[8] found a thickening of the interstitial connective tissues of the ganglion, and an irregularity in the form of the ganglionic cells. On this basis he regards the disease as a chronic inflammation resulting in contraction and compression of the nerve cells. Horsley,[9] in 1897, said he had not found more degenerative changes in ganglia than could be accounted for by the age, condition and habits of the patients. Krause,[10] in 1896, found degeneration of the ganglionic cells and nerve fibers, but no sclerosis or endarteritis.

In 1898 Spiller[11] gives the following as a result of the examination of seven ganglia removed by Keen:

> The medullary substance of the nerve fibers within the ganglion and its branches is much swollen, atrophied or entirely gone, depending on the intensity of the disease. The axis cylinders similarly are markedly degenerated or entirely destroyed. The vessels are very distinctly sclerotic, in some the lumen being entirely obliterated. There is also an increase in the connective tissue of the ganglion.

Two years later Barker,[12] in reporting the condition of two ganglia after removal, said that there were scarcely any normal-appearing cells; some of the nuclei were swollen and concentric bodies were present.

Schwab,[13] in 1903, reported the microscopic findings in four ganglia, two of which were removed before any peripheral operation had been done. The condition found in these four ganglia was the same as was found in two others reported the year preceding. He said:

> In all the ganglia a certain number of distinctly abnormal cells have been found. The number is too large to be accounted for by the accidental effect of faulty technic or through any hardening or staining processes. The cell changes have been found mostly in the peripheral portions of the ganglia, and in those cells which are characterized by staining deeply, by elongated outline and by their small volume, as compared to the cells which lie in the deeper portions of the ganglia. The changes found in the cells vary all the way from a slight degree of chromolysis to profound changes of total cell disintegration and nuclear migration. In three of the six ganglia perinuclear pigmentation was present in large numbers of the cells. In one of the ganglia a sclerosis of the periganglionic tissue with excessive connective tissue formation around and between the cells was found, which was so pronounced that its pathologic significance is unquestioned. In some of the ganglia neuritic changes were found in the peripheral branches, but only in those cases in which a peripheral operation had previously been done.

Later on Schwab, from twenty cases, concludes that there is a neuritis ascending from the terminal branches; that there is an interstitial inflammation of the ganglion, and that there is a central neuralgia affecting the roots at their entrance into the pons.

In 1904 Spiller[14] stated that, of 159 ganglia examined, all presented evidences of degeneration. Davis[15] also reported, in 1904, a ganglion examined by him, which showed advanced degeneration. Gordon,[16] two years later, in eight ganglia, "found the blood cells more or less thickened, depending on the age of the patient. The nerve bundles situated in the vicinity of the altered blood vessels always showed distinct degeneration. The duration of the disease has no special bearing on the degree of involvement of the nerves." He concludes as follows:

> The occurrence of degeneration of peripheral nerves is frequent, if not constant in neuralgia. This nerve degeneration is probably a primary one which, as a neuritis, assumes an ascending condition, and secondarily involves the Gasserian ganglia; the blood vessels undoubtedly play a certain rôle in the causation of a degenerative state of the peripheral nerves. It is difficult to draw a sharp distinction between neuritis and neuralgia, as accumulated facts tend to show an anatomic basis for the latter affection.

Cases are on record in which the ganglion removed by operation has showed nothing abnormal on microscopic examination. Caminiti[17] points out that at times cellular changes are present in the ganglion when tic douloureaux has not even existed.

Dana has suggested, I believe, that the pain occurring in women in early years may be in the nature of migraine; but that after a number of years the pain becomes chronic and more definitely located in the divisions. In the beginning, he says, it may be a disorder of the sensory neuron, neither in the ganglion or in the peripheral branches, but later certain degenerative changes may develop in the branches. The pain occurring after 40 years of age is due to a definite lesion either in the ganglion or in the branches.

The type of lesion in trifacial neuralgia when present has been either a degenerative one, an inflammatory one, as interstitial neuritis, or a neoplasm. As I understand, Spiller, who perhaps has made as careful a study of the subject as any one living, and whose experience has been extensive, has not yet examined a ganglion which has not showed evidences of abnormality. And yet, in a personal communication to me, he said that he was not ready to state that there was a definite pathologic condition to be found in every case of trigeminal neuralgia. Possibly the consensus of opinion may be summed up in his words:

> I should be unwilling to say that pathologic changes will be found in every case because we must believe that in some instances sufficient time has not been given for severe alteration to develop before the ganglion was removed.

And still, if the lesion is in the ganglion, why will division of the second and third branches of the fifth nerve, as they come off the ganglion within the skull, cure, for the time being at least, the neuralgia occurring in those divisions? In certain cases of recurrence in which Abbe operated a second time, it has been found that the pain has returned with regeneration of the nerve trunks. It was this fact which led him, in 1903, to adopt the method of interposing rubber tissue between the cut ends of the nerves to prevent reunion. If the lesion is in the ganglion, why should division of the peripheral branches give relief? Have not the better end-results obtained in complete removal of the Gasserian ganglion been due to the impossibility of regeneration of the nerve fibers? Spiller[14] says:

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[8] Rose: Practitioner, London, 1899, lxii.

[9] Horsley: Clin. Jour., 1897.

[10] Krause: Berl. klin. Wchnschr., 1906, xli; Die Neuralgie des Trigeminus, Leipsic, 1896.

[11] Keen and Spiller: Am. Jour. Med. Sc., 1898, cxvi.

[12] Barker, Lewellys F.: Microscopic Examination of Several Gasserian Ganglia, THE JOURNAL A. M. A., 1900, xxxiv, 1093.

[13] Schwab: Jour. Nerv. and Mental Dis., 1903, xxx.

[14] Frazier, Charles H., and Spiller, William G.: Physiologic Extirpation of the Ganglion of Gasser, THE JOURNAL A. M. A., 1904, xliii, 943.

[15] Davis: Univ. Penn. Med. Bull., 1904, xvii.

[16] Gordon: Is Neuralgia a Functional Disease? Tr. Coll. Phys.

[17] Caminiti: Arch. f. klin. chir., lxxvii, 4.

Philadelphia, 1906, xxviii.

> Very few ganglia have been entirely removed without relief of pain; indeed, I know of only two cases, and I am skeptical concerning these.

It seems also that we have a great deal to learn about the chemical changes in nerve cells during discharges of nerve impulses. "It seems possible that long after primary irritation has ceased, an abnormal chemical state may remain and excite the pain."[18]

We may divide the treatment of trifacial neuralgia into medical and surgical. In determining which to advise, it is necessary, if possible, to find the cause of the disease. Also the duration and frequency and severity of the attacks must be considered. It has been estimated that nearly 20 per cent. of the cases of trifacial neuralgia are amenable to treatment other than surgical. In view of this fact, it seems advisable first to recommend medical treatment to be given only for a short length of time unless improvement in the symptoms is seen. It is needless to say that in those cases recurring after some peripheral operation, medical treatment is contraindicated.

In the treatment of neuralgia of the fifth nerve by medical means, we should first remove, as far as possible, all predisposing causes, such as anemia, malaria, lead-poisoning, syphilis, etc., giving each condition its appropriate treatment. Occasionally, this alone will be sufficient to correct the neuralgia. If the patient is arteriosclerotic, the vasodilators pushed to the degree of producing a sufficient softening of the pulse may control the pain. In the migrainous type of neuralgia, according to Dana, surgical treatment should never be advised, as the lesion is probably located in the central nervous system. One has only to glance over the long list of drugs recommended for use in trifacial neuralgia to realize the uncertainty attending the use of any one. I shall speak of only one, namely, strychnin, as it seems to be the most reliable. It should be given in large ascending doses once daily subcutaneously. If a favorable response occurs, after the pain has disappeared, the drug should be gradually withdrawn.

In 1903 Zimmern[19] published an article giving the results obtained in eighteen cases treated by galvanism. He applies the constant galvanic current of an intensity of eight to fifteen milliamperes over the affected nerve endings for an hour or more at a time, after having first placed a large flat electrode over the nape of the neck, and a half mask of heavy tin-foil moulded to shape the face. In this way, as the current is distributed, no burning occurs. Of the eighteen cases of severe type treated in this way, Zimmern was successful in every case. The value of this treatment has been subscribed to in this country by Zabriskie and others.

In view of the fact that certain cases have been reported in which the neuralgia has been ascribed to nasal and buccal conditions and has been relieved by the correction of those abnormal conditions, a thorough examination of those cavities should be made. One should not be in a hurry, however, to ascribe the neuralgia to the teeth, for many patients have been martyrs to the cause in the past and have sacrificed all their teeth on one or the other side, without relief to their pain. But, as we do know that a carious tooth, antrum disease, accessory sinus disease or hypertrophied turbinates occasionally produce neuralgia, those conditions, if found to exist, should be corrected in the hope that by so doing we may reach the cause of the trouble.

Experience has shown that by the above means a certain number of cases of neuralgia of the fifth nerve will be arrested, either permanently or for longer or shorter intervals. Medical treatment, however, should be given only a fair trial. If the attacks are very frequent, severe and uncontrollable, one should advise an operation.

The injection treatment of trifacial neuralgia has been practiced with more or less success since Billroth and Neuber first began to use osmic acid in 1884. Many cures were reported as a result of this treatment. In 1900 Schlösser began to use 80 per cent. alcohol instead of the osmic acid. As yet he has not made, I believe, a complete report, but from time to time statements have been made by him and by other surgeons, showing that much is to be expected from the alcohol injections. The object of the treatment is to reach the second and third divisions just at their exits from the foramen rotundum and foramen ovale, respectively. It is not necessary to inject the alcohol directly into the nerve sheaths, but only into the vicinity of the nerve trunks. The operation is not a difficult one to do, and as yet no bad aftereffects have been noticed. As a result of the injections, a degenerative reaction is set up in the nerve, the effects of which are only transitory. Anesthesia of one-half of the anterior part of the head from the vertex to the chin is produced, as well as some incomplete paralysis of the masticatory muscles, which usually passes away in a few hours, but which may, according to Ostwalt,[20] last two or three months. The nerve recovers its normal condition, but "the pathologic irritability causing neuralgia disappears for a long time."[21] Ostwalt[20] reported, in 1906, sixty cases of trifacial neuralgia treated by injections of 80 per cent. alcohol; one-third of the patients had recurrences within five months of the time of the first injection. The relapse, as a rule, however, was much less severe and was promptly relieved by other injections. In 1907, Schlösser, at the Medical Congress at Wiesbaden, reported 209 cases in which relief from pain lasted on an average about one year from the time of the injections. Kiliani has reached his hundred-and-eightieth case and states that "his failures are exceedingly few." Patrick[22] published sixteen cases with one failure from supposed inability to reach the nerve. Of the sixteen patients, four have had occasional recurrence of pain, but they refused further treatment.

A permanent cure following a single injection is not, as a rule, to be expected. Recurrences may take place at any time from five months to one year. But Schlösser says that repeated injections delay the recurrences more and more, so that an almost absolute immunity from pain may ultimately be promised these people. It would seem as if the method has been given a thorough enough trial to mark it as a very successful palliative method of treatment.

The history of the operative treatment of trifacial neuralgia has been one of failure, until the intracranial operation was advised and performed in 1890. Since then the results of operation have been steadily growing better. The peripheral operations were a failure in most cases, because of regeneration of the nerve fibers. Still, in those cases in which a peripheral operation is indicated, good results may follow if measures are taken, such as plugging the foramina with silver screws or plugs, to prevent reunion of the ends of the divided and avulsed nerves. Peripheral operations on the third division, for one reason or another, are usually followed by better results than operations on the other two divisions. Frazier[23] says that, if pain is restricted to the distribution of the inferior dental branch of the third division or to the infraorbital branch of the second division, there is no question but that a peripheral operation is the one of choice, because the risk is less from this operation; a certain percentage of patients will recover, and a larger number are given relief, at least for some time One should always, however, resect a considerable portion of the nerve, or remove as much as possible by avulsion and plug the foramen.

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[18] Zabriskie: Postgraduate, 1905, xx.

[19] Zimmern: Arch. de neurol., xv, No. 87.

[20] Ostwalt: Lancet, London, 1906, i.

[21] Hecht, D'Orsay: The Methods and Technic of the Deep Alcohol Injections for Trifacial Neuralgia, The Journal A. M. A., 1907, xlix.

[22] Patrick, Hugh T.: The Treatment of Trifacial Neuralgia by Means of Deep Injections of Alcohol, The Journal A. M. A., 1907, xlix, 1567.

When recurrence follows one or more peripheral operations, or when the distribution of the pain becomes more widespread and is no longer limited to one, but is referred to two or all the branches of the ganglion, the period in which the peripheral operation is indicated has passed.

There are many variations in the procedure of surgeons in performing the intracranial operation. Some surgeons, as Abbe,[24] prefer to divide the branches, resect a small portion as they leave the anterior aspect of the ganglion, and then interpose rubber tissue between the cut ends to prevent reunion. Other operators, as Cushing,[4] Krause, Lexner,[25] favor total extirpation of the ganglion; while others, as Frazier and Kocher, prefer division or avulsion of the posterior sensory root of the ganglion. Cushing, I understand, has also lately begun to perform this operation in preference to total extirpation.

The failure of the intracranial operation from recurrence of pain has been due to reunion of the divided anterior branches when the Abbe operation was performed, or to incomplete removal of the ganglion when complete extirpation was attempted. To overcome these possibilities, Spiller, in 1898, suggested that the sensory root be divided. The success of this operation lies in the fact that unmedullated nerves do not become regenerated after division; and, as the nerve fibers comprising the sensory root of the ganglion are not medullated, regeneration after division does not take place. This has been proved experimentally by Spiller and confirmed by Ballance and Stewart[26] and Van Gehuchten.[27]

The difficulties of the intracranial operation do not lie in the exposure of the ganglion, but in the attempt to free it from its bed and in the fact of its close proximity to the wall of the cavernous sinus and the sixth nerve. For these reasons, it is asserted that division of the sensory root is the easiest method to carry out and will result in a still further decrease in the mortality.

For a long time intracranial operations were held in disfavor, because of the attendant high death rate. Tiffany's[28] estimated mortality, in 1896, of 22 to 23 per cent. for many years was the basis of the argument that the intracranial operation should be advised only in case of last resort. At that time the operation was in the developmental stage and as a consequence the risks were greater than they are at present. Hartley and Frazier place the mortality now at about 3 per cent. in competent hands. Cushing has had 2 deaths in 49 cases, while in the last 25 cases he has had no deaths. Abbe, in his last 25 cases, reports no deaths.

At present, when done by experienced men, the intracranial operation for trifacial neuralgia is not attended by more danger than is the average abdominal operation.

SUMMARY

Facial neuralgia may be classed as minor and major neuralgia. Minor neuralgias are due to peripheral causes, as carious teeth, disease of the antrum of Highmore, or nasal sinuses, by hypertrophied turbinates, nasal spurs, etc. The major neuralgias are probably due to a central lesion in the Gasserian ganglion, although, in these cases, the causes at times may have been peripheral.

The pathology of trifacial neuralgia is still indefinite. Although the investigation along that line has been very extensive, there still seems to be no definite lesion which can be demonstrated in every Gasserian ganglion removed. At least, some of the ganglia examined have given negative results, as reported by the pathologist. The lesion when present may be of a degenerative type, interstitial neuritis or a neoplasm (Frazier). Arteriosclerosis of the blood vessels is a common condition seen. In the peripheral nerves, there may be an ascending neuritis, which may secondarily affect the ganglion.

The treatment of trifacial neuralgia may be arranged under three divisions:

1. *Medical Stage.*—Medical treatment, often effective in the minor neuralgias due to constitutional conditions; includes also local treatment of nose and mouth; should not be persisted in too long without results.

2. *Peripheral Operation Stage.*—Peripheral operation, as neurectomy or avulsion, often effective in those cases in which one branch of a division or one division alone is affected. This stage includes treatment by injections of 80 per cent. alcohol in the region of the painful nerve, the results of which treatment have been very satisfactory. Cases for peripheral operation or treatment by injections should be carefully selected, and even in those cases there will be a certain percentage of recurrences.

3. *Stage of Intracranial Operation.*—Intracranial operations indicated in all types of major neuralgia where more than one division is affected and where medical treatment and peripheral operations have been tried and have failed. The operation advocated by Spiller, consisting of division of the sensory root of the Gasserian ganglion, seems to be the most rational one.

Note—In addition to the authorities previously cited, the following may be found of interest:

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[23] Frazier: Am. Jour. Med. Sc., 1903, cxxvi.
[24] Abbe: Ann. Surg., January, 1903.
[25] Lexner and Turk: Arch. f. klin. Chir., 1902, lxv.
[26] Ballance and Stewart: The Healing of Nerves, Macmillan Co.
[27] Van Gehuchten: Univ. Penn. Med. Bull., 1904, xvii.
[28] Tiffany: Ann. Surg., 1896, xxiv.

ABSTRACT OF DISCUSSION

Dr. Eugene S. Talbot, Chicago: I have had very little experience in the general treatment of trifacial neuralgia. Perhaps some of the most obscure cases are those in relation to irritations about the jaws and teeth. The most difficult cases I have been called on to treat are those in which there has been interstitial gingivitis for a number of years, with absorption of the alveolar process and in which the nerve fibers running into the apices of the roots have become exposed. In some cases it is very easy to diagnose these conditions, especially when the teeth are loose; on the other hand, there are obscure cases in which only one side of the alveolar process has been absorbed and the tooth still remains tight. The pulps are alive in these teeth, and it is only after exclusion of other conditions that we are able to locate the pain. In these cases the only thing to do is to destroy the pulps of the teeth. Other cases which are common and difficult to diagnose are those in which secondary dentine has developed in the dental pulp, or pulp stones. While all of us understand the pathology of the dental pulp, to a certain extent, yet from my experience in the study of this organ, I believe no one has a full idea of its pathology. It is a singular thing that within the last few years we have noted that certain conditions of the system such as autointoxication, blood poisoning, no matter whether due to drugs or systemic conditions, affect this organ, and it is one of the first structures to become involved in autointoxication. The pulp is an end-organ situated within the tooth. There are only one or two blood vessels and nerves entering the root of the tooth, where they multiply and divide and become a large mass, as compared with the entering nerves and arteries. This mass is enclosed in a crypt or cell. Toxins circulating in the blood, no matter what they may be, enter. The moment the pulp becomes engorged with blood there is stasis. Indicanuria, acidosis or any form of blood poisoning, causes this organ to become so involved that many of the diseases due to irritations are developed and deposits of secondary dentine, the formation of calcification islands, and the pressure on the nerve fibers in the pulp cause facial neuralgia. These are important pathologic conditions to the stomatologist. The average general practitioner would never locate the cause of the facial neuralgia in these structures. In cases of facial neuralgia, the stomatologist and the general practitioner should consult in order to locate the cause of the pain. The treatment outlined in this paper has become one of the fixed methods. I would like to hear more in regard to it.

Dr. M. L. Rhein, New York: As an observer I have carefully noted for some years what has been done in these cases, and from my own observations I have reached the conclusion that the general surgeon is prone to underestimate the number of cases of major facial neuralgia which develop from peripheral causes, which must originally have been minor neuralgias. This is the portion of the essay which is of especial interest to our Section. It is my belief from observation that the percentage of these cases that are ascending, as he puts it, is very much larger than is generally credited, and there is good reason for the fact that the general surgeon does not appreciate the number of cases that start in this manner. In the first place it is very rarely that he has the opportunity to come across these cases in the initial condition when it is purely of peripheral origin. But every stomatologist of any experience has had so many cases of this kind that have eventually terminated in the major form, that I feel we can all substantiate this point.

The question that is of peculiar interest to us is the prevention of major neuralgias by radically treating them in the condition that they present to the stomatologist when they are of peripheral origin. As I understand, Dr. Talbot was discussing the effect of the pathologic condition of the pulp of the teeth in these cases. It is in this very respect that I have been looking for the real etiologic factor of the peripheral origin of these cases for a number of years. Dr. Vida Latham has been very helpful to me for a number of years in mounting pathologic specimens of pulps of this nature which I have sent to her, and the microscopic examination of these pulps has borne out this fact. The peculiar relationship that the pulp has to the teeth when it is subject to unnatural irritation, is one that is bound to result in more or less of a pathologic condition at various periods of stress due to this irritating action, and it is my conviction that a great many dental operations are primarily at fault for this irritating and painful effect on the pulps of the teeth. In my experience the patients have been benefited to a great degree by absolutely eradicating the neuralgia when the case has been seen early enough before the disease has extended sufficiently into the nerve fiber itself, by the thorough removal of the pathologic pulp. In this respect I believe that when the offending tooth has been distinctly located, there has often been failure to produce the desired results.

It is absolutely essential in these cases that the pulp tissue should be removed to the very end of the root canal. In a majority of these cases crystallization of the pulp tissues has started and progressed to some extent, and this makes the removal of such pulp tissue in the multi-rooted teeth, where it generally exists, a very difficult matter, and instrumentation alone is never successful in satisfactorily accomplishing these results. When an operator discovers that he has located the real origin of this trouble in such a tooth, and is unable to remove every particle of the contents of those canals, there is only one recourse left, and that is to remove the tooth. In my experience the number of such teeth removed is very small, and only occurs when the irregularity of the roots in very great. The *x*-ray is of great help to the stomatologist, not only in giving him aid in diagnosing the offending pulp, but in informing him when he has satisfactorily reached the end of such roots. I could recite a number of cases that have passed into my hands after such pulp removal has been attempted and not successfully completed, in which, on completion by removing the contents from each of these canals, the result has been satisfactory. When the case once departs from this condition and reaches the unfortunate state described by the essayist as the major form, no method yet devised can be absolutely depended on.

I have paid special attention to the statistics regarding injection of alcohol, and I have found that my patient is relieved sometimes for a year, and even for two years; but recurrence of the major neuralgia finally ensues in a large number of cases treated in this way. I believe this to be due to the fact that the injection of the alcohol does nothing more than paralyze the nerve tissue involved at this period, and that when this action has been finally thrown off, as it generally is in time, the old condition recurs so far as major operations are concerned, therefore I am in hearty accord with what I judge is the technic of the essayist. I believe that when it is incumbent to have an operation of this kind, only the most radical offers any permanent results.

Dr. J. E. Power, Providence, R. I.: This error of faulty diagnosis is not confined entirely to the members of the dental profession. It is true that numbers of teeth are extracted for neuralgias which are not of dental origin; but this same error exists in the ranks of the neurologist, the surgeon, and the physician. By the very direction of their interests they are likely to see things from their viewpoint alone. I believe that the surgical procedure for the treatment of neuralgia should be the last thing on the program of treatment, and that while the dentist is bound in the interest of justice to refer his patient to the neurologist, the neurologist and physician have an equal responsibility, and they also are bound to refer such a patient to the dentist. While there are numbers of cases in which all the teeth have been extracted from a patient for relief of neuralgia with negative results, major operations are performed when proper examination and treatment of the teeth would reveal the cause and perhaps cure the disease. I believe that there is a very small percentage of those cases, which have become chronic, that can be traced directly to a dental origin, but the number is sufficient for us to give proper consideration to dental pains as a probable etiologic factor in neuralgia. Possibly Dr. Hussey will tell us whether or not there is any danger of tumor formation at the ends of the nerves when rubber has been interposed, and the relative danger of its presence. Since he has a wide experience in the medicinal treatment of neuralgia I shall be glad to have him relate his experience with aconitin.

The following is a brief history of a case which came under my treatment about four years ago. A patient, about 35 years old, suffered with neuralgia during varying periods, for five or six years. During these periods relief could be secured only by the administration of drugs. Examination showed a normal oral cavity. The lower third molar had been with difficulty extracted some three or four years previous. I performed an exploratory operation in the region of the extracted tooth which consisted of cutting through the tissues, chiseling through the bone, and establishing a communication with the inferior dental canal. Everything seemed normal, so I dressed the case, and in due time discharged the patient. Three years have now elapsed and there has been no recurrence of pain since two days after the operation. I do not know just what happened to cure the pain. We all know that in a process of repair of bone a callus is formed. I believe that in the extraction of the third molar referred to, the dentist had injured the bone. During the process of repair which followed a callus probably formed on the inner surface of that canal, which was just large enough to produce pressure on the inferior dental nerve. This of course is theoretical reasoning, but that the patient is cured is indeed fact.

Another case which will show the relative importance of dentistry to all other branches of medicine is the following, which had been diagnosticated trifacial neuralgia by several physicians, including a noted neurologist. The patient was prepared for an operation which would remove the second branch of the fifth nerve. The incision was made just below the orbit. When the bone was broken through pus flowed steadily from the antrum. The antrum drained and the patient was discharged cured. Is it not reasonable to believe that if the patient had been referred to a dentist or to a nose and throat specialist, the modern dentist or specialist would have examined the antrum by transillumination or other methods and even in the absence of any subjective symptoms would have made a positive diagnosis, thereby increasing the happiness of the patient.

Dr. M. L. Rhein, New York: My experience with the application of cold and heat and electricity in these cases is not very satisfactory; in the majority of cases they do not give the exact diagnostic results we desire. I have had success in reaching the tooth involved by a careful radiograph of each individual tooth in turn so as to not get one large radiograph of one side of the jaw but simply a non-distorted shadow picture of each particular tooth and its surroundings. It is generally at the point where the pulp with its circulation enters the root canal that the evidence of this inflammatory action becomes evident, and a careful study of most of these radiographs will show the effect of the inflammatory action on the alveolar structure in this neighborhood.

I do not mean to confine the dental irritation entirely to pulp effects. There are all kinds of dental disturbances that will act as peripheral etiologic factors in these cases, but nothing is so prone to do so as the condition in the case described by Dr. Powers. The number of cases due to the roots of the teeth impinging on the inferior dental canal itself has come to the obervation of almost every one of us, and this is also true of the effect of leaving portions of the roots of the teeth in the jaw after such teeth have been extracted. It has been my misfortune in a way to find myself at loggerheads with a number of men in my own locality, who are specialists in the extraction of teeth, for the simple reason that it has been the dogmatic practice of the majority of these specialists in extraction, that when they fracture the roots of the teeth (and there is no blame to be attached to them for that), and find that there is no purulent condition surrounding the roots of the teeth they calmly advise the patient that they need give no further consideration to this portion of the tooth left in the alveolus, and I have found it impossible at times to get such a specialist to remove such pieces. There is no factor more prone to produce peripheral irritation than a piece of root left, especiallly in the neighborhood of the inferior maxillary sinus.

Dr. U. C. Wendell, Milwaukee, Wis.: Not as a neurologist or pathologist, but as a general practitioner, I am much amused at the remarks made here about the general practitioner. In diagnosing these conditions, especially inflammation of the bone, cold and hot water may be used, and also the x-rays, but the response may be due to an inflammatory condition, or it may be absolutely reflex. The idiosyncracy of the patient ought also to be taken into consideration. Diagnosis of a remote disease of this kind is very difficult, even the most skilful physicians and surgeons have made the greatest mistakes in conjunction with the dentist. I have known of teeth being extracted indiscriminately without any relief of the condition. I recall an instance of a small root being left in the alveolar process. The tooth had been extracted years ago. This patient was under my care for two or three years, also under the care of a physician. He came in about six months ago and said this tooth was troubling him and it would have to be removed. I told him I did not believe there was any tooth trouble, that it was a reflex from some other source. The tooth was removed. Eventually I used the exploring needle and found the remains of a small root. I removed this also, but the man came back inside of several months with the same trouble; no doubt of reflex origin. He died of endocarditis.

The reflex action of the stomach and intestines is remarkable. I recall a patient in whom, when these stomach and intestinal conditions would come on, a swelling on the left side of his tongue would appear. This is outside of the discussion, but only goes to show how misleading cases may be.

Dr. E. A. Bogue, New York: During the past thirty years I have extracted or caused to be extracted only five good firm teeth. At present I have a case which has been going on for two years. The patient has been to nine different physicians, and no one has been able to discover the cause of his neuralgia. One man thought he found it in the inflammation of the Eustachian tube. He treated him and the pain subsided and stayed away for three weeks; then it returned. No one has since been able to stop that pain for more than three consecutive days. I do not think any one stopped it; it stopped itself. Thirty years ago in New York the practice of examination of each tooth separately was advocated and Dr. Bronson read a paper at that time advocating the isolation and careful examination of each tooth. I have myself subjected my teeth to examination by six or eight different men. One hurt me so much I did not get over it for two days. Not one of them, according to my idea, made a proper examination.

A surgeon, one of the professors of the Post-Graduate Medical College, brought a woman to my office with a swelling in the roof of the mouth. I suspected some trouble with the permanent molar on the right side. She said, "Impossible. I have just come from Dr. So-and-So a week ago, and he said my teeth are in perfect order." I found on the right side two cavities between every two teeth. Dr. Rhein intimates that we do not get the results we are after along diagnostic lines. It seems to me that we should outline among us here a careful examination of such a nature that it may be possible to those who can not afford radiographs of each case. That is not applicable to people at large. We have not time to put in that way, and the patient can not afford it; the great bulk of sufferers can not have it. A specialist and (so-called) oral surgeon described at Albany one time a case of pulp nodules, as he called it, which he had been able to diagnose causing facial neuralgia. He agreed with the patient that he would cure him for $1,600, and after an examination he found a big hole and put some arsenic in, and got his $800 to begin with. After the arsenic had been there twelve or fourteen days the slough was removed and he got his other $800. The facial neuralgia was cured.

I will confess my own utter inability to conceive any cause for the facial neuralgia which exists in the case which I mentioned. Transillumination has been tried. Every single tooth in the mouth has been either isolated by a rubber dam or cotton or both. There are a number of vacant canals. The patient's mouth has not been radiographed. I made the suggestion to him, but it has not been done to my knowledge. The pain is referable from time to time to the Eustachian tube on the right side. I feel certain there is no pulp exposure anywhere, no calcic abscess anywhere. I have not drilled into the roots.

I am glad Dr. Rhein has concluded that it is not wise to leave any pieces of pulp in the canal, and I hope he will agree that they are not easily removed in their entirety. I have seen several canals so small that it could not be removed at all.

Dr. M. L. Rhein, New York: I felt in the discussion of this subject we should not enter into the question of dental technic, but I do feel that so long as this is going into print I want emphatically to contradict the final statement of Dr. Bogue that it is impossible to remove the pulp contents of fine dental canals, and of the impossibility of removing pulp contents unless arsenic is used. I can demonstrate by means of radiographs of such cases the possibility of the stomatologist getting to the end of the finest canal, and I also want to protest emphatically at this time against the use of arsenic in treating these patients at all. I take an entirely opposite view from Dr. Bogue in this respect, because the very action of arsenic, its irritating effect on the tissues involved, is of such a nature that it is not an unusual etiologic factor in producing peripheral neuralgias.

Dr. F. V. Hussey, Providence, R. I.: I agree with Dr. Talbot in ascribing a great deal of importance to intestinal conditions. I believe thoroughly that the toxic state of the body resulting from a disordered intestinal condition has a great deal to do in many instances with so-called cases of facial neuralgia. The question of dividing neuralgias into minor and major types is simply theoretical for ease of discussion. We can not draw a sharp dividing line. I am of the opinion that the majority of these cases are of peripheral origin. The mere fact that we can not lay a finger on the peripheral cause does not necessarily mean that no cause is there. We know the body is constantly receiving peripheral stimuli, whether we are awake or asleep, and the fact that we are not always conscious of them does not necessarily exclude them.

Another thing which makes me think the pathologic findings which have been recorded in ganglia have been due to peripheral causes are that these findings are always very much more pronounced after preliminary peripheral operations; and in studying pathologic ganglia we should draw a distinction between ganglia which have been removed before peripheral operation and those removed after peripheral operation.

One point I wish to bring out is that medical treatment should not be indulged in too long without satisfactory results. The mere fact that a patient comes into your office and you prescribe for the pain and for the time being stop the neuralgia, does not necessarily mean that you are doing right by allowing that patient to drift along until he comes back. I think that if after three or four months of medical treatment a patient shows no signs of improvement he should be turned over to some one who can institute more radical means.

Thorough examination of the mouth, nose, eyes, ears, etc., should be made in all obscure cases. If we can eliminate disease of these structures we are so much better off.

While I believe that a cure can be promised much more definitely as a result of intracranial operation, we can not always do it. Other methods bring good results, and although they may be only temporary in the majority of instances, we can promise relief for a short time anyway.

The percentage of relief with alcoholic injection has been higher than with any other so-called palliative treatment. The mere fact that these cases recur five months, on an average, after the first injection, is no argument against the use of that method. It has been the experience of men using this method that recurrences after repeated injections become farther and farther apart.

Dr. Schlösser, who has had more experience than any one else, has taken the ground that by repeated injections you can offer a patient definite cure. It seems to me that the fact that the pain does recur is no argument against the injection treatment. I think Dr. Powers' theory in the case he recites, of a callus resulting from some injury to the jaw when the tooth was extracted, is a good one. We do know that certain exostoses will produce neuralgia, and there are cases on record in which removal has cured the trouble.

A STUDY OF MALNUTRITION IN THE SCHOOL CHILD *

[Editor's Note: The article with the above title, by Dr. E. Mather Sill, New York, appeared in The Journal, June 19, before the discussion thereon had been submitted to the speakers for correction. The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

Dr. E. S. Talbot, Chicago: This paper covers so much ground that it is difficult to discuss the entire matter. There are some points, however, of unusual interest to stomatologists. We all know that adenoids occur at an early age; this is also true of deformities of the turbinates and other bones of the face, nose and jaws. If the child be poorly nourished during the period of development—from the first to the twelfth year—it stands to reason that these tissues will cease to develop and will not improve later in life; that is to say, they become arrested or excessively developed and remain so. Since the brain presides over the development of the tissues of the body, when the brain is not properly nourished the poorly nourished nervous system affects the blood supply, produces arrest of development of the face, nose and jaws, and malnutrition of the teeth. I have called the attention of the profession for the last four years to the fact that the teeth are involved in malnutrition. In the eruptive fevers and other constitutional diseases the teeth do not develop strength as they would in health. I think the essayist has brought out these conditions in a general way very well. We all know that the slum children of European cities, as well as of New York, are the most poorly nourished, have the greatest deformities of the face, nose, and jaws, with adenoids, hypertrophies, etc. It is in our province as physicians and dentists to aid these children toward being properly nourished and cared for, more especially during the early developmental years, and I am sure much could be done toward alleviating, or rather preventing, deformities of the jaws and teeth, which in turn would in a large measure improve their mental qualities.

Dr. W. C. Wendel, Milwaukee: In our city we have been endeavoring to ascertain whether the children in the poor wards in the school districts are more subject to dental caries than the children in the better wards. We find very little difference between these poorer children, who have probably never consulted a dentist, and those in the better districts. We investigated some of the other school districts, where they are not exactly the poorest, but the medium class, although in these districts some attention is paid to the teeth, yet we find practically the same conditions, viz., dental neglect. Carious teeth among these children is not even so great as it is among our "better class." Tuberculous patients often have extremely fine teeth. In other cases, in which the parents are apparently healthy, we find exceedingly carious teeth in the children. Investigations have not been carried on extensively enough in this direction to be of much value, but I am of the impression that there is something deeper seated in the civilization of our people than local causes. At the same time we can not deny that malnutrition has a great deal to do with the building up of the osseous structures.

Dr. E. A. Bogue, New York: Dr. Sill did not go far enough back in his discussion. We must go back to infancy to trace the history of most of these carious teeth in children. Dr. Cronin, as you all know, has done considerable work in the matter of examination of school children. He is even now arranging for a system of school-houses, desks and seats, and a dietary and general treatment for all children under the care of the teachers. He takes the ground that we are not sufficiently paternal in this matter. That, having taken charge of the children during the hours of so-called education, we should care for them morally as well as physically. He points out that if physical defects can be corrected, either by diet or anything else, that it will cost less to correct them than to suffer the absence of children so constantly from school. I have elsewhere taken occasion to allude to the fact that 40 per cent. of the absences of school children from school are due to dental conditions—preventable by proper care.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

Referring to the dietary, there is one thing that should be added here—the performance of function. There can be no perfect development of an organ unless its function is brought into use. If the masticatory apparatus is brought early into use, development will be far better than it is.

Dr. E. S. Talbot, Chicago: As to Dr. Bogue's criticism, I was not speaking of prenatal influences. No doubt the first period of stress is the most important to be considered. All deformities of the new-born are due, to a greater or less extent, to malnutrition, as the essayist has said. The effect, however, may be originally on the mother instead of the child.

Dr. M. L. Rhein, New York: I think Dr. Bogue has called attention to the most important feature of the whole subject. As I understand it, the essayist is endeavoring to elicit the sympathy and care of the state in overcoming this condition of malnutrition in school children. That the condition exists is most evident, and I think a careful investigation of the facts from an economic point of view will bear out the correctness of the theory that if the state intends to educate the children it can not overlook the fact that the children must be maintained in a proper physical condition to be educated, but I agree with Dr. Bogue that mere dietary considerations are not the all-important consideration. In other words, the condition of malnutrition can not be corrected by dietary measures alone.

Dr. Bogue has fittingly alluded to the fact that function of the parts must be maintained. It is impossible for us to correct the antenatal conditions. That does not lie in the power of the state. The conditions that tend to the production of deformities and caries of the teeth exist, but the point remains that the malnutrition can not be corrected unless those conditions are primarily attended to. When these conditions exist, on account of the pain involved and the discomfort, the children will not masticate their food; so the first consideration is to put the mouths of these children in a condition that will make mastication possible, in order to produce the proper metabolic changes in the food to bring about assimilation and digestion. I think it becomes our duty to point out the fact that all the conditions resulting from malnutrition are to a large extent dependent on the proper mastication and insalivation of the food before it is swallowed, and that without the performance of these functions digestion and assimilation of the food becomes impossible. It is therefore essential that the organs of mastication be placed in a normal condition before that child will be able to use them properly.

Dr. Arthur Zentler, New York: From information I gather from abroad, I find the subject has been gone into very thoroughly there—that they recognize the need of the state taking care of the mouths of the children. This is especially so in Germany, where Dr. Jessen and Dr. Rose have organized the school dental clinics, and the care of the children is begun in the kindergarten.

It seems to me that with proper care in infancy and in the kindergarten the question of the teeth of the public school children would be to a large extent solved. If we will do something toward the development of the maxilla and the mandible of the child in its infancy through proper nourishment, it will not be necessary, as a rule, to do anything in future years.

Dr. G. V. I. Brown, Milwaukee: I feel that we are under obligation to the essayist for the results of his great undertaking in examining 1,200 children on the East Side. He has dealt with their sociologic relation to our special field as affected by poor food, bad air, lack of air space, etc. It is plain that oral disease resulted, not only from immediate ill-nourishment in the instance of each individual, but that it went back to the time before he was born. If the mother did not have sufficient food or air, and was bearing ten or eleven children, one right after the other, it was impossible that these children could have been sufficiently nourished. Therefore, each of these factors have had an influence on the child. Dr. Wendell's point is well taken when he calls attention to the fact that it is not so much the kind of food,or the amount taken, but the benefit derived from what is taken, and, more than that, the part of the individual which is most benefited. We must not assume that only poor people have caries. After all, the question is, how much or how little of the food taken is of nutritive benefit to the individual and what effect this has on dental caries. I do not know any better way of getting at this than by such work as has been outlined by Dr. Sill in his paper. I think we are to be congratulated on having such a paper in this Section.

Dr. W. C. Fisher, New York: I agree with Dr. Brown that this question is more of a sociologic problem than most of us realize. Unless one has worked in poor sections he can not appreciate the labor necessary for the production of such a paper as has been presented. These investigations are necessarily conducted in the congested districts, because it is here that we find these conditions to such an alarming extent. And how can it be otherwise under existing conditions? How can a laboring man who is fathering from seven to ten children earn enough money to procure food and shelter for them? It is impossible. It therefore sifts back to the sociologic problem. How can we better the condition of that family so that that man can provide for his family?

Dr. Sill compares conditions here with those in England, Scotland and Germany. He takes nations in which the people are all of one nationality. It is far easier to school a nation by its own people. The East Side of New York is made up of the most conglomerate collection of humanity imaginable. You can not teach these people—you can not talk to them; they speak so many different languages—hence the only way is to legislate for them. In other words, these immigrants—for they are mostly immigrants or children of immigrants—come in by tens of thousands and go to these already congested districts. The father can not get work; he can not provide food; and as a result we have these physically impoverished children. The whole remedy, it seems to me, will be found in the word "scatter." If these people could be distributed to the less congested districts, where they could find employment and better air, you would find they would provide food for the children, and the children would find a way to masticate it, and if they complain of the toothache they would be sent to the dentist. Those people are human beings. Give them proper environment and they will improve. We can not expect to improve them under existing conditions. They are massed together so closely it is like taking an ant hill and pushing it down in one place and it comes back in another. Good tenements won't do the work—get these people out of the tenement district. Dr. Sill states that within a few miles there are many thousands of people, enough to make a city. The moral tone is bound to be low, and the mind affects the body. There can not be a healthy body with an unhealthy mind. Until you change their conditions you can not help them. You can give them food every fifteen minutes and they will not profit by it.

Dr. W. C. Wendell, Milwaukee: Dr. Fisher spoke more on sociologic and moral lines. What I would like to know is: Do you find more caries in the mouths of this class of people, and more pathologic conditions, irregularities, adenoids and contracted arches, than you do in the better-fed class?

Dr. E. A. Bogue, New York: One of the British writers on the subject of adenoids called attention to the fact that on the equator about 3 per cent. of the population had adenoids, while in Greenland there was something like 40 per cent. I talked with Dr. Grenfell of Labrador, the missionary-physician, who told me that he thought there was over 30 per cent. in Labrador. There the people live largely on blubber. In the north of Scotland and certain parts of Germany, where the people eat oatmeal cake, which is hard and requires mastication, you will find good teeth and few adenoids—that is, among the older people. I have not examined the children. But in the generation of today you will find "store teeth." The young folks eat oatmeal, but they do not eat the hard cakes. This is not universally so, but to a large extent the young people eat too soft foods. Our calling is still one of repair; we have not been able as yet to exert the prophylactic measures to prevent these conditions of early decay of the teeth. We are still searching

Dr. M. L. Rhein, New York: I think Dr. Bogue is just a little wrong in saying that our calling is one of repair. While I am ready to admit that the ideal state of prophylaxis has not been reached in stomatology, yet there is no specialty in the entire field of medicine that has the possibility that we have in stomatology. Of course, the abnormalities of birth that come from defective parentage are those that can not be prevented after the child is born. These are economic and sociologic questions that are not under consideration; but, when they can be placed aside, the future of stomatology lies exclusively in prophylaxis and not in repair. I also disagree strongly with Dr. Fisher's remarks on this subject when he says that it is possible to scatter any such heterogeneous population by any enactment of legislation. In the first place, I know the East Side of New York. I have studied it very closely and I want to say that the people there are employed in occupations—they could not remain there if they were not. It is true their employment is such as is found in London in similar localities, but his prescription is an impossibility on the start because there is use for the employment of these men. If he would modify his statements and say that efforts to induce some portion of this population to be moved to the suburban districts were enforced it would be beneficial. Now, such efforts are being made constantly in the City of New York, but the impossibility of doing anything of this kind effectually is self-apparent. The improvements in the housing of this population have been going on for years, and a great deal of benefit undoubtedly accrues from efforts in that direction. The old tenements, such as were a disgrace to the city, can never be re-erected in the City of New York. The law prevents anything of that kind in the future, and there is no question of a steady improvement in that direction, but I do insist on the point, with all due reference to the value of proper air, ventilation, etc., that it is impossible to get the benefit of proper growth and nutrition unless primarily the dental organs are in a condition of normality, so that they will be used by the child. Consequently, I claim that it is the duty of the State, if it intends to educate the child, to see that the teeth are in such a condition that the child will masticate its food, just as it is the duty of the State to see that the eyes are in such a condition that they can be used normally; and I believe, when you come to sift this whole matter, that that is the most important point that will be left for consideration in order to accomplish the results that the essayist is looking for.

THE TONSILS AND THE TEETH *

[Editor's Note: The article with the above title, by Dr. G. Hudson Makuen, Philadelphia, appeared in The Journal, June 19, before the discussion thereon had been submitted to the speakers for correction The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

Dr. Frederick Lester Stanton, New York City: Dr. Makuen suggested the possibility of the enlarged faucial tonsil having a direct mechanical effect in pushing the alveolar process and teeth of the lower arch forward of their normal position, and that he has been unable to find anything similar to this theory in the literature of this subject. There has, however, been a similar theory advanced. In order to relieve the pressure on the enlarged faucial tonsil, the child has held the mandible forward, causing the teeth to lock in a malrelation, and in consequence the mandible has been developed to meet the needs of these unbalanced muscular forces, in this way producing a protruding lower jaw.

Dr. Charles K. Teter, Cleveland: I am much interested in this subject, as I have been closely connected with this kind of work for the last six years, but I do not entirely agree as to the necessity of complete extirpation of the tonsil, that is, in the majority of tonsil operations that are done by throat specialists to-day. I have worked with eight or nine leading specialists, and there are probably four or five who do complete extirpation every time they operate; and the others use their judgment in the matter. I have been in a position to compare the results of these operations, and when it comes to my own children—I have three and two had to have their tonsils removed—I prefer tonsillotomy. One child, 8 years old now, was operated on four years ago and has never had any trouble since. The other, about 4 years of age now, was operated on about a year ago. In children it is necessary to give a general anesthetic, and a tonsillectomy under these circumstances comes near to being a major operation; the hemorrhage is profuse, and it takes some time to do it properly. In an adult it is different, because complete extirpation may be done under a local anesthetic. I have had opportunity to follow up a good many cases, and I find in the majority of cases in which tonsillotomy was performed the after-results are just as good as in tonsillectomy.

Complete extirpation does not always end the trouble. Cicatricial tissue forms, which one of the surgeons states gives him more trouble than leaving part of the tonsil.

I have known in the last year of four cases of hemorrhage in which the patient almost lost his life, and the tonsillar pillars had to be ligated to stop the hemorrhage; so I do not think we should do a tonsillectomy in all these cases. I prefer tonsillotomy in children; in adults, if they have diseased tonsils, I prefer complete extirpation under local anesthesia.

Dr. G. V. I. Brown, Milwaukee: I had the pleasure of seeing Dr. Makuen operate last summer, and I am willing to subscribe to whatever he says with regard to methods of operation in tonsil removal. One point in his paper which I believe to be important has not been touched on in this discussion, that is his reference to tonsils which are enlarged, but not visibly so, because they are buried between and behind the faucial pillars. Recently I was asked to examine a patient who seemed to have rather small, certainly not large, tonsils, and a few minutes later two enormous tonsils were placed in my hands that had been dissected out from under the overlying tissue for the same individual. Undoubtedly, tonsils such as these would cause the conditions Dr. Makuen has called attention to, and unfortunately, if dentists depend on themselves for diagnosis, such conditions would often not be discovered sufficiently early to prevent their leading to serious pathologic results.

Dr. E. A. Bogue, New York City: We all know that children whose tonsils are enlarged will close their teeth in such a way as to promote an irregularity of the dental arches. I happen to possess models of two children taken at different periods of their lives during three or four years, and I think that the progress from almost a normal condition to very great abnormality is evidenced very clearly in those models. It is exceedingly interesting to me to hear Dr. Makuen bring that very point up. I have never heard it alluded to before. I am glad that Dr. Makuen spoke of the vicious circle—bad tonsils and bad arches. This is indeed a vicious circle, and as the proceedings of this section will be read more or less by medical men and by dentists, I think that is an important point which has been pretty much neglected. That the attention of dentists is being more and more directed to the entire oral cavity is unquestioned.

Dr. E. S. Talbot, Chicago: As to infection of the alveolar process referred to, I do not quite understand just what Dr. Makuen means by the relations of the tonsils to the teeth. There is no question but what there are germs in diseased tonsils, and there are germs in decayed teeth, but how the tonsil can affect the teeth I do not understand. But there is this point in relation to the teeth which I think Dr. Makuen intended to bring out, and that is that in all patients we have more or less interstitial gingivitis, inflammation of the alveolar process and the gums. We can not have infection of those structures without first an inflammation, then there must be pus germs to infect the part, which would be understood as pyorrhea alveolaris. When the tonsil becomes infected with pus germs we have interstitial gingivitis producing pyorrhea alveolaris, and on treating the tonsil or removing it and afterward curing the pyorrhea alveolaris, it does not occur again, although the interstitial gingivitis may remain. The vicious circle is all important, especially in younger children; the effect on the general system—on the blood and the nervous system is vicious. It prevents growth and development of the jaws and the face and nose as well. We all have seen children develop very rapidly after correction of these conditions.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

Dr. G. Hudson Makuen: I had expected that more would be said in the discussion with reference to my note on the effect of hypertrophied tonsils on the alignment of the teeth and the development of the alveolar arches. I have been able to find no reference to this point in the literature, and I should have liked to have had a fuller expression of opinion on it. It should be borne in mind that these large tonsils are sensitive to pressure, as a rule, only when they are acutely diseased, and only a little pressure sometimes is required to determine the position of the teeth and the shape in the alveolar processes. The relation between the faucial tonsils and the cervical glands is a very close one, as has been shown by anatomic dissections, and one observer, after the removal of some cervical glands, actually passed a probe from the wound in the neck into the faucial tonsillar fossa. The other day I removed the tonsils of a small child having a bunch of cervical glands nearly as large as my fist, which almost entirely disappeared in the brief space of one week after the operation. In other cases glandular enlargements in the neck may and do occasionally increase immediately after operations on the tonsils, which fact shows the close relationship existing between these structures.

As to the comparative merits of tonsillectomy and tonsillotomy, I would say that there seems now to be but little discussion. In the recent meetings of the two largest American laryngologic societies, only one man of the three hundred lifted up his voice in favor of the partial removal of the tonsils, and he was one who had long been a practitioner of the specialty, and he was loath to give up his older methods. Only diseased glands, of course, should be removed, and when we have once decided on the operation, I think we should remove all the diseased tissue, and we should not be deterred because the operation is more difficult or because there is likely to be more hemorrhage. With reference to this last objection, I may say that there are those who think the hemorrhage is greater after tonsillotomy than after tonsillectomy, because blood vessels cut through in fibrous tissue do not contract so readily as those not so surrounded. The operation is not a simple one, but requires some skill and dexterity. The removal of only a portion of the tonsil, beyond giving more breathing space, may do more harm than good by making of the diseased stump a more fruitful source of infection.

Dr. Brown's point with reference to submerged tonsils is a good one. The tonsil that protrudes into the pharynx and hangs, as it were, by a pedicle, is probably the least harmful, because it has better drainage and it does not admit of so much absorption of infected material in the general system. In reply to Dr. Talbot, I am of the opinion that foul detritus exuding from diseased tonsils must have a more or less injurious effect on the teeth, and from what he has just said, I gather that he agrees with me thoroughly on this point.

Clinical Notes

GONORRHEAL EXOSTOSIS OF THE OS CALCIS

REPORT OF CASES

GILMAN J. WINTHROP, M.D.
MOBILE, ALA.

Baer,[1] in 1906, called attention to certain cases characterized by pain over the plantar surface of the heel, due to a chronic inflammatory change, of gonorrheal origin, located in the flexor brevis digitorum muscle, with secondary new formation of bone or exostosis at the attachment of this muscle to the tubercle of the os calcis.

Nobl,[2] of Vienna, had previously noted exostoses on the posterior surface of the os calcis, due, he thought, to inflammation of the sheath of the tendo Achillis, and suggested that they might, perhaps, be of gonorrheal origin, but this was not proved.

L. Jacquet[3] and Painer[4] also described exostoses on the posterior calcaneal surface, but were unable to determine the etiologic factor.

Ely[5] refers to a condition he names "gonorrheal foot," and states:

> It is characterized by extreme sensitiveness, usually in the soles. A history of a comparatively recent infection by the coccus of Neisser can be obtained, and the urethra will be found affected. These feet have something about them that immediately makes one suspicious, but further than the extreme sensitiveness and the fact that the patients walk as if they were treading on eggs, I can not tell exactly what it is. Even the pathology is a matter of doubt, for the condition is not one to justify an operation, and the diagnosis is a mere matter of empiricism.

It is quite possible that he refers to cases of gonorrheal exostosis, but he reports no skiagraphic or pathologic findings.

The paper of Baer,[1] I believe, first definitely describes and proves the gonorrheal origin of the condition he terms "gonorrheal exostosis of the os calcis."

Following the report of six cases by Baer, Jaeger,[6] in 1908, reported eleven others, and Davidson[7] adds the eighteenth case. I wish to add to this number the histories of two cases.

This affection is probably not uncommon, but the chief symptom, that of pain under the heel, is usually ascribed to some other condition—flat foot, tuberculosis, osteomyelitis or sarcoma of the bone, neuritis, bursitis, chronic rheumatism, rheumatoid arthritis, Schaffer's foot and the various other conditions associated with painful heel—and the close relation of an existing or previous gonorrhea is overlooked.

PATHOLOGY

Baer[1] believes that the initial process is located in the flexor brevis digitorum muscle and extends down to the os calcis. The chronic inflammatory process produces, first, exostotic growths at the attachment of the muscle to the tubercle of the os calcis and, secondarily, other bony growths may develop on the sides and posterior surface of the calcaneum or in the adjacent tendons. Jaeger states that "pathologically the process is an ossifying periostitis." Gonorrheal arthritis and exostoses between and along the vertebra may be coexistent. Baer demonstrated gonococci by culture in 1 and in sections in 2 of 4 cases examined. Jaeger reports positive findings of gonococci in one case. Cultures taken in Davidson's case proved to be sterile.

SYMPTOMS

1. Pain.—This, the chief symptom, is referred to the plantar surface of the os calcis, is very limited and present only when the patient bears weight on the foot or on direct pressure over the exostosis. Both feet are generally simultaneously affected. Usually there is no pain on moving the foot, unless secondary osteophytes be present about the attachment of the tendo Achillis or mediotarsal joint. Pain about the ankle, knee or in the calf muscles may occasionally occur, because of strain on muscles or tendons from the unnatural gait of the patient.

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[1] Baer: Surg. Gynec. and Obst., February, 1906.

[2] Nobl: Fersenschmerz der Blennorrhoekranken, Ztschr. f. Heilk., xxiv, 273, quoted by Baer: Surg., Gynec. and Obst., February, 1906.

[3] Jacquet: Ann. de dermat. et de syph., 1892, p. 681; quoted by Baer: Surg., Gynec. and Obst., February, 1906.

[4] Painer: Tr. Am. Orthop. Assn., xi; quoted by Baer: Surg., Gynec. and Obst., February, 1906.

[5] Ely: Rheumatism of the Feet, Med. Rec., Aug. 5, 1905.

[6] Jaeger: Am. Jour. Orthop. Surg., January, 1908, v, No. 3.

[7] Davidson: Med. Rec., Oct. 3, 1908.

2. *Gait.*—The extreme tenderness of the heel causes the patient to throw the body weight forward to the ball of the foot and gives a tiptoeing gait. His steps are slow and careful.

3. *Deformity.*—There is but little noticeable deformity. Periosteal thickening often produces a swelling on either side of the calcaneum. Occasionally very large exostoses may be felt on the bottom of the os calcis.

DIAGNOSIS

The complaint of pain in both heels and admission of an existing gleet or attack of acute urethritis some months previously, generally three to nine months, are suspicious. These, with the presence of the tender spot over the tubercle of the os calcis, absence of acute signs of inflammation and the gait should lead to an *x*-ray examination. Skiagraphs show a pointed or slightly bulbous bony growth springing from the tubercle of the os calcis and varying in size from "that of a pea to that of a marble." Occasionally there may be multiple exostoses. All the cases recorded have occurred in adult males. The exostoses are commonly bilateral.

TREATMENT

All measures save operative seem of little avail. Baer reports five patients operated on with cure. Jaeger obtained excellent results in six patients operated on. Davidson's patient was fully relieved by operation.

An incision is made along the inner side of the heel parallel to the plantar fascia, exposing the lower border of the os calcis. The tissues are retracted and the exostosis chiseled or curetted away. The wound is closed with silkworm gut without drainage. Baer also used in several cases a plantar incision directly over the exostosis. Jaeger also employed the plantar incision and introduced a cigarette drain for twenty-four hours. The lateral incision is probably the better, as it admits of clearer exposure and the resulting scar is not subjected to pressure as when located on the bottom of the heel. Drainage is unnecessary, as there is but little bleeding and the wounds heal by first intention.

CASE REPORTS

Case 1.—*Patient.*—J. S., white man, aged 19, was admitted to Gouverneur Hospital,[8] New York, Sept. 11, 1907. Family history unimportant. Patient had measles and pertussis as a child. He was an electrician and was not subjected to an unusual amount of standing or walking.

Present Illness.—Patient had an attack of acute gonorrhea three months before admission, which was treated for several weeks. Three weeks before admission he noticed slight tenderness in both heels on walking. Tenderness had grown steadily worse and latterly in the evenings he had had some pain in ankle and running up to knee. The heels were never red or swollen and pain was noticed only on standing or walking.

Examination.—Patient was a rather poorly nourished man; general examination otherwise negative except for the presence of enlarged inguinal glands on both sides and for the tenderness under heels. On under surface of both heels there was marked tenderness over a very limited area. No swelling, redness or deformity was to be made out. Patient walked with great pain and threw his weight forward on to ball of foot, keeping heels free from the floor. Temperature, pulse and respiration were normal. Blood examination was normal; urine, normal except for presence of "clap shreds." Skiagraphs showed presence of exostoses on under surface of both ossa calcanei. Gonococci were determined in pus cells from the urine. The exostoses were, unfortunately, not examined for organisms.

Operation.—Ether. Right heel: Incision on inner side. Os calcis exposed and exostosis (½ inch long and ⅜ inch high) removed. Wound closed without drainage with silkworm gut. Left heel: Incision on plantar surface of heel; exostosis, about same size as in right foot, removed. Wound closed with silkworm gut. No drainage.

Postoperative History.—Wounds healed kindly and patient discharged November 28. All symptoms relieved. The pain in ankles and knees of which patient complained was evidently due to muscular strain produced by his abnormal gait in effort to relieve heels of pressure. This pain disappeared entirely after patient was kept in bed.

Case 2.—*Patient.*—X, man, aged 20, was admitted to Gouverneur Hospital,[9] New York, April, 1908. Family and past history unimportant.

Present Illness.—Some nine months before admission the patient contracted an acute gonorrheal urethritis. He was treated with urethral injection until the acute symptoms abated, when treatment was discontinued. He noticed a slight mucoid discharge in the mornings for some time after stopping treatment. About four months before admission he felt slight tenderness in heels when he first walked in the morning but this gradually wore off during the day. Lately this tenderness had grown worse and persisted all day, seriously interfering with walking. He had been treated without improvement for flat foot and rheumatism.

Examination.—Patient was a fairly well-nourished young man. Thoracic and abdominal organs were normal. Prostate was slightly enlarged and firmer than normal. Inguinal glands, especially of left side, were enlarged. Urine showed gonorrheal shreds in first glass; second and third glasses clear. On plantar surface of both heels there was marked tenderness on pressure and walking was quite painful. No redness, swelling or deformity was noticed about heel; no pain on movement of foot. Gram-negative diplococci were determined in cells from urine. Skiagraphs showed a pointed bony growth springing from the tubercle of both ossa calcanei.

Patient was treated with hypodermic injections of gonorrheal antitoxin for three weeks but without improvement.

Operation.—May 4, 1908. Ether anesthesia. Right foot: Incision over inner side of right heel exposing exostosis, which was chiselled away. Wound closed with continuous catgut suture. No drainage. Left foot: Plantar incision over tubercle of os calcis. Exostosis, not so large as in right foot, was easily removed with rongeur forceps. Catgut closure and no drainage.

Postoperative History.—Wounds healed by first intention. Patient discharged on twentieth day after operation. Very slight tenderness persists under left foot, probably because of scar.

204 Couti Street.

HAIR SICKNESS

H. F. GILLETTE, M.D.
CUBA, N. Y.

I wish to call the attention of those who are interested in the various phases of serotherapy to a disease which affects workmen in hair-cleaning mills. The hair from various animals is received at the mills in bales which are opened and the hair is put into machines which separate the hair from dust and other foreign material, and the workmen necessarily inhale much of this dust which, in part, is the dried secretion of the sudorific glands of the animals from which the hair came.

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[8] I am indebted to Dr. H. M. Silver, visiting surgeon to the Gouverneur Hospital for permission to publish this case.

[9] I desire to thank Dr. Edward L. Kellogg of New York City for permission to report this case.

The workmen recognize a disease, or reaction which they call "hair sickness," which comes on from 3 to 5 days from the time a new workman is first exposed to the dust. The sickness is characterized by a severe chill which comes on in seeming health, and a fever which may reach 103 to 104 F. The patient experiences severe pains in the head, back and extremities, and has nausea and vomiting. He usually is confined to the bed for a week or more. When he recovers he is immune to the disease so long as he continues to work about the hair, but if he leaves the mill for a year or two his immunity ceases and he experiences the reaction again if he resumes work about the hair. The mill hands claim that hair which has been removed by clipping machines from live horses is more toxic, and that the reaction comes on earlier and is more severe than that of other animals.

Workmen who are subject to asthma, or who look for a return of hay-fever on a certain date, are quite sure to be free from the asthma and hay-fever while working about the hair, but the immunity ceases after a time if they leave the mill and enter other work. Horse serum is used in the human subject because its effects are milder than the serums from other animals, yet if the observations of workmen are correct the dust from the horse is more toxic than that from other animals. One explanation of the seemingly increased toxemia from the dust from horse hair is that it comes usually direct from the clippers and with all the dust retained, while the cow hair which is received has been passed through a tanning process which washes out the dust.

It is possible that something on this subject has been reported, but I am not able to find any reference to the reaction or toxemia described.

[Editor's Comment.—This interesting account of what seems to be a special "trade disease" suggests the possibility that the symptoms described may be due to an infection rather than to an intoxication by any constituent of the hair. The sharp rise in temperature, the chill, and the general symptomatology are distinctly more in harmony with the course of an infection than with any intoxication with substances of animal origin. This possibility is made more plausible by the statement that the hair from hides that have been tanned seem less toxic than that derived from living animals. The process of tanning would naturally destroy the bacteria. Cultures from the blood might throw light on the etiology of the disease, which is assuredly well worthy of investigation.]

USE OF APPENDIX TO SPLICE THE URETER

HARVEY P. JACK, M.D.
CANISTEO, N. Y.

During some recent operations in the pelvis, in which the ureter was bared during the dissection, it occurred to me to see if it would be possible to use a healthy appendix to splice the defect caused by any injury of the ureter or by the involvement of an inch or two of it in cancerous disease, requiring the sacrifice of that portion. I found that I could bring the appendix over this place in the ureter without traction on its mesentery. Since these operations, whenever I have opened the abdomen either for removal of the appendix or for any other operation, I have attempted to ascertain if it were possible to bring the appendix over the ureter. My investigations have confirmed my opinion that it would be possible in a right-sided injury of the ureter to splice the defect with a healthy appendix. So far as I know this is an original idea.

PELLAGRA IN ARKANSAS

O. L. WILLIAMSON, M.D.
MARIANNA, ARK.

The following case came under my care July 28, 1909:

Patient.—Virginia C., negro woman, aged 23, field hand, married, has child 4 months old. Family history negative. Patient has had attacks of malaria; no syphilis; has always used corn-bread in preference to other breads.

Present Illness.—This began about May 20, 1909, with "sore mouth." Patient had considerable difficulty in eating on account of pain. About June 1 a skin lesion appeared on the proximal side of the palm of the right hand. This was followed in about a week by a similar lesion on the dorsal surface of the left hand. These lesions increased rapidly in area. They were thought to be due to burns, although patient could not remember having burned herself. The lips soon became affected with a moist lesion. Patient began losing flesh rapidly but continued to work in the fields. About July 10 diarrhea began. The stools contained blood and mucus but were not accompanied with tenesmus. She had no nourishment for the baby after July 14. Nausea and vomiting began July 25.

Examination.—On July 28 I found patient weak and emaciated. The dorsal surfaces of both hands were covered with a dark lesion that appeared somewhat like an old burn. The skin was thickened, rough, and very black in places. Portions of the surfaces were covered with crusts while others were entirely raw. The condition was exaggerated on the knuckles and between the fingers. There was some pus between the fingers. The palms were also affected but the lesions there were drier and there was considerable exfoliation. There were no raw surfaces on the palms. Both hands were slightly swollen. The affected areas were symmetrical in size, shape and position and extended from the tips of the fingers to about the juncture of the lower and middle thirds of the forearms. There were painful exfoliating areas on the lips. The tongue was red, smooth and painful. Stomatitis was evident. The temperature was 101 2/5, pulse 150, respiration 20; heart rapid but otherwise normal; lungs, liver and spleen normal; abdomen slightly tympanitic and tender. The skin of the abdomen appeared somewhat like that on the doral surfaces of the hands, being thick, rough and abnormally dark. The pupils were equal and reacted to light and accommodation. There was slight decrease in tactile sense over affected areas. The knee-jerk was normal on the right side but decreased on the left. There was no ankle clonus and nothing abnormal about the gait. The patient's mind was clear and she had neither headache nor vertigo. She complained of being tired, weak and thirsty; had pain in back of neck and itching of affected parts. She was restless at night and had had chills the past three nights; was still suffering from nausea, vomiting, loss of appetite and diarrhea. She had lost thirty pounds since June 10 and had become too weak to sit up long at the time. The urine contained neither albumin, casts nor sugar, the only abnormality being an increase of indican.

Examination of Blood: Hemoglobin, 95 to 100 per cent.; prolonged search revealed one estivoautumnal parasite. Polychromatophiles and macrocytes present; blood platelets decreased. Differential leucocyte count; small mononuclears, 23 per cent.; large mononuclears, 15.3 per cent.; polynuclears, 59.2 per cent.; eosinophiles, 2.4 per cent.

PAROXYSMAL TACHYCARDIA ASSOCIATED WITH ANGINAL SYMPTOMS

T. WERTZ, M.D.
PRINCETON, IND.

This condition began in my own person about six years ago, first with the loss of a heart-beat about every five to twenty beats, more particularly after meals and after exercise. There was little or no discomfort from the irregularity. Repeated examination of the heart by experts failed to discover any heart lesions. This condition continued for a period of about four years without any apparent increase in the irregularity and no other subjective symptoms.

ANGINA APPEARS

About two years ago anginal symptoms with tachycardia first made their appearance. At first the pain about the heart radiated into the left shoulder, and in a short time subsequent into both shoulders. This rapid heart and pain was always brought on by walking at my usual pace for a distance of two or three blocks, and at these times the heart would be very irregular. As time went on these paroxysms were excited by walking, by any sudden movement or mental excitement. At the height of this trouble night attacks occurred some time after retiring for two or three times at intervals of several weeks. These night attacks would last half an hour or more, the heart beating very rapidly—four or five times faster than normal. The attacks brought on by exercise usually quieted down after five or ten minutes of rest. With these paroxysms the heart irregularity was very great, losing a beat every three or four pulsations. After this condition had lasted about a year it began slowly to abate in severity so that now after two years the irregularity and pain about the heart is very much less.

Exercise immediately after a meal will set the heart to going; but an hour or more after the meals I can walk at a moderate pace for a mile or more with little discomfort. I feel perfectly well and comfortable when at rest bodily and mentally, with usually little or no irregularity of the heart and about 70 beats a minute. But this cardiac quietude is easily disturbed. In the morning hours before rising or with some mental emotion there will be a sudden jump of the heart beat to many times the normal. This unsteadiness seems to be associated with the congestion of the brain from the long recumbent position. Every morning this rapid heart action is a prominent factor while dressing. In the last six months a soft systolic initial murmur has developed without any other apparent heart lesion. All other bodily functions are normal and well performed. I am six feet tall, weigh two hundred pounds, am past 60 years of age and have always heretofore enjoyed good health and come of a long-lived family.

I have tried many forms of treatment with drugs, but without any apparent benefit, except during the first year of the severe symptoms. These were held in check or slightly modified by nitroglycerin pellets if taken before walking. For the last year all drugs have been abandoned. A daily morning cold tub bath will relieve the restlessness and steady the heart.

In addition to this I have discovered that the rapid heart can be instantly brought to the normal rhythm by grasping both carotids with the thumb and forefinger and compressing them against the larynx or trachea. The instant this compression is made the heart makes a single vigorous impulse and at once resumes its normal rhythm. This has been a great boon to me for the last year, as the galloping heart can at once be brought under subjection. The vagi seem to have lost control of the heart's action and this organ is like an engine without a governor. The compression of the carotids increases the blood pressure in the heart which, perhaps, through a better nutrition, steadies the cardiac ganglia. What the exact condition is and just how this compression of the carotids acts beyond increasing the blood pressure I am not prepared to say. But so far as my own case is concerned it has robbed this terrible condition of its sting. I place this statement on record hoping it may be of equal service to others in like conditions.

A CASE OF APPENDICITIS OF TWENTY YEARS' STANDING *

J. H. CARSTENS, M.D.
DETROIT

Clinical History.—Reported by Dr. F. E. Bowman. The patient, Mrs. E. W., aged 60, appears well nourished and robust. Her trouble, which began about the age of 40, was diagnosed as peritonitis and in about five months terminated in an abdominal abscess in the region of McBurney's point, which was lanced. It remained open for about three weeks. After this the right thigh was flexed on the abdomen for about eighteen months. For about eight years thereafter the patient's health was good. Then she fell from a hammock and injured her right hip. One week later an abscess appeared at the site of injury. Almost immediately after the fall, pain was experienced again at McBurney's point. The patient connected this pain with the abscess opening on the hip. In about three weeks she was about her housework in fair health.

After that time there were from one to three recurrences of the abscess openings on the hip, which healed in from three weeks to three months. About ten or twelve years ago she had an operation for appendicitis. The surgeon opened the abdomen at right iliac region and reported that "appendix had sloughed off." He likewise made a long incision on the hip at the site of the abscess opening. Recovery did not take place until ten months later. During convalescence repeated incisions were made on the hip and two on the abdomen, tubes being inserted in both abdominal and hip wounds. A tube was retained in the posterior wound for three years. This brings the history up to some seven years' ago. Then for three years abscesses formed from one to three a year. Poultices were applied and the lance used in every instance. For the past four years no abscess formed and the wounds closed. An abdominal hernia developed at the old abdominal incision in the meantime. In September, 1907, another abscess formed, which was opened. It drained freely at times; then would close to reopen in four or five days. In this condition the patient consulted Dr. J. H. Carstens on Dec. 7, 1907.

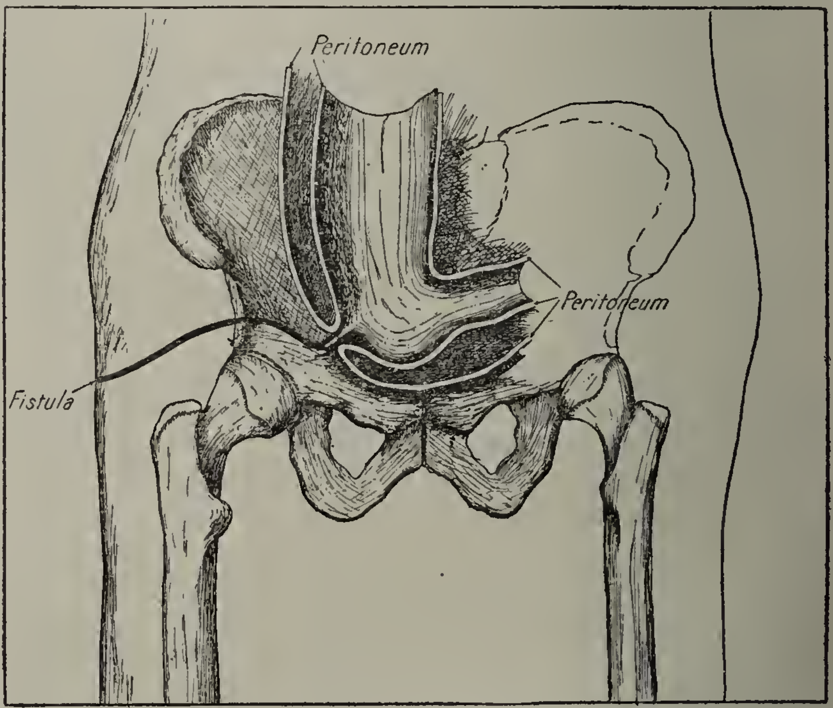

Diagram showing structures involved in an unusual course of an appendiceal abscess.

Operation (December 10).—An incision was made over the hernia. The cecum was adherent to the right iliac fossa and was with difficulty brought to view. A stump of the appendix, about three-fourths of an inch long, was still thoroughly adherent all around to the posterior peritoneum, but the center had passed through the peritoneum and opened behind the peritoneum into the fascia and muscles found in this locality. From there started an opening back of the peritoneum upward, passing over the ilium and then passing downwards around the hip joint, opening just back of the great trochanter. The remnant of the appendix was loosened from its adhesions. The peritoneum was stripped back, making a cuff to the cecum, the small stump of the appendix cut off, and the hole in the cecum closed with fine catgut. First, the muscles and mucous membrane were carefully brought together, the cuff of the peritoneum also sewed and all this amplified by Lembert's suture. A small rubber drainage-tube was then inserted in that posterior opening up to the crest of the ilium and then downward to the skin opening. The tube reached just up to the peritoneum, but not into it. The hole in the posterior peritoneum where the appendix had been was now carefully closed in a similar way to hole in the cecum and amplified with Lembert's suture. The peritoneal cavity was closed. I then resected the muscles where the hernia was, in the flap-splitting manner, put them well together with catgut, and closed the rest of the incision and skin without drainage.

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*Read at Northern Tri-State Medical Association, Toledo, July 13, 1909.

Postoperative History.—The patient made an ideal recovery. The rubber tube at the external opening was gradually withdrawn and in twelve days everything had healed perfectly. The patient has remained in good condition since that time.

Analysis of the case now with a better understanding shows that the appendix (probably two-thirds of it) reached back of the peritoneum originally. I described such cases ten years ago.[1] This part back of the peritoneum became inflamed and suppurated and sloughed off, the pus burrowing, and finally the abscess opened just in front of the crest of the ilium. Later on it burrowed downward and opened near Poupart's ligament, as shown in the schematic sketch I have made.

The adhesions and cicatrices offered more resistance than the loose cellular tissue in the iliac fossa; hence thereafter the burrowing continued over the ilium, then downward around the hip joint, and the abscess would open there. It was, indeed, a puzzling case. Any one looking at the different scars now would naturally make the diagnosis of a former hip-joint disease. A number of times the woman had been apparently well. Everything had healed, but as the result of injury or some trouble with the bowels the valve at the junction of the appendix with the cecum finally opened up. Now fecal and septic matter would get into the little stump of the appendix, and as the end was open (or only covered by the loose muscles and fascia found in the iliac fossa) it burrowed in the direction of least resistance.

As the more resisting peritoneum covered the stump the pus fortunately did not break into the peritoneal cavity and thus the woman's life was saved. Her wonderful power of resistance carried her through all, although she was suffering virtually for twenty years with a suppurating appendix.

620 Woodward Avenue.

Therapeutics

OPHTHALMIA NEONATORUM

While the treatment of this serious inflammation is generally rightly referred to the oculist, it may occur in little patients whom it is impossible to bring under the specialist's care. Also, the prevention of this inflammation of the eye is of national importance, and should be understood and carried out by every practitioner who takes charge of obstetrical cases.

Dr. Julien A. Gehrung, New York (*New York State Journal of Medicine*, May, 1909), offers good advice for the prevention and treatment of this serious inflammation.

As soon as the child is born and after thoroughly cleansing the eyes, he advises the instillation of a drop of a 1 per cent. nitrate of silver solution. While Credé advised the use of a 2 per cent. solution, Gehrung thinks the 1 per cent. is of sufficient strength. After the child has been washed and dressed and the nurse's hands have been cleansed, he advises the instillation of another drop of the 1 per cent. solution into each eye, and this may be followed by a little physiologic saline solution or a drop of adrenalin chlorid solution (1 to 5,000). This "stops the pain and neutralizes the further action of the silver."

Gehrung believes that this prophylactic treatment is efficient and as satisfactory as can be obtained from any silver preparation.

If in spite of such prophylactic treatment (and he emphasizes the necessity of cleanliness as being next to godliness, both in the care of the child and in the nurse's care of her own hands) the conjunctivæ become inflamed, he advises the use of cold boric acid solution (if the cornea is not involved) and careful cleansing of the pockets of the conjunctivæ. The lid of the eye is gently raised, all pressure being avoided, and the tip of a soft rubber bulb syringe is inserted under the upper lid. Slowly and gently the eye is irrigated with the cold boric acid solution to wash out all purulent matter. "This should be done every fifteen minutes, or oftener if the discharge is profuse."

He next advises the instillation of a 4 per cent. solution of cocain and adrenalin chlorid (1 to 5,000) for its anesthetic effect and to cause contraction of the blood vessels.

The cornea should be carefully watched, and to inspect it properly, if necessary, a lid elevator should be used. If the cornea is involved, hot applications and atropin drops are indicated.

If but one eye is involved, the greatest care should be exercised to prevent infection of the other eye.

Once a day during the inflammation Gehrung applies a 1 per cent. nitrate of silver solution as follows: "Raise the lid slightly, and with a cotton swab saturated with the silver solution gently brush (raising the upper eyelid on the swab) the whole conjunctiva, both upper and lower, being careful to treat the cul-de-sacs thoroughly. Such treatment breaks up all adhesions, opens pockets of pus, and enables the medicament to reach all parts." If bleeding is caused, it does good rather than harm.

The point of the swab should be thoroughly protected by folding cotton over it so that it can not injure the membrane. To apply the above treatment it is not necessary to evert the swollen, painful lids; simple elevation of the upper lid by the retractor is sufficient.

If the disease is severe, Gehrung uses instillations, every one or two hours, of a strong, even up to 50 per cent., argyrol solution, but does not believe this alone is satisfactory, and reinforces it by one daily application of a 1 per cent. solution of nitrate of silver. He thinks the nitrate of silver kills the germs that cause the inflammation.

He believes that ice compresses are of value, applied from ten to twenty minutes every two hours, or, if possible, more frequently, "according to the vitality of the child," but if the cornea is involved, as above stated, hot applications must be used.

Proper nutrition, preferably mother's milk, and proper hygiene are important factors in aiding quick recovery from this serious inflammation.

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[1] New York Med. Jour Aug. 12, 1899.

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SATURDAY, AUGUST 28, 1909

OLIVER WENDELL HOLMES

To-morrow, August 29, 1909, marks the hundredth anniversary of the birth of one whose name is probably more widely known than that of any other American physician. We refer to Oliver Wendell Holmes. The fact that the year 1809 saw the birth of four men of such varied genius as Gladstone, Tennyson, Darwin and Holmes has been frequently remarked. Dr. Holmes himself spoke of this circumstance in his "Hundred Days in Europe" in the following words: "It seems like an honor to have come into the world in such company, but it is more likely to provoke humility than vanity in a common mortal to find himself coeval with such illustrious personages"—a remark thoroughly characteristic of his breadth of spirit and not at all incompatible with the genial egotism appearing in many of his informal passages. The name of Dr. Holmes holds rather an unusual position in the annals of medicine and literature. There are great physicians who produced contributions to general literature, like Haller and Werlhof; and there are great writers who received a medical education, like Goldsmith and Keats; but the world has forgotten the literature of the former and the medicine of the latter. Dr. Holmes, however, belongs, with Sir Thomas Browne and "Rab's friend," to that small group who must be remembered both as devoted physicians and as lovable authors, because their writings are charged with personality, and the experience of their profession went to the upbuilding of that personality.

Moreover, while Dr. Holmes' lasting contributions to medicine are few, that he held a position of real influence in the medical thought of his day can not be doubted, as may be seen in the famous controversy concerning the contagiousness of puerperal fever. For forty years he was professor of anatomy at Harvard, keeping abreast of the progress of science to the end with all the enthusiasm of a young man; and yet he was the author of the exquisite lines of "The Chambered Nautilus." In this versatility, whose expression brought distinction in such widely varying fields, lies the most remarkable characteristic of his remarkable career.

It is perhaps of the genial "Autocrat" that we most often think when we hear the name of Oliver Wendell Holmes. The delightful humor and good sense of his philosophizings, his broad sympathy and charity toward all men, and his inexhaustible fund of anecdote and illustration have endeared him to us all, so that we turn back again and again to his "Breakfast Table" series to be cheered by his wit and to learn something of his fine charity.

The peculiar affection in which Dr. Holmes is held in medical circles is perhaps best explained by the fulness with which his life expressed the spirit that sang:

> A triple health to Friendship, Science, Art,
> From heads and hands that own a common heart!

THE FLY AND TYPHOID FEVER

The fly has from time immemorial been endured as a necessary scavenger. This it is, but a scavenger necessary only to those unaccustomed to reasonable and adequate cleanliness. While on the one hand the fly removes putrefying substances, on the other it distributes material at least as pathogenic—much tuberculous material, the virus of cholera, of tetanus, of trachoma, and of anthrax. It is certainly more than a coincidence that infant mortality is greatest in fly time. Milk is a very fair culture medium for bacteria, and amidst the uncleanliness obtaining in many families among the poor, it easily becomes contaminated with the excreta of flies and with the germs clinging to their feet. One fly was found thus to be the host for a hundred thousand fecal bacteria; "and it was on its way to the nearest milk pitcher." It is now generally agreed that the dysenteries and the diarrheas (except in the rare cases induced mechanically or nervously) are of microbic origin. Here the fly is surely implicated; especially since breast-fed infants almost never suffer the intestinal disorders which are deplorably frequent among the bottle-fed.

It is becoming manifest that the fly stands in a causative relation to typhoid fever. We have been accustomed to speak of typhoid as the autumnal fever. Counting back two months from the fall rise in typhoid mortality to the beginning of the fortnight's incubation, we come on the curve of prevalence of flies; the curve of high temperature most conducive to fly-breeding and activity; and also that of prevalence of diarrheal disease in both infant and adult. The time, then, when the fly is most active and numerous corresponds notably with the time when typhoid fever is contracted with unusual frequency. Many persons have come down with typhoid on returning to the city from their vacations, and tainted wells have generally been blamed; whereas, possibly in some cases the well has not been so blameworthy as the bluebottle.

The *Musca domestica* has not inaptly been termed the typhoid fly. Of course there are other means of contracting the disease than through this insect; but that it is a formidable agent can not be doubted. Its breeding-places are in the manure and refuse in and about stables; in the excrement of animals and human beings; in dust from dried urine and feces, and the discharges of "typhoid carriers;" in decaying vegetable matter, especially when congenial warmth and moisture coexist. Two hundred larvæ have been found in one inch of manure; ten days will suffice for the development of a brood; fifteen broods a season are possible; twelve flies surviving a winter may reproduce 40,000 during the following warm season. The fly's life is usually but a few weeks; but it may live dormant through the winter in closets and the warm parts of houses[1].

Felt [2]has found that this insect does not as a rule travel beyond three hundred to five hundred feet from its breeding-place; its habitat may indeed be close at hand—in spittoons, under the table, behind doors. It is, then, the part of wisdom to keep these insects from the sick-room, especially in contagious cases; to screen all doors and windows, especially in kitchen and dining-room; to cover or screen all food, particularly such as is uncooked, not only in homes, but also in hotels, provision stores and markets. Decaying material should not accumulate in or near a dwelling; fermentable refuse—bedding straw, waste paper, etc., which can not be burned or otherwise destroyed, should be covered with lime or kerosene oil; a modern sewage system, not leaking and not exposed, should be maintained; plumbing should be sanitary, filtration effective; kerosene should be poured into drains. Nuisances should be at once reported to health departments. Where there is no dirt and no filth there will be no flies. It is suggested[3] that the best and simplest fly-killer is a weak solution of formaldehyd in water (two drams to the pint); this should be put in saucers throughout the dwelling. Pyrethrum powder burned is also destructive of flies.

The typhoid bacillus may be carried from open drains, vaults and cesspools by flies, and then deposited by them on food and water; or the infection may be conveyed from open or box privies through underground drainage into wells, streams, small lakes and reservoirs visited by flies. Howard[4] would have large metal vessels used in rural districts; the excreta should be covered with earth, and the vessel should be emptied daily in a place where it is certain the drainage would not be dangerous. Manure should be put into tight pits or vaults without wire screens (which would be corroded by disinfectants); there should be an outer door from which the manure can be shoveled away. A barrel of chlorid of lime should be constantly at hand, from which each deposit of manure should be sprinkled.

Thus the breeding of flies may be prevented, but undoubtedly will not be until something like the same effort has been made to arouse public sentiment against the fly as against the mosquito. When by iteration and reiteration the chain of cause and effect that connects refuse, flies, and disease shall have become known to every one; when the housewife shall feel as much horror at finding a swarm of flies at her back door as she now feels at finding one in the parlor—then, perhaps, the day may come when scavenger flies will be as unknown in any self-respecting community as are now such scavenger dogs as those which constitute the street-cleaning force of Constantinople. Even if the extermination of the fly should not mean as much with relation to any one disease as the extermination of the anopheles has meant for malaria or the extinction of the calopus for yellow fever, in view of the number and variety of germs for which the fly is host, it is certain to mean an immense gain in general health.

THE TREATMENT OF NOCTURNAL ENURESIS WITH THYROID EXTRACT

Many causes have been assigned for the wetting of the bed at night by young and older children, but they have not led to any uniformly successful plan of treatment. In some instances, no doubt, the disorder may be traced to defective training, with the development of a vicious habit, but in many both provocative factor and remedial measure alike elude discovery. That the phenomenon may be due to some abnormality of internal secretion would appear to be shown by the interesting and instructive experience of Dr. Leonard Williams,[1] who records a series of 25 cases in which relief was afforded by the administration of small doses of thyroid extract. The suggestion was obtained from the case of a boy with nocturnal enuresis who instead of improving on removal of adenoids and tonsils became worse. Reasoning that the operation had deprived the child of a corrective internal secretion, Williams was led, on account of the intimate relations between the thyroid gland and the lymph glands, to try the therapeutic effect of thyroid extract. To use Dr. Williams' own words, "the effect was most dramatic." The enuresis ceased immediately and never recurred. Observations of a similar character had been previously made by a Belgian writer, Dr. Hertoghe, of Antwerp. It is important that the dose of thyroid extract employed be small—from ½ grain to 2½ grains thrice daily—as larger doses may defeat the purpose of the treatment, as was illustrated in one case in which enuresis previously absent developed in a boy to whom 2½ grains of thyroid extract were administered thrice daily for the correction of general debility following an attack of nephritis. The initial dose should be small, and it should be increased only if necessary, but no more should be administered than the minimum sufficient to effect the desired result. From the foregoing experiences it is argued that the thyroid secretion is a regulator of the action of the bladder and its sphincter, an excess being almost if not quite as deleterious as a deficiency.

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[1] Coward, F. A.: The Common House-Fly, The Journal A. M. A., June 5, 1909, ii, 1871.

[2] Felt, E. P.: The Control of Household Insects, Bull. New York State Education Dept.

[3] The Merchants' Association Committee on Pollution of the Waters of New York; Rules for Dealing with the Fly Nuisance.

[4] Howard, L. O.: House-Flies, U. S. Dept. of Agriculture, Bureau of Animal Industry.

[1] Lancet, May 1, 1909, p. 1245.

SLEEPING SICKNESS

Sir Henry Hesketh Bell, Governor of the Uganda Protectorate, claims to have sleeping sickness under control in the region under his supervision. This feat was not accomplished, however, by any successful medical treatment. Professor Koch's work seems to have been unavailing, so far as finding any really curative method against the disease. The success was obtained by the most drastic measures. For several hundred miles along the shore of Lake Victoria, a strip two miles in width has been depopulated by order and the inhabitants removed inland. This was done by cooperation with the native chiefs, and the only people who remain within reach of the *Glossina* carrying the disease are the dwellers on a few islands from which it was not practicable to remove them. The mortality, which had ranged from 20,000 to 30,000 a year in the protectorate, fell during 1908 to less than 2,000, and the deaths occur now almost exclusively in the segregation camps; and it is believed that the new cases of infection are very few. The ultimate good result which is hoped for is that in a comparatively short time the disease will disappear from lack of sources of infection. Such a measure could only be carried out successfully with a docile population living under almost absolute authority, and constant vigilance will be required hereafter to hold the ground gained in the contest against the disease. It is not likely that so extensive a tract along the border of a navigable lake, the largest in Africa, can remain always unutilized, and the investigations into the cause and cure of sleeping sickness, the finding of the host of the protozoon, will have to be continued until some conclusive and valuable results are obtained. The sleeping sickness does not appear to exist along the shores of other African lakes, at least not to any such extent as has been the case in Uganda, which is an encouraging fact so far as the prospect of the complete success of Sir Henry Hesketh Bell's methods is concerned. Thus far certainly the outlook is encouraging.

ACUTE RHEUMATISM

Acute articular rheumatism or rheumatic fever was first described in the middle of the eighteenth century by Boerhaave, who was himself a sufferer from the disease. His description was subsequently elaborated by one of his pupils, van Swieten, in his commentaries on the aphorisms of his distinguished master. Sydenham was one of the earliest observers to recognize the affection, and he has given a most admirable account of it. For a long time the disorder was attributed to changes in the chemical constitution of the blood, but modern investigation appears to have demonstrated conclusively its bacterial origin. It is true that there are many forms of arthritis, whether affecting a single joint or many joints, and due to divers causes, but among these true rheumatism stands out as an acute specific, apparently self-limited disease, with well-defined clinical and pathologic characteristics. According to the view of Dr. Norman Moore,[1] who discusses the subject at considerable length in the Lumleian Lectures, the cardinal features of rheumatic fever are endocarditis and arthritis. The former he believes to be always present, in most instances causing permanent damage to one or more valves. He goes so far as to express the opinion that any disease attended with arthritis, but not with evidences of endocarditis, is not rheumatic fever. Accordingly, he proposes the term "heart fever" as the most appropriate designation for the disease. There may be in addition pericarditis or pleurisy. The distinguishing feature of the arthritis, as differentiated from other forms of joint inflammation, is the fact that complete recovery always ensues. The temperature curve is characterized by an initial rise, followed after a decline by occasional elevations, with intervals of normal temperature. Acute rheumatism is to be distinguished especially from ulcerative endocarditis and gonococcal arthritis. In cases of ulcerative endocarditis the joints usually escape, the temperature is high and oscillating, the disease is of protracted duration and recovery is rare. In cases of gonococcal arthritis evidences of endocarditis are generally wanting, while the lesions of the joints almost always leave permanent injury behind. Rheumatic fever, according to Moore, has an indefinite and variable duration, from two months to ten years or more, in accordance with the course of the attending endocarditis and the survival of the causative micro-organisms. Treatment consists mainly in protracted rest and the administration of some form of salicylic acid.

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[1] Lancet, April 24, May 1, 8, 1909.

Medical News

CALIFORNIA

Personal.—Dr. and Mrs. Peter A. Jordan, San Jose, have returned from Europe.——Dr. Antoinette M. Bennette, San Bernardino, has been appointed resident physician and superintendent of nurses at the county hospital.——Dr. Thomas G. Hesser, Folsom, was operated on for appendicitis at Wentworth Hospital, Sacramento, July 28.

Sanatorium Dedicated.—The White Crusaders' Sanatorium for the Treatment of Patients Afflicted with Incipient Tuberculosis was dedicated July 16, at Alta. The site consists of 90 acres of wooded hillsides at an altitude of 3,600 feet, about one mile from Alta. The colony consists of eight buildings, grouped about the central sanatorium. In this building will be the dining-room, kitchen and general assembly room, and home of the resident physician. The sanatorium will accommodate thirty patients.

ILLINOIS

Chicago

Personal.—Dr. S. Josephine McCollum, recent medical superintendent and for ten years anesthetist at Mary Thompson Hospital, has withdrawn, entered private practice, and will make anesthetics a specialty.

KENTUCKY

Proclamation.—The State Board of Health has issued a proclamation setting forth that 39.1 per cent. of 119 samples of specimens of milk supplied to the city of Louisville examined are tubercular; showing that infectious and contagious diseases exist among cows producing milk for sale in Kentucky; announcing the existence of infectious and contagious diseases in the counties of the state, and giving rules for the prevention of the spread of these diseases and the protection of the health of the state. These rules provide that persons owning or controlling cows shall submit such cows to the tuberculin test; that no milk shall be sold in the state unless the cows producing same show a negative reaction to tuberculin; that all cows found to be infected with tuberculosis shall be destroyed at the cost of the owner; that all local boards through the state, the inspectors of the Bureau of Animal Industry of the

United States, and officers of the commonwealth shall cooperate with the officers of this board in this regard; that no cows such as are brought for immediate slaughter shall be allowed to enter the state unless they have shown negative reaction to tuberculin and have been inspected by the officers of the board.

MARYLAND

Hospital News.—The Polyclinic Dispensary will be opened in a short time on East Baltimore street. Dr. Leonard K. Hirshberg is chief of clinic and Drs. Newdigate M. Owensby, Claude A. Stonecipher, E. G. Linthicum, George W. DeHoff, Samuel Kahn, Henry H. Flood and Thomas H. Magness are his associates.——The Board of Estimates has appropriated $137,000 for improvements at Bayview Hospital. A wing will be erected to cost $87,000, making room for 150 additional beds, which will allow all patients to be in the hospital and empty the tunnel. This will also separate the insane from the indigent inmates.

Personal.—Dr. William K. White underwent an operation at University Hospital, August 5.——Dr. James M. H. Rowland has been elected chairman of the Democratic Advisory Committee of 120, which was appointed by the Democratic State Central Committee to manage the campaign next fall.——Dr. Percy Millard Dawson, associate professor of physiology in Johns Hopkins Medical School, has resigned.——Dr. Anton Dilger of the faculty of Heidelberg University is inspecting the hospitals of Baltimore.——Dr. Aristide Giampietro has been appointed physiologist in the Bureau of Plant Industries of the United States Department of Agriculture.

Baltimore

Personal.—Dr. Theodore Cooke, Jr., has been elected president of the National Prison Physician's Association which met recently in Seattle.——Dr. John Doyle, a resident physician at Mercy Hospital, was operated on for appendicitis in that institution, August 20.——Dr. William Henry Smith suffered a fracture of the fibula in a game of ball between the resident physicians and non-resident physicians of University Hospital, August 20.——Dr. Walter V. S. Levy, pathologist to University Hospital, has accepted a similar appointment to the Freedman's Hospital, Washington, D. C.——Dr. Matthew James McKinnon, of York, Pa., one of the oldest graduates of the University of Maryland, while on a visit to his daughter near Baltimore, was seized with a critical illness of the stomach.

MINNESOTA

New Hospital.—Drs. Archa E. Wilcox, Charles G. Weston and John Warren Little have had plans drawn for a hospital at Harriet and Franklin avenues, Minneapolis, to accommodate thirty-four patients.

Personal.—Dr. Edward W. Buckley, St. Paul, has been elected national physician of the Knights of Columbus.——Dr. Herbert O. Collins has been elected city physician of Minneapolis.——Dr. Wilcox has been appointed a member of the standing committee to take care of the Hopewell Hospital.

County Society Meeting.—The forty-first annual session of Wabasha County Medical Society was held at Wabasha, July 8, when Dr. Henry T. McGuigan, Mazeppa, was elected president; Dr. Joseph F. Bond, Wabasha, vice-president; Dr. William F. Wilson, Lake City, secretary and treasurer; Dr. Jesse A. Slocumb, Plainview, delegate to the state association; Dr. John P. Dougherty, Wabasha, alternate, and Dr. D. P. Dempsey, Kellogg, censor.

MONTANA

Smallpox Quarantine Abolished.—At a meeting of the State Board of Health, July 10, resolutions were adopted abolishing quarantine regulation of smallpox for the following reasons: Vaccination, properly performed and repeated at intervals, is an absolute preventative. The care of cases is a heavy expense on the counties. Properly vaccinated persons can not become a care on the counties.

Medical Board's Decision Affirmed.—A jury composed of Drs. Napoleon J. Salvail, Louis H. Fligman, Charles S. W. Thompson, all of Helena; McCabe, Oscar M. Lanstrum, Helena, and Max Barbour, heard an appeal in the District Court in the matter of the application of W. R. Smith, Roundup, to the State Board of Medical Examiners, for a certificate to practice. The jury returned a verdict sustaining the board and finding the defendant was not entitled to practice medicine in the state.

NEVADA

Hospital News.—At the meeting of the Goldfield Mine Owners' Association, Dr. Eugene A. Wheeler, formerly in charge of the Miners' Union Hospital, was selected to take charge of St. Mary's Hospital, succeeding Drs. D. Ashley Turner and Ora Burton Dunham.

New Laboratory.—Under the law creating a State Hygienic Laboratory at the University of Nevada and providing a bacteriologist for the diagnosis of infectious diseases for the physicians and health officers of the state and for research into the natural causes and control of such diseases, Dr. W. B. Mack has been appointed director of the laboratory.

Personal.—Dr. Francis C. Pache, Mina, was recently operated on in San Francisco for appendicitis.——Drs. Archibald L. Rice, Mack and John A. Lewis have been appointed members of the Board of Health of Reno.

NEW JERSEY

July Mortality.—During the month ended July 15, there were 2,606 deaths reported to the Bureau of Vital Statistics. It is noticeable that there is a decrease in the deaths from infantile diarrhea, measles, scarlet fever and diphtheria; cancer, infantile diarrhea, measles, scarlet fever and diphtheria, but an increase in cancer, cerebrospinal meningitis and nephritis.

Personal.—Dr. George H. Baker, Long Branch, is critically ill with cerebral hemorrhage.——Dr. Richard C. Barrington, Mount Holly, has succeeded Dr. J. W. Branin as a member and secretary of the State Board of Medical Examiners.——Dr. William F. Ridgway has succeeded Dr. J. Addison Joy as chief of the medical staff of the Atlantic City Hospital, and Dr. Samuel Barbash has been appointed chief of the dispensary work.

NEW YORK

New York City

Post-Graduate Hospital Acquires Property.—The New York Post-Graduate Hospital is to erect an annex to the hospital on property recently purchased by them for that purpose on Twentieth and Twenty-first streets.

Personal.—Dr. and Mrs. George L. Brodhead, Dr. and Mrs. Ferdinand C. Valentine, and Drs. Arthur S. Vosburgh, Charles S. Barnes, and Fred H. Albee have sailed for Europe.——Dr. Gordon Lindsay was recently assaulted and robbed of $200 on Twenty-sixth street and Second avenue.

OHIO

License Is Revoked.—The State Medical Board is said to have revoked the license of Dr. James M. Earnest, Alliance, June 30, and the license of Dr. J. G. Colton, Cleveland, July 6.

Election.—At the annual meeting of the Columbus Southside Physicians' Association, July 23, Dr. John Rauschkolb was elected president; Dr. Charles D. Dennis, vice-president; Dr. Harry Pershing, secretary, and Dr. Everett T. Tidd, treasurer.

Taken to Prison.—Dr. Norman M. Geer, Cleveland, said to have been five times indicted, thrice tried and twice convicted for performing illegal operations, who was refused motion for a new trial July 24, was taken to the State Penitentiary, Columbus, to serve his term of four years.

Illegal Practitioner Convicted.—Alba Dalka, Broken Branch, an Indian "herb doctor" of Tiffin, charged with the illegal practice of medicine, is said to have pleaded guilty and to have been sentenced to pay a fine of $25 and costs and to be imprisoned for sixty days in the county jail.

New Tuberculosis Hospitals.—A tuberculosis sanatorium to cost $50,000 is to be erected on the site purchased in McBeath Park, Lima, by Auglaize, Mercer, Van Wert and Allen counties, under the law recently passed by the legislature.——Preble and Montgomery counties have united in the acquisition of Brookside Sanatorium, which was opened August 2 with 14 patients.

Cincinnati

Personal.—Dr. Paul Gerhardt Wooley, professor of pathology in the University of Nebraska, has accepted the position of professor of pathology, and Dr. William B. Wherry, of the United States Public Health and Marine-Hospital Service, has accepted the position of assistant professor of bacteriology in the Ohio Miami Medical College, the Medical Department of the University of Cincinnati. Dr. Wooley will be pathologist and Dr. Wherry bacteriologist to the Cincinnati Hospital.

OKLAHOMA

Not in Good Standing.—The State Medical Board announced, July 15, that the Epworth Medical School of Oklahoma City is not in good standing, and that its diplomas will not be recognized in the future unless the requirements of the board are met.

Personal.—Dr. Robert E. Looney, Oklahoma City, has been appointed temporary city physician during the absence of Dr. William M. Hubbard.——Dr. William P. Fread, Enid, who sustained a fracture of the left leg in a runaway accident, has recovered.——Dr. Marcus H. Heldman, assistant city physician of Oklahoma City, has resigned.

Licenses Revoked.—The licenses of J. P. Norvell, Weleetka; James F. Lee, Eldorado; John Lindsay, Shady Point; Homer L. Wilson, Woodward, and W. A. Clark, Hitchcock, are said to have been revoked by the State Medical Board on the ground that they were not graduates of recognized medical schools, and were, therefore, illegally registered.

Hospital News.—The Duke and Rucks Sanatorium for Mental and Nervous Diseases, Guthrie, will hereafter be under the sole control of Dr. John W. Duke.——The Oklahoma Baptist Hospital, Muskogee, was formally opened for the reception of patients August 10. The institution is under the control of a board of trustees and is open to all reputable physicians.——The Ladies' Hospital Association, Muskogee, will begin immediately the erection of a forty-room hospital.——Shawnee recently voted $20,000 in bonds for the erection of a municpal hospital at that place.

PENNSYLVANIA

Personal.—Dr. Andrew S. Stayer, Altoona, has been reappointed surgeon-in-chief of the National Guard of Pennsylvania, with the rank of lieutenant-colonel.——A memorial tablet to Dr. Nathaniel Bedford, the first physician in Pittsburg, was placed on his tomb in Trinity Churchyard recently by the Daughters of the American Revolution.

Officers Elected.—At the annual meeting of the Lehigh Valley Medical Association, held at Delaware Water Gap, July 22, the following officers were elected: President, Dr. Obadiah H. Sproul, Flemington, N. J.; vice-presidents, Drs. Jonathan M. Wainwright, Scranton, and William E. Gregory, Stroudsburg; secretary, Dr. Clinton J. Kistler, Lehighton; treasurer, Dr. Albert A. Seem, Bangor.

Lodge Practice Condemned.—At the regular meeting of the Dauphin County Medical Society held in Harrisburg, August 17, a resolution was adopted requiring the expulsion of all members of the society who act as physicians for fraternal or beneficial orders under contract to treat members of such orders and their families at a fixed yearly rate, or who consult with physicians who engage in lodge or contract practice.

New Hospital Staff.—The new staff of St. Francis' Hospital, Pittsburg, is made up as follows: Medicine—Drs. Thomas G. Simonton, Ernest W. Willetts, Benson A. Cohoe and Howard G. Schleiter; surgery—Dr. Miller; gynecology—Dr. Raleigh R. Huggins; diseases of children—Dr. Ogden M. Edwards, Jr.; *x*-ray and skin diseases—Dr. Russell H. Boggs; ophthalmology—Dr. Edward A. Weisser; otology, rhinology and laryngology—Drs. Chevalier Q. Jackson and Edith T. Waldie; pathology—Dr. Ernest W. Willetts; and neurology—Dr. Thomas M. T. McKennan, Theodore Diller and W. Walker.

Medical Camp of Instruction.—The War Department designated the following members of the National Guard of Pennsylvania to attend the recent medical camp of instruction for officers at Antietam, Md.: Dr. Joseph K. Weaver, Norristown, colonel and surgeon-general; Drs. George H. Halberstadt, Pottsville, William J. Ashenfelter, Pottstown, Charles C. Wiley, Pittsburg, Morris F. Cawley, Allentown, Charles S. Turnbull, Philadelphia, William E. Keller, Scranton, Robert G. H. Hayes, Bellefonte, Benedict S. Ralston, Pittsburg, G. S. Crampton and Harlan Shoemaker, Philadelphia, majors and surgeons; Drs. P. Francis Gunster, Scranton, and M. Toland Sime, Philadelphia, captains and assistant surgeons; Drs. Edward M. Hand, Coraopolis, James F. Edwards, Pittsburg, Henry H. Doan, Philadelphia, Frederick A. Hartung, Pittsburg, Frederick O. Waage, Philadelphia, Robert S. McKee, Newhaven, William J. Crookston, Pittsburg, and John I. Robinson, State College, lieutenants and assistant surgeons.

Philadelphia

Hospital Buys Property.—The officials of Pennsylvania Hospital have purchased for $70,000 the property at 724 Spruce street. The building is occupied at present by the Women's Southern Homeopathic Hospital, which plans to erect a $150,000 new hospital at Broad and Fitzwater streets.

Wills Hospital Addition.—Plans have been prepared for the enlargement and improvement of Wills Eye Hospital. Beside interior changes to the present building, there will be an addition of three stories and basement, 80 by 32 feet.

Bequests.—By the will of the late Harry S. Henry, his entire estate, which is said to amount to $1,500,000, will revert on the death of the widow and his two sisters, to five local hospitals for establishment of beds for the treatment of white children.——The late Gustave Berntz bequeathed $500 to the German Hospital, and the late Elizabeth McGarvey $300 to the Presbyterian Home.

Personal.—Dr. David Braden Kyle has returned from Europe.——Dr. Andrew B. Kirkpatrick sailed for Europe August 14.——Dr. John H. Musser has gone to Europe to attend the International Medical Congress in Budapest. He is chairman of the American committee.——Drs. Luther C. Peter, Carle Lee Felt and H. Brooker Mills have resigned from the staff of the Northwestern General Hospital.——Dr. H. M. Goddard has returned from Europe.

Appeal for Epileptic Clinic.—A letter of appeal has been sent throughout the city asking for funds for the establishment of a clinic and an employment bureau for persons suffering with epilepsy. The clinic is to be known as the Letchworth Clinic for the Home Treatment of Epileptics. It is also aimed to start an employment bureau to be known as the Society for Securing of Suitable Employment for Epileptics, in order that persons suffering with that malady may be enabled to secure work without danger to themselves or their fellow-workmen.

RHODE ISLAND

Bequests.—By the will of Mrs. Henry G. Russell, Providence, $150,000 is devised to the Rhode Island Hospital, and $25,000 to Butler Hospital.——The will of Capt. Ira Winsor bequeaths $3,000 to the Rhode Island Hospital.

Personal.—Brown University has conferred the degree of D.Sc. on Dr. Charles V. Chapin, superintendent of public health of Providence.——Dr. John Howard Morgan, Westerly, has been elected a member of the board of censors of the Rhode Island Medicolegal Society.——Dr. William C. Monroe, health officer of Woonsocket, and trustee of the state sanatorium for tuberculosis of Wallum Lake, has started for Europe.——Dr. William R. Morse, Providence, has decided to enter the medical mission field in China.——Dr. Charles A. Sylvia has been appointed vice consul of Portugal at Providence

TENNESSEE

Medical School Closed.—The trustees of the University of the South decided that the medical department should be discontinued after commencement exercises, October 28. The hospital will continue in operation in charge of Dr. Allen Lawrence Lear.

Hospital Plans.—Plans for the Baptist Memorial Hospital, Memphis, are rapidly nearing completion and the fund for the hospital is rapidly growing.——The present home of the University of Tennessee, medical department, is to be converted into a hospital to be used for both schools, until the building proposed on College Hill can be erected.

Personal.—Drs. E. D. Watson and Walter S. Lawrence have been appointed Roentgenologists to the Memphis City Hospital.——Dr. Albert G. Kern has been elected physician of the Tennessee Deaf and Dumb School, Knoxville, vice Dr. John M. Boyd, deceased.——Dr. and Mrs. Winston T. Michie, Memphis, have sailed for Europe.——Dr. William L. Dudley, Nashville, has returned from abroad.

Medical Officers for Encampment.—The adjutant general has announced the following appointments of medical officers for state encampment: First regiment, encampment at Waverly, Captains R. B. Underwood and J. M. Troutt, Lieutenant Morris Hartman. Third regiment, encampment at Knoxville, Major James R. Nankivill and Captains A. G. Kyle, John Overton and S. L. Wadley. State rifle competition, Knoxville, Captains Larkin Smith and William E. Cooper.

VIRGINIA

Virginia Military Surgeons in Camp.—The following medical officers of the Virginia National Guard have been in attendance at the school of instruction at Antietam, Md.: Lieut.-Col. Junius F. Lynch, Norfolk; Major Lawrence T. Price, Richmond; Captains Adam T. Finch, Chase City; J. Fulmer Bright, Richmond; F. K. Travers Warrick, Richmond; Israel Brown, Norfolk; Harry B. Wall, Norfolk; and Collins.

WASHINGTON

New Hospital Being Built.—Dr. Emilion O. Houda, Centralia, is erecting a private hospital at that place with a capacity for fifteen beds.

Personal.—Dr. Alfred Ernest Braden, Tacoma, has been selected to fill the newly created position of city school physician of that place.

GENERAL NEWS AND COMMENT

Warning Concerning Agent.—Dr. William J. Thompson, Portage, Wis., writes that a man giving his name as George V. Smiles, or George Van Sands, and presenting a card of the American Claim Buyers' Union, 306 Hodges Building, Detroit—a firm which was not found at the address given—has been held to the Circuit Court at Portage for the alleged attempt to obtain money under false pretenses. Dr. Thompson asks us to announce this in The Journal. He says that the man is also wanted on two warrants at Janesville, Wis.

Federal Laboratories Will Furnish Plague Specimens to Colleges.—Surgeon-General Wyman announces that the Federal Laboratory of the Public Health and Marine-Hospital Service in San Francisco, Cal., will furnish to medical colleges and medical museums requesting them tissues illustrating the lesions of plague in guinea-pigs, and when practicable in other rodents, as well as stained slides showing the organism of plague as it is found in tissues from infected persons or rodents. By availing themselves of this offer, medical colleges should be able by means of safe specimens to demonstrate to their students the lesions of plague, and thus give practical instruction regarding a disease which is of great practical interest at the present time.

CANADA

Work of Tuberculosis Sanatorium.—The building for the Nova Scotia Sanatorium for Tuberculosis was completed in 1904, is situated on sixteen acres of land at Kentville, and cost $20,000. From June 1, 1904, to June 1, 1909, there have been admitted 298 patients to the institution. Of this number, 245 are available for classification, 73 being incipient cases, 93 advanced with favorable symptoms, and 79 far advanced. The conditions on discharge were as follows: 52 apparently cured, 123 improved, and 70 not improved. There were 60 per cent. of apparent cures in the incipient cases. Patients to this institution are admitted on the examination of either of two medical examiners residing in Halifax, the maintenance rate now being $5.00 per week. The institution is under the control of the government of Nova Scotia. The medical profession are advocating a resident physician.

Medical Societies Meet.—The annual meeting of the New Brunswick Medical Society was held in St. John, July 20 and 21, under the presidency of Dr. John R. McIntosh, St. John. The following officers were elected: President, Dr. H. A. Murray, Fredericton Junction; vice-presidents, Drs. Clinton T. Purdy, Moncton, and George G. Melvin, St. John; corresponding secretary, Dr. John S. Bentley, St. John; recording secretary, Dr. George G. Corbet, St. John, and treasurer, Dr. Daniel E. Berryman.——The fifty-sixth annual meeting of the Medical Society of Nova Scotia was held in Sidney, July 7 and 8, under the presidency of Dr. Arthur S. Kendall, Sidney. The subject of a laboratory and bureau of public health came up for discussion, on the report of the committee appointed regarding the communication of Dr. Arthur Macdonald, Washington, asking that a resolution be passed calling for a sublaboratory for scientific and sociologic study of criminals, etc. The meeting unanimously adopted a resolution asking that the Dominion Government establish a central bureau of public health. A committee was appointed to report on affiliation with the Canadian Medical Association.

FOREIGN

Five Hundredth Anniversary of University of Leipsic.—The University of Leipsic celebrated, July 29, its quincentenary. It was founded as an offshoot of the Prague university and for centuries took the lead in medical science, and in some respects it still maintains its supremacy. In recent years the names of His, Wunderlich, Thiersch and Credé are familiar to all, and the organization of the medical profession in Germany was first effected there in the foundation of the *Aerztevereinsbund*. The organization that protects the economic interests of German physicians—the well known *Leipziger Verband*—owes its origin also to a Leipsic physician, Dr. H. Hartmann, who is still at its head. The celebration of the quincentenary was most impressive, fully sixty universities around the world having sent representatives, and thousands of students, alumni and guests gathered in the great coliseum built for the occasion. One feature of the celebration was the historic procession representing the various periods in the life of the university, the students in historic garb. An elaborate banquet was tendered by the state to one thousand guests. Among the honorary degrees conferred was one on ex-President Roosevelt, and four other Americans were thus honored: Professor Michelson, the physicist; Professors Loeb and Wilson, the biologists, and Professor Burgess, the publicist. Our current German exchanges contain numerous historical articles depicting the evolution of the medical faculty and medical science in general at the university. The old reputation of the university as one of the two or three recognized centers of scholarship in the world is still maintained by the present faculty, which includes Curschmann, Trendelenburg, Hering, Flechsig and Rabl. The university of Leipsic has the most handsomely endowed chair of the history of medicine in the world, the Puschmann endowment, of which K. Sudhoff is the incumbent. Leipsic is the center of the German book trade, and large numbers of scientific periodicals are published there.

LONDON LETTER

(From Our Regular Correspondent)

London, Aug. 14, 1909.

Bursting of an Aneurism Declared to Be An Accident

A case which has just been decided, again shows the difficulties which the recent Workmen's Compensation Act involves and the extraordinary extent to which the term "accident" has been stretched. A workman had a large aortic aneurism which was liable to burst at any moment. While tightening a nut with a spanner, but not using more than ordinary force the aneurism ruptured and he fell dead. The case went into court and the judge held that death was the result of accident within the meaning of the act and gave compensation accordingly. The case was then taken to the court of appeals and the appeal was dismissed. The court held that the man, admittedly suffering from aneurism, had incurred a strain of a not extraordinary character during his work, which ruptured the aneurism. Therefore the case came within the law as laid down by recent decisions. But such cases have a result the very opposite of that intended by the framers of the act, which was intended to benefit workmen regardless of all other interests, and was passed in the present House of Commons by a government actuated by strong humanitarian motives and constantly importuned by a powerful and greatly increased labor party. Employers insure their workmen against the liabilities of the act. Insurance companies refuse to accept men with any physical defect or disease, however slight, which increases the chance of accident, and these are consequently refused employment. The result is that many men suffering from some slight defect which in no way interferes with their capacity for work are unable to obtain employment.

Pharmacists Object to Physicians Dispensing

It is a standing grievance with the medical profession that pharmacists not only dispense physicians' prescriptions, but do a large amount of what is termed "counter prescribing," generally for minor maladies, but sometimes inadvertently for serious ones. On the other hand the pharmacists consider it a grievance that the majority of the physicians in England dispense their own medicines. The only ones who do not are the consultants and the very small number of general practitioners whose clientèle is almost entirely wealthy. At the annual meeting of the British Pharmaceutical Conference, which has been held at Newcastle-on-Tyne, the president, Mr. J. F. Tocher, opened a discussion on the subject, "Should the Dispensing of Medical Prescriptions Be Confined to Pharmacists?" He said that the great grievance of pharmacists was that they were the only class specially educated and properly trained to prepare and dispense medicine, and as such, many of them got little if any employment in this kind of work because it was done by the medical profession. The total transference of the dispensing of prescriptions from physicians to pharmacists would in his opinion be advantageous to the medical man, the pharmacist and the public. He proposed to institute a joint standing committee, consisting of members of the British Pharmaceutical Conference and of the British Medical Association. Later if practicable, interested members of the public, including leaders of friendly societies, might be added. The duties of this committee would be to collect information on the actual practice with respect to dispensing and to the facilities for transference of the work to pharmacists in the cases in which the work was done by physicians. A number of local physicians took part in the discussion and a resolution to the above effect was carried. A discussion on this subject took place a few years ago in the columns of the *Lancet* and it was shown that it would be a great advantage in many ways if physicians were relieved of the work of dispensing. The profession would gain in dignity and would have more time to devote to its proper work, the treatment of the sick, and also more leisure. But in poor and club practice there would be a marked increase of expense which it would be difficult to transfer to the patients. It is very unlikely that the present system will be abolished. Moreover, the claim of pharmacists that they are the only persons trained to dispense medicines is not correct. Every medical student has now to go through a course in pharmacy.

Carbon Tetrachlorid for Shampooing

In a previous letter (The Journal, July 31, p. 392) I reported the case of a young woman who died while her hair was being shampooed with tetrachlorid of carbon. The view that the shampoo is not quite so harmless as has been thought is confirmed by an article contributed to the *Lancet* of August 7 by Dr. A. D. Waller, director of the physiologic laboratory of the University of London, with an added note by V. H. Veley, D.Sc., F.R.S., a distinguished chemist. Dr. Waller has investigated the toxicity of various drugs by means of their action on isolated muscle. He finds that the toxicity of a molecule of chloroform is 100 times greater than that of a molecule of alcohol. Carbon tetrachlorid he finds more toxic than chloroform and the incriminated hair shampoo (which contains in addition, impurities, of which the most important is carbon bisulphid to the extent of 1.5 per cent.) still more toxic. Dr. Veley considers that the bisulphid is so intensely poisonous that even in this small percentage it increases the toxicity of the shampoo. He further points out that as carbon tetrachlorid is very heavy (5.3 times as heavy as air), notwithstanding any fanning the vapor, which is considerably more toxic than chloroform, must fall over the face of the person shampooed. He thinks that legislation is called for to prohibit the use of carbon tetrachlorid in hair-dressing.

Munificent Bequest for Cancer Patients

If the cancer problem is not solved it will not be for want of funds. The latest sum to be devoted to the disease is the munificent one of $1,250,000, which was left by the late Mr. Harry Barnato for the purpose of founding some charity in commemoration of his brother, Mr. Barney Barnato, and his nephew, Mr. Woolf Joel. After considering many schemes the trustees have decided to apply the money to the building and endowment of an institution for the reception of cancer patients. To increase the potentialities of the bequest the institution will be administered in connection with the Middlesex Hospital, the only general hospital in London which has special wards for cancer patients and special laboratories devoted to investigation of the disease. A site has been acquired adjoining the hospital's cancer wards. The advantages of the trustees cooperating with the hospital are considerable. The cost of organizing the new undertaking will be greatly diminished and they will have the guidance—administrative and medical—of those whose experience of the disease is exceptional. The trustees intend to devote $10,000 to the erection of research laboratories of a character calculated to induce men of the highest skill to work in them.

A Woman Member of the Royal College of Physicians

For the first time in its history the Royal College of Physicians has admitted to its membership a woman, Miss Ivy E. Woodward, M.D. Lond. The ordinary qualifications granted by the college is the license which is associated with the familiar letters L.R.C.P., but the distinction now obtained is the M.R.C.P., the highest diploma obtainable by examination at the college, which is possessed by, and is the hall-mark of, consulting physicians.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Aug. 11, 1909.

The Bureaus of Hygiene

According to the law of 1902, each city of more than 20,000 inhabitants is to have a bureau of hygiene with authority to take sanitary measures and to oversee their execution throughout the commune. But sixteen of the most important communes of the Department of the Seine have protested against the change in organization required by the law, both on account of the expense, and also because they are obliged to put a physician at the head of each bureau. The mayors of these communes say that they can not dismiss the non-medical officials who have hitherto directed the bureaus. The prefect of police thought that he might compromise by merely exacting that each director who did not have a medical degree should be assisted by a physician. The Council on Hygiene has just refused to sanction a compromise by which physicians should work in bureaus of hygiene under the orders of non-medical directors

Increase in Medical Fees

The medical society of the fourth ward (arrondissement) of Paris having recently taken up the question of the increase of medical fees (The Journal, July 10, 1909, p. 126), a mixed commission, composed of representatives of the medical societies of the Department of the Seine, of Paris and of the wards of Paris was formed to study this question. This commission has just decided that it is necessary (1) to increase medical fees by at least a third over current rates for ordinary visits and consultations, each ward making the minimum rates that are suitable for it; (2) to ask higher rates for urgent, evening and Sunday visits; and (3) to establish a minimum scale for the special procedures of current practice.

The Congress of Alienists and Neurologists

The nineteenth Congress of Alienists and Neurologists of France and of French-speaking countries has just been held at Nantes, August 2 to 8. Among the questions discussed, which I have already mentioned in a preceding letter (The Journal, June 19, 1909, lii, 2006) that of insanity in the army from the clinical and medicolegal point of view, assumed special importance. The ministry of war had sent a special delegate, Dr. Simonin, professor at the school of military hygiene at Val-de-Grace. It was the first time that the military administration had been represented at the Congress of Alienists and Neurologists. Numerous magistrates were also present. The president of the congress, Dr. Vallon, chief physician of the Ste. Anne Asylum at Paris, congratulated himself on the increasing interest among legists in the problems of medicolegal psychiatry.

According to the report of Dr. Granjux of Paris, there are annually invalided 0.6 per thousand of the effective military force for "mental alienation, idiocy and general paralysis." In this reckoning those who are invalided for hysteria, epilepsy, neurasthenia and alcoholism are not included; if the latter are added the percentage is 1.8 per thousand; and even this is far too low to represent the actual proportion of the insane, for insanity is often not recognized. The French army, however, is not in a comparatively bad state in this respect. The number of the insane is, it is true, somewhat less in the German army, but it is even a little larger in other armies having general military service, and very much larger in the countries where military service is not general, such as Great Britain, Belgium, etc.

After the discussion of the reports of Dr. Granjux, and of Dr. Rayneau of Orleans, the congress passed resolutions looking toward the strengthening of the army and navy medical corps on the side of psychiatry and the collection of better statistics on insanity.

The congress will meet in 1910 in Brussels and Liège under the presidency of Drs. Crocq of Brussels and Klippel of Paris. The subjects of discussion will be: (1) sleeping sickness and narcolepsy; (2) the classification of cutaneous lesions in nervous maladies; (3) alcoholism from the criminologic point of view.

The French Association for Advancement of Science

The thirty-eighth session of the French Association for the Advancement of Science was held August 2 to 7 at Lille under the presidency of Professor Landouzy, dean of the College of Medicine of Paris. M. Henri Poincaré of the French Academy and the Academy of Sciences was awarded the large gold medal of the association, which last year was awarded to the illustrious English savant, Sir William Ramsay.

The section of medicine, presided over by Professor H. Roger of Paris, discussed questions of practical interest, such as the new methods of diagnosis and treatment of tuberculosis, recent contributions to the subject of epidemic cerebrospinal meningitis, etc.

In the section of medical electricity, which brought together a great many members, a large place was naturally given to radiography. A paper by Dr. A. Imbert, professor of medical physics at the College of Medicine of Montpellier, on errors of interpretation in radiography and a paper on the same subject presented by Drs. A. Mouchet and Lamy of Paris, aroused great discussion. A great number of papers were devoted to the treatment of arteriosclerosis by high frequency currents. Dr. Lejars, professor *agrégé* at the College of Medicine of Paris, presented a question of great practical interest, namely, the indications for use of electricity in ileus.

Next year the association will meet at Toulouse under the presidency of Dr. C.-M. Gariel, professor of medical physics at the College of Medicine of Paris.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Aug. 4, 1909.

The Incidence of Infectious Diseases in Prussia

According to the ministerial report on the health of Prussia in 1907, which I have already mentioned, there was a considerable increase in the mortality from influenza. There died of influenza in Prussia 5,512, that is, 0.145 per thousand living and 0.81 per hundred deaths. The largest previous influenza mortality occurred in 1892, during the great influenza pandemic, when about 16,000 or 0.523 per thousand living died in Prussia. The three winter months, January, February and March, in 1907, especially February, had the highest mortality; September the lowest. The deaths according to ages were as follows: Infants, 351; children 1 to 15 years old, 354; between the ages of 15 and 60, 1,395, and over 60, 3,412. The number of cases of typhoid continually decreases in Prussia, dropping from 4,410 cases in 1901 to only 2,168 in 1907. The typhoid mortality is declining still more rapidly, from 0.264 per thousand living in 1887 to only 0.057 in 1907. The largest number of deaths according to age occurs between 30 and 40; the highest relative mortality between the ages of 20 and 25. The morbidity was highest during the summer months. In most cases the diagnosis was confirmed bacteriologically. The government laboratories have also in many cases discovered bacillus-carriers; for example, in a village parsonage in which cases of typhoid continually occurred, while the rest of the village remained free, it was discovered that the pastor's mother had typhoid bacilli in her stools; she had had a severe attack of typhoid thirty-seven years before. Among the customers of a city milkdealer cases of typhoid continually occurred, and a maidservant in the village from which the dealer obtained his milk was discovered to be a bacillus-carrier. The spread of typhoid generally occurred through conveyance from person to person; also through infected water, through milk from dairies, and through other foodstuffs; a few times through the washing of the clothes of a typhoid patient. There were 57 cases of paratyphoid reported, 7 of spotted fever, and 3 of relapsing fever. There were 185 deaths from dysentery. Malaria seldom occurs. Trachoma is still prevalent, especially in the east of our country. In the district of Königsberg there were 1,872 trachomatous school children reported in 1907; in the district of Dantzig, 2,000; in the district of Posen, 3,800. There were 2,591 cases of epidemic cerebrospinal meningitis with 1,613 deaths, or 62.47 per cent.; the largest relative number of cases occurred in April. Only 142 cases of smallpox were reported during the whole year. There were 338 cases of traumatic tetanus, the mortality being about 75 per cent. The patients treated for gonorrhea in the general hospitals numbered 20,000, and for syphilis and soft chancre, 22,000. There were 3,771 mothers who died of puerperal fever, or 2.942 per thousand parturients. The diphtheria mortality has continued to decline during the last decade; in 1898, 18,147, or 0.556 per thousand living, died; in 1907, only 9,307 died; that is, 0.246 per thousand living.

Death of Professor Runge

A few weeks after the death of Pfannenstiel, German gynecology suffered another heavy loss in the death of the director of the Göttingen gynecologic clinic, Prof. M. Runge. He died in Berlin, aged 59, following an operation for kidney disease. Runge began his academic career as assistant to Leyden in Strasburg, his gynecologic work as assistant to Gusserow in Berlin. Before his professorship at Göttingen, in 1883, he was called to Dorpat as ordinarius, and in 1888 he, like all the other German professors, left the Russianized and ruined university. Aside from his numerous scientific works, Runge was best known by his text-books on obstetrics and gynecology, and as the author of the official manual for midwives now in use in Prussia.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Aug. 9, 1909.

The Health of Potters

A series of investigations into the health of certain classes of the population has been instituted by Chyzer and reported to the board of health. The occupation of the pottery makers requires the presence of lead in the inhabited places, and as in this country there are many potteries in dwelling-houses where even young children are employed, the danger to health is great. Thus in some instances the dust collected from these houses contained up to 14 per cent. of lead. Constant human lead-poisoning is often observed among them; the household animals also fall victims to the occupation of their masters. Fowls and ducks can not thrive in the vicinity of potteries; dogs and swine are killed by drinking water polluted with the lead-containing waste of the process, and cats are especially susceptible. The latter animals often show colic, loss of flesh and nervous disturbances, with terminal paralysis. As a rule, all household potters are attacked at least once before having completed their third year at this occupation, and many patients had been five or six times in the hospital. It is not yet possible to forbid the factories in dwelling-houses, as many people would be thrown out of work, especially in this country; and the regulations of the board of health dealing with these conditions are in force only in the towns. The death rate of the potters is high: Of 3,010 men examined, only 265 were apparently healthy, and only 16 were over 60 years old. The average age at death is only 41 years! The conclusions arrived at by the investigations point to the necessity of prevention of all kinds of pottery work except in properly conducted large factories.

The Arrangements for Infectious Corpses in the Vienna Cemetery

A new morgue has been opened recently in Vienna in the general cemetery for the purpose of dealing with persons dead from infectious diseases. The corpses are placed in the lying-in-state hall, which is separated by glass walls from the general waiting-hall for the friends and relations of the deceased. Special care is taken to prevent the possibility of transmission of disease during the burial ceremony. Once the body is brought to the cemetery, nobody touches it except the two to four men necessary to bring it to the grave. Even the priest must fulfill the necessary rites while separated from the body by a glass screen. The corpse is brought in a disinfected coffin, is covered with phenol or lysol, and the friends may follow only at a certain distance. The bearers must, after each funeral, change their clothes, which are at once disinfected by steam; they themselves must take a hot bath at once. The bathing rooms divide the infected area of the building from the non-infected one. Doctors, servants, bearers—all persons who have had anything to do with the corpse in the house—must pass the same ordeal of bath and disinfection of clothes. Their clothes are handed to them only after their baths. The refuse and water used in the morgue are carried away by a special system of drainage and thoroughly disinfected. A dissecting-room, together with a laboratory, is in connection with the morgue, and all work is done here under the strictest precautions. For especially dangerous corpses, there are three isolation cells, capable of holding three bodies at a time, so that a more effective disinfection is possible. The cost of the institute amounted to only $60,000, and the current expenses amount to about $70 per funeral.

The Weather and the Health

The unusual climatic conditions this summer have had a marked influence on the general health. According to the monthly returns of the bureau of health the number of affections of the alimentary canal among children is unusually small compared with the number of cases of infectious diseases owing to the protracted period of rain lasting now, with some slight interruptions of from three to five days of fine weather for more than twelve weeks. Summer diarrhea, cholera infantum and other summer affections are nearly absent. Perhaps the freedom from cholera, in spite of its ravages in the neighboring districts of Russia, is also partly due to the excess of rain. Another very welcome feature of this summer, in itself perhaps no less responsible for the good health of the public, is the complete absence of flies and other insects observed by the farmers. Diseases of the respiratory organs, as well as rheumatic conditions, have been and still are very numerous, though mortality is low. On the whole, central Europe, to which this country belongs, has had the privilege of enjoying a regular oceanic climate similar to that of Ireland.

The Conflict Between Dental Surgeons and Dentists

In this country there are two kinds of dentists, the *Zahnärzte*, surgeon-dentists with the diploma of M.D., and the *Zahntechniker*, or dentists without university or hospital diplomas. The latter were until recently only assistants of the surgeon-dentists, doing chiefly the technical dentistry, prosthetic appliances, putting in artificial teeth and crowning partly destroyed teeth. But about a dozen years ago these assistants obtained permission to practice this prosthetic dentistry if controlled by a qualified surgeon, and since that time they have always been endeavoring to shake off the control and become independent. Indeed, they even try to get the whole of dentistry into their own hands and leave to the surgeon-dentist nothing but the filling of the carious teeth, or the extraction of whole teeth, while the extraction of stumps necessary in the adaptation of the mouth before use of artificial teeth they claim for themselves. The demands of the technical dentists mean nothing else but the overthrow of the law prohibiting quackery. The medical profession as a whole has endorsed a protest addressed by the medical council of Vienna to the Minister of the Interior. A compromise has been suggested by the other party, all the present dentists possessed of diplomas or not, to be allowed to practice in the human mouth, but in future no independent technical dentists to be permitted. This being refused by the medical profession, the technical dentists have changed their tactics and cry for a clear division of rights, surgical procedures to belong to the surgeons, artificial dentistry to the technical dentists. The acceptance of this platform would mean the ruin of the dental surgeons, for hardly ten men could make a living out of extraction and stopping of diseased teeth only. There are over 400 dental surgeons in Vienna alone, while there are in all Austria about double the number of technical dentists. There is reason to hope that the medical point of view, being identified with the interests of the public health, will prove the stronger of the two.

The Jubilee Hospital in Vienna

The municipality of Vienna proposes to spend $2,250,000 in the erection of a hospital with 1,000 beds, intended to commemorate the jubilee of the Emperor Francis Joseph. The directors and heads of the departments will not belong to the Vienna University. In October the work will be commenced, and it is expected to finish it in eighteen months. The plans provide for open air pavilions and spacious corridors for children. Details of the hospital, which will be the most up-to-date institution of its kind, will be forthcoming in a short time.

Pharmacology

BUCHANAN CANCER REMEDY

A correspondent submitted for analysis a "cancer paste" that had been manufactured and sold by the Buchanan Medical Co. of New York City. The only information available concerning the composition of the paste was that contained in a booklet formerly published by the manufacturer, in which it is stated:

"Chlorid of Chromium (ozonized; the cancer antidote). The liquid chlorid of chromium is added to pulverized bloodroot, or some other inert powder; is made into a paste of the consistency of tar . . ."

ANALYSIS

The sample was submitted to the Association laboratory, which reported as follows:

"The sample of Buchanan's Cancer Cure was a dark, brownish-red, pasty mass of about the consistency of tar. Its odor was not characteristic. Examination showed that chromium salts were not present. The active ingredient was found to be zinc chlorid. With this was mixed a finely ground vegetable powder and some mucilaginous substance. Glycerin, sugar, alkaloids, resins and fats were not found. The vegetable tissue possessed the general structures of rhizomes and in some characters resembled bloodroot, but could not be identified positively. There was considerable starch present, but its identity could not be made out, since the structure of the starch grains had been destroyed, probably by the zinc chlorid. A red coloring matter was present. Further than a quantitative determination of zinc chlorid, an exhaustive chemical examination was not undertaken, although tests were made for a considerable number of substances which the nature of the remedy suggested.[1] The analytical results are given herewith:

Anhydrous zinc chlorid......	46.3 per cent.
Vegetable tissue, dry...	9.2 per cent.
Mucilaginous matter	12.2 per cent.
Moisture	19.1 per cent.
Undetermined (starch, loss, etc.)....	13.2 per cent."

Zinc chlorid mixed with an absorbent, such as flour, starch, powdered galangal, powdered althea, gypsum, etc., has been employed in the treatment of cancer for many years. The Buchanan remedy, therefore, evidently contains nothing new. It belongs to that great army of "wonderful new discoveries" which examination usually shows to be well-known remedies. The statement that the cancer antidote is "chlorid of chromium ozonized" is not only false but meaningless, no such product being known. It is evidently intended to mislead the unwary physician by the use of the term "ozonized."

THE AMERICAN COLLEGE OF MECHANO-THERAPY

"Manual Manipulation" and "Curative Mechanics" Taught by Mail

In the realm of the new "drugless" quackery probably no field has been more thoroughly worked than that of "manipulation." The absence of laws in many states and the inadequacy of such laws as do exist makes the "treatment" of disease by mechanical means a veritable gold mine for the unscrupulous and incompetent. The rise of osteopathy and its latest freak offshoot—kiropractic—is but one illustration of what has been done in the way of commercializing manual manipulation as a therapeutic agent.

In his "Great American Fraud" series Samuel Hopkins Adams calls attention to the absurdity of the proposition put forward by numerous quacks that it is possible to treat diseases by correspondence. As Mr. Adams says, it is "like mending chimneys by mail." On a par with this is the teaching of "manual manipulation" by correspondence. This feat is accomplished (?) by an institution calling itself the "American College of Mechano-Therapy" having its headquarters in Chicago.

The advertisements of this concern put the "science of mechano-therapy" as taught by it on a frankly commercial basis. The important and much-emphasized point is that by studying mechano-therapy you can "earn from $3,000 to $5,000 a year."

WHAT IS A "MECHANO-THERAPIST?"

The individual who, attracted by this get-rich-quick proposition, is anxious to learn something about the general principles of the cult, is told:

> "His [the mechano-therapist] medicines . . . . . are not drugs but scientific combinations of food, circumstance, idea, water and motion."

After mentally digesting this somewhat abstruse proposition, descriptive of the fundamental principles of mechano-therapy, the reader learns further, that:

> "His instruments are not knives and saws, but his own deft hands and the vital processes of the body itself, the circulation, respiration, secretion, etc., which he manipulates as he sees fit and his judgment dictates."

In other words the graduate of the American College of Mechano-Therapy "manipulates as he sees fit" his patient's "secretion" by "scientific combinations of food, circumstance, idea, water and motion." It would surely be hard to find a more meaningless jargon of words outside of Mrs. Eddy's "Science and Health."

The dean of this "college" is W. C. Schulz, M.D., who, we are told, "has had a thorough European training, and so *combines all the learning of the great schools of the world.*" [Italics ours.—ED.] The subjects taught at this institution of learning are, according to the catalogue, the following:

> "Anatomy, Physiology, Diagnosis, Hygiene, Dietetics, Hydrotherapy, Manual Manipulation, Swedish Movements, Vibration, Oscillation, Mechanics (curative), Suggestive Therapeutics . . . Ethics, Establishment, Promotion and Business Methods."

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[1] DETAILS OF ANALYSIS.—Owing to the small quantity of sample submitted, duplicate determinations could not be made.

Alcohol-insoluble: A portion was dissolved in alcohol so far as possible, filtered, dried and weighed; 1.6578 gm. gave 0.3557 alcohol-insoluble residue, or 21.4 per cent.

Zinc: The alcohol-insoluble portion was washed, dissolved in hydrochloric acid, so far as possible, the filtrate, added to the alcohol-soluble portion, the mixture evaporated to small bulk, and the zinc precipitated as zinc ammonium phosphate. (Olsen, "Quant. Chem. Anal.," 1904, pp. 82 to 84.) The precipitate was dissolved in hydrochloric acid, re-precipitated, dried, ignited and weighed as zinc pyrophosphate. 1.0790 gm. gave 0.5599 gm. zinc pyrophosphate, equivalent to 46.3 per cent. anhydrous zinc chlorid.

Moisture: This was determined approximately by drying over concentrated sulphuric acid; 1.0790 gm. gave a loss of 0.2063 gm., or 19.1 per cent.

Vegetable Tissue (water-insoluble portion): This was determined by dissolving a sample as completely as possible in distilled water, filtering and drying the residue at 98C.; 3.264 gm. gave 0.3011 gm. residue, or 9.23 per cent.

Mucilaginous Matter: An approximate value for the mucilaginous substances and soluble starch was obtained by subtracting the portion insoluble in water (vegetable tissue) from that insoluble in alcohol (vegetable tissue and mucilaginous substances). 21.45 per cent.—9.22 per cent.=12.23 per cent.

In addition to these numerous subjects, "Osteopathy" is thrown in for good measure; and all this is taught by correspondence! Apparently there is no limit to human credulity when cupidity beckons. In referring to the time required to complete the "course" and thus receive the diploma, which is "handsomely executed on art parchment," we are told:

> "In six months you can begin practicing mechano-therapy."

Of course the acquirement of the *tactus eruditus* is all-essential, "but it is no more difficult than learning to ride a bicycle." And incidentally that suggests the commercial possibilities of teaching bicycle riding or even equestrianism by mail!

THE "BUSINESS SIDE"

In addition to the various subjects from anatomy to suggestive therapeutics that are taught by this "college" the curriculum includes "The Business Side of Mechano-Therapy." This important subject deals with such problems as:

> "How to approach a Patient."
> "How to get the Fees at once."
> "The Business talk that will make the Patient willing to pay the fee."
> "How to handle the Question of the size of a Fee."
> "Real Money Talk."
> "Always get Cash down."

The "business side," too, is particularly emphasized in the advertisements of the college:

> "Opportunities to make money in Mechano-Therapy are everywhere. You need not leave home to make your fortune."
> " . . . . we guarantee success . . . . "
> "We fit you in a few months so you may become successful and earn from $3,000 to $5,000 a year."
> "Unlimited income to graduates."
> "We know of no other calling . . . which promises the same financial returns that Mechano-Therapy does."

Such is the bait, which, judging from the amount spent in advertising, is so productive of results in catching the ignorant and avaricious.

The "instructor" in "business methods" is one S. J. Tinthoff, who also is treasurer of the "college." We learn from the prospectus that as instructor, he "is eminently well qualified for this position." In fact:

> "His knowledge of the proper methods a physician, specialist or Mechano-Therapist may pursue in order to build up a large practice, is perhaps unsurpassed by that of any other man in the United States."

We are told, too, that F. S. Tinthoff, brother of S. J. Tinthoff, and "Director of the Correspondent Department, is also a trained business man and expert correspondence instructor." We understand that F. S. and S. J. Tinthoff operate the "Aurum Company," which does a mail-order business in "Vestro," which is modestly claimed to be "the only true Bust Developer on the market to-day." If we are not mistaken, too, F. S. Tinthoff was president and treasurer of the now defunct "Physician's Institute" of Chicago. The question arises: Does an experience in operating a "physician's institute" and filling mail-orders for the "only reliable bust developer" qualify a man for the position of "instructor" in a correspondence "college of Mechano-Therapy?"

LEGAL STATUS OF MECHANO-THERAPY

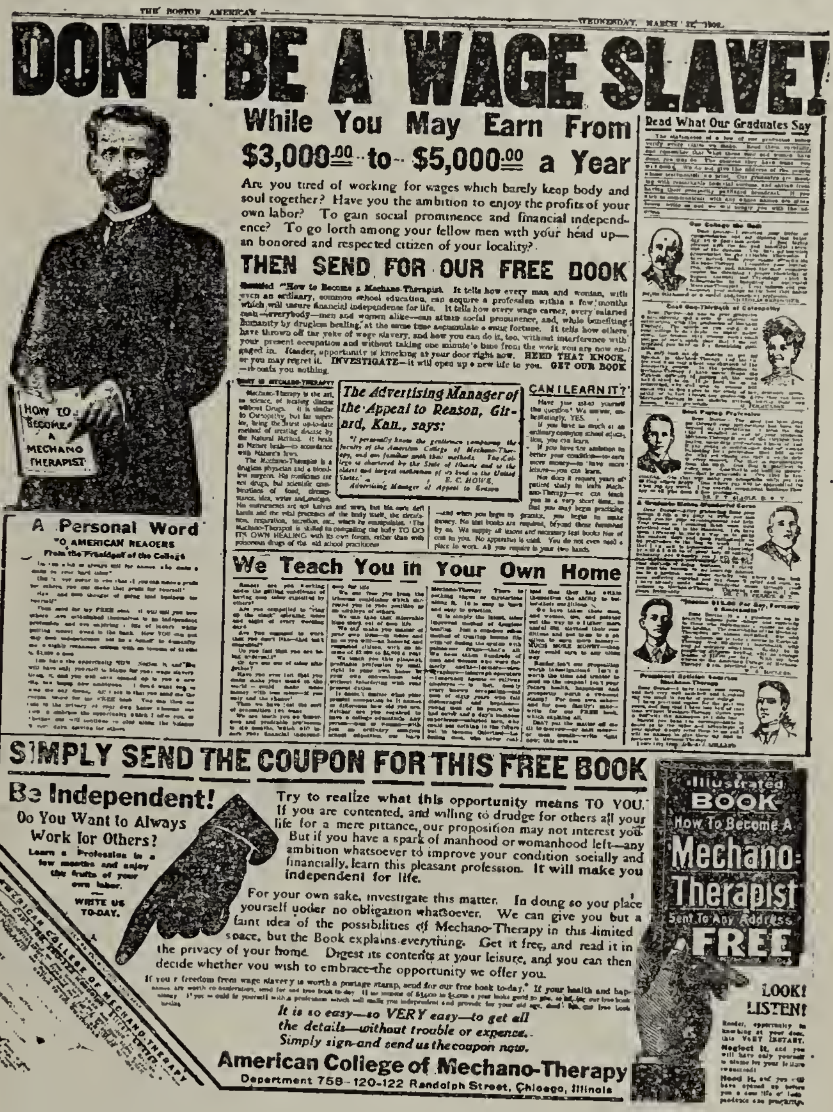
The American College of Mechano-Therapy advertises: "We Teach You How to Treat Disease Without Drugs." A prospective student who wished to know what legal restrictions there might be to the practice of this method of "treating" disease, wrote as follows: "If I should take your course and receive a diploma could I practice Mechano-Therapy in *any* of the states? I understand that the different states have different laws regarding the practice of medicine and I would like to know if there are any restrictions in regard to Mechano-Therapy?"

The reply he received may well be pondered over by those who believe that medical practice acts exist for the benefit of the public:

> Dear Friend:—There are no laws on the statute books regarding Mechano-Therapy. In Illinois for instance, there is the so-called "Drugless Healing Act" applying to all such methods as Mechano-Therapy, Osteopathy, etc. Some of our graduates have qualified under this law by examination, while *others carry on their work under the advice and consent of a friendly M.D. We recommend the latter method* [Italics ours.—Ed.] until such time as Mechano-Therapy is regulated by legislative enactment in the various states.
>
> Yours truly,
> American College of Mechano-Therapy,
> W. C. Schultze, M.D.

METHOD OF INTERESTING "STUDENTS"

The individual who writes to this college for information receives a three-page letter and a "prospectus." The latter is entitled, "How to Become a Mechano-Therapist," and the first page is taken up with a full-page picture of the "home of the American College of Mechano-Therapy." This "home" is pictured as a nine-story building, across the top of which appears in large letters, the legend: "American College of Mechano-Therapy." The natural inference to one not conversant with the facts would be that the "college" occupied the entire building. In reality, however, it occupies some rooms on the sixth floor of the building in which it is located, and the building carries no such legend as is shown in the picture.



THE BOSTON AMERICAN WEDNESDAY, MARCH 31, 1909.

DON'T BE A WAGE SLAVE!

While You May Earn From $3,000.00 to $5,000.00 a Year

Are you tired of working for wages which barely keep body and soul together? Have you the ambition to enjoy the profits of your own labor? To gain social prominence and financial independence? To go forth among your fellow men with your head up—an honored and respected citizen of your locality?

THEN SEND FOR OUR FREE BOOK

Entitled "How to Become a Mechano-Therapist. It tells how every man and woman, with even an ordinary, common school education, can acquire a profession within a few months which will insure financial independence for life. It tells how every wage earner, every salaried man—everybody—men and women alike—can attain social prominence, and, while benefiting humanity by drugless healing, at the same time accumulate a snug fortune. It tells how others have thrown off the yoke of wage slavery, and how you can do it, too, without interference with your present occupation and without taking one minute's time from the work you are now engaged in. Reader, opportunity is knocking at your door right now. HEED THAT KNOCK, or you may regret it. INVESTIGATE—it will open up a new life to you. GET OUR BOOK—it costs you nothing.

The Advertising Manager of the Appeal to Reason, Girard, Kan., says:

CAN I LEARN IT?

We Teach You in Your Own Home

A Personal Word TO AMERICAN READERS From the President of the College

Read What Our Graduates Say

SIMPLY SEND THE COUPON FOR THIS FREE BOOK

Be Independent! Do You Want to Always Work for Others? Learn a Profession in a few months and enjoy the fruits of your own labor. WRITE US TO-DAY.

Try to realize what this opportunity means TO YOU. If you are contented, and willing to drudge for others all your life for a mere pittance, our proposition may not interest you. But if you have a spark of manhood or womanhood left—any ambition whatsoever to improve your condition socially and financially, learn this pleasant profession. It will make you independent for life.

For your own sake, investigate this matter. In doing so you place yourself under no obligation whatsoever. We can give you but a faint idea of the possibilities of Mechano-Therapy in this limited space, but the Book explains everything. Get it free, and read it in the privacy of your home. Digest its contents at your leisure, and you can then decide whether you wish to embrace the opportunity we offer you.

It is so easy—so VERY easy—to get all the details—without trouble or expence. Simply sign and send us the coupon now.

American College of Mechano-Therapy
Department 758—120-122 Randolph Street, Chicago, Illinois

Illustrated BOOK How To Become A Mechano-Therapist Sent To Any Address FREE

LOOK! LISTEN!

HOW TO BECOME A MECHANO THERAPIST
AMERICAN COLLEGE OF MECHANO-THERAPY

Reproduction of a full-page advertisement from the *Boston American*, March 31, 1909.

VARIABLE TUITION RATES

The form letter, after expatiating on the virtues and money-making possibilities of the "course" winds up by calling attention to the fact that the tuition is $100 cash "for the complete course." The tuition rates, however, seem to vary. One person who inquired about the course was told in the first letter that it cost $100; in the second letter he was told that "we expect shortly to advance our fees to $200"—but they would still accept this particular individual at the $100 rate; in the fourth letter he was told that the advance had been made "and our present terms are $200 cash," but as a special proposition he would be accepted "at the old special reduced rate;" in the fifth letter he was offered the "complete course" for $60, but the "college" insisted that he must "hold this special reduced price strictly confidential." As a (presumably) final "confidential price" he was offered the "regular $100 correspondence course in Mechano-Therapy for only $25 cash."

Another individual was offered the course for $50—and this, too, within a few days of the time that the first person received notice that the fees had been "advanced" to $200. Other persons have been offered a 50 per cent. discount ($50 cash) with the first letter. It should be said that all the "enrollment blanks" which we have seen—and they are many—give the cost of the course as $100.

The extensive advertising done by this concern would seem to demonstrate its profitableness. On both sides of the Atlantic the public has been advised through the daily and weekly press of the commercial possibilities of "mechanotherapy" as taught by this "college." In commenting on the part that the press plays in making such concerns as this profitable, London *Truth* says:

"It passes my understanding how wealthy newspaper proprietors . . . can condescend to take money for foisting this sort of bunkum on their readers; but as long as they do so, cheap postage to America will certainly put money into some pockets."

Elsewhere the same publication, in describing the "college," calls it "a concern which proposes to give postal tuition in quackery to British fools"—a description which can only be improved by the substitution of "English-speaking" for "British."

Correspondence

Age and Exercise

To the Editor:—I have read with approbation your editorial, "The Septuagenarian Pedestrian," in the issue of August 7. I fully agree that Mr. Weston's performance is "sufficiently noteworthy . . . to deserve mention in a medical journal;" in fact, I go further and assert that it is a demonstration of transcendent importance to all mankind that a man after he is biblically dead, so to speak, having passed his seventieth birthday, can accomplish a feat hitherto considered next to impossible, to-wit, the walking of 3,975 miles in 105 days, or almost 38 miles a day, over, in many cases, execrable roads or on railroad ties, in severe storms, in mud, snow and sleet and sometimes, which is often worse, sand. This great exhibition of human pluck and endurance at an advanced age, is, to my mind, of far more importance than the question of the exact bacillus that causes meningitis, to the discussion of which you cheerfully give up 18⅛ inches of your most conspicuous editorial space, while Mr. Weston's performance gets less than 2½ inches of space, and that at the "tail end," giving one the impression that it is just a "filler." Pardon me if I seem to undervalue your admirable "leader." On the contrary, I enjoyed it and profited by it greatly.

However, my principal object in writing this letter is that I wish to correct one or two erroneous inferences which might readily be drawn from your editorial on pedestrianism. You say that "he [Weston] comes before the public in this spectacular way after about a quarter of a century of comparative obscurity." Among those who take no interest in feats of human endurance, and the improvement of man's physique, Mr. Weston's career for the past twenty-five years may have excited little or no interest. Yet his utterances on temperance and the benefits of exercise have attracted, and deservedly so, considerable attention; and inasmuch as he has participated in a number of pedestrian contests during that period, the sporting element also have had occasion to keep him in mind. In support of this contention, I venture to give a partial list of his performances since 1867:

In 1867 he walked from Portland to Chicago.

In 1868 he walked 100 miles in 24 hours.

In 1870 he walked 100 miles in 21 hours and 39 minutes.

In 1875 he walked 115 miles in 23 hours and 40 minutes without a rest.

In 1879 he walked 550 miles in 141 hours and 44 minutes.

In 1884, under the auspices of the "Church of England Temperance Society," he walked 50 miles a day for 100 consecutive days (Sundays excepted) over English roads, making a total of 5,000 miles, and lectured every night on temperance, of which he has always been an ardent advocate.

In 1886 he walked 2,500 miles against Daniel O'Leary and beat the latter by 200 miles.

In 1893 he walked 160 miles in 39 hours and 59 minutes.

In 1907 he walked from Portland to Chicago in 24 days and 6 hours, beating his own record of 40 years before, by over 16 hours.

He has frequently spoken of his way of life, asserting that he has never taken a drink over a bar. That he eats only twice daily as a rule, and then in great moderation. That he walks 12 or 15 miles every day for exercise, and is consequently always "in condition." He sleeps six hours at night and takes a siesta during the day. Hence it is fair to say that the man is well known, and that the causes of his wonderful endurance are well known. Your editorial concludes with the words that "probably many other men with like training and temperate habits could somewhat approximate his record." A little examination of the subject will show that other men, not to say women, have already approximated his record. If you will pardon me, I will take up a little more space to quote a few instances.

Moses Cleveland, a cousin of former President Grover Cleveland, when 82 years old, ran a foot race of a half mile against L. C. Lawrence, aged 80, at Worcester, Mass., and won after an exciting contest by a few yards. Mr. Cleveland declared that he could have run another half mile just as fast as he had won the race, and challenged any man in the world of his age to run a foot race of any distance for any stakes.

Surgeon Major Hinton, who enjoys the distinction of being the oldest member of the Royal College of Surgeons in Great Britain, is in his 95th year. He walks for pleasure 5 miles or more every day. In 1851, Mary Callnack, then 84 years of age, walked from Penzance to London, a distance of nearly 300 miles.

The Emperor Francis Joseph of Austria, at 76 years of age, still stalked "the chamois in its mountain fastnesses."

Timonthy Dillon died in New Rochelle, N. Y., in August, 1906, at the age of 100 years. Up to within two days of his death he had taken a daily walk of 4 miles and had formerly walked 20 miles and back twice a week.

Mark All, an Englishman, 78 years of age, had a year or two ago walked 51,751 miles in an attempt to walk 60,000 miles in seven years. A favorite bull dog, after having kept up with his master for 21,000 miles, died.

Hancock says in the introduction of his book on "Exercises for Women," that a teacher of jiu jitsu in Japan, aged 75, vanquished every competitor at this sport who appeared against him.

A Mr. Brown of Philadelphia began playing golf at 50 and at 64 won a tournament, defeating nineteen or twenty competitors, some of whom were thirty years his junior. The newspaper account of this contest says that Mr. Brown had no handicap and won solely on the merits of his play.

A contortionist, aged nearly 80, in perfect health, was looking around a few years ago to find a medical man to whom he could sell his skeleton. He had already disposed of it twice, once to a doctor in Detroit who died, and then to another in New York who had also died.

Mary Wheaton, aged 72, gave not long ago exhibitions of fancy swimming and diving at Bangor, England. She has been an expert swimmer for fifty-seven years.

One hundred thousand miles on a bicycle is the record of Thomas W. Davis of Peoria, Ill., made between the ages of 65 and 75. This includes a number of "century runs," one made when he was 73, in which he outrode a number of younger men.

William O. Greene of Milwaukee, 71 years old, frequently rides 100 miles a day on his "wheel."

"Jem" Mace, the veteran prize fighter, sparred in the ring at 80 years of age. He was noted as a total abstainer.

These are a few records, selected almost at random, from a number collected during the past dozen years or more. No doubt a systematic search would bring to light an indefinite number of similar histories. The point to be noted is that Mr. Weston's record, although remarkable, is by no means unattainable by any faithful pedestrian who is willing to pay the price (1) by long years of constant effort in perfecting himself as a pedestrian; (2) by great abstinence and self-denial, and (3) by sufficient confidence in his own almost limitless powers. Most men lie down and die, not knowing what they are capable of, either mentally or physically. Mr. Weston says that in 1870, when he was preparing to walk 100 miles in twenty-four hours Horace Greeley said to him that it was wicked to encourage him in such an effort, and added: "You are young and spry now, but wait until you are 50 years old and then you can not walk 40 miles a day." No doubt that worthy editor thought he was performing a solemn duty in trying to prevent the rash young man from doing himself a permanent and irreparable injury. Do not wise people still shake their heads and allude to the terrible consequences to be expected in after years if anyone should "over-exert himself" or get too tired?" The very indefiniteness of these terms seems to add to their mental picture of the disasters that will follow the disregard of their warnings.

Revolutionary as it may seem, I am prepared to maintain that Mr. Weston, "Jem" Mace, Mr. Cleveland and all the others I have mentioned, have actually lived longer than they otherwise would have done, by reason of their bodily exercises, and not in spite of them. There is no question that college athletes are longer lived than the non-athletic scholars, and if you say that is because they are stronger to begin with than their more sedentary brethren, I deny that. Mr. Weston, like Sandow, Blaikie, Mr. Roosevelt, Dr. Winship and many others, went into physical exercises because they were sickly as boys, and not for pastime.

Fortunately, people are at last beginning to wake up to the paramount necessity of educating and developing the body, and are beginning to perceive that while we are wasteful of many things, we are not so wasteful of any other thing as we are of our own and our children's lives; and, by the way, is it not time that we should drop the use of that unscientific limit to human life so beautifully stated in the Ninetieth Psalm, as it evidently has only a poetical meaning? For that matter, there is just as good biblical authority for placing the limit of our days at 120 years as at 70 years (see Genesis, Chap. vi:3). The former figure, moreover, nearly accords with present scientific opinion as to the length human life should attain than does the latter.

The ignorance and prejudice that surround these all-important questions can scarcely be dispelled until they are approached in a more rational and scientific spirit. While the influence of "the wise old lady next door" is somewhat diminished in clinical medicine, she is still much in evidence in preventive medicine and personal hygiene, as shown, for example, by Mr. Greeley's remarks just quoted in regard to the sad condition in which Mr. Weston would find himself at 50, if he should persist in his dangerous practice of walking. However, the light is slowly breaking as Parkes puts it: "As ages roll on, hope does in some measure grow. In the midst of all our weaknesses, and all our many errors, we are certainly gaining knowledge, and that knowledge tells us in no uncertain language, that the fate of man is in his own hands."

RICHARD COLE NEWTON, M.D., Montclair, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TUBERCULOSIS—A BACTERIEMIA?

To the Editor:—In connection with the editorial in THE JOURNAL June 19, 1909, on the theory of tuberculosis as a bacteriemia, in which the results of Forsyth in confirmation of the work of Rosenberger are discussed, as well as Rosenberger's observations, I wish to call attention to a paper by Burnham and Lyons read before the Louisiana State Medical Society, May 4-6, 1909, in which the results of study of ten cases of tuberculosis by the staining methods of Rosenberger, in every case, gave negative results. I note in THE JOURNAL, Aug. 21, 1909, that Ravenel and Smith presented a paper before the Wisconsin State Society in which eighteen cases were studied in the same way with negative results. This subject is one of great interest and in view of the contradictory reports of the observers quoted I think that the question can well be considered doubtful as to whether or not tubercle bacilli are really present in the blood stream. I would like to ask if any other investigators have confirmed or failed to confirm the observations of Rosenberger?

M. P. BURNHAM, Harrisonburg, Va.

ANSWER.—Our correspondent and others may be interested in an article entitled "Tests Concerning Tubercle Bacilli in the Circulating Blood," in the *Archives of Internal Medicine*, August, 1908, iv, 133. The authors, E. C. Schroeder and W. E. Cotton, examined microscopically the blood of forty-two tuberculous cows and bulls, but failed to find tubercle bacilli. The blood from the tuberculous cattle was injected into eighty-eight guinea-pigs, also with negative results.

AIDS TO OBSTETRIC TRACTION BY THE PATIENT

To the Editor:—Sometimes a simple device is of great benefit to humanity. For twenty-four years I have practiced obstetrics: the first four years were times of labor indeed. Any physician who has attended a good strong woman in the second stage of labor, who meant business, and who wished to have her husband, nurse or neighboring women pull on her hands while she was doing her best to expel the presenting head, would, it seems to me, welcome the following simple labor-saving device: (1) Take a towel at least 26 inches long and 14 inches wide and catch it by diagonal corners with the thumb and fingers; (2) twist it into a rope; (3) tie the diagonal corners with a square knot—the towel is then converted into a ring with a diameter of 7 inches; (4) fix another towel like the first; (5) place the patient, after the first stage of labor, in the dorsal or lateral prone position with the legs flexed on the thighs; (6) place the rings over the knees and insist that the patient grasp a ring with each hand, while the nurse or some one else keeps the rings from slipping off the knees. The patient is then instructed to pull and hold the breath at the same time. She will recognize after a pain or two, that the rings afford her great comfort, and are an appreciable help in advancing the labor. The use of these rings inspires the patient with confidence in her own strength and her ability to terminate the labor. This device also saves the people in waiting much fatigue, as well as saving the patient from being dragged all over the bed. The device is simple, and always at hand. I have never seen this simple device mentioned in literature.

FRANK DEWITT REESE, Cortland, N. Y.

ANSWER.—In obstetric cases, physicians frequently have to improvise some such simple apparatus as that described above. Instead of flexing the knees on the thighs the towels may be placed around the patient's legs, just above the knees, so that she may grasp them as is here suggested and no one need hold them. Another method frequently used is to twist a sheet cornerwise and put it over the crossbar at the foot of the bed, put knots on the ends and let the patient pull on the sheet. Various other simple methods are in common use as well as patented tractors of straps and loops which are more or less complicated. If it will comfort the patient to have something human to hold in place of the effective sheet-rope, let the husband or some one else assist her, but if the medical attendant has tact and firmness it is seldom necessary for him to use up his time and strength in helping the patient pull. Our correspondent does not mention the danger that the physician may be so tired and his hands so lamed that he can not give the strength and skill necessary in some complication such as dystocia, retained placenta, hemorrhage, or asphyxia.

NEED OF A SECTION ON PSYCHIC FORCES

To the Editor:—I applaud the call made by Dr. G. Betton Massey, (THE JOURNAL, July 31, 1909, p. 394) for the establishment of a new "Section on Physical Forces in Medicine and Surgery," and offer an amendment that the new Section embrace the psychic as well as physical forces. I would ask an expression of opinion from the profession.

There is on the part of the people so much unrest and insurrection over the inefficiency of drug therapy which has been indiscriminately prescribed with little or no benefit in a large and rapidly increasing number of cases of nervous disorders that continued neglect of the more effective psychic and physical forces for the cure of these disorders will bring disaster to the profession and to the community at large.

Although the development of the psychic forces would perhaps more logically belong to the Section on Nervous and Mental Diseases, the members of that Section have told us so plainly that they are too busy to give the attention to the subject which its importance demands that we must look to new men to develop it, and besides it is a subject on which the general practitioner of the future will have to be educated, and, all things considered, I believe that the best possible way to develop the psychic and physical forces which will in the future play an increasingly important part in the healing art is to organize a new Section, which in my judgment will not be lacking in earnest work and hearty support at any meeting.

GUSTAVUS WERBER, Washington, D. C.

CHEESE IN TREATMENT OF CELLULITIS

To the Editor:—Recently I had a case of cellulitis of the hand with badly engorged lymphatics and ascending phlegmonous manifestations. The hand was swollen, the arm brawny and swollen. I made free incisions in the hand, applied hyperemic cups and arm band, and soaked the parts for hours in hot bichlorid of mercury. The arm was getting along well, but one day I noticed it white and the skin loose and apparently bloodless. The patient said that on the entire arm he had placed the ordinary fresh cottage cheese—*Schmierkäse* of the Germans—and the benefit seemed more than that obtained from the Bier treatment, incisions and bichlorid of mercury. I would like to know from what source the benefit was derived. Unfortunately, I made no microscopic examination of the pus, but my own explanation was that the lactic and butyric acid organisms must have had an inhibitory or bacteriolytic action on those pus organisms. Can you tell me if this is so? Is there any literature on the subject? Or did the bactericidal serum or opsonins of the body simply overcome the invading organisms? Cheese is a household remedy among the Slavs for pneumonia, erysipelas and any local infection, and, strange to relate, it works.

C. E. McDERMID, Charleroi, Pa

ANSWER.—The application of cheese is of little if any benefit. It is true that fresh green cheese contains many lactic acid bacteria, but usually the ordinary kind; and it would be rather difficult for these bacteria to reach the seat of the trouble. It is not impossible that the application of the cheese had a similar effect to that of a moist poultice. The statement that Slavs use cheese for pneumonia and erysipelas successfully is rather indefinite; many popular ideas are devoid of scientific basis and should be mistrusted. It is probable that the supposed benefit derived from application of cheese is purely coincidental.

PHOSPHORESCENT SIGNS FOR PHYSICIANS

A correspondent states that some years ago an agent sought to sell him a sign for his office to contain his name in phosphorus letters, so that in the day time it would appear as a plain white sign, but at night would shine with a phosphorescent glow. He asks the name and address of any firm that makes such signs, and we will be glad to pass the information on to him if any of our readers can inform us.

The Public Service

Medical Department of the Army

Memorandum of changes for the week ended Aug. 21, 1909:

Robbins, Chandler P., major, granted leave of absence for one month.

Reynolds, Charles R., major, granted leave of absence for 10 days.

Russell, F. F., major, ordered to proceed from Washington, D. C., to Fort Sill, Okla., and return, on business connected with the Medical Department.

Siler, Joseph F., capt., ordered to proceed from New York City to Peoria, Ill., and return, on business connected with the Medical Department.

Drake, Percy G., 1st lieut., M. R. C., ordered to proceed from Fort Ethan Allen, Vt., to Fort Leavenworth, Kan., for temporary duty.

Morse, Arthur W., major, relieved from duty at the Presidio of Monterey, Cal., and ordered to the Philippine Islands, for duty on Oct. 5, 1909.

Parce, Alexander D., 1st lieut., Wilson, James A., 1st lieut., relieved from duty with Co. C., Hospital Corps, Fort Niagara, N. Y., and ordered to the Philippine Islands for duty on Oct. 5, 1909.

Trotter-Tyler, George, 1st lieut., M. R. C., relieved from duty at Vancouver Barracks, Washington, and ordered to the Philippine Islands, on Oct. 5, 1909.

Winter, Francis A., major, Darnall, Carl R., major, Pipes, Henry F., capt., appointed members of a board of officers of the Medical Corps, to meet at the Army Medical Museum Building in Washington, at the call of the senior member of the board, for the purpose of conducting the preliminary examination of applicants for appointment in the Medical Corps of the Army.

Wickline, Wm. A., capt., granted 30 days' leave of absence.

Ekwurzel, George M., capt., granted leave of absence for three months, to take effect on his relief from duty in the Philippines Division.

Schmitter, Ferdinand, 1st lieut., granted leave of absence for four months, with permission to go beyond the sea.

Shillock, Paul, major, relieved from treatment at the Army and Navy General Hospital, Hot Springs, Ark., and will return to his proper station.

Howard, Deane C., major, granted two months' leave of absence, to take effect on his arrival in the United States.

Juenemann, George P., capt., granted 10 days' leave of absence Aug. 19.

Ames, John R., dental surgeon, accompanied by a member of the Hospital Corps, as assistant, will proceed from Fort Snelling, Minn., about Sept. 1, 1909, to the following named posts in the order given and report to the commanding officer for temporary duty during the period indicated to perform dental work for officers and enlisted men: Fort Lincoln, N. D., 15 days, Fort Assinniboine, Mont., 30 days.

Scott, Harold O., dental surgeon, relieved from duty in the Philippines Division, and on arrival at San Francisco, to report by telegraph to the Adjutant General of the Army for further orders.

Medical Corps of the Navy

Changes for the week ended Aug. 21, 1909:

Robertson, G. E., acting asst.-surgeon, ordered to duty at the Naval Hospital, Boston.

Ledbetter, R. E., surgeon, detached from the Naval Academy, and ordered to the Naval Station, Cavite, P. I.

Noble, D. H., asst.-surgeon, detached from duty at the Naval Hospital, Las Animas, Colo., and ordered to the Third Squadron, Pacific Fleet, via the *Maryland*.

Sinclair, J. A. B., asst.-surgeon, detached from the Naval Proving Ground, Indian Head, Md., and granted leave of absence for 2 weeks.

Dunn, H. A., P. A. surgeon, ordered to the Naval Proving Ground, Indian Head, Md., August 23.

Webb, U. R., P. A. surgeon, ordered to duty at the Naval Hospital, Mare Island, Cal., August 24.

Henry, R. B., asst.-surgeon, detached from the Naval Magazine, Iona Island, N. Y., and ordered to the Third Squadron, of the Pacific Fleet

Public Health and Marine-Hospital Service

List of changes for the seven days ended Aug. 18, 1909:

Glennan, A. H., asst. surgeon general, leave granted July 17, 1909, for 28 days from July 20, 1909, amended to read 25 days from July 20, 1909.

Stoner, George W., surgeon, granted 11 days' leave of absence from August 17, 1909.

Banks, Charles E., surgeon, granted 5 days' leave en route to station.

Cobb, J. O., surgeon, granted 10 days, leave of absence from Aug. 15, 1909.

Wertenbaker, C. P., surgeon, granted 1 month's leave of absence from Aug. 16, 1909.

Lavinder, C. H., P. A. surgeon, directed to proceed to Peoria, Ill., on special temporary duty.

Parker, Herman B., P. A. surgeon, granted 15 days' leave of absence from Aug. 16, 1909.

Ramus, Carl, P. A. surgeon, granted 1 day's leave of absence, July 11, 1909, under paragraph 191, Service Regulations.

Goldberger, Joseph, P. A. surgeon, granted 1 day's leave of absence en route to station.

McCoy, G. W., P. A. surgeon, directed to make certain inspection trips in Contra Costa and adjacent counties in California on special temporary duty.

Ebersole, R. E., P. A. surgeon, granted 2 months' leave of absence from Aug. 12, 1909.

McKeon, F. H., P. A. surgeon, granted 4 days' leave of absence from June 29, 1909, under paragraph 191, Service Regulations.

Chapin, C. W., asst.-surgeon, directed to proceed to Portland, Ore., on special temporary duty.

Bean, L. C., acting asst.-surgeon, granted 5 days' leave of absence from Aug. 15, 1909.

Cross, I. J., acting asst.-surgeon, granted 30 days' leave of absence from Sept. 9, 1909, with pay, and 13 days from Oct. 9, 1909, without pay.

Fabian, J. J., acting asst.-surgeon, granted 6 days' leave of absence from Aug. 2, 1909, under paragraph 210, Service Regulations.

Hamilton, H. J., acting asst.-surgeon, granted 2 days' leave of absence from Aug. 16, 1909.

Townsend, W., acting asst.-surgeon, granted 14 days' leave of absence from Aug. 8, 1909.

Walkley, W. S., acting asst.-surgeon, granted 4 days' leave of absence from Aug. 25, 1909.

BOARDS CONVENED

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Aug. 16, 1909, for the purpose of making a physical examination of two officers of the Revenue-Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; P. A. Surgeon M. K. Gwyn, recorder.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Aug. 20, 1909:

SMALLPOX—UNITED STATES

Louisiana: New Orleans, July 31-Aug. 7, 1 case.
Montana: Butte, July 31-Aug. 7, 3 cases.
Oklahoma: Oklahoma City, July 31-Aug. 7, 1 case.

SMALLPOX—FOREIGN

Brazil: Bahia, June 11-25, 6 cases, 1 death; Rio de Janeiro, June 26-July 11, 8 cases, 2 deaths.
China: Amoy, July 3-10, 1 death; Shanghai, June 19-26, 1 case.
Egypt: Cairo, June 24-July, 1 death; Suez, June 18-24, 2 cases, July 1-8, 2 cases.
France: Paris, May 28-June 5, 7 cases, July 17-24, 2 cases.
India: Bombay, June 29-July 6, 4 deaths; Calcutta, June 19-26, 8 deaths; Madras, June 26-July 2, 1 death.
Italy: General, July 18-25, 12 cases; Naples, 39 cases, 5 deaths.
Mexico: Mexico City, July 3-10, 11 deaths; Monterey, July 25-Aug. 1, 1 death.
Portugal: Lisbon, July 24-31, 7 cases.
Russia: Libau, July 18-25, 1 case: Riga, July 11-24, 7 cases; St. Petersburg, July 3-10, 16 cases, 3 deaths; Warsaw, June 5-12, 2 deaths.
Siam: Bangkok, June 1-30, 1 case.
Siberia: Vladivostok, May 27-June 3, 2 cases, 1 death.
Spain: Vigo, July 18-24, 1 case.

YELLOW FEVER

Brazil: Bahia, June 11-25, 9 cases. 5 deaths.
British Guiana: Suddie, July 22, 1 case, 1 death.

CHOLERA—INSULAR

Philippine Islands: Manila, June 19-26, 76 cases, 50 deaths.

CHOLERA—FOREIGN

China: Amoy, July 3-10, 25 deaths.
India: Bombay, June 29-July 6, 12 deaths; Calcutta, June 19-26, 55 deaths; Rangoon, 2 deaths.
Russia: General, exclusive of St. Petersburg, July 23-30, 346 cases, 136 deaths; St. Petersburg, 390 cases, 165 deaths.

PLAGUE

Brazil: Bahia, June 11-25, 8 cases, 5 deaths; Rio de Janeiro, July 4-11, 1 case.
China: Amoy, July 3-10, 79 deaths; Hongkong, June 19-July 3, 7 cases, 7 deaths.
Ecuador: Guayaquil, June-July 10, 3 deaths.
India: General, June 26-July 3, 553 cases, 478 deaths; Bombay, June 29-July 6, 23 deaths; Calcutta, June 19-26, 48 deaths; Rangoon, 33 deaths.
Japan: Kobe, July 10-17, 3 cases, 2 deaths.
Siam: Bangkok, June 1-30, 12 cases, 12 deaths.
Venezuela: Caracas, July 17, 2 cases, July 31, 1 case.

Book Notices

Hydrotherapy. A Brief Summary of the Practical Value of Water in Disease. By William H. Dieffenbach, M.D., Professor of Hydrotherapy, New York Homeopathic Medical College and Flower Hospital. Cloth. Pp. 267, with illustrations. Price, $3. New York: Rebman Co.

The first half of this book is devoted to the general principles of hydrotherapy, and to a description, with many excellent photographs, of the apparatus and technic of hydrotherapeutic procedures. The second half is devoted to the practical application of hydrotherapy to diseases. Dr. Dieffenbach is an enthusiastic believer in "the cure of disease by water." In his introduction to the practical part of the book he says: "Although convinced of the almost universality of these applications we do not desire to be classed among those who in their zeal announce hydrothermotherapy as a panacea or cure-all. There are few abnormal conditions where *some* modality of hydrothermo-therapeutics is not called on to do yeoman service. The triumphs of hydrotherapy in fevers, especially in typhoid fever, where hydrotherapy has succeeded in penetrating the citadel of conservatism and of traditional medicine which has hampered the progress of the art of healing for ages are alone sufficient to convince the most skeptical among physicians of the virtues of water in disease." A clean-cut, concise, definite, short yet lucid and comprehensive treatise on this subject is indeed welcome. The present work is all of this—it is written by a master. And yet one can not help but feel that Dr. Dieffenbach in his sincere enthusiasm has materially detracted from the value of his work because of the very "almost universality" that he attributes to hydrotherapeutic procedures. Perfectly satisfied as we are that hydrotherapy has a very wide and very valuable range of usefulness in the art of healing, we are a little skeptical when disease after disease is mustered before us and "*some* modality of hydrothermo-therapeutics" is applied to it, or, as it seems to us at times, even forced on it. It seems to us a far cry from the well-recognized results of hydrotherapy in typhoid to such recommendations as "short cold half baths" with friction as *the* treatment of anemia and chlorosis, with no reference to iron; or to the use of the "iced compress to the vulva, with efficient vaginal packing and mechanical pressure" for the treatment of postpartum hemorrhage, etc. The following quotation in full giving the treatment of membranous croup, will illustrate what has been said:

"This fatal affection requires correct diagnosis, and prompt intervention by the physician. The indications for treatment require clearing the parts of the false membrane, preventing spasms of the glottis and keeping up the resisting power of the child. Moist heat, applied by means of the vapors of the 'croup kettle,' tends to produce local leucocytosis and hyperemia and loosens the membrane. Hot foments applied over the larynx and trachea and changed five times hourly, to be followed by the cold, stimulating compress, will act beneficially. Warm baths, with cold affusions applied every five minutes to the nape of the neck until a vigorous respiratory reaction with cough is induced, have also produced expectoration of the membrane." Such paragraphs, and especially the last sentence, do not appeal to one who has been accustomed to give antitoxin. The book is written from the standpoint of the hydrotherapeutist, as is evident from its substance and also from the titles of the author. Its appeal will be rather to the physician who specializes in institutional hydrotherapeutics, etc., than to the ordinary practitioner of medicine who believes in hydrotherapy as a most valuable adjuvant rather than as a system of therapeutics in itself. The book is nevertheless a valuable and comprehensive summary of the whole subject of hydrotherapy.

Confessions of a Neurasthenic. By William Taylor Marrs, M.D. Cloth. Pp. 114, with illustrations. Price, $1. Philadelphia: F. A. Davis Co.

This interesting bit of satire may serve to arouse some persons who are nursing their own alleged invalidism and may shed light on the conduct of friends who often unwittingly pander to hysteric conditions. If Dr. Marrs has omitted any symptoms in his fanciful portrayal, they fail to occur to us at the present moment.

The Emmanuel Movement in a New England Town. By Lyman P. Powell, Rector of St. John's Church, Northampton, Mass. Cloth. Pp. 194, with illustrations. Price, $1.25. New York: G. P. Putnam's Sons, 1909.

Mr. Powell is one of the leading workers in the so-called Emmanuel movement and may be accepted as one of the expositors of what it claims to accomplish. According to him, "every Emmanuel clinic works within the limitations set by scientific medicine," but he follows this by the statement that "every Emmanuel worker follows his own temperament and training in the application of the principle." Here lies the peril and the basis for the criticisms which have been rather numerous both from physicians and clergymen. There is no question but that a religious stimulus is of great value in many forms of mental and even bodily ailment; a thorough medical education would be of great value to many clergymen and some physicians probably suffer on account of their lack of religious faith and training. The debatable ground, however, between moral and physical healing is full of pitfalls for the injudicious and we fear that anything like a healing cult, such as the Emmanuel movement appears to be developing into, is full of perils to the church as well as to the public welfare generally. Not every clergyman is possessed of proper balance and judgment to go beyond the limits that have usually been set to his functions and the tendency to conscious or unconscious fakerism is likely sooner or later to appear if the practice is to spread. Even with the advice of physicians cooperating with the minister there are dangers. The most fatal form of organic insanity in the active period of life is often indistinguishable in its earlier stages from neurasthenic conditions. Mr. Powell does not seem altogether free from undue credulity. His statement as to the effects of the reading of the twenty-third chapter of Dubois' well-known work seem to us somewhat like evidence of this. His ideas of hypnotism do not appear very well defined, and we are not sure that his methods are not as perilous as other more obviously objectionable ones. His book, therefore, is not altogether a safe one to follow in this regard. What will be the outcome of this Emmanuel movement we are not prophets enough to say; it may do no harm, but it looks to us more perilous to the church than to medicine if it is to be taken up by enthusiastic and more or less credulous clergymen to any very great extent.

Seventh Annual Report of the Director of the Bureau of Science, to the Honorable, the Secretary of the Interior. By Paul C. Freer, Director of the Bureau of Science, for the Year Ending Aug. 1, 1908. Paper. Pp. 79. Manila.

The part of this report of interest to medical men is the space given to the Philippine Medical School. This school is organized with a faculty composed partly of clinical instructors who teach while practicing their profession, partly of men devoting their time exclusively to instruction and research, and of others who belong to the staff of the Bureau of Science, and whose salaries are paid by that bureau. The result is that there is some conflict between the demands made by the school on the one hand and the bureau on the other. The situation is complicated by the fact that the men belonging to the laboratory staff are compelled to give much of their time to clinical work and the organization of the hospital and the school. The report suggests that the government should appoint independent clinical professors who should care for the patients, leaving the laboratory men free to pursue their important investigations. The total number of students in the school is 67. The question of admission requirements is discussed and the fact that the authorities have been quite lenient in applying these requirements is explained by the necessity of providing as soon as possible trained native physicians who will be able to advance the hygienic work in the islands and interpret the requirements of the government to their countrymen with a belief in their necessity. The report emphasizes the necessity of carrying on, in addition to work in Manila, research and practical work in the provinces. For this it is proposed to use the opportunity afforded by the periodic segregation of lepers to be sent to the Culion leper colony. Interesting cases found at these meetings should be brought to Manila for investigation. The other portions of the report are also of considerable interest and show that the worthy standard set by the Philippine Bureau of Science is being maintained.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Iowa: State House, Des Moines, September 21-23. Sec., Dr. Louis A. Thomas.

Missouri: Kansas City, September 20-22. Sec., Dr. J. A. B. Adcock, Warrensburg.

New York: Albany, September 21-24. Chief of Examinations Division, Charles F. Wheelock, Albany.

Massachusetts: State House, Boston, September 14-16. Sec., Dr. Edwin B. Harvey.

The Preparation for the Study of Medicine

An article bearing the above title by Dr. Frederic T. Lewis of Harvard Medical School appears in the *Popular Science Monthly*,[1] and is worthy of careful reading by those having to do with medical education.

Dr. Lewis names subjects which the student during his preliminary college course should take up and gives reasons why they are of importance. The subjects recommended are zoology, botany, chemistry, physics, mathematics, psychology, French and German, English literature and drawing. In zoology, the value of the biologic methods, including dissection and microscopic technic, is emphasized. A table is given based on examinations in anatomy and histology, held by Harvard Medical School for the class which entered in 1907. This table shows that the highest averages were obtained by the students who had previously studied zoology. In botany a study of the morphology of plants with special reference to the fungi is recommended because of the aid it gives in the study of bacteria. The study of flowering plants, however, is not recommended.

The value of the study of chemistry, general and organic, is emphasized because of the aid in the future study of physiology and physiologic chemistry. A college course in physics "with laboratory work consisting of accurate measurements" is recommended as a valuable preparation for the study of physiology and its bearing on numerous problems of medicine. In mathematics, Dr. Lewis shows that plane geometry and plane trigonometry are essential to the securing of the desired preliminary course in physics and that for advanced physics, solid geometry and higher mathematics are needed. A knowledge of psychology is important, particularly in the study of nervous diseases and psychiatry. A half course in psychology, therefore, is recommended.

The reading knowledge of French and German is important in order that the student may benefit from the large number of medical books and periodicals published in those languages and which are invaluable to the student, the practitioner and the investigator. The study of English literature is recommended, not only because of its utilitarian value, but also as a source of recreation and diversion from specialized scientific studies. Drawing is valuable in developing accuracy of observation, since the very act of drawing or modeling an object calls attention to many details otherwise overlooked.

While all this may be secured in two years of collegiate work, it is recommended that students who can possibly do so should take the complete college course before beginning the study of medicine.

South Carolina June Report

Dr. Harry H. Wyman, secretary of the State Board of Medical Examiners, reports the written examination held at Columbia, June 8-10, 1909. The number of subjects examined in was 18; total number of questions asked, 85; percentage required to pass, 75. The total number of candidates examined was 81, of whom 46 passed and 33 failed. One candidate did not complete the examination. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University, Washington	(1909)	79.
Medical College of Georgia	(1909)	75.2, 81.4
Atlanta College of Physicians and Surgeons	(1908)	80.5
University of Maryland	(1907) (1908) (1909)	85.4 75.2, 81.6 78.7, 80.2, 82.1, 82.2.
Louisville and Hospital Medical College	(1908)	77.1
Columbia University, College of Phys. and Surg.	(1906)	81.5
North Carolina Medical College	(1909)	76.2, 83.9
Jefferson Medical College	(1908)	84.2
Medical College of the State of South Carolina	(1909)	75, 75, 75, 75.5, 75.6, 75.7, 75.7, 76.9, 78.6, 78.9, 79.4, 80, 80.6, 80.9, 81.5, 82, 82, 82.4, 83.2, 83.9, 84.2, 84.7, 84.9, 87.2.
Meharry Medical College	(1908) (1909)	75 79.1
Vanderbilt University	(1909)	76.1
University of Nashville	(1909)	75, 81.6
Medical College of Virginia	(1908)	90.9

FAILED

College	Year Grad.	Per Cent.
Howard University	(1907)	69.3
Birmingham Medical College	(1908)	68.2
Medical College of Georgia	(1906) (1908)	63 60, 60.9, 62.5, 66.
University of Louisville	(1908)	71.5
Baltimore Medical College	(1907)	66.
University of Maryland	(1909)	69.4
Leonard Medical School	(1906) (1908) (1909)	55.5 63.8, 73.4 63.4.
Medical College of the State of South Carolina	(1904) (1907) (1908) (1909)	58.6 63.6 22.8, 66.7 56.5, 59.6, 64.9, 68.1, 70.2, 71, 71.2, 71.4, 72.1, 72.1
Meharry Medical College	(1907) (1909)	61.1 64.1, 65.
University of Nashville	(1909)	68.9
University of the South	(1908)	52.9

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[1] July, 1909, p. 65

Marriages

R. P. Cowles, M.D., to Miss Sarah C. McConville, at Baltimore, August 6.

Otto Fisher, M.D., Trenton, N. J., to Miss Mollie Nash, at Reisterstown, Md., August 14.

Henry Strong Denison, M.D., to Miss Jeannette Welch, both of New London, Conn., August 19.

Giuseppe Previtali, M.D., New York City, to Miss Rose R. Morrow, at Windsor Hills, Md., August 8.

Swithin Chandler, M.D., Philadelphia, Pa., to Miss Elizabeth Dickenson of Middletown, Conn., July 31.

Daniel B. Redmond, M.D. to Miss Eva Fewell, both of Washington, D. C., at Rockville, Md., August 11.

Anthony Gruessner, M.D., New Brunswick, N. J., to Miss Piozsika Deutsch, of New York City, August 14.

Deaths

Walter Gilman Curtis, M.D. Harvard Medical School, Boston, 1846; acting assistant surgeon in the Army before the Civil War, and medical quarantine officer of the Cape Fear river thereafter; state quarantine physician for nearly 30 years; in 1868 clerk of the superior court of Brunswick county, N. C.; and for many years a magistrate and member of the board of county commissioners; died at his home in Southport, N. C., August 8, aged 83.

Henry G. Christzman, M.D. Pennsylvania Medical College, Gettysburg, 1859; surgeon in the Army during the Civil War, and in charge of the Hagerstown (Md.) Hospital during and after the battle of Antietam; for many years a U. S. pension examining surgeon at Washington; ex-president and an honorary member of the Medical Society of Franklin County; died at his home in Welsh Run, Pa., August 10, from paralysis, aged 72.

Byron Clark, M.D. University of Maryland, Baltimore, 1881, College of Physicians and Surgeons, Baltimore, 1881; formerly professor of theory and practice of medicine in the Eclectic Medical College of the City of New York; died at his home in Washington, Pa., August 5, from diabetes, aged 72.

William Smith, M.D. Cleveland Medical College, 1848; Columbus Medical College, 1876; a veteran of the Mexican and Civil Wars; and for many years a member of the American Medical Association; died at his home in Van Wert, Ohio, August 8, from heat exhaustion, aged 87.

James P. Rorex, M.D. University of Alabama, Mobile, 1875; died at his home in Scottsboro, Ala., August 8, from a gunshot wound of the heart, supposedly self-inflicted, while despondent on account of ill-health, aged 64.

John Jacob Beyer, M.D. Jefferson Medical College, Philadelphia, 1890; a member of the Medical Society of the State of Pennsylvania; died at his home in Philadelphia, August 9, from locomotor ataxia, aged 51.

Louis Jacob Eger, M.D. Starling Medical College, Columbus, Ohio, 1893; a specialist on diseases of the eye, ear, nose and throat; died at his home in Delphos, Ohio, August 4, from cerebral meningitis, aged 41.

William Forrester, M.D. University of Louisville (Ky.), 1862; surgeon of the Fifth Kentucky Volunteer Cavalry during the Civil War; died in Louisville, August 15, aged 72.

Stanley Theodore Boggess, M.D. Bellevue Hospital Medical College, New York City, 1891; of Bristol, W. Va.; died in a hospital in Clarksburg, W. Va., August 5, from tetanus, aged 47.

Pleasant James Monroe Burket, M.D. University of Michigan, Ann Arbor, 1865; a veteran of the Civil War; died at his home in Topeka, Kan., July 3, from heart disease, aged 65.

Marcellus M. Adams, M.D. Medical College of Indiana, Indianapolis, 1885; a member of the Indiana State Medical Association; died at his home in Greenfield, August 5, aged 75.

Kent Black, M.D. Medical College of Virginia, Richmond, 1878; a member of the Medical Society of Virginia; died suddenly on his farm near Blacksburg, Va., August 12, aged 53.

William R. Wall, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1887; died suddenly at his home in Willoughby, Ohio, August 7, from cerebral hemorrhage, aged 68.

James C. Harrington, M.D. Cleveland University of Medicine and Surgery, 1865; of Brooklyn, N. Y.; died at the home of his daughter in Bellevue, Pa., July 15, aged 72.

Emanuel A. Smith, M.D. Medical College of Indiana, Indianapolis, 1892; of Newton Stewart, Ind.; died at the home of his brother in Bird's Eye, Ind., July 9, aged 62.

George Washington Hamill, M.D. Bellevue Hospital Medical College, New York City, 1876; of Baltimore, Md.; died at Mercy Hospital in that city, August 13, aged 56.

Samuel W. Yearick (license, Iowa, 1885); an eclectic practitioner of Cedar Rapids; and a veteran of the Civil War; died at his home, July 18, aged 74.

Michael C. Kett, M.D. University of Georgetown, D. C., 1904; of Glenwood Springs, Colo.; was killed August 6, in a runaway accident at that place, aged 30.

Robert Emmett Jones, M.D. Western Reserve University, Cleveland, 1884; died at his home in Bethany, W. Va., August 2, from anemia, aged 59.

John Davis Thornton, M.D. University of Kansas City, Mo., 1887; of Des Moines, Iowa; died in Kansas City, August 2, from brain disease, aged 56.

Marion M. Erwin (license, Ark., 1903); a Confederate veteran, died at his home in Newport, Ark., August, 2, from pneumonia, aged 59.

Thomas Charles Stevenson, M.D. Western Pennsylvania Medical College, Pittsburg, 1893; died at his home in Carnegie, Pa., August 6, aged 42.

Edward Cornet, M.D. National University of Illinois, Chicago, 1892; died at his home in Uncasville, Conn., from paralysis, aged 62.

George W. Baker, an eclectic practitioner of Leon, Iowa; died at his home January 10, from pneumonia, aged 87.

Thomas D. Hulme (license, practitioner, Iowa, 1886); died at his home near Commerce, Iowa, August 8, aged 68.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Medical and Chirurgical Faculty of Maryland Establishes a Permanent Relief Fund

The July number of the *Bulletin of the Medical and Chirurgical Faculty of Maryland* contains the report of the committee on a fund for the relief of widows and orphans of deceased members, showing the work which has been accomplished during the past year. This fund, established in 1903, has been steadily growing and has recently been considerably enlarged through the organization of the Ladies' Auxiliary. Dr. Eugene F. Cordell, the chairman of the committee, gives the following account of its establishment and activities:

> Several times in the long life of the Faculty, extending back to the eighteenth century, the matter was discussed and at different times resolutions adopted, to carry the plan into execution, but it was not until 1903 that it was successful. At the annual meeting of the Faculty, held in Baltimore in April of that year, a resolution was adopted founding a permanent fund for the relief of the widows and orphans of deceased members. This fund was placed in the hands of the committee to invest and to use the annual interest for the relief of those who might be in need of it. Personal effort was needed to make the project a success. Solicitation among friends and members of the profession secured several hundred dollars within the first year. While the fund has not increased as rapidly as it should, it is growing and is safely invested in 5 per cent. bonds. The goal which the committee has in view is the securing of an amount which will yield an annual income of at least $1,000. There is little doubt that before long, as the charity becomes known and appreciated, gifts and bequests will come in which will make its work an important part of the activities of the Faculty. It is the hope of the committee to establish somewhere near Baltimore a home for the widows and orphans of physicians, where they can be cared for and where the children can be educated. It seemed to the committee that if the women of the Faculty, the wives, sisters, mothers and daughters of the 1,100 members, could be interested in this work, it would be prosecuted with greater success. The recent dedication of the fine new building of the Faculty offered an opportunity to carry this idea into execution. The brilliant opening of May 13-15 drew the community and especially the ladies together, and made them see what a powerful body the medical profession was under its new organization. The local newspapers were full of our career and work and the project was well advertised as a result. Accordingly, a Ladies' Auxiliary of the Widows and Orphans Fund was organized, making the women, in a measure, members of the Faculty. They entered on their work with enthusiasm, a large membership committee having been appointed to secure the membership of all the ladies. In October, an entertainment will be held in Osler Hall, at which reports of the work of the Ladies' Auxilary will be made. A large number of the wives and daughters of members of the Faculty are taking an interest in the plan. It is hoped that eventually a permanent home may be established, which will offer its hospitality not only to the widows and orphans of physicians, but also to the superannuated physicians themselves.

The work outlined above is most commendable, and the result in Maryland will be watched with interest. State associations can well give such a plan careful consideration in selecting possible lines of development.

Society Proceedings

COMING MEETINGS

Amer. Assn. Obstetricians and Gynecologists, Ft. Wayne, Ind., Sept. 2.
Amer. Electrotherapeutic Association, New York, September 14-16.
Colorado State Medical Association, Estes Park, September 19.
Michigan State Medical Society, Kalamazoo, September 15-16.
Missouri Valley, Med. Society of, Council Bluffs, Ia., September 9-10.
New Mexico Medical Society, Roswell, September 15-16.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
Utah State Medical Association, Ogden, September 21-22.
Wyoming State Medical Society, Cheyenne, September 1-2.

OREGON STATE MEDICAL ASSOCIATION

Annual Meeting held at Seattle, July 20-23, 1909

The President, Dr. W. H. Byrd, in the Chair

The officers elected were named in The Journal, Aug. 7, 1909, p. 467.

The report of the secretary showed a membership of 371. This included one new society, the Polk-Yamhill, of which Dr. W. G. Gilstrap is president and Dr. L. A. Bollman, secretary. The state association granted a charter to this society.

Practice Act Discussed

The Committee on Public Policy and Legislation endorsed a plan for the consideration of a practice act, as a special order of business for the next meeting. The model bill presented in the state legislature at the last session had been defeated, and it was with a view to passing this that the motion was made. The bill was widely discussed at the meeting.

Ophthalmia Neonatorum

Dr. J. F. Dickson, the Oregon representative of the committee on Ophthalmia Neonatorum of the American Medical Association, urged the appointment of a special committee of three to secure the passage of a bill regulating the practice of physicians and midwives in the care of new-born infants. The matter was referred to the Committee on Public Policy and Legislation, who will be urged to adopt the plan.

Official Journal Considered

The important business of the session was the adoption of an official journal. The Committee on Journal, Drs. W. T. Williamson, C. J. Smith and K. A. J. Mackenzie, appointed last year to consider the best methods of publication, endorsed a plan for the formation of a Northwest Publishing Association and presented articles of incorporation, constitution and by-laws. *Northwest Medicine*, published at Seattle, and for several years official journal of the Washington State Medical Association, had offered to lease its plant to the states entering into the agreement, and it was recommended that this journal be made the official organ of the states of the Pacific Northwest. According to the plan recommended each state medical association will elect three trustees, and the trustees from all the states will elect an editor-in-chief and managing editor, forming a publishing company to be known as the "Pacific Northwest Publishing Association." Each state will have two associate editors and the state secretaries will become assistant editors *ex-officio*.

The journal will continue to be known as *Northwest Medicine*, and will be furnished to each member by the state associations. As at present arranged, the new publication will prove a most desirable one. The Oregon State Medical Association adopted the plan, as did also the Washington State Medical Association. Idaho is expected to do likewise, and it is hoped that British Columbia willl join in the plan. Much satisfaction is being expressed by physicians of the Northwest, who thoroughly approve the arrangement, which will go into effect immediately.

Report of Delegate to American Medical Association

The delegate to the American Medical Association, Dr. A. C. Smith, reported the results of his observations while attending the last meeting of the American Medical Association. He made a motion that the next delegate from the Oregon State Medical Association be instructed to promote legislation tending to carry out the suggestions of President Burrell advising the segregation of the three offices of secretaryship, managership and editorship of The Journal of the American Medical Association, and that he also be instructed to initiate or support any action tending toward the restriction of the term of office of the members of the Board of Trustees to one term. This motion was carried.

Northwest District Association Formed

The chairman appointed a committee of three, Drs. N. Moliter, La Grande, W. G. Gilstrap, Sheridan, and W. T. Williamson, Portland, to consider the advisability of forming a northwest association comprising Oregon, Washington, British Columbia and Idaho. The project was favorably reported and organization effected (as already noted in The Journal).

The three journal trustee nominees, Drs. W. T. Williamson, C. J. Smith and K. A. J. MacKenzie, were elected unanimously to serve in order named for one, two and three years respectively.

The next place of meeting will be Portland, Oregon, in 1910.

NEW JERSEY STATE MEDICAL SOCIETY

Annual Meeting held at Cape May, June 23-25, 1909

(Concluded from page 650)

Medical Expert Testimony

Dr. T. P. Prout, Summit, protested against the present methods of judicial procedure, and said that unless one's knowledge dated from the seventeenth century, one was of very little importance in a court of law. The venerable question always propounded whenever insanity was in question ignored completely the advances that had taken place in two centuries of medical practice. The slow administration of justice was a characteristic of bad civilization; for it meant a costly administration. He did not consider our penal system adapted to cure criminals, who were always abnormal. He hoped that the day might come when an improvement would be made in the present legal system, and the prison would become the laboratory of an active science of jurisprudence. He stated that any three physicians who had had training in a certain department would be able to come to an agreement, provided they had access to all the facts, and suggested a plan by which the medical experts should be appointed in such a way as not to be bound to testify in favor of one side or the other.

DISCUSSION

Dr. Britton D. Evans, Graystone Park, said that medical experts could not be criticised for not always being harmonious, as the eminent men who had just spoken on the subject of obstetrics did not seem to be by any means altogether agreed. He stated that the objection to changing the system of employing medical expert witnesses was that the Constitution of the United States guaranteed to an accused citizen the right to summon experts from anywhere who would tend to help his cause. Men appointed as experts with a life tenure would not always agree. That a life tenure did not insure agreement had been shown by the Dred Scott decision.

Dr. E. Ill thought that when the day came that there would be no difference of opinion among physicians, there would be no physical body. He said that Dr. Prout's paper should be widely circulated among medical men, so that honest members of the profession might endeavor to have revised this cumbersome machinery of the law. He believed that if the asking of hypothetical questions could be abolished, this would constitute a long step in the right direction. He stated that no countries except Great Britain and the United States allow witnesses to be insulted by the attorneys without rebuke.

Pathognomonic Signs Relating to Appendix Localization

Dr. A. J. Walscheid, Union Hill, stated that besides pain, muscular rigidity, tenderness, tumor, etc., there were a number of signs that, if carefully studied, could localize the appendix, its direction and, in a great many instances, its pathologic state and prognosis. He considered the normal position of the appendix, and how it could be placed in these various positions. The positions of the appendix, he said, were: (1) the intrapelvic, with the development of the bladder, rectal, and uterine adnexa symptoms; (2) near the iliopsoas muscles, producing leg symptoms; (3) the position upward, outward, and backward, producing lumbar pains in chronic cases; and (4) upward and inward, or under the liver, producing respiratory symptoms. He touched on the importance of pain in relation to localization, particularly in outward and upward locations, or in inward, pointing toward the median line. Tenderness, as an important factor in localization, was also referred to; as well as the significance of McBurney's point, in making a fine diagnosis of the position and condition of the appendix. The importance of gastrointestinal disturbances was next described. Pain and tenderness he considered of value in showing the degree of inflammation.

DISCUSSION

Dr. George W. J. Sommers, Trenton, said that the diagnosis in most cases depended on the position occupied by the appendix. Those in which the tip pointed toward the other side of the colon were favorable for operation; while those in which it turned inward were more serious. He considered a study of the blood count an aid in the diagnosis of appendicitis, particularly a differential leucocyte count. He thought that the patients should be operated on as soon as the diagnosis was made, and considered a dose of castor oil a very good temporary expedient in cases of doubt. He believed, also, in the starvation plan of treatment in so-called inoperative cases. He had seen patients thus treated live long enough to be operated on successfully at a subsequent time.

Dr. Theodore Senseman, Atlantic City, did not believe the location of the direction in which the appendix pointed to be of any practical value. He thought that the first twenty-four hours in an appendix case would be better consumed in getting the patient ready to be operated on than in taking a leucocyte count. If one found the base of the appendix, it was easy enough to reach the tip.

Dr. J. M. Rector, Jersey City, referred to cases in which the appendix is sympathetically connected with the uterine adnexa, primary inflammatory changes in one of these being associated with secondary inflammatory changes in the other.

Dr. Walschied said that it was difficult sometimes to convince people of the necessity of early operation in appendicitis; and that in such cases one could wait and see whether, at the end of twenty-four hours, the acute pain was still present, meanwhile making the blood count and giving large doses of castor oil. While he admitted that the location of the tip of the appendix was not important to the general practitioner, he thought it very advantageous for the surgeon to know it.

Sterilization of Confirmed Criminals, Idiots, and Other Defectives by Vasectomy

Dr. William J. Chandler, South Orange, said that students in sociology had called attention to the fact that the birth rate of the criminal and defective classes was increasing much more rapidly than that of intelligent and law-abiding citizens. This was probably because these defectives had no sense of responsibility, and sought only the gratification of their animal natures. He referred to the famous Jukes family of criminals, prostitutes, vagabonds and paupers, to support the view that crime was hereditary. Society had sought to protect itself against the increasing number of criminals and defectives by passing punitive laws and by maintaining institutions for such persons. This had entailed considerable expense on the community, and had not been particularly successful. Some states had forbidden the marriage of persons who were epileptic, imbecile, feebleminded, or afflicted with insanity; but, unfortunately, the race could be propagated without marriage. Segregation or colonization was costly, and deprived many otherwise useful citizens of their liberty. Castration unsexed the individual; and, while advisable as an additional punishment for a limited number of criminals, was objectionable as a general measure. Vasectomy, however, was simple, safe, and thoroughly efficient. It would prevent propagation without unsexing the individual. Dr. Harry C. Sharp, of Indianapolis, for a long time chief physician of the Indiana State Reformatory, had done many hundreds of these operations, and stated that it in no manner limits the marital relations, except in the prevention of procreation. Indiana and several other states have passed laws making it compulsory for unimprovable defectives to submit to this operation.

DISCUSSION

Dr. Chandler offered a resolution that a committee be named to prepare a bill on the lines of the Indiana law, and to present it at the next meeting of the Legislature.

Dr. George H. Balleray, Paterson, said that we were what we were in consequence of heredity and environment. Therefore, the propagation of the human race should not be left entirely to chance. In the breeding of the lower animals, great precautions were taken to improve the stock and to prevent crossing with inferior animals. This was not so with humanity, and the result was often a progeny that was a disgrace. One of the measures that Dr. Balleray thought would be beneficial in this respect was the control of immigration. There were laws in existence supposed to do this, but they were not enforced. Dr. Balleray said that at present there were no especial means of preventing the marriage of the unfit. He thought that a law regulating this should be passed in every state, and that the applicant for matrimony should be made to pass an examination as severe as that required now of an applicant for life insurance. He thought that it should not be vasectomy, but castration that should be performed.

Dr. Prout said that the procedure should be undertaken with some trepidation, because not much was yet known concerning the ultimate effects of vasectomy. He thought that the performance of the operation on criminals would place them in a position of absolute irresponsibility; and that to allow them their liberty would cause a good deal of trouble.

Dr. D. E. English thought that the criminals were about as irresponsible now as they could be. He was not in favor of the operation for females, as it is more serious in them than in males. He believed that very few prostitutes had children.

Dr. Cornell did not think that the law in Kansas prohibiting the marriage of degenerate and unfit persons could have a fair trial until other surrounding states passed similar laws; as people who wished to be married needed only to step across the border. He said that the fact that some criminals had stated that they felt better after the operation of vasectomy did not prove it to be a good thing. He considered that the results given by Dr. Chandler lacked the accuracy of scientific verification.

Dr. D. C. English made a motion that a special committee, consisting of Drs. Chandler, Balleray and Prout, be appointed, and that the recommendation contained in Dr. Chandler's paper be referred to this committee with power to prepare a bill and have it introduced at the next session of the Legislature. His motion was seconded and carried; and the committee was appointed. He did not think that the procedure should be regarded entirely as a punitive measure, as many of these persons were not criminals. If they could be put into a safer and better condition by vasectomy, he thought it was well to employ it. These people were not more irresponsible after the operation than before, and were better able to restrain themselves. No harm had been observed in either women or men as the result of the operation.

Dr. Balleray was willing that vasectomy should be performed on the feeble-minded, but felt that to remove the testicles of criminals would have a great deterrent effect.

Dr. Chandler said that he had recommended castration for a certain class of criminals.

Mental Hygiene and Prophylaxis

Dr. Henry A. Cotton, Trenton, reviewed the recent advances in the study of psychiatry and in the care and treatment of patients in insane hospitals, and said that not only in prophylaxis, but also in the after-treatment of patients who leave the hospital, the physician had an important field. There were a great many preventable forms of insanity, alcoholics making 20 per cent. of the admissions and 10 per cent. more being cases of general paralysis due to syphilis. These, with other indirect causes of insanity, would run the estimate up to 50 per cent. of cases of insanity that were entirely preventable. He regretted that the New Jersey law did not provide for voluntary commitment, and hoped that this defect would be remedied at the next session of the legislature. He thought that the care of the acute insane should not be entrusted to a layman, no matter how good. He believed that the counsel of the family physician would often be of value in so directing the life of his patient as to prevent the development of insanity.

Dr. Prout emphasized the upbringing of children as an element in the prophylaxis. He thought that obedience and imagination were both parts of the character sadly neglected in the training of children in the United States. This he considered a serious defect, and one that would lay the foundation for an unstable equilibrium in the mind of the individual.

Dr. Alexander Marcy, Jr., Riverton, thought that institutions for the insane should be under the care of men thoroughly trained in this particular specialty. He thought that Dr. Cotton would not have gone far wrong if he had said that 75 per cent. of the cases of insanity are directly due to alcohol. He believed in a sharp differentation between the acute and curable insane and the chronic and incurable. He thought that the county institutions should take care of the latter, but that the state should take charge of the former, separating them from the chronic cases. He thought that the acute cases needed the most careful, painstaking, and thorough investigation. He believed that the stigmata of insanity were often implanted in the offspring of the degenerate, and considered the two questions closely allied.

Dr. Parsons said that the county asylum did care for the acute cases; and that chronic cases required much more care than the acute. He thought Dr. Marcy was discriminating too much in favor of one class at the expense of the other.

Dr. Luther M. Halsey, Williamstown, said that at the present day institutions for the insane were no longer regarded as asylums, but were looked on as hospitals. Daily staff consultations were held, and the management of the different cases discussed. He thought it almost impossible to get a lay superintendent capable of managing a county insane institution properly, and thought that politics was very likely to creep into the matter. He was in favor of a closer relation between the hospital physician and the general practitioner.

Dr. Cotton did not think that every patient who had been in the state hospital for five years should be sent back to the county institution, as in a good many chronic cases the patients were violent and hard to manage. When they reached a stage of quiet dementia, they could be taught farming and housework. He thought that the physicians in county asylums worked under a great disadvantage, as they could not always get the superintendent to do what they wished.

The Supernutritive Properties of Milk

Dr. Alexander McAlister, Camden, said that cows' milk was ideal only for calves, although there was less danger in feeding a child with cows' milk than with that of any other animals. The fetus was nourished before birth by the blood, and afterward by milk, which was the nearest thing to blood. Milk was now regarded as a collection of living cells suspended in serum. These cells were nearly related to the white blood corpuscles. The valuable supernutritive properties were found only in whole milk. Milk that was not definitely known to be good and new should not be endorsed by physicians for nursery and clinical use. It was almost always possible in this country to get milk containing 100 per cent. of economic goodness. The place that could not command good milk for its infants and invalids should be held up to ridicule.

At What Age should a Child be Admitted to our Public Schools?

Dr. Joseph Funk, Elizabeth, said that the law of New Jersey permitted children to be sent to school at the age of 5 years. He considered this far too young, as mental development could not be expected until the child had laid the foundation for a good physical development. At 5, they were too young to concentrate their minds, and even tired of play very quickly. He thought no child should be sent to school until 7 years old, and that during the first two years after this the school hours should be short. A great deal of the school time should be spent in the open air.

DISCUSSION

Dr. Marcy said that he wished to emphasize the points of shortening the school year, limiting the hours of confinement, attending more thoroughly to the physical and moral development, and allowing the mental development largely to take care of itself.

Dr. Elias J. Marsh, Paterson, said that classes often had to be put on half time because school accommodations were insufficient. He suggested that the financial problem could be solved by having the children spend a large part of their time out of doors during school hours, using the ground around school houses for the purpose of conducting their exercises in for part of the day.

Dr. Henry L. Coit, Newark, considered it a mistake to send a child to school before the age of 8, the period between 5 and 8 being that of most critical development for the nervous system and in which it gained its greatest strength.

Dr. Livengood said that there were too many studies in the public schools, and that the subjects were often too abstruse for the minds of the children. Even if the school hours were shorter, it would take all the pupils' spare time to prepare lessons. If the schools could be taken out of politics, he thought that radical changes in the right direction could be made.

Dr. Chavanne did not approve of the manner in which children were stuffed with information, and said that much of the knowledge thus acquired was of no subsequent use.

Dr. Linn Emerson, Orange, said that children would readily acquire, in a short time, and without much waste of energy, what it would have required tremendous efforts on the part of the teachers to pound into their heads between the ages of 5 and 7. He thought that the child who began to go to school at the age of 8 years would be better grounded at the age of 12 than the child who had gone to school since the age of 5.

Dr. Cornell said that the teachers were powerless to change the course, unless backed up by the medical profession. They had to be governed by those higher in authority. He thought that if the New Jersey Medical Society would take some action regarding the matter, other state societies would follow its lead.

Dr. Marcy offered a resolution that a committee of three be appointed to consider the subject of the school life of children, to report at the next meeting of the New Jersey Medical Society, and to make monthly reports of progress in the journal of the Society. The motion was seconded and carried.

Points in Infant Feeding

Dr. D. E. English, Milburn, was the author of this paper; but, he having been called home, the paper was read by Dr. D. C. English.

Efforts should be directed, not to making a perfect imitation of mothers' milk, but to obtain a food that suits the infant. No exact rules as to quantity can be laid down. Rules are based on the supposed capacity of the infant's stomach at different ages, and this is a most uncertain and variable criterion. If the child shows a normal increase in length and weight, it must be getting a proper amount of food. Lack of this increase is more often due to the quality than to the quantity of the food. In hot weather, one should be content if the child keeps well, and not insist on an increase in weight and length up to the full amount. The child requires a larger quantity of cows' milk than of breast milk. It is wrong to wake a child and insist on its swallowing a certain amount of food at a particular time. An infant should never be fed when it is not hungry. The child should be allowed to worry a while before each feeding. Occasional crying is the only form of physical exercise that a young infant can get. One should try to make the baby continue feeding until its stomach is full and distended. It is this distention that develops the stomach. It will not produce dilation, which is caused by feeding the child too frequently and not allowing the stomach to become entirely empty. After feeding, the baby should sleep. In regulating the time of feeding, one should not pay attention to the clock, but should watch the baby. The intervals will then tend to approximate those given in the text-books, but will be more irregular. By the age of 18 or 20 months, the feedings can be reduced to three good meals a day with something in between meals.

DISCUSSION

Dr. Francis E. Todd, Paterson, believed in putting the normal baby with a normal mother on the breast as soon as convenient after delivery. He was accustomed to allow the infant to nurse every six hours in the interval between delivery and that of free lactation. He considered the first secretions from the breast necessary to the child, clearing out its intestinal tract and leaving it in condition to take the pure milk of lactation. He thought the child could get almost enough water from the breast, but said that any water given it should be sterile. He preferred to have this given after nursing, instead of before. Breast-fed babies require less attention to their mouths than do bottle-fed babies. He thought that regular nursing brought about regular habits and made the child easier to care for. In mixed feeding, he would allow the child to get all the milk it could from the breast before giving it the bottle. Strong efforts should be made to secure certified or pure milk. He doubted whether the removal of a little of the cream from the top of the bottle would remove enough bacteria to make the procedure worth while. He thought that Dr. English gave the fruit juices a little earlier than necessary, and said that six or seven months was early enough for this. He thought milk formulas too weak, as a rule.

Dr. Livengood said that the child's toys should be sterilized; and that, when placed on the floor, a sterile sheet should be put over the carpet.

Ophthalmia Neonatorum

Dr. T. R. Pagnelli, Hoboken, divided the disease into two forms, gonorrheal and non-gonorrheal, and said that the prognosis was better in the latter than in the former, but that the treatment was similar. Infection usually took place just before or just after the head passed the vagina. If the disease developed later than the fifth day, the disease must have been contracted from outside sources. The diagnosis should present no great difficulty. The prognosis depended on the bacterial cause, the size of the fissure, the stage of the disease, and the nutrition of the infant. Various silver preparations were used in the treatment, and several different acids. The best method was that of Credé, which consists in instilling a drop or two of silver nitrate into the eyes of the new-born child after the lids have been cleaned.

DISCUSSION

Dr. Norton L. Wilson, Elizabeth, had seen far fewer cases in the last eight years than formerly, and believed this to be due to the use of the Credé method of treatment, particularly in institutions. He did not, however, recommend that this method should be employed in every case in private practice. He thought that in non-specific cases the eyes would get well in most instances, whether any treatment were employed or not, provided they were kept clean. Even specific cases would do much better if the eye were frequently and thoroughly flushed. He did not favor the application of continuous cold to the eyes, as he had seen much harm result from it. He preferred nitrate of silver to either argyrol or protargol.

Dr. Emerson's experience with argyrol and protargol had been more satisfactory than that of Dr. Wilson. He believed that in many cases physicians were not explicit enough in giving directions about cleaning the eyes at certain intervals. They should give a demonstration to the one having charge of this of the manner in which it was to be done. He preferred to give a weaker solution to the mother or nurse to instil, and to use the stronger nitrate of silver himself.

Dr. Pagnelli said that if the patient were under the constant observation of the physician, the latter would be pretty well guided regarding any complications arising in the case.

Report on Recent Milk-Commission Legislation

Dr. Henry L. Coit, Newark, said that he was a member of a committee appointed twenty years ago, and never discharged, to attend to the subject of obtaining pure milk. This was the pioneer step in this direction. He said that an act had been passed by the New Jersey Legislature of 1909 conferring on the milk commission a legal status, and that it was the most comprehensive law on the subject ever placed on the statute books.

It was moved, seconded, and carried that the report be received, and that the committee be discharged with the usual pension of thanks of the society.

Medicolegal

Validity of Claims of Physicians for Making an Autopsy

The Supreme Court of Arkansas says, in Clay County vs. Thornton and another, that the latter parties, two physicians, filed claims of $25 each for professional services rendered in making an autopsy at the direction of a justice of the peace, acting in the absence of the regular coroner, who resided more than twenty miles from the place where the death of the subject occurred. On behalf of the county it was said, in opposition to the claims, that the jurors were not sworn in the immediate presence of the dead body, as is contemplated by the Arkansas statute, and that they did not together view the dead body before holding the inquest, as provided by the law, and because of the failure of the acting coroner to comply with the literal terms of the statute in this respect it was contended that the allowance to the physicians for making the autopsy was not valid. But the court does not agree with that. As it views it, this was a matter of procedure that addressed itself to the acting coroner and did not render an act done by the physician in good faith under the direction of the acting coroner unlawful.

It was also contended that the acting coroner exceeded his powers in employing and directing more than one physician to make the autopsy, and that, on that account, the county was not liable. The presiding judge, however, found from the evidence that the services of the two physicians were necessary to ascertain whether the circumstances of the death of the young woman indicated that she had been foully dealt with, and that the fees charged were reasonable. This being so, and the findings and judgment of the lower court, allowing the claims, being sustained by evidence legally sufficient, the supreme court affirms that judgment in the physicians' favor.

What Physicians May and May Not Testify to Involving Range of Bullets

The Criminal Court of Appeals of Oklahoma says, in Price vs. United States, that it was entirely proper for a physician to describe fully the location, character, and range of a bullet wound. But it was error, the court holds, to allow physicians to testify to their opinions as experts as to the position of the arm of the person shot at the time he received the fatal wound based on the range of the bullet after it entered his body. Medical science does not undertake to decide what range a bullet, fired from a gun or pistol, will take after coming in contact with, or entering, the human body. The reports of army surgeons and of army hospitals prove that there is no rule on this subject. They present the most astonishing, contradictory, and apparently impossible results. Therefore it has been uniformly held by the courts that this is not a proper subject for expert evidence. From this it necessarily follows that a physician should not be permitted to testify as an expert to the position of the body of a person when a wound was received, based on the range of the bullet after it entered his body.

Privilege in Case of Communications Made in Presence of Third Persons

The Appellate Court of Indiana, Division No. 1, says, in Indiana Union Traction Co. vs. Thomas, a personal injury case brought by the latter party, that the plaintiff testified as a witness in her own behalf and in the course of her examination in chief testified to services rendered to her immediately after the injury by a certain physician. On her cross-examination it was sought to ask her whether, on the day of the injury, she made certain statements descriptive of the manner in which the injury occurred, to her said physician, at the residence of, and in the presence of, her daughter, and in the presence of another woman. Objections to these questions were properly sustained. The statements about which the inquiries were made were in the nature of privileged communications to a physician within the intent of the Indiana statute. Without the consent of the patient the physician could not testify to such statements made by the patient, and the patient herself could not be compelled to divulge communications between her and her physician. The privilege attaches, notwithstanding the presence of third persons; and, while as to such a communication made in the presence of others, and such other persons be not necessary to enable the patient and the physician to communicate with each other, such third persons may be admitted to testify concerning the communication, yet the privilege still exists so far as to exclude the testimony of the physician, and the patient as well, from divulging such communication as a witness.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

August 14

1 *Technical Difficulties in the Distention Method for Hypospadias and Other Urethral Affections. C. Beck, New York.
2 *Anatomic and Clinical Relations of the Sphenopalatine (Meckel's) Ganglion to the Nose and its Accessory Sinuses. G. Sluder, St. Louis.
3 *New Container for the Preservation of a Constant Temperature of Saline Solution for Rectal Irrigation or Infusions. R. C. Kemp, New York.
4 *Clinical Diagnosis of Pulmonary Tuberculosis. J. A. Miller, New York.
5 *Presence of Tubercle Bacilli in the Urine of Tuberculous Patients. Its Significance and Dangers. E. J. G. Beardsley, Philadelphia.
6 The Analogy of Migraine to Rheumatism. I N. Cohen. Brooklyn.
7 Inflammation of the Verumontanum. J. A. Hawkins, Pittsburg.
8 *Error in Diagnosis Maintained by Microscopic Examination. C. J. Koenig, Paris, France.
9 Interesting Case of Double Uterus. J. A. Campbell, New York.

1. **Urethral Affections.**—Beck reviews his experience in those cases of urethral malformations, defects, deformities and injuries, which he has treated by urethral distention within the last nine years. So far as failures of the distention method are concerned, it seems to Beck that they are more due to the hand than to the method itself. The most frequent mistake made is that the urethra is not sufficiently mobilized. The method has yielded extremely gratifying results in Beck's work.

2. **Sphenopalatine Ganglion.**—Meckel's ganglion is in quite as close relation to the nose and its accessory sinuses as is the optic nerve. It has long been recognized that inflammatory processes in the sphenoidal, postethmoidal and maxillary sinuses extend to the optic nerve, and the fact has been demonstrated postmortem (Birsch-Hirschfeld). It is therefore altogether reasonable to assume, Sluder says, that these processes also pass over to Meckel's ganglion, although the clinical picture is very much less striking than the blindness produced by involvement of the optic nerve. According to his observations, characteristic disturbances have followed postethmoidal and sphenoidal suppurative inflammations which can not be explained otherwise than by assuming that Meckel's ganglion has become involved by extension; some of these disturbances have been transitory, and some have persisted for many years. In other cases the conviction has been equally positive that the extension has been from the nose proper. Thus far he has not seen anything that could be interpreted as an extension from the maxillary sinus. From the anatomic relations of Meckel's ganglion to the anterior boundary of the pterygopalatine fossa, i. e., to the posterior wall of the maxillary sinus, it is not very likely to be involved by extension of an inflammatory process from that sinus, inasmuch as the arteria palatina descendens and the arteria sphenopalatina, together with their accompanying veins and the surrounding connective tissue, lie between the ganglion behind, and the wall of the maxillary sinus in front. This relation appears to be constant; and Sluder believes that it explains why clinical manifestations referable to the ganglion do not ordinarily follow inflammatory processes in the maxillary sinus.

3. **Rectal Irrigation.**—Kemp employs a vacuum bottle with a specially devised attachment. Through the screw cap which closes the bottle, passes a small hard rubber (non-heat-conducting tube), to which is attached the outflow tube. Parallel to this is a filiform tube which allows the entrance of a fine column of air so as to render the flow possible. This last tube passes through the solution to within about one-eighth of an inch from the bottom of the bottle. As the instrument is employed inverted, it would correspond to the same distance from the top of the bottle. This filiform tube is of hard rubber externally where exposed to the air as a non-conductor of heat. The part lying within the bottle is purposely made of metal so that it is rapidly heated by the surrounding solution and the entering air is thus in turn heated markedly. A series of experiments demonstrated that there is only a loss of from 1 to 2 F. in the temperature of the solution in the bottle during the administration of proctoclysis (the drop method) lasting half an hour, a negligible amount. A screw compression valve is applied close to the bottle attachment so as to avoid as much as possible the solution cooling in the soft outflow tube. This outflow tube is joined to the catheter by a short piece of glass tubing for the purpose of observing whether the flow is constant. The catheter for rectal injection passes through a self-retaining rectal tip and the former can be inserted to any length desired. Asbestos ribbon is wound about the conducting tube from its junction at the bottle to the catheter. This lessens dissipation of heat and obviates the use of hot-water towels.

4. **Pulmonary Tuberculosis.**—Miller places special emphasis on the following points: The attitude of every physician toward tuberculosis should be that of constant suspicion. The history of intimate exposure to infection and a detailed inquiry into previous illnesses are of the greatest importance. A properly conducted physical examination is the cornerstone of the diagnosis, but physical signs of tuberculous toxemia are quite as important as are the signs in the lungs. Prolonged and repeated examinations are often essential. Failure to find the tubercle bacilli in the sputum and other excretions is evidence of little value. The tuberculin tests are valuable in connection with the clinical manifestations, but their exact significance is not yet absolutely determined. In general, the diagnosis is based on no one symptom, sign, or test, but on a careful correlation of all the evidence into a rational clinical picture.

5. **Tubercle Bacilli in Urine.**—Beardsley found that acid-fast and alcohol-fast bacilli are frequently present in the urine of tuberculous patients. He says that such bacilli have been proved in many instances to be capable of producing tuberculosis in animals, and, until it is conclusively proved that these bacilli are not virulent it is wise to consider all of them virulent. It is reasonable to believe that in tuberculosis tubercle bacilli are present, at times, in the blood of the individual. Tubercle bacilli may be present in the urine without a macroscopic lesion of the genitourinary organs. Although inoculation experiments are absolutely necessary to conclusively prove that a germ found in the urine is the specific bacillus of tuberculosis, nevertheless a bacillus that retains the carbol-fuchsin stain after thorough decolorization with Pappenheim's solution is likely to be the tubercle bacillus. Beardsley emphasizes that disinfection of the urine and feces of tuberculous patients is required to free them from danger of transmission of the disease to others.

8. **Error in Diagnosis.**—Koenig cites a case in which a serious affection of the throat and of the whole organism was not recognized on account of the resemblance, or rather non-resemblance, which exists microscopically between the *Spirochæta pallida* of Schaudinn and the spirillum of Vincent.

Medical Record, New York

August 14

10 Military Obligations of the Medical Profession. J. R. Kean, U. S. Army.
11 Features of the Medical Department of the Navy in Peace and War. C. F. Stokes, U. S. Navy.
12 The National Guard Surgeon. W. G. Le Boutillier, New York.
13 The Hygiene of the Regiment. H. Brooks, New York.
14 Instruction of the Hospital Corps. E. P. Fowler, New York.
15 *Medical Education in France and Germany. E. St. Jacques, Montreal, Canada.
16 Traumatic Hysteria in Its Relation to Surgery. B. C. Loveland, Syracuse, N. Y.
17 *Hygiene of the Air Passages. A. B. Judson, New York.
18 Skin Disinfection with Iodin in Abdominal and Other Operations. C. Jewett, Brooklyn.

15. **Medical Education in France and Germany.**—St. Jacques says that in Germany laboratories are numerous and better equipped, and research work is extensively carried on. Clinical facilities are greater in France. Paris excels in skin, nervous and genitourinary diseases, in surgery and bacteriology. Postgraduate work is more practically organized in Germany.

17. **Hygiene of Air Passages.**—Judson draws attention to the fact that coughing, sneezing and blowing the nose do not relieve the subject, but that by increasing the congestion and irritation of the air passages they increase the condition which the patient seeks to relieve. By proper control of these things suffering will be lessened.

Boston Medical and Surgical Journal

August 12

19 *Problem of Cancer Considered from the Standpoint of Immunity. F. P. Gay, Boston.
20 Importance of Active Muscular Exercise in Restoration of Function. C. H. Bucholz, Boston.
21 *Acute Postoperative Dilatation of the Stomach. J. R. Torbert, Boston.
22 *Congenital Imperforation of the Esophagus with Tracheoesophageal Fistula. A. R. Robertson, Boston.
23 Thrombosis of the Left Femoral Artery. C. S. Walker, Keene, N. H.

19. **Cancer Immunity.**—Gay claims that it is justifiable to regard the pre-metastatic period of a tumor as a period during which the animal shows reaction products to cancer tissue, and during which period the animal is able successfully to combat a generalized infection of the cancer. In those cases in which spontaneous resorption of the tumors occurs, which are relatively frequent in animals and have also been described in human beings, it may be supposed that the resistance of the individual has succeeded in overcoming the cancer. From experiments carried out by Gay in animals, it would seem possible that during this pre-metastatic reaction

period, the resistance of the individual may be increased by re-inoculation of the tumor, or possibly of products of the tumor, to such an extent that the resorption of the original tumor may be brought about.

21. **Postoperative Dilatation of Stomach.**—Torbert points out that acute postoperative dilatation of the stomach is not so rare as the literature would lead one to believe. The diagnosis can usually be made by having the subject in mind, especially when we have the presence of distention, vomiting of large amounts of brownish-green fluid, no necessary rise in temperature, rapid pulse and a rapidly increasing collapse. The passage of the stomach tube will usually establish the diagnosis. According to reported cases, the condition is very fatal, Laffer stating that 63.5 per cent. of those affected die. When the condition is recognized early, however, most of the patients respond well to treatment, the high mortality figures being probably due either to a late diagnosis or to a complete failure in recognizing the condition. The importance of the stomach tube as a part of an operation outfit is emphasized by the existence of this comparatively recently recognized condition.

22. **Esophageal Malformations.**—Robertson cites a case in which the esophagus consisted of two distinct portions entirely separated from one another. The upper portion opened normally above into the pharynx, but below it ended in a blind cul-de-sac, the lowest portion of which was 1.4 c.c. above the tracheal bifurcation. The lumen was about uniform throughout; the thickness of the wall increased slightly toward the lower end. The mucous membrane was pale, smooth and slightly thrown into folds. The lower moiety was in all respects smaller than the upper part. Below it opened normally into the stomach, but above it formed a fistulous communication with the posterior wall of the trachea at a point 8.4 mm. above the bifurcation and 6 mm. below the pouch-like end of the upper part. The mucous membrane was smooth and pale. The pylorus was freely patent, measuring 15 mm. in circumference. The mucous membrane of the stomach and intestines was smooth and pale.

Lancet-Clinic, Cincinnati

August 7

24 The Blood Vessels in Fused (Horseshoe) Kidney. B. Robinson, Chicago.
25 General Peritonitis as a Complication of Appendicitis; Report of Case. J. N. Ellison, Sardinia, Ohio.
26 *New Method of Inducing Local Anesthesia. J. L. Ransohoff, Cincinnati.

26. **New Method for Inducing Local Anesthesia.**—Ransohoff publishes a case preliminary to a series of experiments on a new method of local anesthesia—that is, by injecting a mild cocain solution directly into the artery supplying the part to be anesthetized. The patient had been suffering for three years from a chronic osteomyelitis of the hand, which became so painful as to necessitate amputation. His age and condition contraindicated general anesthesia. An Esmarch bandage was applied about the arm two inches below the insertion of the deltoid. Under infiltration anesthesia the brachial artery was exposed and the needle of a hypodermic syringe inserted into its lumen, and 1 c.c. of a 2 per cent. cocain solution injected into the artery in the direction of the blood current. After a lapse of two minutes the anesthesia was absolute, and an antebrachial amputation was done entirely without the knowledge of the patient.

Northwestern Lancet, Minneapolis

July 15

27 Congenital Syphilis. F. R. Wright, Minneapolis.
28 Stomach Pains. W. Zweig. Vienna, Austria.
29 Irregular Ethics, Grafts, and Frauds in the Profession. J. A. Hohf, Tripp, S. D.
30 Hernia. N. L. Werner, Red Wing, Minn.
31 Medicine in Edinburgh. G. D. Head, Minneapolis.

Virginia Medical Semi-Monthly, Richmond

July 23

32 *Influence of Sleep on Arteriosclerosis. W. W. Beveridge, Asbury Park, N. J.
33 Surgical Diseases of the Kidney. J. G. Sherrill, Louisville, Ky.
34 Surgery of the Peripheral Nerves. J. S. Horseley, Richmond, Va.
35 Frigidity from the Sociologic and Gynecologic Viewpoint. C. M. Strong, Charlotte, N. C.
36 Dead Fetus Seven Months: Complete Placenta Prævia Associated with Round Worms. J. W. McGehee, Reidsville, N. C.

32. Abstracted in THE JOURNAL, July 31, 1909, p. 401.

Medical Fortnightly, St. Louis

July 26

37 Touring Lands Where Medical Science Evolved. R. G. Eccles, Brooklyn
38 Toxicology of Tobacco Smoke. A. A. Robinson, Ogden, Utah.
39 The Reading of Prescriptions—Of Interest to the Physician, the Pharmacist and the Layman. J. F. Chandler, Forest City, Mo.
40 Directions for Preoperative and Postoperative Treatment of Peritonotomy for Nurses and Internes. B. Robinson, Chicago.

Philippine Journal of Science, Manila

April

41 Achievements of Modern Medicine. P. C. Freer, Manila.
42 *Cultivation of Bacillus Lepræ. M. T. Clegg, Manila.
43 Treatment of Asiatic Cholera During the Recent Epidemic. H. J. Nichols. U. S. Army, and V. L. Andrews, Manila.
44 *Treatment of Cholera by Injections of Hypertonic Saline Solution with a Simple, Rapid Method of Intra-abdominal Administration. L. Rogers, Calcutta, India.
45 Suppression of the Cholera Outbreak in the Provinces of the Philippine Islands. A. J. McLaughlin, U. S. P. H. and M.-H. S.
46 Piroplasmosis. E. Martini, Manila.
47 Distribution of Filaria in the Philippine Islands. J. M. Phalen and H. J. Nichols, U. S. Army.

42. **Cultivation of Bacillus Lepræ.**—The experiments conducted by Clegg on the cultivation of the leprosy bacillus were confined entirely to an attempt to grow the organism in symbiosis. Believing that the leprosy bacillus derives its nutrition from the products of the tissue cells in the lesions in which it is encountered, and from the fact that it occurs so frequently within the protoplasm of these cells, an organism was selected which could be cultivated and which corresponded in a degree to the living tissue cells; that is, an organism containing a nucleus and protoplasm, the ameba. The culture medium was composed of agar 20 grams, sodium chlorid 0.3, extract of beef 0.3; it was otherwise prepared in the same manner as ordinary agar media for bacteria, the finished product giving a reaction of 1 per cent. of alkaline to phenolphthalein. The medium was then placed in tubes and sterilized.

The culture medium, when it is to be used, is melted and poured into sterile Petri dishes and allowed to harden before being inoculated. The material containing the ameba is then spread in a thin layer over the surface of the medium. If the proper symbiotic bacteria are present, the ameba will develop in from two to ten days, depending on the source of the ameba and the number and character of the bacteria present. A culture of ameba was obtained from a dysentery stool and after a sufficient growth of the ameba had occurred to overbalance the original symbiotic bacteria growing with the ameba, that is to say, when it would have been necessary to add a fresh supply of the symbiotic bacteria to the culture in order to obtain a further development of the ameba, leprosy bacilli were added instead.

The inoculation of the plates with leprosy bacilli was accomplished by smearing the surface of the medium containing the ameba with a portion of the pulp of a leper's spleen, and incubated for six days at a temperature of 37 C. Microscopic preparations were then made from the cultures and stained with hot carbol-fuchsin solution, decolorized and counterstained by Gabett's method. A great number of leprosy bacilli were found to be present, together with short, plump, acid-fast bacilli, occurring mostly among the clumps of the leprosy bacilli, and associated closely with the ameba. Those organisms which from their morphology were evidently leprosy bacilli were undoubtedly carried over from the original source, that is, from the spleen. Transplants from these plates were immediately made on fresh plates containing ameba and their symbiotic organisms, and incubated for two days at the same temperature. Slides were then prepared from this series of cultures and stained in the same manner. Microscopic examination showed that the short, plump acid-fast bacilli had increased in number, showing conclusively that the organism was multiplying. Control plates made at the same time with the same ameba and in the same manner, except without the material from the leper's spleen, showed no acid-fast organisms. In the cultures from two cases an acid-fast bacillus is growing and multiplying, which although it differs from the leprosy bacillus in morphology, nevertheless may be that organism, as we know nothing regarding the morphology of *Bacillus lepræ* on artificial media.

44. **Treatment of Cholera.**—Rogers found that the severity of the cholera attack is in proportion to the loss of fluid and salts from the blood, which, in all but mild cases of the disease, it is desirable to replace. This can best be done by the intravenous injection of about four pints of hypertonic salt solution, two drams of sodium chlorid to the pint (1.35 per cent.) being a suitable strength. The use of this solution has reduced the mortality during 1908 in the Calcutta Medical College Hospital by nearly one-half. The salt solution may be given intraperitoneally with great advantage. Postcholeraic uremia is associated with deficient blood pressure, and should be treated by methods which raise the tension in the arterial system.

Journal Abnormal Psychology, Boston

July

48 The Psychologic Principles and Field of Psychotherapy. M. Prince, Boston.
49 Therapeutic Value of Hypnotic Suggestion. F. H. Gerrish, Boston.
50 Simple Explanation and Re-education as a Therapeutic Method. E. W. Taylor, Boston.
51 Treatment of Fatigue States. G. A. Waterman, Boston.
52 Psychoanalysis in Psychotherapy. E. Jones, Toronto, Canada.
53 The Psychotherapeutic Value of the Hypnoidal State. B. Sidis, Brookline, Mass.
54 Obsessions and Associated Conditions in so-called Psychasthenia. J. E. Donley, Providence, R. I.
55 Psychoprophylaxis in Childhood. T. A. Williams, Washington, D. C.

Cleveland Medical Journal

July

56 Psychotherapy and the Emmanuel Movement. W. Sinkler, Philadelphia.
57 Hemorrhage in Ruptured Ectopic Pregnancy. H. Robb, Cleveland.
58 Adminstration of Nitrous Oxid and Oxygen for General Anesthesia. C. B. Parker, Cleveland.
59 The Skiagraph in Litigation. R. B. Newcomb, Cleveland.
60 Calcification of Fibromyomata of the Uterus. I. Ludlow, Cleveland.
61 Tonsil Enucleation with Its Capsule and Description of the Technic. W. B. Chamberlain, Cleveland.
62 Diagnosis and Treatment of Brain Tumor (continued). A. Peskind, Cleveland.

August

63 *Painless Dental Disease as a Cause of Neurasthenia and Insanity. H. S. Upson, Cleveland.
64 Exudative Diathesis with Demonstration of Cases. H. J. Gerstenberger, Cleveland.
65 Fracture of the Anterior Superior Spine of the Ilium by Muscular Contraction; Review of Literature. J. H. McHenry, Cleveland.
66 The Tuberculo-Opsonic Index. P. A. Jacobs, Cleveland.
67 Extraction of the Lens in its Capsule—or Intracapsular Expression of the Lens. C. C. Stuart, Cleveland.
68 Acute General Peritonitis in a Ten-Year-Old Girl. F. E. Bunts, Cleveland.
69 Hallux Valgus and Bunion. G. I. Bauman, Cleveland.

63. **Dental Disease.**—Upson puts on record a few observations made during the past two years in a broad and important field, that relating to dental diseases in connection with nerve strain and with the psychoses, melancholia, mania and dementia præcox. He says that of all cases of neurasthenia and the psychoses not due to obvious physical causes, such as digestive disorders and eyestrain, the great majority, possibly four-fifths in men and three-fifths in women, are due to dental disease. In several of his patients, severe nervousness, insomnia and melancholia have begun soon after extensive bridgework and capping. These symptoms have persisted several years without pain, and relief has followed only after removal of irritation in the teeth and jaws. Upson reports a number of cases in support of his contention.

Maryland Medical Journal, Baltimore

August

70 *The Widened Scope and Affiliations of Psychiatry. C. B. Farrar, Baltimore.
71 Ideals of Health in Town and Country (continued). C. O'Donovan. Baltimore.
72 *Study of Some Phases of Family Psychoses. J. G. Fitzgerald, Boston.
73 Avicenna—Avenzoar. H. M. Cohen, Baltimore.

70. Abstracted in The Journal, May 29, 1909, p. 1785.

72. **Family Psychoses.**—Fitzgerald believes that there is an evident tendency when several members of the same family of one generation become insane, to show a fairly uniform reaction type, so that it is possible to classify these cases as belonging to one given clinical group. There is also evidence to show that with succeeding generations, a psychosis occurring in each generation, there is a lowering of the reaction type and a likelihood of deteriorating psychoses developing, and still further from the original antecedent a probability of gross defectives appearing.

New Orleans Medical and Surgical Journal

August

74 Plea for the Systematic and Universal Examination of School Children's Eyes, Ears, Noses and Throats. F. Allport, Chicago.
75 Severe Deformity, Result of Anterior Poliomyelitis: Plastic Operation on Heel; Inguinal Hernia. C. W. Allen, New Orleans.
76 Amebic Dysentery. G. Dock, New Orleans.
77 *Diarrhea of Gastrogenous Origin. S. K. Simon, New Orleans.
78 Toxic and Nervous Conditions as Factors in Chronic Diarrhea. G. F. Patton, New Orleans.
79 Surgical Aspects of Chronic Diarrhea: Appendicostomy or Colostomy. H. Gessner, New Orleans.
80 *Acute Spasmodic Asthma as Evidence of Autointoxication. A. Eustis, Abbeville.
81 *Prophylactic Injections of Serum and the Theory of Anaphylaxis. I. I. Lemann, New Orleans.
82 Blue Sweat (Indicanhydrosis). J. A. Storck, New Orleans.

77. **Diarrhea of Gastrogenous Origin.**—The diarrheas of purely gastrogenous origin can not be said to be of very frequent occurrence, but, though relatively infrequent, the stomach, according to Simon, does play a part, and he emphasizes the importance of this class of diarrheas.

80. **Acute Spasmodic Asthma Evidence of Autointoxication.**—In 1905, Eustis first called attention to the clinical significance of indicanuria, and since then he has made it a practice to include this in the routine examination of patients. The fact that he has found evidence of autointoxication in every case of asthma examined by him for four years, leads him to believe that during the attack there is some toxin in the blood, which acts similarly to muscarin, or which depresses the respiratory center to such an extent that the reflex stimulation of an inflamed nasal mucosa results in a stimulation of the constrictor fibers of the vagus. Nearly every one of these cases was relieved by diminished nitrogenous diet and measures to reduce the toxemia. Eustis employs eliminative treatment and more hygienic procedures, using few sedatives.

81. Abstracted in The Journal, May 22, 1909, p. 1687.

Northwest Medicine, Seattle, Wash.

July

83 Use of Vaccines and Serums. C. S. Wilson, Tacoma, Wash.
84 Nasal, Nasopharyngeal and Oropharyngeal Obstructions with Special Reference to Children. J. W. Summers, Walla Walla, Wash.
85 The Brompton Hospital and its Treatment of Tuberculosis by Graduated Labor. C. Quevli, Tacoma, Wash.
86 Suggestions in the Use of Water Cystoscopes. A. H. Peacock, Seattle, Wash.

Archives of Diagnosis, New York

July

87 *Complement Fixation Test in Diagnosis of Syphilitic and Metasyphilitic Conditions. H. Noguchi, New York.
88 *Roentgen Rays in Diagnosis of Pulmonary Tuberculosis. S. Lange, Cincinnati.
89 *Differentiation of Reflex Dyspepsia from Primary Organic Diseases of the Stomach. D. Fulton, Los Angeles.
90 Diagnostic Significance of Epithelia in Urine. L. Heitzmann, New York.
91 Importance of Early Diagnosis of Tabes and Cerebrospinal Lues. T. A. Williams, Washington, D. C.
92 Points in Diagnosis of Tumors of the Spinal Cord. J. Grinker, Chicago.
93 Hematuria, Pyuria and Allied Conditions in Infants and Children. L. C. Ager, Brooklyn.
94 *Diagnostic Signs in New Growth of Kidney. F. Cabot, New York.
95 Henoch's Purpura with Symptoms Like Acute Appendicitis. J. A. Lichty. and H. H. Donaldson, Pittsburg.
96 Itching, A Pain Equivalent. C. H. Bangs, Boston.
97 Multiple Spontaneous Keloid. G. M. MacKee, New York.

87. **Syphilitic and Metasyphilitic Conditions.**—Noguchi emphasizes the fact that any method in which five different factors—amboceptor, complement, corpuscles, antigen and patient's serum—are not separable, titrable and adjustable, is defective in principle and should not be recommended for diagnostic purposes. As regards the value of the butyric-acid reaction in the diagnosis of nervous diseases, the results obtained by Noguchi, together with Moore, Rosanoff and Wiseman, show that it is positive in nearly 90 per cent. of cases of paresis and tabes, and that it is nearly as reliable a diag-

nostic indicator as is pleocytosis. Compared with the percentage of positive results by the Wassermann reaction, the butyric acid test yields better results, especially in cases of cerebrospinal lues in which the Wassermann reaction is usually inconsistent.

88. **Pulmonary Tuberculosis.**—Lange believes that the thorax is peculiarly adapted for Roentgenologic examinations, but all conclusions must be based on technically perfect plates made during a respiratory "still-stand." The interpretation of the shadows must be correlated to the history and clinical findings. The Roentgen ray will register actual and definite increase in density of the lung tissues. Since the term incipient tuberculosis is a clinical (not a pathologic) one, and since the recognition of incipient tuberculosis must depend on the size, distribution and location of the lesions and on the skill of the examiner, a comparison between the usual physical examination and the Roentgen ray examination is difficult to make. For deep-lying lesions and bronchial gland involvement the Roentgen ray is superior. Roentgen ray findings point to the bronchial glands and lung hilus as the most common starting points of tuberculosis.

89. **Differentiation of Reflex Dyspepsia.**—According to Fulton, the symptoms of all primary organic diseases of the stomach are dependent on the quality or quantity of food eaten. Functional and nervous dyspepsias are independent of the diet and are dependent on the nervous conditions of the patient. Reflex dyspepsias are but slightly influenced by diet and are dependent on aggravation of the primary disease, and are absent when the primary disease is latent.

94. **Diagnostic Signs in New Kidney Growth.**—In the case of a patient who presents himself with a history of intermittent hematuria in whom no blood is found in the urine, either by macroscopic or microscopic examination, Cabot advises massaging the kidneys, one at a time, as was done in a case cited. A man, aged 47, gave a history of occasional attacks of hematuria with periods between of several weeks when his urine was free from blood. *X*-ray examination was negative. Bimanual examination of the kidneys seemed to show some enlargement of the right kidney, but not perfectly clear. The patient had been told by a distinguished surgeon that probably both kidneys were diseased and operation was not advisable. Cystoscopy revealed a perfectly normal bladder and normal ureteral openings. A catheter in each ureter for a distance of six inches drew off clear urine. On massaging each kidney separately immediately abundant bright red blood gushed out of the right ureteral catheter; none from the left. The diagnosis of hypernephroma of the right kidney was confirmed by operation.

Woman's Medical Journal, Toledo, O.

July

98 Relation of the Physician to the Public. F. P. Henry, Philadelphia.
99 Early Diagnosis of Extrauterine Pregnancy. G. P. Murray, New York.
100 Chemical Rays as Promoters of Life and Energy: Their Mode of Action and Their Therapeutic Uses. M. A. Cleaves, New York.

Archives of Pediatrics, New York

July

101 Diagnosis of Tuberculosis in Young Children. H. L. K. Shaw, and A. T. Laird, Albany, N. Y.
102 *Relation of Measles, Whooping Cough, and Influenza to Tuberculosis in Childhood. E. P. Copeland, Washington, D. C.
103 *The Soy Bean in Infant Feeding. J. Ruhräh, Baltimore.
104 Tuberculous Enteritis, with Foreign Body in Ileum, Probable Primary Intestinal Tuberculosis. J. C. Gittings, Philadelphia.
105 Forty Cases of Anterior Poliomyelitis, Observed in New York City During the Epidemic of 1907. H. Heiman, New York.
106 Case of so-called Congenital Malaria. F. S. Meara, New York.
107 Tertian Malaria (Golgi Type), with Gastrointestinal Symptoms. J. J. Philips, Tarboro, N. C.
108 *Two Interesting Dermatologic Cases. C. J. Hunt, Philadelphia.
109 Pulmonary Gangrene in Children; Report of a Case. W. P. Lucas, Boston.

102. Abstracted in THE JOURNAL, Oct. 17, 1909, p. 1366.

103. **Soy Bean in Infant Feeding.**—The soy bean (*glycine hispida*), sometimes incorrectly called the soja bean, is an annual leguminous plant which originally grew in a wild state from Cochin, China, to the south of Japan and to Java. It is now being grown in various sections of this country and can be obtained in the open market like any other legumin. As regards the use of the beans in infant feeding, it seemed to Ruhräh that soy bean gruel or milk, either alone or mixed with cow's milk, might be of value in feeding several classes of cases, viz., of marasmus and malnutrition, as a substitute for milk in diarrhea, and in intestinal and stomach disorders, and in diabetes mellitus. So far, the gruel has been prepared by soaking the beans over night, stirring to remove the envelop surrounding the bean. Three times the amount of water is added to the beans and they are boiled until a smooth gruel results. This is strained, if necessary. This has the odor and taste of malt, but with the addition of a little salt is well taken, especially after the first bottle or two. The gruel is retained unusually well and seems to be digested easily. The stools are not more frequent than with other foods; they are light brown in color, like those from malted milk. This soy bean gruel has nearly the same food value as milk, and for certain children may need further dilution. About the same size feedings should be used as if milk were being given; 5 per cent. sugar may be added to increase the fuel value. Ruhräh has not used the beans in a sufficiently large number of cases, nor over sufficient periods of time to justify any further statements at this time, but he feels that properly used they will be a most valuable addition to the dietary of the sick infant. Grinding them to a bean meal would simplify matters very much, and, if success attends their use, a soy bean meal could easily be prepared.

108. **Two Interesting Dermatologic Cases.**—The reason for the report of these two cases is found in the character of the lesions, their association and mode of onset. In both there is a certain similarity as to the personal history, and the character and distribution of the lesions were identical as to region. They appeared on the tips and on the extensor surfaces of the phalanges of the upper extremities as distinct vesicles of large size, without an inflammatory areola, caused a separation of the epidermis from the corium, were filled with a sterile serous fluid, and were accompanied locally by itching, burning and heat. The first patient, a girl of 10 years, had fallen while at play, striking her hands rather severely. She complained at the time that her hands "stung," but no lesions of any type were observed, though the hands were somewhat reddened. For relief the child put her hands under cold water and immediately lesions of the type described above appeared. She had pertussis when 2 years old, which merged into an attack of measles, apparently uncomplicated. At a later date, she had an attack of varicella, and at her sixth year, and later, suffered considerably from rheumatism in the upper and lower extremities. She had three attacks of infectious blepharitis, complicated in every instance by a facial tic, which involved, for the most part, the muscles of the eyelids. She had had frequent mild attacks of urticaria and one severe attack which was associated with aching of the extremities. A careful physical examination showed that she was totally negative, except for enlarged tonsils, which were removed. The lesions healed without infection and there have been no recurrences.

The patient, a boy aged 7 years, while riding on the street car, suddenly felt a sense of burning pain in his hand and found what he called blisters on the ends of his fingers. The boy complained of burning and pain, with itching, and there was some local heat. He had pertussis at his sixth year, and has been subject to slight digestive disturbances for a long time past, especially in the last six months. Ever since his third year he has had a well-developed urticaria during the strawberry season, and during the last year had a severe attack of urticaria following excessive sweating while at play. He has complained of rheumatic pains in the extremities during the past winter more than during any previous winter.

Kansas City Medical Index-Lancet

July

110 Puerperal Sepsis. E. A. Reeves, Kansas City, Mo.
111 The McCoy Instruments in the Submucous Resection of the Nasal Septum. H. Hays, New York
112 *Increased Longevity of Life Insurance Policyholders. B. Foster, St. Paul.
113 The Psychologic Basis of Inebriety. F. A. Williams, Washington, D. C.
114 Value of Formidine as a Surgical Dressing in Minor Operations. O. M. de Keiffer, Chicago.

115 Paracentesis in Certain Forms of Eye Symptoms. W. A. Camp, Springfield, Mo.
116 The Case Against the Sun. C. E. Woodruff, U. S. Army.
117 Burns and Scalds. E. P. Lacy, Bessemer, Ala.

112. This subject was discussed editorially in The Journal, May 1, 1909, p. 1428. The article was also published in *The Medical Fortnightly*, April 26, *Southern California Practitioner*, May, *Southern Practitioner*, May, *Alienist and Neurologist*, May.

Annals of Surgery, Philadelphia

July

118 *End Results After Total Excision of the Scapula for Sarcoma. C. B. G. de Nancrede, Ann Arbor, Mich.
110 The Old and Beginning of the New in Surgery. J. E. Mears, Philadelphia.
120 Sudden Death: Study of Certain Cases Occurring During Physical Exercise or Psychic Shock. J. B. Blake, Boston.
121 *Treatment of Tetanus by Chloretone. W. Hutchings, Detroit.
122 *Aneurisms in Young People. T. A. McGraw, Detroit.
123 *Gunshot Injury of Brain. J. Ransohoff, Cincinnati.
124 Complete Detachment of Facial Bones from Cranium, together with Multiple Fractures of the Sides and Base of Skull. C. A. Powers, Denver.
125 *The Parathyroid Question. C. H. Mayo, Rochester, Minn.
126 *The Histopathology of Goiter. F. J. Shepherd and C. W. Duval, Montreal, Canada.
127 *Excision of the Larynx for Carcinoma. J. Bell, Montreal.
128 *Operative Treatment of Heart Wounds. C. H. Peck, New York
129 *Operative Treatment of Tuberculosis of the Lungs with Total Thoracoplastic Pleuropneumolysis. P. L. Friedrich, Marburg, Germany.
130 *Resection of Ribs Combined with External Pressure in Treatment of Tuberculosis of Apex of the Lung. L. Freeman, Denver.
131 *Treatment of Fistulas and Abscesses Following Operations for Empyema of the Thorax. A. J. Ochsner, Chicago.
132 Empyema Thoracis. A. Vanderveer, Albany, N. Y.
133 Esophagogastrostomy After Intrathoracic Resection of the Esophagus. W. Meyer, New York.
134 *Chronic Intestinal Stasis. W. A. Lane, London.
135 *Surgery of the Large Intestine. W. J. Mayo, Rochester, Minn.
136 Distortion of Mesentery and its Relation to Intestinal Obstruction. J. D. Bryant, New York.
137 *Rare Hernias. W. B. Coley, New York.
138 *Vesicointestinal Fistulas. F. W. Parham, and J. Hume, New Orleans.
139 *One Hundred and Thirty-one Consecutive Cases of Fibroid Tumors of the Uterus Demanding Operation. A. Maclaren St. Paul.
140 *Resection of the Sciatic Nerve. K. A. J. Mackenzie, Portland, Ore.
141 Inequalities of the Right and Left Femora. A. T. Bristow, Brooklyn.
142 Transportation of Skin Flaps from one Part of the Body to Another and from one Individual to Another. J. M. T. Finney, Baltimore.
143 *Massive Keloid of Face and Hands. C. A. Porter, Boston.

118, 134. Abstracted in The Journal, July 3, 1909, pp. 68, 69.

121. Published in *Surgery, Gynecology and Obstetrics*, July, 1909.

122. **Aneurisms in Young People.**—McGraw reports two cases of aneurism in young men 16 and 17 years of age. Both aneurisms were associated with great dilatation of the heart and, in both patients, the arteries were soft and fragile. There was no history of rheumatism or other acute infectious diseases.

123, 135, 137, 139, 140.—Abstracted in The Journal, July 31, 1909, pp. 407-409.

125, 127, 129, 131.—Abstracted in The Journal, July 24, 1909, p. 319.

126. **Histopathology of Goiter.**—Shepherd and Duval studied fifty-nine cases. Eighteen were unquestionably cases of Graves' disease, two of which proved fatal. The infolding and budding of the acinal epithelium was present in some parts of the gland in 20 cases. The gland presented tumor formation in three cases of the series, viz., carcinoma in one, intercystic papilloma in another, and angioma in still another. Chronic inflammation in the form of lymphoid cell and plasma cell infiltration, together with an increase in fibrous tissue stroma, occurred 29 times. Eleven cases were of a simple cystic nature.

128. **Operative Treatment of Heart Wounds.**—Peck reports a case of wound of the right auricle which was sutured, with recovery of the patient. He also tabulates 158 cases of sutured heart wounds.

130. **Surgery of Lung Tuberculosis.**—Freeman says that the healing of stubborn tuberculous pulmonary lesions is favored by collapse of the lung. This may be obtained by (a) artificial pneumothorax; (b) extensive extrapleural resections of all the ribs, with removal of their periosteum; (c) local resections of ribs, especially at the apex. The first method is not always applicable, owing to adhesions and to induration of lung tissue, while the second is difficult and dangerous, and should be employed under exceptional conditions only. The third method is applicable to obstinate troubles at the apex, and can be employed alone or in conjunction with an artificial pneumothorax, according to circumstances. Its full benefit can not be obtained, however, unless the removal of the ribs, which need not include their periosteum, is followed by the application of firm external pressure in the manner suggested by Freeman.

138. **Vesicointestinal Fistulæ.**—Parham and Hume summarize their article as follows:

1. Establish clearly the nature of the lesion.
2. Determine the location of the opening in the bladder and in the intestine, when possible; this can usually be done by the modern methods of exploration of the rectum and bladder, and by a study of the intestinal contents passed *per urethram*.
3. Medical treatment is always to be tried for a reasonable time, as some patients have recovered under such management, and certain fistulæ of syphilitic origin have been absolutely cured by appropriate treatment.
4. The prognosis in patients untreated is generally bad and spontaneous cures are rare.
5. Ascending infection of the kidneys is one of the most important sequelæ, and this is always to be feared in patients who do not recover within a reasonable time.
6. Colostomy relieves the symptoms though it does not cure the condition, but it is to be tried in all cases in which a radical procedure is not possible.
7. Radical operation is always to be preferred, when practicable; from below, when the fistula is situated within 4½ inches of the sphincter in suitable cases; intraperitoneally, for high-placed fistulas the viscera being separated and direct suture of each opening done.
8. When the radical operation can not be done, bilateral or total exclusion of the portion of the intestine involved, may be done when there is no urinary flow into the bowel; this not being advisable, one of the shunting anastomosis procedures should be done, or simple drainage of an intermediary pouch resorted to.
9. The suprapubic intravesical suture of the bladder orifice is not to be recommended, because difficult of execution and uncertain in result.
10. Exploratory laparotomy is indicated in all cases in doubt to determine the location of the fistula and the operation of choice. Colostomy is to be regarded as an operation of last resort and applicable only in those cases in which the artificial anus may with certainty be placed above the fistulous communication with the bladdder.

143. **Massive Keloid of Face and Hands.**—In Porter's case the patient's face presented masses of keloid extending from the hair line on the forehead over the whole face, including both ears. A small portion of the right cheek was visible, the eyes appearing as slits in the midst of the exuberant overgrowths. Slight impairment of hearing; vision in left eye was interfered with; mouth could be opened only half an inch. There was excessive keloidal growth on the backs of both hands and the lower third of forearms, the fingers being hyperextended, twisted and distorted. In numerous places the keloidal tissue was eroded, with some foul discharge from the sulci between adjacent lobules.

After many operations, there has been a gradual but distinct abatement of the tendency to form keloidal tissue. The forehead is covered by shiny, movable skin, resulting partly from natural healing and partly from skin grafts. There is some keloid about the deformed ears, but both show evidence of their presence. The nose and cheeks are fairly normal, but there is still some ectropion in spite of the numerous operations. The hands have been improved so far as ability to grasp objects with the thumb is concerned, but dorsal hyperextension of the fingers still persists. Roentgen ray exposures seem to have been of no value.

Journal Missouri State Medical Association, St. Louis

July

144 Medical Organization. A. R. Kieffer, St. Louis.
145 Trend and Benefits of Modern Medicine. R. H. Goodier, Hannibal.
146 Nature of Cancer and Recent Additions to the Methods of Treating Inoperable Cancers. F. J. Lutz, St. Louis.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

July

147 State Care of the Insane. W. F. Drewry, Petersburg, Va.
148 Practical Methods for the Suppression of Tuberculosis in Virginia. C. P. Wertenbaker, Norfolk, Va.
149 Incised Wounds of the Liver Due to Accidental Traumatism: Report of Case Complicated by Evisceration. A. McGlannan, Baltimore.
150 Adenoids—Causes, Dangers, and Treatment. C. P. Jones, Newport News, Va.
151 Physiotherapy in the Treatment of Chronic Diseases; Report of Cases. J. C. Walton, Richmond, Va.

Pennsylvania Medical Journal, Athens

July

152 The Profession and the People. T. E. Swan, Easton.
153 Poliomyelitis: Epidemiology. F. F. Urey, New Castle.
154 *Symptomatology of Acute Anterior Myelitis. J. H. McKee, Philadelphia.
155 *Treatment of Poliomyelitis. T. Diller, Pitsburg.
156 How to Prevent Spread of Disease in our Public Schools. A. C. Brooks, Wilkes-Barre.
157 *Importance of Starches in Infant Feeding. W. W. Feidt, Bellefonte.
158 Gonorrheal Ocular Metastases. E. Stieren, Pittsburg.
159 *Intracranial Complications of Otitic Origin. E. W. Day, Pittsburg.
160 *Epithelioma of the Lower Lid, with Successful Transplantation from the Arm. G. B. Jobson, Jr., Franklin.
161 *Aural and Laryngeal Complications of Typhoid, Especially as Observed in Hospital Practice. J. S. Gibb, Philadelphia.
162 *Mental Aspect of Neurasthenia. J. E. McCuaig, Erie.
162 Oral Prophylaxis from the Viewpoint of the Abdominal Surgeon. S. E. Tracy, Philadelphia.

154, 155, 157.—Abstracted in The Journal, Nov. 7, 1908, pp. 1629, 1630.

159, 160.—Abstracted in The Journal, Oct. 17, 1908, p. 1356.

161.—Published in *Monthly Cyclopedia and Med. Bulletin*, October, 1908.

162.—Abstracted in The Journal, Oct. 3, 1908, p. 1179.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 31

1 *The Belfast Medical School. Sir W. Whitla.
2 *Progressive Medicine and the Outlook on Tuberculosis. R. W. Philip.
3 *Progress in Intestinal Surgery. A. E. Barker.

1. **The State of Medical Education.**—This address consists, in the main, of a historical sketch of the Belfast medical school, touching briefly on the present state of medical education, especially condemning the congestion of the curriculum. Whitla believes in the sending out of men qualified immediately to enter on the routine practice of their profession. We are, in some respects at least, behind the results obtainable in the old days of apprenticeship. He says that the preliminary and intermediate periods, amounting to three years out of the minimum of five years, must be shortened, and the clinical period of study must be increased if we are to train more efficiently, and turn men out of our teaching institutions properly equipped for their serious life work. How is this readjustment of the curriculum to be accomplished? Obviously, an enormous aid to it would be a compulsory examination in experimental physics and chemistry at matriculation. Such an examination could never dispense with the necessity of a complete academic course in these subjects; it would ensure the student having some knowledge of the principles of both sciences from the start of his college work, and enable the average young man easily to pass his further examinations in them within a period of twelve months from matriculation. Already the old notion that the stage of school life should be entirely devoted to purely literary studies is showing signs of yielding to the urgent pressure of modern ideals, which demand that boys must be trained to observe and reason on the operations of the natural forces continually manifesting their presence in the world around them. Owing, however, to the present unsatisfactory arrangements for the teaching of science in the majority of the secondary schools, little relief is immediately to be expected from this method of shortening the curriculum of the preliminary subjects, though we can confidently count on a steady improvement in the amount of elementary scientific knowledge possessed by medical candidates presenting themselves for matriculation. There is a growing conviction, amounting among those best qualified to judge aright in this matter to a consensus of opinion, that a prolongation of the period devoted to clinical studies can be achieved (without unduly lengthening the entire curriculum) only by a radical change in the method of teaching the entire group of preliminary and scientific subjects. The teaching of these subjects must be conducted with due regard to their bearing on the special requirements of the student of medicine.

2. **Progressive Medicine.**—Philip discusses fully the development of knowledge of tuberculosis, believing that it would be well to limit attention to one department, which illustrates in striking fashion the extraordinary revolution of thought which has occurred in little more than a generation.

3. **Intestinal Surgery.**—Barker gives a short review of the gradual evolution of intestinal surgery from the point of view of one who, though still in his fifties, has seen it in his own time. He says that this evolution has not been the result alone of the better conception of asepsis, much as we owe to it. Nor has it been due altogether to improved manipulative skill. It has resulted from clearer views on the vital processes concerned in all lesions within the abdomen. These we have gained partly from closer clinical observation, aided by what we have learned from the anatomist, the pathologist, bacteriologist, biologist and physicist, and from careful sifting of our experiences, whether of failure or success.

Lancet, London

July 31

4 *The Belfast Medical School. Sir W. Whitla.
5 *Progressive Medicine and the Outlook on Tuberculosis. R. W. Philip.
6 *Progress in Intestinal Surgery. A. E. Barker.
7 *Chronic Rheumatic Myositis (*Muskelschwielen*). N. S. Yawger.
8 Missed Labor Treated by Abdominal Section. C. E. Purslow.
9 Incarceration of the Appendix Containing a Foreign Body (Pin) in the Sac of an Inguinal Hernia in a Child. T. H. Kellock.
10 Angioneurotic Edema Associated with Cirrhosis of the Liver. S. G. Corner.
11 Place of the Poor-Law Medical Officer in a Unified County Medical Service. S. Webb.

4, 5. 6. See abstracts 1, 2. 3.

7. **Chronic Rheumatic Myositis.**—Yawger believes that the most frequent cause of the so-called gouty or rheumatic pain is a form of chronic myositis. Among the causes affecting this condition is heredity, there being a distinct family tendency to these diseased muscles. The effects of climate and weather are most marked. Chilly and rainy weather often causes the indurations to become painful; it is sufficient to be within the outer limits of storm conditions and not necessarily within the area of rainfall. They may appear at almost any time of life. While probably no voluntary muscle enjoys an immunity there are sites of predilection, the most common of which is in the muscles of the head and neck. This he believes is due to the exposure through lack of covering to which this part of the body is necessarily subjected. The gluteal, lumbar and deltoid regions, and calf muscles are often involved. The muscles may be invaded at their points of insertion, as in those attached to the superior curved line of the occipital bone and those inserted into the processes of the upper cervical vertebræ; or the infiltrations may appear within the bodies of the muscles as is frequently seen in the abdominal wall, and in the sternomastoid muscles near the level of the thyroid cartilage. At times the infiltration extends to the periosteum to which the muscles are attached and also to the fascia. The pathology of these diseased muscles is largely hypothetic for the reason that people do not die from this condition. The muscle infiltration may be due to the deposition of an excess of the salts of uric acid or an allied substance, with the later formation of connective tissue. Yawger has known vigorous massage treatment of a patient with extensive indurations to be followed by an attack of acute muscular rheumatism. It seems probable that this formation of indurations is a manifestation of a metabolic disturbance autotoxic in character. At all events, it appears that as soon as good circulation is established relief is at once experienced. Whatever this muscle poison is, many of its subjects have had bilious attacks in childhood, and in advanced life they often suffer from arteriosclerosis. The mistakes in diagnosis to which these rheumatic deposits give rise are very numerous. Many cases of cephalalgia are of this variety; involvement of the intercostal muscles has been taken for intercostal neuralgia and pleurisy; in the abdominal wall for acute and chronic appendicitis, gastric ulcer, abdominal and pelvic adhesions, calculus of the kidney; and floating kidney; involvement of the gluteal region for sciatica and hip-joint disease; in the neck they have been mistaken

for swollen glands. The treatment consists of a thorough course in massage.

Bristol Medico-Chirurgical Journal

June

12 Smallpox in Bristol and Neighborhood. D. S. Davies.
13 Indications for Gastroenterostomy. T. Carwardine.
14 Family with a Congenital Deformity of the Nose, and the Results of Subcutaneous Injection of Wax. E. H. E. Stack.
15 Lead Encephalopathy. J. A. James.
16 Cretinism and the Puerperium: Sequel to a Recorded History. D. A. Alexander.
17 Treatment by Ionization or Cataphoresis. H. P. Tayler and H. L. Jones.
18 Electricity in General Practice. H. P. Tayler.

Intercolonial Medical Journal of Australasia, Melbourne

June

19 Anatomic and Clinical Study of the Thoracic, Abdominal and Pelvic Viscera, as Dissected from the Back. R. J. A. Berry.
20 Bismuth Injections into Sinuses. J. Smith.
21 Ions and Electrons. S. Argyle.
22 Clinical Value of the Wassermann Test for Syphilis. K. Hiller.
23 *Cirrhosis of Liver with Ascites—Omentopexy—Recovery. E. R. White.
24 Double Coxa Vara and Tuberculous Meningoencephalitis—Recovery. E. R. White.

23. **Omentopexy.**—A girl of 9 years had had an abdominal swelling since birth, and had always worn an abdominal binder. Eighteen months ago the swelling gradually increased. She tired easily with shortness of breath on exertion. The liver was enlarged upward and downward half-way to the umbilicus, and the edge was well-defined and distinctly nodular. The spleen was also enlarged, extending four fingers' breadth below the costal margin, and there were also definite signs of ascites. Two months after admission, under chloroform, the abdomen was opened in the midline by a five-inch incision. The cavity was dried, and the liver exposed, which was of a typical hobnail type. The peritoneum over liver and spleen, and the parietal peritoneum over a corresponding area, were rubbed with gauze. The great omentum was located, and the greater portion, six inches by six inches, was stitched by catgut to the anterior parietal peritoneum. The abdominal wall was then completely closed, layer by layer. A small incision was made more laterally over the right lobe of the liver, which was exposed and then sewn to the abdominal wall by four strong catgut sutures, and the wall again closed. There was no immediate change, as the abdomen filled with fluid, and was tapped as usual three times in five weeks. In three or four weeks after operation an improvement was noticeable. The urine passed daily increased from ten ounces to twenty to thirty ounces. The abdominal measurement became less and the general condition of the child was better. Two months after the operation the child was bright and happy, and running about. There are no signs of ascites. The liver is shrinking in size.

Dublin Journal of Medical Science

July

25 Postoperative Tetanus. L. G. Gunn.
26 Use of Carbon Dioxid Snow in Dermatology. R. L. Sutton.
27 Clinical Reports of Rotunda Hospital. E. H. Tweedy, J. R. Freeland, and B. A. H. Solomons.

British Journal of Children's Diseases. London

June

28 Adenoids and Nocturnal Enuresis. L. Williams.
29 *Pulmonary Tuberculosis in Young Children. J. Miller.
30 *Congenital Hernia. J. B. Barrett.

29. **Pulmonary Tuberculosis in Young Children.**—Miller suggests the following as the simplest method of classification, and one which includes all types of the disease: 1. Disseminated metastatic tuberculosis (miliary tuberculosis). 2. Caseous bronchopneumonia, or merely caseous pneumonia. 3. Fibrocaseous pneumonia. Both of the last two conditions may be complicated by the presence of cavities.

30. **Congenital Hernia.**—In Barrett's case the hernia was a large one and never disappeared into the abdomen. It could not be reduced entirely by taxis. Attempts at reduction seemed to pain the child. Moreover, the nurse in charge said that the child would sometimes cry as if in pain. An incision was made in the usual line for inguinal hernia in children. The sac was opened and an attempt made to return the contents to the abdominal cavity. This proved difficult, and it was then discovered that the appendix was adherent to the left testicle, an unusual condition, which explained the symptoms before operation. The free end of the appendix was also adherent to the cecum, which was also in the sac. The adhesions were ligatured and cut. The appendix was removed, as it was thought that the adhesions were probably due to inflammation in it, and the contents of the sac returned to the abdomen. The internal ring was extremely large, and three sutures were employed to close the conjoined tendon to Poupart's ligament.

Journal of Obstetrics and Gynecology of British Empire, London

July

31 Primary Chorioepithelioma of the Ovary. J. S. Fairbairn.
32 *Polypoid Endometritis, Complication of Pregnancy and the Puerperium. F. A. Nyulasy.
33 Scopolamin-Morphin Narcosis in Labor. Sir J. H. Croom.
34 *Ligature of the Ovarian Vessels as Substitute for Oöphorectomy. H. M. W. Gray.
35 Epithelial Contents of a Paroöphoric Cyst. H. K. Whittingham.
36 Toxemia of Pregnancy Complicated by Rupture of Uterus. B. A. H. Solomons.
37 Gauze Drainage in Puerperal Sapremia. A. Donald.
38 Bilateral Pelvic Abscess During Pregnancy. A. Donald.
39 Adenomyoma Uteri. C. E. Purslow.
40 Eclampsia Treated by the Administration of Chloroform in the Year 1849. J. R. Fothergill.

32. **Polypoid Endometritis.**—Nyulasy believes that not only is polypoid endometritis not a malady of great rarity, but, on the contrary, is one of much frequency, attended by serious and sometimes fatal consequences, and liable to be met with in any woman during the child-bearing epoch. It accounts for much of the otherwise inexplicable mortality still occurring among puerperal women as the result of sepsis, more especially in private practice, in spite of the improved modern methods in the conduct of delivery now generally adopted. Polypoid decidual endometritis is the most important disease of the decidua, and is a frequent cause of abortion. It is a result of pre-existing chronic endometritis beginning prior to, or coincidentally with, pregnancy, and continued into the puerperium, during which acute processes are grafted on the chronic condition in consequence of septic infection. The most conclusive evidence, however, that polypoid endometritis usually commences prior to, or during pregnancy, is furnished by the fact that in many cases it is found to be distinctly syphilitic in origin, as evidenced by the history and microscopic appearances of cases examined. An interesting point is that in many instances the mothers show no external signs of constitutional syphilis, thus illustrating Colles' law; but that the mother does not become actually immune and escape serious lesions in these cases is shown by the very existence of syphilitic endometritis. During the past ten years Nyulasy met with over 100 cases in private and hospital practice, and, at the very lowest estimate, he says that it will be encountered in from 3 to 5 per cent. of all pregnancies, whether ending prematurely or at full time. Many cases of adherent placenta are due to it. In the majority of cases it is really a condition superimposed on and secondary to polypoid endometritis, for which it is usually mistaken. But from a pathologic, surgical and medicolegal standpoint, the existence of polypoid endometritis in the puerperium is of infinitely greater importance than the fact that there may be fragments of placenta adhering to the polypoid masses, because it is essential to remove these masses in order to save the life of the patient. Early curettage, by means of the ungloved finger or fingers, and a large-looped moderately sharp curette is essential for the satisfactory removal of polypoid conditions of the endometrium in the puerperal woman. By the early resort to this method such a formidable operation as hysterectomy in such cases would never be needed.

34. **Ligature of Ovarian Vessels.**—The operation advocated by Gray is performed in the following manner: The abdomen is opened by a vertical suprapubic incison, from ½ to ¾ inches to one or other side of the midline. Both layers of the sheath of the rectus and the peritoneum are opened in a corresponding line, the rectus muscle being displaced outward. Having decided that ligature of the ovarian vessels is feasible, the ovary of one side is pulled forward and away from the side of the pelvis. This makes the vessels taut and brings into evidence the "clear space" in the outer part of the broad

ligament through which fine silk ligatures (No. 1) are pulled by a handled needle or ligature carrier. If the ovaries are prolapsed into Douglas' pouch the ligatures are placed at such an interval that, when the vessels are firmly tied, the part between the ligatures resected, and the ends of the threads tied together so as to approximate the "stumps" the ovaries will lie on the brim or just immediately below the brim of the pelvis. (This procedure is similar to the usual operation for varicocele in the male). Gray prefers to arrange the ligatures, especially if the veins are varicose and tortuous, so that the ovaries are slung well up, because, owing to stretching of the vessels afterward, they tend to settle in their normal position. When the ovaries are not displaced the vessels are merely divided between two ligatures, the ends of which are tied together. If the "raw" ends of the vessels protrude, the peritoneum may be stitched over them with fine silk or catgut, so as to prevent the formation of adhesions. In cases in which there is much tension or a likelihood of postanesthetic vomiting, it is well, before tying, in order to prevent slipping, to pass one end of each ligature transversely through the leash of vessels above and below the site of ligature, respectively. In some cases adhesions under the lower part of the sigmoid flexure have to be separated in order to allow the necessary amount of vessels to be removed.

Annales de Dermatologie et de Syphiligraphie, Paris

July, X, No. 7, pp. 417-480

41 New Form of Cutaneous Discomycosis. P. Ravaut and Pinoy.
42 Ringworm in Italy. (Etat actuel des trichophyties de la province de Parme.) G. B. Dalla Favera.
43 *Roentgen-Ray Treatment of Ringworm of the Scalp. (Radiothérapie des teignes; des critiques qu'on lui a faites; des accidents qu'elle peut causer et des moyens de les prévenir.) R. Sabouraud.

43. **X-Ray Treatment of Ringworm of the Scalp.**—Sabouraud has been the pioneer in this line of treatment and has had five years of experience and favorable results with an annual average of 500 children thus treated. He here discusses the possible objections to the method, the danger of injury of the brain and of rendering the part exposed permanently bald. He has never witnessed anything which even remotely suggested injury of the brain in any instance, although he has kept careful watch for evidences of such. At first he did not venture to apply this treatment until the children were over 2 years old and the fontanelles closed, but later he found that this made no difference and he now applies the *x*-rays at any age. He has never observed any nervous symptoms or agitation or depression, no modification in the pulse and not even a headache in his 2,000 scalp ringworm patients thus treated. At the same time, it is easy to induce a dermatitis which may kill the hair in the part, and he warns that extreme care is necessary to avoid overexposure and that no one should apply this method of treatment unless he has well studied the technic for this special affection. A trifle of excess does no harm in Roentgen treatment of an epithelioma, but it may produce a permanent bald spot on the scalp. He measures the strength and duration of the exposures with a special pastille made with platino-cyanid of barium mixed with amyl acetate collodion. As sunlight affects it, the exposures are always made in semidarkness, and he warns that when the radiometer is taken to the light to examine it, this is liable to affect its tint misleadingly; it must also be borne in mind that while the radiometer is being examined the *x*-rays are still continuing their work on the scalp, and they thus get in more work than is indicated by the index. He gives a number of suggestions for guarding against overexposure of any one part, warning especially that restless children are liable to dislodge the protecting shields over parts that have already been sufficiently exposed, and thus give them an extra dose. If the head of the child is so small that it rounds up into the "localizing tube," this is liable to increase the dose received. Another point to be borne in mind is that previous medicinal applications to the scalp render it more sensitive to inflammation. In several cases, a localizing x marked on the skin with iodin caused a delay of three weeks in the growing of the hair over this x. The swinging of the apparatus out of the center is also liable to cause a misleading exposure as the radiometer then does not get the full force of the rays.

Bulletin de l'Académie de Médecine, Paris

July 6, LXXIII, No. 27, pp. 1-44

44 Experimental Research with Smallpox Vaccine. (De la variole-vaccine.) Kelsch.
45 *The Transthoracic Wave as Sign of Hydatid Cyst in the Liver. (Le signe du "flot transthoracique" dans les kystes hydatiques de la convexité du foie.) A. Chauffard.
46 Prophylaxis of Cattle Plague. (Prophylaxie de la peste bovine, par l'isolement individuel des contaminés.) Piot-Bey.
47 *Rabbit Eye Implanted after Clinical Enucleation. (De l'hétéroplastie orbitaire dans le but d'améliorer la prothèse.) F. Lagrange.

July 13, No. 28, pp. 45-56

48 Varying Toxicity of Acetylene Gas and Carbon Monoxid for Different Species of Animals. N. Gréhant.

July 20, No. 29, pp. 57-79

49 *Pneumonic Plague at Beyrout. (Etude sur la peste pneumonique observée à Beyrouth en janvier 1907.) H. de Brun.

45. **The Transthoracic Wave as Sign of Cyst in Liver.**—This sign was mentioned in the Paris Letter, July 24, page 308.

47. **Graft of Rabbit Eye After Enucleation of Human Eye.**—Lagrange reports that in 25 cases he has implanted a rabbit eye after enucleation of the eye of a patient, and has been able to follow the outcome to date in 13. The results have been extremely satisfactory, the eye healing aseptically in place and not shriveling more than one-half on the average, never more than two-thirds, the graft answering its purpose admirably in every instance. The engrafted eye shriveled less in the younger patients. He describes his preliminary experimental research and the technic for the operation. In 3 patients, aged 6, 20 and 28, the engrafted eye provided an elastic, living, large and permanent stump, thus rendering the conditions ideal for the artificial eye later.

49. **Pneumonic Plague.**—The epidemic described by de Brun comprised only four cases after the true nature of the atypical pneumonia in question was recognized, but all proved rapidly fatal, as also the few cases retrospectively diagnosed. The difficulty of diagnosing this form of plague when it first appears in a locality is the greatest obstacle in prophylaxis. Certain features of the disease suggest that the pneumonic form of plague is a special septicemic variety with coexisting variable pulmonary or bronchial lesions. This conception of pneumonic plague as a septicemia aids materially in its early differentiation, as also the absence of an initial chill, and sometimes of sharp local pain, or the pain may be experienced in some unusual location, near the apex, in the spine or axilla. The dyspnea is extreme and is accompanied by an indescribable sense of oppression in the chest, and the cough may be incessant, smothered, as if whispered, or there may be no cough at all. The expectoration may be profuse or scanty, and may suggest the sputum of bronchitis, or it may be blood-tinged and foamy, but it never resembles the rusty, tenacious sputum of pneumonia. The intense malaise and headache, pain in the chest, cough, vomiting and extreme prostration may suggest exanthematous typhus, but pneumonia is generally first thought of; the absence of the characteristic auscultation findings is ascribed to an atypical location and the physician waits for the next day to clear up the diagnosis. Then the general symptoms are more pronounced while the local symptoms are no more distinct, and the third day the patient succumbs. On the other hand, once convinced that the pneumonic form of plague is, above all, a septicemia, greater attention is paid to the general symptoms and they supply presumptive evidence in favor of plague; the stethoscope confirms this assumption even before bacteriologic diagnosis.

Grèce Médicale, Syra, Greece

June 1, XI, Nos. 11-12, pp. 25-28

50 The Authentic Authorship of Two Ancient Medical Texts. (Des noms des auteurs de deux anciens textes médicaux.) S. Zervos.

Lyon Chirurgical, Lyons

July, II, No. 2, pp. 129-260

51 Tumors of the Orbit. (22 observations de tumeurs de l'orbite.) E. Rollet.
52 Lymphadenoma of the Rectum. L. Bérard and A. Chalier.
53 Five Cases of Botryomycosis in Man. L. Thévenot and H. Alamartine.
54 Surgical Treatment of Suffocating Laryngeal Papillomas. Sargnon and Barlatier.
55 *Conservative Treatment of Sarcoma of the Long Bones. P. Cavaillon and H. Alamartine. Commenced in No. 1.
56 Best Mode of Access to Heart and Lung. (De l'abord chirurgical du cœur et du poumon.) Muller and Tavernier.

55. **Conservative Treatment of Sarcoma of the Long Bones.**—This article summarizes fourteen cases of sarcoma of the long bones treated by removal of the growth alone and thirty-three cases with resection. The results show that extensive resection of the bones, respecting the nerve and muscle apparatus, is effectual on the arm, but this technic is applicable to the leg only when the weight-bearing strength of the limb will not be impaired. A sarcoma of the femur can be resected without shortening the limb or material impairment of its strength and the same can be done for the fibula. Amputation should be reserved for the severest cases.

Presse Médicale, Paris

July 17, XVII, No. 57, pp. 505-512

57 Value of Tincture of Iodin for Antisepsis of the Skin in Experimental Surgery. E. Gley.

July 21, No. 58, pp. 513-520

58 *Repeated Cesarean Section. (L'opération Césarienne itérative.) Garipuy.
59 *Fats in Gastric Hypersecretion. (Les corps gras chez les hypersthéniques.) A. Martinet.
60 The Light Reflex in New-born Infants. (A quel moment de la vie est susceptible de se produire pour la première fois le réflexe pupillaire à la lumière.) A. Magitot.
61 Brain Extract. (Une antitoxine cérébrale.) M. Page.

July 24, No. 59, pp. 521-536

62 *Post-traumatic Nervous Disturbances. Brissaud.
63 *Death from Post-traumatic Delirium Tremens. E. Forgue and E. Jeanbrau.
64 *Final Estimation of Incapacity from Trauma of the Eye. (Consolidation dans les traumatismes oculaires.) De Lapersonne.
65 Sensory Disturbances and Industrial Accidents. (Troubles de la sensibilité et accidents du travail.) J. A. Sicard.
66 *Measurements of Parts after Industrial Accidents. (Les mensurations chez les accidentés du travail.) P. Desfosses and L. Durey.
67 Necessity for Autopsy after Industrial Accidents. M. Letulle

58. **Repeated Cesarean Section.**—Garipuy concludes from his analysis of the literature on this subject that the obstetrician should aim to perform the later Cesarean section as near to term as possible and yet before commencement of labor as with the onset of labor there is danger of rupture of the old cicatrix. There are usually scar changes and adhesions requiring modification of the classic technic, but the literature does not show that the prognosis has been aggravated by them. Four and even five successive Cesarean operations have been performed in a few cases. The question whether to remove or merely incise the uterus in a later pregnancy must be determined by the strength of the uterus wall; if it shows signs of weakness or cicatricial tissue requires resection, hysterectomy rather than Cesarean section may be advocated, for fear of rupture in a later pregnancy. Adhesions which it is impossible to separate are another argument in favor of rendering the woman sterile thereafter, preferably by resecting the tubes between two ligatures if hysterectomy is not deemed advisable.

59. **Fat in Diet in Gastric Hypersecretion.**—Martinet's experience has confirmed that of others in regard to the great benefit derived in gallstone troubles and gastric hypersecretion from the daily ingestion of from 75 to 150 c.c. of olive oil before breakfast. The only objection is the repugnance to the oil experienced by many patients, and for these he orders the needed fat in the form of fresh milk and cream, fresh butter and bone marrow. The latter is freshly cooked and spread on bread. The substitution of olive oil for butter in cooking the food is an advantage. He has also found almonds a simple and palatable means of supplying the fat; the patient is told to eat from 60 to 80 or 100 gm. of almonds according as they are fresh or old.

62. **Traumatic Neuroses.**—Brissaud passes in review the various communications on this subject at the International Industrial Accident Congress held recently at Rome. The necessity for institutional care for the victims of industrial accidents was emphasized by several speakers; special hospitals where they could receive proper treatment with due regard to rendering the subjective symptoms objective and detecting malingering were advocated. In France it is becoming more and more the custom to hasten legal proceedings, accepting a permanent but comparatively slight impairment of the earning capacity, estimated at 5, 10 or 15 per cent., and to settle damages summarily on this basis without further delay. Windscheid has declared that too large an indemnity deprives the injured of their only means of cure—the resumption of their work.

63. **Post-Traumatic Delirium Tremens.**—Forgue relates an example of death from delirium tremens after a slight fall, which, without this complication, would have been comparatively harmless. The spontaneous pain of the contusion subsided under repose by the second day but then delirium tremens developed, fatal the sixth day. He has witnessed a number of cases of this kind and discusses the question from the standpoint of accident insurance. There can be no question as to the connection between the accident and the development of the fatal complication. The verdict of a Swiss court in a similar case reduced the indemnity on account of the chronic alcoholism, stating that the life expectancy and earning capacity must be regarded as having been much below the normal. French jurisprudence does not accept this view; it disregards entirely the previous condition and seeks to determine merely whether there is a causal connection between the industrial accident and the disability or death of the injured.

64. **Duration of Incapacity in Accidents to the Eyes.**—De Lapersonne states that in 200 cases of industrial accidents to the eyes on which he had to report to the authorities, the incapacity lasted for less than a month in 25 per cent. and up to three months in 50 per cent. and he discusses the various factors affecting the final outcome. Sympathetic ophthalmia, he states, is most liable to develop after penetrating wounds of the ciliary region, with hernia or constriction of the iris, especially when complicated by the presence of a foreign body. Consequently, early diagnosis of the foreign body is of the utmost importance and also its prompt removal, especially if it is lodged in the dangerous ciliary zone. Traumatic cataract always entails more or less industrial incapacity and there is no need to wait for its extraction; he has never found that normal conditions were restored later in cases of this kind, and the settlement of the case need not be deferred in expectation of improvement later.

66. **Measurement of Parts in Cases of Industrial Accidents.**—Desfosses uses in clinical—not precision—examinations a dressmakers' tape measure, a goniometer to measure the angles of flexion and extension of the joints, and a dynamometer to register the effort in pressure and traction. In a number of illustrations he shows the way to use them and the points for measurement of parts, direction, thickness, etc., to have the records uniform for comparison and readily controlled. The results of examination of the victims of industrial accidents should be transcribed as objectively as possible, he emphasizes, as they are to be submitted to various lay parties, and the written descriptions should be accompanied by measurements and a statement as to how the measurements were taken. The comparison between the injured and the sound parts and between the same parts after certain intervals may throw light on the case and exclude malingering by objective data.

Berliner klinische Wochenschrift

July 12, XLVI, No. 28, pp. 1293-1340

68 *Phobias and Anguish States. (Psychopathologie der Angstzustände.) H. Oppenheim.
69 *Collective Appendicitis Enquiry at Berlin from Standpoint of Treatment. (Sammelforschung der Berliner medizinischen Gesellschaft betr. die Blinddarmentzündungen des Jahres 1907 in Gross-Berlin.) J. Rotter.
70 Experimental Tuberculosis in Guinea-pigs. (Prognose und Incubationsstadium bei experimenteller Meerschweintuberkulose.) H. P. Römer and K. Joseph.
71 *Anatomy, Pathology and Roentgenology of Pulmonary Tuberculosis. M. Cohn.
72 *M. Stern's Improved Technic for Seroreaction in Syphilis. (Ueber die von M. Stern vorgeschlagene Modifikation der Wassermann- A. Neisser-Bruck'schen Reaktion.) E. Meirowsky.
73 *Sugar in Relation to Formation of Glycogen. (Verhalten und Wirkung des dem Tierkörper einverleibten Traubenzuckers und seine Beziehung zur Glykogenbildung.) L. Süssenguth.
74 *Frequency of Inherited Syphilis at Berlin. J. Heller.
75 Lightning Treatment or Fulguration. (Ueber Funkenbehandlung.) F. Davidsohn.

68. **Psychotherapy.**—Oppenheim replies to Dubois' article, summarized in The Journal, August 7, page 493, endorsing his views but complaining that they do not pay sufficient at-

tention to the morbid anatomy element in anguish conditions. The disturbance is based to a greater or less extent on an abnormal excitability of the centers presiding over vasomotor functioning and the functioning of the viscera. Courage and will power may be enthroned in the brain while anguish and dread tyrannize in the cerebellum. Regard to this fact imposes caution in estimating motives, actions, properties and character manifestations, while at the same time it points the way to effectual physical measures which may restore conditions in the cerebellum to normal. The psychotherapy must be supplemented by the tried and indispensable means of influencing the excessively irritable vasomotor centers; dietetics, outdoor life, hydrotherapy, electrotherapy, gymnastic exercises, etc.

69. **The Appendicitis Collective Inquiry.**—Rotter reviews the 3,016 cases, included in the reports, from the standpoint of treatment, the conclusion being that the principle of early operation—in the first forty-eight hours—has won the victory.

71. **Roentgen Differentiation of Tuberculosis of the Lungs.**—Cohn gives the reasons for the indispensable value of *x*-ray examination in the diagnosis of affections of the lungs, to supplement other diagnostic measures. He says that it is necessary to examine the lung with three forms of exposure: (1) examination of the apices, the hilus region and the diaphragm with a medium soft tube, sagittal, from front and rear; (2) exposure of the apex with a round diaphragm showing the second and third intercostal field, in the ventrodorsal diameter; (3) exposure of the middle part of the lung with the tube at the back.

72. **The Modified Technic for Seroreaction in Syphilis.**—Meirowsky gives the findings in 318 cases tested both with the Wassermann and the Stern technics. The findings paralleled each other except that the Stern technic seems to be more sensitive while it is much simpler. He advises comparative tests with both technics, as he regards the Stern modification as an advance.

73. **Action of Injected Sugar.**—Süssenguth injected about 1 per cent. of the body weight of a 50 per cent. solution of grape sugar in his experiments on rabbits and guinea-pigs, the subcutaneous injection being repeated daily. No toxic action was apparent, and the conditions in regard to glycogen did not seem to be altered in the direction of diabetes. The findings suggest that the sugar in diabetes should not be incriminated for the symptoms to the extent some assume.

74. **Frequency of Inherited Syphilis in Berlin.**—Heller compiled this statistical article for the inauguration of the new asylum at Berlin for children with inherited syphilitic taint. The statistics are very defective, but they show a proportion of from 0.9 to 2.53 per cent. children with inherited syphilis among the younger inmates of the hospitals and asylums of Berlin. The unfavorable prognosis of inherited syphilis changes wonderfully for the better when it is recognized in time and treatment instituted at once. Welander's success in the similar institution at Stockholm encourages efforts in this line. Only two of the children inmates of his home have died since it was founded nine years ago, and an intercurrent disease was responsible for these fatalities.

Deutsche medizinische Wochenschrift, Berlin

July 15, XXXV, No. 28, pp. 1217-1256

76 *Treatment of Bronchiectasis. G. Hoppe-Seyler.
77 Rare Infectious Mononeuritis. P. L. Schlippe.
78 Sympathetic Ocular Lesions of Unknown Origin. (Okuläre Sympathicusaffektionen unbekannter Ursache.) Halben.
79 Form of Tubercle Bacillus not Taking the Ziehl Stain. G. Liebermeister.
80 Form of Lepra Bacillus not Taking the Ziehl Stain. E. Arning and F. Lewandowsky.
81 *Indications for Terminating Pregnancy in Diabetics. (Indikationen zur Unterbrechung der Schwangerschaft bei zuckerkranken Frauen.) H. Offergeld.
82 *Hyperemia from Hot Sounds in Treatment of the Urethra. (Die Hyperämiebehandlung der Harnröhre mit heissen Sonden.) M. Porosz.

76. **Treatment of Bronchiectasis.**—Hoppe-Seyler lays great stress on the prophylaxis of bronchiectasis and urges that this should be borne in mind in all cases of bronchitis, especially in the aged. Every effort should be made to ensure complete evacuation of the secretion from the air passages. In the elderly the reduced sensitiveness of the bronchi, the less elastic thorax and lungs and the weakness of the chest muscles, all cooperate in preventing ample expectoration. Such patients should make copious use of stimulant expectorants, and they should be made to change their position often, reclining at times horizontally or with the pelvis raised to promote expulsion of the secretions. When resolution drags in pneumonia, the patients should use breathing exercises and lie on the sound side to prevent consolidation and stiffening of the lung tissue which hampers evacuation of the bronchial secretions. Early evacuation of pleural effusions will aid in preventing development of adhesions. Chronic bronchitis should be healed or kept under control with turpentine and creosote derivatives. Treatment of the cylindrical form of bronchiectasis is the same as of chronic bronchitis; benefit may be derived from breathing exercises supplemented by compression of the lower part of the chest; this the patient can do himself by putting his hands on the sides of his chest, and bending far over, as if bowing low, the forcing up of the diaphragm in consequence thus exercising the lower part of the lung. In sacculated bronchiectasis of the lower lobe it is difficult to evacuate the secretion, but this can be promoted by reclining slanting, the shoulders low, or even the true Trendelenburg position. This is sometimes surprisingly effectual and the patients should train themselves to recline in this slanting position an hour or so morning and night or even longer, changing from side to side until the position is found in which most copious evacuation occurs. It can be promoted by compression of the region involved. If the patients are not too weak, out of door exercise and climbing will benefit by the greater respiratory demands. Inhalation of fumes of turpentine poured on boiling water may aid in softening and expelling the sputum. If operative measures become necessary, his experience speaks in favor of mobilization of the chest wall by extensive resection of ribs, thus allowing it to sink in and compress the lung, closing up the formerly gaping cavities. This should be followed by inhalations and breathing exercises, opening into and draining the cavities as the last resort.

81. **Pregnancy in Diabetics.**—Offergeld states that 30 per cent. of 57 diabetic women died in coma during or soon after a childbirth, and 14 others died during the fourteen months following, either from the diabetes or from complicating pulmonary tuberculosis—a total mortality of 50 per cent. in 57 cases; 51 per cent. of the children were stillborn, 11 per cent. died soon after birth, and 7 per cent. died in infancy from hydrocephalus or diabetes—a mortality of over 66 per cent. In the 25 cases in which the fetus succumbed, 17 of the women died in coma. It is thus evident that the diabetes and the pregnancy have a most unfortunate influence on each other, but it is possible to avert evil consequences in the mild and moderately severe cases in many instances by dietetic measures, bearing in mind the requirements of the growing fetus in respect to needed calories. If the diabetes becomes aggravated by the pregnancy, the tolerance reduced, the patient losing weight, and the subjective symptoms becoming aggravated, the woman should be delivered from the stress of the pregnancy; acidosis alone does not indicate this unless it is constantly accompanied by albumin and tube casts. The course in previous pregnancies is an important guide to treatment. Coma is generally preceded by certain premonitory symptoms, acidosis and increase in the ammonium salts, and consequently the latter may prove of decisive importance under certain conditions. Coma once installed, the fetus inevitably succumbs and as the coma determines the outcome there is no necessity for interrupting the pregnancy, but if labor is under way the woman should be delivered rapidly and with the least possible effort. Diabetic parturients do not seem more exposed to infection or more disposed to hemorrhage than normal women. General anesthesia should be avoided if possible, but ether should be given the preference if such becomes necessary.

82. **Hot Sounds in Hyperemic Treatment of Urethritis.**—Porosz uses a sound arranged to permit a current of hot water to flow through it without escaping into the urethra. The hyperemia thus induced softens and loosens the tissues and aids in dilatation of the stricture.

Deutsche Zeitschrift für Chirurgie, Leipsic

June, XCIX, Nos. 1-2, pp. 1-199

83 *Pathologic Histology and Clinical Experiences with Varicocele. E. K. Istomin.
84 *Transplantation of Vessels and Entire Organs. (Transplantation von Gefässen und ganzen Organen.) Borst and Enderlen.
85 *Operation for Recurrence of Trigeminal Neuralgia. (Rezidivoperation bei Trigeminusneuralgie.) K. Budinger.
86 *Pathogenesis and Treatment of Felon. (Knochenpanaritien.) W. Ohm.
87 *Case of Gangrene of the Leg after Constriction by Momburg's Belt. (Fall von Gangrän des Beins nach Unterbindung der Arter. femoralis unter Momburgscher Blutleere.) F. Kempf.

83. **Varicocele.**—Istomin reviews the anatomy and histology of the spermatic veins and the importance of mechanical factors in the origin and the cure of varicocele. A suspensory and dietetic measures should be tried first in all cases; if they fail, an operation should be advised, and this should aim to form an "internal suspensory." Resection of the vein is justified only after other measures have failed to induce a permanent cure. The resection should not be done in the scrotum but in the inguinal ring. He warns that the wearing of a suspensory may increase a tendency to hypochondria, and that extreme hypochondria should contraindicate an operation for the time being, as such surgery on the mentally unsound may result in harm both for patient and surgeon. In conclusion he advocates a technic which he found beneficial in the two cases in which he has applied it. Through a small longitudinal incision in the tunica vaginalis at the inguinal ring he passed a thread through the spermatic cord and through the cellular tissue on the anterior surface of the pubis just below the ring, tying it there while two other sutures held the tunica vaginalis to the external and internal pillars of the inguinal ring. The central portion of the spermatic cord was readily reduced through the inguinal ring while the sutures held the testis at the desired height and they were in such firm tissues that there was no danger of their pulling out. A bibliography of 193 titles is appended.

84. **Transplantation of Entire Organs.**—In 7 animals the carotid and thyroid gland were reimplanted in the same dog and in 6 were transplanted into another dog, while in 7 an artery and kidney were reimplanted in the same animal and in 6 in another animal, with 5 operations on vessels alone. The early and ultimate findings are listed; they show that transplantation on the same animal alone promises complete restoration of function.

85. **Trigeminal Neuralgia.**—Büdinger reports the complete cure for three and a half years to date after an operation for recurrence of trigeminal neuralgia a few months after a primary peripheral and ineffectual operation. The oval foramen was opened and the neuroma-like enlargement of the central stump was released from its confined bed and the nerve resected from the base of the skull to the ganglion. The oval foramen was then plugged with bone to prevent regeneration.

86. **Treatment of Felon.**—At Bier's clinic a felon is regarded as a traumatic inflammation originating in the subcutaneous tissue from invasion of bacteria through some possibly insignificant lesion, but soon involving the periosteum. Under constriction hyperemia the process healed in an average of 23.5 days in 33 cases; under suction hyperemic treatment in 35.5 days in 20 cases, and in 40.3 days in 12 cases treated by ordinary operative measures. The induced hyperemia reduces the pain at once and permanently and the bone is protected against sequester formation or the sequester heals into place again. The functional outcome was also better under conservative than operative measures. Skiagrams of a number of the cases are given, the final conclusions being in favor of a minute incision with constriction or suction hyperemia as superior to all other methods of treatment, assisting the organism in its struggle against the infection, promoting natural healing processes and best ensuring a good functional outcome.

87. **Gangrene After Application of Momburg Belt to Arrest Hemorrhage.**—The gangrene developed a week after resection of 3 cm. of the femoral artery on account of injury from a pitchfork, a handbreadth below Poupart's ligament. The patient was a young man and he had lost much blood before the operation. It might have been better, Kempf remarks, if collateral circulation had been promoted by saline infusion before attempting the operation or afterward, but this was not deemed necessary at the time. The operation was completed in twenty minutes, but as the tourniquet first applied interfered with the operation, the rubber tube was wound around the waist according to Momburg's technic. It gave no better results, however, than an ordinary tourniquet from the standpoint of development of gangrene.

Medizinische Klinik, Berlin

July 11, V, No. 28, pp. 1029-1067

88 *Diagnosis of Tuberculous Etiology in Ophthalmology. W. Löhlein.
89 Immunity to Tumors. (Ueber Immunität gegen Geschwülste.) E. v. Dungern.
90 Treatment of Surgical Tuberculosis with Marmorek's Serum. W. E. Sikemeier.
91 *Diffuse Peritonitis after Appendicitis. (Zur Pathologie und Therapie der freien ausgedehnten Bauchfellentzündung nach Wurmfortsatzentzündung.) Bertelsmann.
92 Elephantiasis of Syphilitic Origin. G. Morawetz.
93 Importance of Antitrypsin Test of Blood in Diagnosis and Prognosis of Anemia. (Wert der Antitrypsinbestimmung des Blutes für Diagnose und Prognose der Anämie, und die Einwirkung des Arsenwassers.) F. Brenner.
94 Viscosity of the Blood. (Viskosität des Blutes beim Gesunden und Kranken.) G. Jorns.

July 18, No. 29, pp. 1068-1104

95 *Treatment of Trigeminal Neuralgia. A. Fuchs.
96 Scarlatiniform Exanthem with Acute Tonsillitis. (Scharlachähnliche Exantheme bei akuten Halsentzündungen.) F. Reiche.
97 Traumatic Meningitis from *Streptococcus mucosus.* R. Rube.
98 Treatment of Acute Otitis to Prevent its becoming Chronic. A. Hillebrecht.
99 Importance of Balneologic Research for General Practice. (Bedeutung der neueren balneologischen Forschungsergebnisse für die Praxis.) P. Mayer.
100 Prevention of Fluctuations in Tension of Galvanic Current. (Ueber Spannungsschwankungen der von Gleichstromdynamos zu elektrotherapeutischen Zwecken—Galvanisation—entnommenen Ströme und deren Beseitigung mittels Kondensators.) A. Eulenburg.

88. **Diagnosis of Tuberculous Eye Affections.**—Löhlein declares that the new local tuberculin tests show that tuberculosis is a much more frequent and important factor in eye affections than has been previously recognized. He disapproves completely of the ocular tuberculin test as liable to do damage. The preferable technic seems to be to apply first the cutaneous test; a negative reaction seems to exclude tuberculosis. The subcutaneous technic is the most valuable and reliable. The cutaneous test first, followed by the subcutaneous allows surprising insight into the nature of ocular lesions.

91. **Treatment of Peritonitis.**—Bertelsmann discusses mainly the diffuse peritonitis following appendicitis, commenting on the fact that the serous surface of the peritoneum covers an area of 1.7 square meters and yet it does not absorb bacteria, when inflamed, while tendon sheaths and joints take up bacteria in swarms and pour them into the blood. It can not be a mere coincidence that Kanon, Libmann and Bertelsmann found no bacteria in the blood in fully 100 cases of intense peritonitis. The collapse can not be due to the bacteria but merely to the toxins; they are responsible for the local injuries, the paralysis of the bowel and the tympany. The toxins act on the vasomotors in the splanchnic region, paralyzing them until the organism becomes exsanguinated by the pouring of all the blood into the abdominal vessels. The heart fails because it has nothing to pump, and death is the result of the paralysis of the vasomotor center and not of paralysis of the heart. This is of immense importance in treatment, as saline infusion will start up the heart and force along the blood stagnating in the splanchnic region. Before the operation a saline infusion should be made as a preventive measure; otherwise the opening of the abdomen releases the paralyzed vessels of the splanchnic region from pressure, allowing them to suck up the rest of the blood which has been keeping the patient alive. This is the cause of the "peritoneal collapse." Bertelsmann is convinced that the patient can be tided past the stage of collapse in almost every case of peritonitis by intravenous infusion of from 3 to 4 quarts of salt solution with or without 7 drops of adrenalin. The saline infusion permits longer operations. In 72 cases of severe peritonitis in the last five years, 80 per cent. of the patients recovered under treatment along these lines, the operation concluded by stimulating peristalsis with enemas and local heat, finishing with lavage of the stomach if necessary.

95. **Treatment of Trigeminal Neuralgia.**—Fuchs has obtained good results in 16 cases of exceptionally severe trigeminal

neuralgia and also in 100 moderate cases by treatment with aconitin and vigorous purgation. The aconitin seems to have actual specific efficacy in trigeminal neuralgia. He prefers to give it in the form of eight or ten pills containing a maximum of 0.002 gm. for the daily dose. It is supplemented with calomel, 15 grains in ten doses in ten hours (0.1 gm. per dose), continuing afterward with a laxative water three times a day. In giving the aconitin he inquires constantly for signs of intoxication, paresthesia in tongue, lips or hands, mostly in the ulnar region, but has never observed anything of the kind, probably on account of the vigorous purgation which he regards as the greatest advance in the treatment of neuralgia in the last quarter century. In 14 of the above 16 cases the neuralgia had recurred after peripheral resection. The pain is probably of central origin in certain cases which explains the inefficiency of treatment, even of gasserectomy. On the other hand, peripheral resection and injections may induce temporary benefit.

Münchener medizinische Wochenschrift

July 13, LVI, No. 28, pp. 1409-1456

101 Diagnosis and Treatment of Subphrenic Abscess on Left Side. Meisel.
102 *Mobilization of Chest Walls. (Ueber Mobilisierung des Brustkorbes.) J. Fränkel.
103 *Clinical Hypersusceptibility. (Klinische Ueberempfindlichkeit. ii. Oertliche Hautreaktionen auf Atoxyl.) E. Moro and H. Stheeman.
104 Importance of Precipitation of Lecithin with Cancer. (Bedeutung der Lezithinausflockung bei malignen Tumoren.) F. Schenk.
105 *Ocular Typhoid Extract Reaction in Typhoid. (Die Chantemessesche Ophthalmoreaktion bei Typhuskranken.) J. K. Beckers.
106 *Treatment of Suppurative Processes with Antiferment. (Ferment- und Antifermentbehandlung eitriger Prozesse.) A. Kantorowicz.
107 Implantation of Cornea from the Horse in the Cornea of the Rabbit. (Zur Keratoplastikfrage.) Salzer.
108 Paratyphoid Infection. (Zur Kasuistik der Paratyphusinfektion.) A. Bingel.

102. **Mobilization of the Thorax.**—This communication from Bier's clinic at Berlin calls attention to the importance of mobilizing the thoracic vertebræ in attempts to expand and mobilize the chest. This element in the mobilization has been rather overlooked hitherto; the purpose is admirably accomplished by Klapp's creeping exercises. This method was described in The Journal, Feb. 1, 1908, page 410, as giving good results in scoliosis. It answered the same purpose as Freund's chondrotomy to mobilize the superior aperture as a means of influencing apical processes. The creeping method is deserving of wide application outside of the treatment of scoliosis. The exercise found most effectual for mobilizing the thoracic vertebræ starts with lordosis, the attitude similar to that of a creeping tiger or dachshund. The patient kneels, the thighs perpendicular, the elbows bent so that the arms imitate the bow-leg position of the dachshund while the head is bent far back. The pelvis is thus above the shoulders and the thoracic portion of the spine is in lordosis; this position must be maintained during the creeping. The arm is advanced and stretched before the hand touches the floor. This hand then turns and the elbow is bent as the trunk is advanced until the upper arm forms a right angle with the trunk. The arm thus forms the axis over which the thoracic vertebræ are levered by the drawing forward of the other arm, the scapula of the supporting arm forming the fulcrum of the lever. This exercise loosens up the thoracic vertebræ and spreads the ribs apart, and corrects torsion of the spine if present. The thorax expands more, the more correctly the lordosis of the thoracic vertebræ is localized during the sideward bend. The expansion of the chest under the influence of this creeping exercise can be followed with the *x*-rays. A number of such skiagrams are to be published in the transactions of the recent congress of orthopedic surgery at Berlin. The expansion of the chest provides better conditions for the large vessels and lungs, and is an important aid in the prophylaxis of disturbances in the circulation and of tuberculous apical processes.

103. **Local Cutaneous Reaction to Atoxyl.**—Moro noticed a local reaction in children injected with atoxyl; it resembled the cutaneous tuberculin reaction and paralleled it in 82 per cent. of the positive and 85 per cent. of the negative primary reactions to this Pirquet test. Repeated injection gave a more intensive and more rapid reaction than the first in 6 of 13 children injected several times. The other 58 children were given only a single injection.

105. **The Ocular Typhoid Reaction.**—Beckers reports application of Chantemesse's ocular typhoid toxin reaction in 30 patients with various affections and 8 typhoid patients. The instillation of a minute drop of typhoid toxin caused no reaction in 30 non-typhoid patients and none in the healthy, but there was a specific reaction in 7 of the 8 typhoid patients and in 6 out of 9 typhoid convalescents. These experiences confirm the specific importance of the test when applied with minute amounts; he does not use more than half the dose that Chantemesse recommends.

106. **Antiferment Treatment of Suppurative Processes.**—This communication from Garré's clinic at Bonn lauds the antiferment treatment of abscesses as a valuable measure. The principles were described in The Journal, Feb. 6, 1909, page 516. Müller's discovery of the proteolytic ferment in the leucocytes showed that the latter and their enzymes have an injurious action in an abscess; the excess of ferment breaks down the tissues, doing more harm than the bacteria themselves. The incision evacuating this excess of ferment acts as effectually as the antiferment which neutralizes the ferment, but the latter penetrates into the abscess walls, protecting the already infiltrated tissue from destruction by the leucocyte ferment while the defensive forces of the body attend to the destruction of the bacteria. The antiferment treatment thus protects the leucocytes from autolysis and protects the tissues from heterolysis by the leucocytes. The aim in tuberculous processes is just the reverse; here there is deficiency of the ferment, and the indication is to supply it from without. Trypsin has been used for the purpose as it is so closely allied to the leucocyte ferment and so readily obtainable. For the antiferment, Garré found that hydrocele fluid answered the purpose admirably. The results of this method of treatment are immediate arrest of the secretion, confirming the fact that the free ferment is the irritation that kept up the secretion. This, he asserts, causes us to revise our views in regard to laudable pus. Kantorowicz gives several examples of the effect in localized abscesses. In mastitis, furuncles and phlegmons the results were disappointing as the indispensable condition—direct contact between the living ferment and the antiferment—can not always be realized in these cases. The trypsin injections in the cold abscesses answered the desired purpose except in bone processes. The trypsin is indifferent to bone, and consequently chemotactic iodoform is more efficient than trypsin in bone lesions. The trypsin also proved effectual in cleaning up wounds; necrotic scraps were thrown off more rapidly, but this effect was observed only in the drier forms, never when there was much suppuration. The whole antiferment conception modifies previous views in regard to suppuration in many points, he adds, but the success of the treatment under proper conditions will convert the most skeptical.

Therapie der Gegenwart, Berlin

July, L, No. 7, pp. 313-360

109 *Acute Perisigmoiditis with Effusion. H. Strauss.
110 Oxygenated Baths. (Studien über Sauerstoffbäder.) F. Scholz.
111 *Increased Uric Acid Production from Coffee and Methyl-Xanthin in the Healthy and in the Gouty. (Harnsäurevermehrende Wirkung des Kaffees und der Methylxanthine.) Besser.
112 Treatment of Certain Forms of Heart and Kidney Disease. (Zur Therapie gewisser Herz- und Brightischer Krankheiten.) H. Naegeli and P. Vernier.
113 *Permeability of Renal Filter. (Dichtigkeit des Nierenfilters.) J. Brodzki.
114 *Anesthetic and Antiphlogistic Action of Guaiacol. Hecht.
115 Successful Conservative Treatment of Extreme Prolapse of Rectum. (Ueber einen konservativ behandelten Fall von hochgradigem Mastdarmvorfall.) K. Bieling.

109. **Acute Perisigmoiditis.**—Strauss relates some case-histories of acute inflammation of the serosa of the sigmoid flexure, the syndrome having as great clinical importance, notwithstanding its rarity, as perityphlitis, which it much resembles. The anamnesis is of importance, especially a history of chronic diarrheic conditions and signs of ulcerative colitis; also a tendency to coprostasis, especially when alternating with diarrhea. Differentiation is important for treatment as the chief indication is to empty the colon and cure the pre-

existing ulcerative colitis if such exists; otherwise the main reliance is on strict bed rest, light fluid diet and local application of ice and morphin. Surgical intervention is not so promptly necessary as in an appendicitic process, at least in the endogenous cases, as a rule. In two such cases on record, the acute endogenous exudative perisigmoiditis healed after perforation into the intestine, but in one of his fatal cases peritonitis followed the perforation. In considering the indications it must be borne in mind that in the majority of cases the disturbance is secondary to appendicitis.

111. **Coffee in Production of Uric Acid.**—Besser relates research which confirms the fact that part of the caffein and theobromin is eliminated as uric acid, and consequently that coffee must be included in the purin-containing substances injurious in the diet of the gouty.

113. **The Permeability of the Renal Filter.**—Brodzki expatiates on the importance of throwing light on dietetic questions by pathologic experiments in order to obtain data for applying dietetic factors from a therapeutic point of view. For this purpose he has been giving 20 or 25 gm. (from 300 to 375 grs.) milk sugar in water in the morning in forty cases of various kidney affections, keeping this up for ten or fourteen weeks. In the cases with a tendency to much albuminuria the amount of urine increased and the edema and albuminuria became reduced, which he ascribes to the influence of the milk sugar in great measure. There was little, if any, increase in the reducing property of the urine in these cases, but in the others with only moderate glycosuria the reducing property rapidly increased. In a few cases of stationary contracted kidney the increase in the specific gravity was evidently also a result of the milk sugar.

114. **Guaiacol as an Anesthetic and Antiphlogistic.**—Hecht regrets that guaiacol is not used more for external application as its properties deserve. He reviews its history in local treatment of neuralgia, neuritis, gout, chronic rheumatism and traumatism, in the form of a salve, and for application to the surface of the chest in lung, pleura and febrile affections. He advocates a 10 per cent. solution or salve and reports excellent results from it in various cutaneous lesions, including erysipelas, furuncles and herpes zoster. There are no untoward by-effects unless too large doses are used, over 1.5 or 3 gm. (22.5 or 45 grs.).

Wiener klinische Wochenschrift, Vienna

July 15, XXII, No. 28, pp. 989-1022

116 *Determination of Anaphylactic Antibody in Serum of Persons with Cancer. (Nachweis eines gegen das eigene Karzinom gerichteten anaphylaktischen Antikörpers im Serum von Krebskranken nebst vorläufigen Bemerkungen zu diesem Befunde.) H. Pfeiffer and J. Finsterer.
117 *Several Years' Supervision of 1,000 Troops Injected in 1901-02 with Tuberculin for Diagnostic Purposes. K. Franz.
118 *Porges' Precipitation Reaction Serum. (Ueber die Ausflockungsreaktion nach Porges.) R. T. Schwarzwald.
119 Frequency of Helminthiasis with Gastrointestinal Cancer. (Häufigkeit von Eingeweidewürmern bei Krebsen des Verdauungstraktus.) G. Kelling.
120 *Transient Painful Pseudoparalysis in Infants. M. Turnowsky.
121 Importance of Rhinology and Laryngology for Internal Medicine. (Bedeutung der Rhinologie und Laryngologie für die interne Diagnostik und Therapie.) E. Glas.

116. **Anaphylactic Seroreaction with Cancer.**—Pfeiffer and Finsterer confirm the constant occurrence of the anaphylactic drop in the temperature in their experimental research, and report further experiments with guinea-pigs treated with carcinoma juice. The results show that in the course of a cancer antibodies develop which induce anaphylaxis when injected into guinea-pigs. Guinea-pigs untreated or previously treated with normal human serum show no signs of anaphylaxis when injected with juice from carcinoma tissue. On the other hand, guinea-pigs injected forty-eight hours before with serum from the cancer patient and then injected with the cancer juice display severe anaphylactic symptoms, among others, the characteristic and easily measured anaphylactic drop in temperature. The anaphylactic shock occurs not only with the serum of the cancer patient from whom the juice was derived, but also with serum from other carcinoma patients. The serum in cancer cases, therefore, is distinguished from normal serum by the presence of anaphylactic antibodies. This antibody injected into the peritoneum of the guinea-pig transmits a passive anaphylaxis demonstrated in the drop of temperature when cancer juice is injected, which may prove to have differential value. The discovery of this anaphylactic property in a patient with tumor confirms the diagnosis of malignant disease. If the anaphylactic condition permanently vanishes after removal of the tumor the cure may be regarded as definite. Reappearance of the anaphylactic antibody should be an indication for renewed intervention. It is possible that the discovery of this antibody may throw light on the nature of cancer. The hypersusceptibility revealed by the presence of an anaphylactic antibody explains the unrestricted growth of the tumor and the possibility of metastasis—not only the serum but all the cells and tissues become hypersusceptible while the lack of this with benign tumors explains their inability to spread. If these premises are correct, the aim in treatment of cancer must be to put an end to the anaphylactic condition. This would prevent the spread of the malignant disease and influence the cancer without surgical intervention.

117. **Seven Years' Observation of 1,000 Soldiers After the Tuberculin Test.**—Franz reports the subcutaneous tuberculin test applied to a thousand recruits during 1902; the Hungarians gave 38.7 per cent. positive responses and the Bosnians from 61 to 76 per cent. None but the more robust was tested and only a small proportion of those giving a positive response have shown any signs of tuberculosis during the years since, only 46 during the first three years and 18 in the fourth; a total of 64 cases of clinical tuberculosis in 575 responding positively out of 1,002 tested. His experience further shows that the test with 0.003 gm. of tuberculin is not enough to reveal a latent tuberculous process in many cases by subcutaneous application. He is convinced that if he had used 0.01 gm. he would have obtained as many positive findings as Naegeli obtained in cadavers.

118. **Porges Precipitation Reaction in Syphilis.**—Schwarzwald has applied this test in 302 cases of syphilis with 22 controls and commends it as a simple and easy technic for differentiation in dubious cases. He used 0.5 per cent. solution of sodium glycocholate and advocates this test first and the Wassermann test only when the first gives a negative response.

120. **Transient Painful Infantile Pseudoparalysis.**—Turnowsky has encountered six cases of this affection during the last fifteen years. The children were from 15 months to 4 years old and the paralysis of the leg and arm came on suddenly with severe pain but no fever. The child dragged the limb and screamed when it was touched. The paralysis vanished in from one to five days as suddenly as it came on, but recurred three times in the course of a month or six weeks in 2 cases. He reviews the literature on the subject with the conflicting views in regard to the origin of the trouble; he explains it as a sudden slight dislocation in a joint by some abrupt movement, the dislocation being too slight to be detected by external examination.

Zeitschrift für klinische Medizin, Berlin

LXVIII, Nos. 3-4, pp. 177-348. Last indexed June 12, p. 1965

122 Gas and Corpuscle Content of Blood Mainly Responsible for its Viscosity. (Zur Viskosität des Blutes.) H. Adam.
123 *Pathology of Vegetative Nervous System. II and III. H. Eppinger and L. Hess.
124 Alternating Pulse. (Wesen des Herzalternans.) T. Rehberg.
125 *Testing of Pancreatic Secretion and its Importance for Diagnosis. (Zur Prüfung der Pankreassekretion.) E. von Koziczkowsky.
126 *Action of Fever on the Course of Infection. (Wirkung des Fiebers auf den Verlauf der Infektion.) V. Barankeieff.
127 Purin Metabolism during Fever. (Zur Kenntniss des Purinstoffwechsels im Fieber.) D. Jonescu and V. Grünberger.
128 Iron Metabolism. (Untersuchungen über den Eisenstoffwechsel.) H. Schirokauer.
129 *Auscultation of Bronchial Breathing over the Thorax as Sign of Mediastinal Tumor or Aneurism. (Die Auskultation des Bronchialatmens auf dem Thorax als Zeichen einiger Mediastinalaffektionen.) L. D'Amato.
130 Unreliability of Stain Serodiagnosis in Syphilis. (Ueber die Schürmannsche Farbenreaktion bei Lues.) A. Braunstein.

123. **Pathology and Therapeutics of the "Vegetative" Nervous System.**—The Journal, Oct. 24, 1908, page 1475, mentioned previous research by Eppinger on the opposite pharmacologic action of certain drugs on different individuals. Certain persons are susceptible to the action of pilocarpin and atropin, both of which act on the vagus sustem, the former stimulating, the other inhibiting it, while other persons are susceptible

to adrenalin which acts on the sympathetic nervous system. To date no drug is known which has an inhibiting influence exclusively on the sympathetic system, similar to the inhibiting action of atropin on the vagus. By testing the action of pilocarpin and atropin and adrenalin it is possible to obtain an insight into the functioning of organs innervated by the vagus or sympathetic systems and Eppinger reviews the findings in a number of morbid conditions such as paroxysmal tachycardia, digestive reflex neuroses, Gowers' vasovagal attacks, etc. He cites two examples to show how in "vagotonic" individuals 0.0075 gm. of pilocarpin injected subcutaneously induces intense salivation, sweating and lachrymation with redness of face and neck, and 0.00075 gm. atropin sends the pulse from 80 up to 138, while 0.0075 gm. adrenalin fails to induce its usual effect of glycosuria and polyuria. In two examples of the "sympatheeotonic" type, 0.01 gm. of pilocarpin and 0.001 gm. of atropin had no influence on saliva, sweat, tear secretion or pulse, but 0.001 gm. adrenalin induced pronounced glycosuria (7.93 gm. in the twenty-four hours' urine) and the amount of urine increased from 1200 to 2300 c.c. and from 1200 to 2800 c.c. In neuroses of the vagus minute amounts of "vagotropic" drugs have a marked therapeutic influence. In all his experience he has never found an individual who presented a pronounced reaction both to pilocarpin and to adrenalin. The "vagotonic" are more numerous among the young while with increasing age the "sympathecotonic" type predominates. Exophthalmic goiter is studied in detail from the standpoint of these pharmacologic functional tests, showing the difference in the symptoms and therapeutic response accordingly as the individual is vagotonic or sympathecotonic.

125. **Secreting Function of the Pancreas and Its Importance for Diagnosis.**—This communication relates functional tests of the pancreas undertaken with eighty patients with various affections. The patients drank 150 c.c. of oil, or 250 gm. of cream, fasting in the morning and sat still for forty-five minutes, after which the stomach content was siphoned out. In 43 of the 80 cases trypsin was found directly in the stomach content and in 29 others after the excess of acid had been neutralized with magnesia. In only 8 of the total number was there no trace of trypsin to be detected; these were patients with inoperable gastric cancer, diabetes, pernicious anemia or some severe liver affection. The smallest proportions of trypsin were found in patients with these affections or catarrh of the small intestine, cholelithiasis or diabetes insipidus. The largest proportions were in patients with little if any free hydrochloric acid in the stomach content. The trypsin was always in the activated form, showing that it had been mixed with intestinal juice. The test is more instructive when a series of examinations are made, constant absence of minute proportions of trypsin suggesting severe functional disturbance in the pancreas, while large amounts exclude such. The oil or cream breakfast also allows insight into the functioning of the liver from the proportion of bile found in the stomach content, and it reveals the admixture of intestinal juice and trypsin and thus explains anacid conditions. The presence of trypsin also is an index of the motor functioning of this part of the digestive tract. The research related shows further the importance of excluding fat from the test breakfast when examining merely for the chemical and motor functioning of the stomach.

126. **Action of Fever on Course of Infections.**—Barankeieff induced fever in rabbits by puncture of a heat center and then inoculated them with some mildly infectious agent, the results demonstrating that fever reduces materially the resisting power of the organism so that it yields to invasion and proliferation of bacteria of greatly attenuated virulence. It also reduces the immunity possessed naturally by rabbits against certain germs and the febrile organism also displays an exceptional tendency to autoinfection.

129. **Auscultation of Bronchial Respiration Over the Thorax as Sign of Mediastinal Lesion.**—D'Amato reports three cases of solid tumors in the mediastinum and five of aneurism or other lesion in which bronchial respiration was heard not only over the manubrium but over the body of the sternum and at times over the heart region, but less distinct. It was also heard diffuse over the clavicles, and most pronounced over the spine, even with tranquil breathing, with a much louder tone and over a much wider area than in normal conditions. In one case of solid tumor the bronchial respiration was heard over both the anterior chest walls. The positive auscultation findings over the spine with these mediastinal lesions has considerable differential importance both for children and for adults; the greatest intensity of the respiration sound is directly over the spine, not in the scapulovertebral line. Such findings in the apparently healthy do not disprove their differential importance as there may be some unsuspected lesion in the peribronchial glands, possibly long healed over. The positive findings are not constant with all mediastinal tumors, etc., but depend on their location and the consequent displacement of the trachea and bronchi.

Zentralblatt für Chirurgie, Leipsic

July 17, XXXVI, No. 29, pp. 1009-1040

131 Technic of Endothoracal Resection of the Esophagus. M. Tiegel.
132 *Method of Operating on Femoral Hernia. (Neue Methode für die operative Behandlung der Femoralhernien.) Abrashanoff.

July 24, No. 30, pp. 1041-1072

133 *Ligation of Veins for Suppurative Portal Thrombosis after Appendicitis. Wilms.

132. **Operative Treatment of Femoral Hernia.**—Abrashanoff ties a long silk suture thread around the neck of the hernial sac after it has been emptied and draws each end of the thread out through the abdominal wall about three-quarters of an inch above Poupart's ligament, the distance between the emerging points of the ends of the thread being from one-half to three-quarters of an inch. Poupart's ligament is then drawn up and back to expose the posterior margin of the horizontal branch of the os pubis, and each end of the thread is passed through the triangular ligament. As the ends of the threads are then tied together, the hernial sac is drawn up tight and the peritoneum is also stretched, while the abdominal wall is drawn down to the os pubis on which Poupart's ligament rests. By this means the femoral canal is practically obliterated throughout its entire length. He has performed this operation in eight cases and commends it as effectual and stable. The technic is shown in three illustrations.

133. **Ligation of Veins in Suppurative Thrombosis of the Portal Vein.**—Wilms tied off the veins in the mesentery connected with the cecum and appendix and was surprised to find that all the serious symptoms were arrested at once and the patient rapidly recovered. The principle is the same as for ligation of the ovarian veins in puerperal pyemia, but in suppurative portal thrombosis the danger of metastasis in the liver is especially imminent. He is not aware of a single instance of spontaneous recovery in such cases with recurring rigors. All his patients with this syndrome succumbed, but it is becoming less frequent now that early operations in appendicitis forestall the development of the venous thrombosis. In his case an abscess in the region of the cecum in a man of 42 had developed in the course of ten days and chills occurred daily after evacuation, with temperature over 104 the fourth day. In the triangle formed by the junction of colon and cecum two small arteries were tied separately and the veins ligated in two bunches, the line of ligation forming the hypothenuse of a triangle of which the junction of colon and cecum formed the other two sides. The temperature dropped at once and no further chills were observed while the circulation in the intestines showed no signs of disturbance and stool was passed the next day. The operation is effectual only before infectious emboli have reached the liver; the chills may indicate merely toxic action. Even if a few bacteria have entered the circulation the organism in many cases is able to cope with them. It does not succumb until its power of producing antitoxins has become exhausted.

Zentralblatt für Gynâkologie, Leipsic

July 17, XXXIII, No. 29, pp. 1009-1024

134 The Rachiotome and Rachiotomy. (Rachiotom.) O. Küstner.
135 Bacteriologic Diagnosis of Puerperal Fever. W. Sigwart.
136 Influence of Delivery on Muscular Supports of Pelvic Floor (Einfluss der Geburt auf den Levatorspalt.) Pankow.

July 24, No. 30, pp. 1041-1064

137 Instrument for Measuring the Diagonal Conjugate. C. Hoerder.
138 *Mishaps with Spinal Anesthesia. (Unglucksfälle bei Lumbalanästhesie.) J. Risch.

139 *Suprarenal Preparations in Gynecology, etc. (Zur Frage der reinen Verwendung von Nebennierenpräparaten.) M. Neu. Id. (Ueber die Anwendung des Suprarenins.) Braun.
140 Large Bilateral Dermoid Cystomas Removed without Interfering with Pregnancy. T. Petri.

138. **Mishaps with Spinal Anesthesia.**—Risch reports from Franqué's clinic at Giessen four threatening mishaps with spinal anesthesia out of the 315 cases in which this method has been employed since 1908. Two of the patients, women, were finally revived but the other two succumbed. In the first there was complete arrest of the respiration and in the second heart collapse, while in the fatal cases the heart action stopped abruptly and permanently. The women in these fatal cases were obese and had lost much blood; the heart in one was flabby and inclined to fatty degeneration while the cardiovascular system in the other seemed to be sound except for slight arteriosclerosis. The experiences at this clinic with spinal anesthesia in 14 cases of Cesarean section were gratifying, but the mishaps have convinced Franqué that spinal anesthesia must be restricted to certain specially adapted cases, and that complications on the part of the vascular system or anemia practically contraindicate it. Bier's latest report on spinal anesthesia states that we must reckon with one death to each 400 or 500 spinal anesthesias.

139. **Suprarenal Preparations in Gynecology and Spinal Anesthesia.**—The communications by Neu and Braun are in reply to the report of two fatalities mentioned in The Journal, July 31, page 423. Both insist that the suprarenal preparations should be used very much diluted as this reduces materially the toxic action even of the same dose. Neu further urges cautious estimation of the individual reaction in the given case and especially the exact state of the heart and vessels. He warns decidedly against intravenous injection, and emphasizes the necessity for extreme care in injecting the preparation where it might get into a vein. Braun insists that the vaginal portion of the uterus can be rendered anemic effectually and safely by injection of only 10 c.c. of 200 c.c. of salt solution containing merely 1 c.c. of the 1 per thousand solution of suprarenin—there is no need to use a stronger concentration.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 11, XXX, No. 82, pp. 857-872

141 Colloidal Metals in Treatment of Nephritis. G. Bassoni and G. Abbo.

July 15, No. 84, pp. 881-888

142 Intestinal Fauna of the Snail in Human Pathogenesis. (Dei protozoi intestinali della lumaca e una nuova petalomonas.) P. Barabaschi.

Policlinico, Rome

July, XVI, Surgical Section, No. 7, pp. 285-332

143 Single Incision for Gasserectomy, Resection of the Trigeminal Nerve and Ligation of the Middle Meningeal Artery. (Taglio unico per la resezione del ganglio di Gasser, della 2 e 3 branca del trigemino e per l'allacciatura del tronco della meningea media.) F. Mastrosimone.

Riforma Medica, Naples

July 26, XXV, No. 30, pp. 813-840

144 The Membrane of the Red Corpuscle. (Dimostrazione della membrana del corpusculo rosso.) G. Fusco.
145 Some Poisonous Plants from the Congo. (Sopra uno strychnos e sopra un veleno [Cipna apua] del Congo belga.) G. Vinci.

Nordiskt Mediciniskt Arkiv, Stockholm

XLI, Internal Medicine, No. 4. Last indexed April 17, p. 1303

146 *Acquired Heart Disease in Children. (Die erworbenen Herzerkrankungen des Kindesalters.) G. Forssner. Commenced in No. 3.
147 A Study of Uric Acid. J. P. Chrom. Commenced in No. 2.

146. **Acquired Heart Disease in Children.**—Forssner reports the ultimate outcome in 96 cases of heart disease, articular rheumatism and chorea in children, investigated from fifteen to twenty-two years later, out of a total of 116 cases. All this material is classified and tabulated under various headings, the long course of observation permitting several important conclusions. Acute pericarditis seems to develop very rarely in acute articular rheumatism if it does not make its appearance in the first few months. In 10 out of 11 cases of acute pericarditis at the beginning of the rheumatic affection, the heart was previously sound. In the 16 cases of acute pericarditis 2 of the patients died during the first attack and 9 after a subacute or chronic course, up to fifteen years in one instance. One patient recovered completely and the heart has been apparently sound for twenty-nine years since. In another group of 25 cases of a mild heart affection not one of the patients re-examined lately had completely normal heart. The trouble had been slight mitral insufficiency, free from pleural or lung complications which were frequent in the first group. In the 56 cases of articular rheumatism in children, no less than 31 have died of some heart affection, and 4 still present some severe cardiac defect; in 4 others a similar defect has developed since; in 5 a mild cardiac defect is manifest and in 5 others it is probable. In only 5 is the heart apparently normal at present. The prognosis of articular rheumatism in this respect seems to depend on whether a heart affection develops within the first few months or not. If complications on the part of the heart develop later they seem to be of a milder form. Only 4 of the 24 patients with chorea minor have succumbed to heart disease and only 2 present a serious cardiac defeat, 6 a mild one and in 7 the heart findings are apparently normal, while 2 have died of tuberculosis. In the 9 cases in which the children have had both chorea and acute articular rheumatism, 4 died of some heart affection, 2 have still a serious and 1 a slight cardiac defect, and one patient is apparently sound while another with objective findings is yet subjectively well.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

History of New Jersey State Dental Society. By Dr. A. Irwin, Camden, N. J., 1909. Paper.

Jubiläums-Jahrbuch des "Stefanie" Armenkinderspital-Vereines, Budapest, für 1908. Paper. Pp. 73.

The Twenty-eighth Annual Report of the Newton Hospital Corporation, Newton, Mass., Feb. 1, 1909. Paper. Pp. 17.

Twentieth Annual Report of the Secretary of the State Board of Medical Examiners of Tennessee, 1909. By C. A. Abernathy, M.D., Secretary. Paper. Pp. 24.

A Theory Regarding the Origin of Cancer. By C. E. Green. Cloth. Pp. 46, with illustrations. Second Edition. Price, 2 shillings net. London: William Green & Sons, 1909.

A Consideration of the Introduction of Surgical Anesthesia. By William H. Welch, M.D., LL.D., Professor of Pathology, Johns Hopkins University, Baltimore. Paper. Pp. 24.

Aseptic Surgery. By Charles Barrett Lockwood, F.R.C.S., Surgeon to St. Bartholomew's Hospital. Cloth. Pp. 275. Edition 3. Price, $1.50. New York: Oxford University Press, 1909.

Children in Health and Disease. By David Forsyth, M.D., D.Sc., Physician to the Evelina Hospital for Sick Children. Cloth. Pp. 362. Price, $3. Philadelphia: P. Blakiston's Son, & Co., 1909.

Handbuch der Biochemie des Menschen und der Tiere. Herausgegeben von Carl Oppenheimer in Berlin. Installment 19, with 7 illustrations. Price, 5 marks. Jena: Verlag von Gustav Fischer, 1909.

Mémoire de l'Association Générale des Médecins de Roumanie Relatif au XVI Congrès International de Médecine de Budapest. Bucarest: Ateliers graphiques Socec & Co., Société anonyme 1909.

Accident Insurance for Workingmen. Reuben McKitrick. Comparative Legislation Bulletin No. 20, July, 1909. Prepared with the cooperation of the Political Science Department of the University of Wisconsin. Paper. Pp. 70.

Woman. A Treatise on the Normal and Pathologic Emotions of Feminine Love. By Bernard S. Talmey, M.D., Gynecologist to the Yorkville Hospital and Dispensary. Edition 5. Cloth. Pp. 260, with 23 drawings in text. Price, $3. New York: Practitioners' Publishing Co.

Hints in Practical Urinalysis with Etiology and Symptoms of Some Important Genitourinary Diseases. Third Edition. By Charles C. Yarbrough, M.D., Therapist, Scientific Department, Frederick Stearns & Co. Paper. Pp. 77. Detroit, Mich.: Press of Frederick Stearns & Co.

A System of Operative Surgery. By Various Authors. Edited by F. F. Burghard, M.S., F.R.C.S., Teacher of Operative Surgery in King's College, London In Four Volumes. Vol. IV. Cloth. Pp. 686, with illustrations. Price, per set, $40: per vol., $10. New York: Oxford University Press, 1909.

Manual of the Diseases of the Eye. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York. 1890-1903. Sixth Edition. Cloth. Pp. 391, with 362 illustrations. Price, $2 net. New York: Wm. Wood & Co., 1909.

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Original Articles

PRESERVATIVES IN FOOD MATERIALS

THEIR DETECTION AND EFFECT *

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The use of preservatives in food materials has engaged the attention of sanitarians for a number of years and they have uniformly condemned the practice. Nevertheless new and hitherto unsuspected uses of preservatives are discovered from time to time notwithstanding the laws prohibiting their use.

The plea of the manufacturers is that the use of preservatives is absolutely necessary to keep the food materials, and also that it is not harmful.

During the past ten years nearly all of the states of the union have enacted laws which aim to prohibit the use of food preservatives. The national law of 1906 has served as a model for many of the state laws enacted since that time.

The Food and Drugs Act, passed by Congress and approved June 30, 1906, provides "for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes."

Section 7 of the act states that a food shall be deemed to be adulterated:

First: If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

Second: If any substance has been substituted wholly or in part for the article.

Third: If any valuable constituent of the article has been wholly or in part abstracted.

Fourth: If it is mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

Fifth: If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: *Provided*, That when in the preparation of food products for shipment they are preserved by an external application applied in such a manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this act shall be construed as applying only when said products are ready for consumption.

Sixth: If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

Regulation 12 explains the terms "coloring," "powdering," "coating," and "staining" as used in Section 7:

(a) Only harmless colors may be used in food products.

(b) The reduction of a substance to a powder to conceal inferiority in character is prohibited.

(c) The term "powdered" means the application of any powdered substance to the exterior portion of articles of food, or the reduction of a substance to a powder.

(d) The term "coated" means the application of any substance to the exterior portion of a food product.

(e) The term "stain" includes any change produced by the addition of any substance to the exterior portion of foods which in any way alters their natural tint.

Regulation 14 relates to the external application of preservatives:

(a) Poisonous or deleterious preservatives shall only be applied externally, and they and the food products shall be of a character which shall not permit the permeation of any of the preservative to the interior, or any portion of the interior, of the product.

(b) When these products are ready for consumption, if any portion of the added preservative shall have penetrated the food product, then the proviso of Section 7, paragraph 5, under "Foods," shall not obtain, and such food products shall then be subject to the regulations for food products in general.

(c) The preservatives applied must be of such a character that, until removed, the food products are inedible.

Regulation 15 relates to the wholesomeness of colors and preservatives:

(a) Respecting the wholesomeness of colors, preservatives, and other substances which are added to foods, the Secretary of Agriculture shall determine from chemical or other examination, under the authority of the agricultural appropriation act (Public 382, approved June 30, 1906), the names of those substances permitted or inhibited in food products; and such findings, when approved by the Secretary of the Treasury and the Secretary of Commerce and Labor, shall become a part of these regulations.

(b) The Secretary of Agriculture shall determine from time to time, in accordance with the authority conferred by the agricultural appropriation act (Public 382, approved June 30, 1906), the principles which shall guide the use of colors, preservatives, and other substances added to foods; and when concurred in by the Secretary of the Treasury and the Secretary of Commerce and Labor, the principles so established shall become a part of these regulations.

Food Inspection Decision 100, approved by Secretary Wilson Dec. 9, 1908, states:

In view of the extent of the bleaching process (flour bleached with nitrogen peroxid) and of the immense quantity of bleached flour now on hand or in process of manufacture, no prosecutions will be recommended by this Department for the manufacture and sale thereof in the District of Columbia or the territories or for transportation or sale in interstate or foreign commerce, for a period of six months from the date thereof.

Food Inspection Decision 101, approved by Secretary Wilson Dec. 18, 1908, states:

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

> Benzoate of soda, in quantities not exceeding one-tenth of 1 per cent., may be added to those foods in which generally heretofore it has been used. The addition of benzoate of soda shall be plainly stated on the label of each package of such food.

Food Inspection Decision 102, dated Dec. 23, 1908, states:

> Until further notice, vegetables greened with copper and which are otherwise suitable for food, will be allowed entry into the United States, if the label bears the statement that sulphate of copper or other copper salts have been used to color the vegetables.

The "pure food" laws of the following states conform in all important particulars to the national laws: Vermont, 1908; Massachusetts, 1908; Connecticut, 1907; New Jersey, 1908; Pennsylvania, 1909; Delaware, 1907; Virginia, 1908; West Virginia, 1907; North Carolina, 1907; Georgia, 1906; Kentucky, 1908; Tennessee, 1907; Illinois, 1907; Arkansas, Colorado, 1907; Texas, 1909; Oklahoma, 1909.

Food Inspection Decision 101 permits the use of one-tenth of one per cent. of sodium benzoate in "those foods in which generally heretofore it has been used." This provision is apparently so drawn as to make it permissible to use sodium benzoate in almost any food substance. Some of the states which permit the use of sodium benzoate restrict its use to certain substances, as catsup, etc., while others have even less definite restrictions than those of the United States law.

Aside from the food regulations of the United States, the laws of the following states permit the use of sodium benzoate in food: Maine, New Hampshire, Pennsylvania, North Carolina, Georgia, Iowa, Texas, North Dakota, South Dakota, Wyoming, Oregon, and Washington. In the laws of the other states sodium benzoate is not expressly mentioned, but the laws of most of the states appear to prohibit its use.

The use of benzoate of soda, permitted by Decision 101, is, to my view, an unmitigated evil since we have the assurance of many manufacturers that such use is absolutely unnecessary to preserve the food materials in which it is used.

Dr. H. W. Wiley, chief of the Bureau of Chemistry, United States Department of Agriculture, in Circular 39 of that department, gives the results of experiments and the general conclusions drawn from them as to the injurious effects of sodium benzoate, as follows:

> From a careful study of the data in the individual cases and of the summaries of the results, it is evident that the administration of benzoic acid, either as such or in the form of benzoate of soda, is highly objectionable and produces a very serious disturbance of the metabolic functions, attended with injury to digestion and health.
>
> As in the case of boric acid, salicylic acid, and sulphurous acid, this injury manifests itself in a number of different ways, both in the production of unfavorable symptoms and in the disturbance of metabolism. These injurious effects are evident in the medical and clinical data, which show great disturbances of digestion, attended by phenomena which are clearly indicative of irritation, nausea, headache, and, in a few cases, vomiting. These symptoms were not only well marked, but they were produced on healthy individuals, receiving good and nourishing food and living under proper sanitary conditions. It is not only fair to conclude, therefore, that under similar conditions of administration of benzoic acid or benzoate of soda in the case of weaker systems, or less resistant conditions of health, much more serious and lasting injury would be produced.
>
> It was also noticed that the administration of benzoic acid and benzoate of soda was attended with a distinct loss of weight, indicative of either a disturbance of assimilation or an increased activity in those processes of the body which result in destruction of tissue. The production of a loss of weight in cases of this kind must be regarded as indicative of injurious effects.
>
> The influence of the benzoic acid and benzoate of soda on metabolism was never of a character indicative of a favorable change therein. While often the metabolic changes were not strongly marked, such changes as were established were of an injurious nature. It is evident that the administration of these bodies, therefore, in the food tends to derange metabolism in an injurious way.
>
> An important fact in connection with the administration of these bodies is found in the efforts which Nature makes to eliminate them from the system. In so far as possible the benzoic acid is converted into hippuric acid. There is a tendency usually manifested, however, to retain the benzoic acid in the body for a notable length of time, and this is much more marked in the case of benzoate of soda than in the case of benzoic acid.
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> While the administration of both of these bodies, therefore, is undoubtedly harmful, the injurious effects are pronounced more rapidly in the case of benzoic acid than they are in the case of benzoate of soda; the data, however, will show that the total harmful effect produced in the end is practically the same in both cases; hence there appears to be no reason for supposing that the administration of the preservative in the form of benzoate of soda can be justified by an argument relating to the less injurious effect thereof on health.
>
> The occurrence of microscopic bodies in the urine is undoubtedly increased under the administration of benzoic acid in both forms, thus showing conclusively the tendency to stimulate the destructive activities of the body.
>
> Coming to final consideration of all of these different phases of the subject, there is only one conclusion to be drawn from the data which have been presented, and that is that in the interests of health both benzoic acid and benzoate of soda should be excluded from food products. This conclusion is reached independently of any consideration of the conditions which it is alleged surround the processes of manufacture and which result in the demands of the manufacturers to be allowed to continue the use of these substances. This is a subject which must be discussed from an entirely different point of view and has no bearing whatever on the general conclusions which have been reached, namely, that both benzoic acid and benzoate of soda are bodies which, when added to foods, are injurious to health.

In view of the fact that benzoic acid and sodium benzoate are allowed by the national and state laws, I hoped to perfect a speedy and simple method of discovering these substances in food substances.

ANTIFERMENTATIVE TEST FOR THE PRESENCE OF PRESERVATIVES IN FOOD MATERIALS

I have made a large series of tests to ascertain with what degree of certainty the presence of preservatives may be detected in food by means of the antifermentative action of the preservatives on trypsin. The studies of Bliss and Novy[1] show that of the ordinary digestive ferments trypsin is injured to the greatest extent by formaldehyd, aside from the effect of the preservative on the food constituents themselves. These results are confirmed by those of Sheperd,[2] who found that nitrous acid affected pancreatic digestion in higher dilution than it did the other ferments which he employed. For these reasons I regarded trypsin as a delicate indication of the presence of preservatives in food.

The tests for the detection of preservatives in food were carried out by the addition of small amounts of the food to a definite volume of a sterile solution of casein and determining the inhibiting influence of the preserved food on the tryptic digestion of the casein by the addition of a few drops of an alcoholic solution of acetic acid to the mixture at the end of a period of digestive action.

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[1] Bliss and Novy: Jour. Exper. Med., 1899, iv, 47.

[2] Sheperd: Report of Food and Dairy Commissioner, North Dakota, 1908.

The following experiments may be cited as indicative of the results obtained in a large series of tests:

TABLE OF RESULTS

Thirteen test-tubes containing 2 c.c. casein solution and 0.5 c.c. trypsin solution, to which increasing quantities of milk serum were added and decreasing quantities of 0.85 per cent sodium chlorid solution. These tubes were incubated at 37.0 degrees C. for three-quarters of an hour, when the alcoholic acetic acid was added drop by drop, about six drops of the acetic acid to each tube:

Milk Serum.	NaCl.	Sodium Benzoate.	Sodium Sulphite.	Results.
0.0 c.c.	1.0 c.c.	......	......	Nearly complete digestion
0.1 c.c.	0.9 c.c.	......	......	Nearly complete digestion
0.2 c.c.	0.8 c.c.	......	......	Nearly complete digestion
0.3 c.c.	0.7 c.c.	......	......	Nearly complete digestion
0.4 c.c.	0.6 c.c.	......	......	Slight precipitate formed
0.5 c.c.	0.5 c.c.	......	......	Slight precipitate formed
0.6 c.c.	0.4 c.c.	......	......	Definite precipitate formed
0.7 c.c.	0.3 c.c.	......	......	Definite precipitate formed
0.8 c.c.	0.2 c.c.	......	......	Definite precipitate formed
0.9 c.c.	0.1 c.c.	......	......	Definite precipitate formed
1.0 c.c.	0.0 c.c.	......	......	Marked precipitate formed
0.0 c.c.	0.5 c.c.	0.5 c.c.	......	Definite precipitate formed
0.0 c.c.	0.5 c.c.	......	0.5 c.c.	Slight precipitate formed

Increasing quantities of milk serum exerted an ascending effect in inhibiting the tryptic digestion of the casein, indicating that some preservative had been added to the milk. The addition of 0.5 c.c. sodium benzoate solution (concentrated) produced a slightly greater inhibition of the tryptic digestion than did an equal quantity of the milk serum, while 0.5 c.c. sodium sulphite solution (concentrated) produced approximately a degree of inhibition of the tryptic digestion equal to that produced by an equal quantity of the milk serum.

I have also attempted to ascertain the reliability of the antifermentative test in the detection of preservatives in meat. The hacked meat is placed in a meat-press and the blood and juices expressed. The main difficulty in applying the test to the meat juices lies in the fact that normal blood serum exerts an antifermentative effect. I have attempted to overcome this influence by heating the meat juice and recovering the watery part of the juice for the tests. The tests with this final product have not been satisfactory because, apparently, the major portion of the preservatives is retained in the coagulated albumin of the blood serum, and in consequence the tests made on the watery part of the meat juice were never very decisive.

The evidence which scientific investigators have collected all shows that the addition of chemical preservatives to food substances is injurious to the consumer in several different ways:

1. The use of preservatives permits the use of food substances that are of inferior grade or that are not perfectly fresh.

2. The food preservatives when taken into the body must be eliminated subsequently; this operation entails extra labor on some special organ or organs, and this extra labor will sooner or later lead to direct injury.

3. Many of the food preservatives are direct poisons and their constant ingestion induces chronic poisoning with its concomitant effects.

4. The food preservatives have an antifermentative effect on the different digestive ferments, especially on trypsin, and thus retard digestion and interfere with assimilation.

5. The food preservatives act on the food substances in such a manner as to render them less easily digested or even wholly indigestible, and make it necessary for the body to deal with partly digested food or deprive it altogether of nutrition, especially of nitrogenous food.

6. In consequence of the use of food preservatives digestion and assimilation are interfered with, and the general nutrition of the body suffers through organs that are overtaxed and injured in attempting to eliminate the poisonous chemical substances, and in attempting to deal with imperfectly split food substances that may be in such a state as to preclude their utilization, especially on account of the lack of digestive ferments, because of the loss entailed through the destructive action of the food preservatives.

SUMMARY

Contrary to my expectations the use of the antifermentative test for the detection of preservatives in foods does not give results that are satisfactory in every particular. The employment of this test must be carried out in such a manner as to eliminate normal antifermentative effects in the food substances, and attempts to remove these normal antiferments may lead to the simultaneous removal of the preservative.

In view of our knowledge of the detrimental effects of chemical food preservatives there is no more reprehensible practice than that of permitting their use in foods in any quantity whatever. The better class of manufacturers and dealers have set us an example, which we should follow, in the fight which they are making against the enactment of laws that in any particular permit the use of chemical substances for the preservation of foods where their use is not absolutely necessary.

We should not allow the greed of unscrupulous manufacturers and dealers to overrule our knowledge of the evil effects of the use of food preservatives. The medical profession owes it to itself to uphold the laudable position assumed by Dr. Wiley in his crusade against food adulteration, and any course which falls short of this will stultify the profession in the eyes of educated humanity of to-day and for all time to come.

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THE PARASITOLOGY OF SYPHILIS *

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Syphilis has long been considered an infectious disease, but until recent years the discovery of the causal agent has eluded the most careful investigation. There has hardly been a pathologist or syphilographer of note who has not attempted to unravel the mystery. It would be impossible here to enumerate all the alleged causes that have been reported. Lassar has said that during the past twenty-five years at least 125 causes have been assigned to syphilis. It is evident that the great majority of these theories were very short-lived. There are three, however, that deserve mention. The bacillus which Lustgarten described in 1885 occupied the stage for several years, being defended by so good an observer as Weigert, but later it was shown to be identical with the smegma bacillus. The next appearance was Neissen's so-called syphilis bacillus. Recently Neissen[1] has published the

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Neissen: Der Syphilis Bacillus, Leipzig, 1908.

results of his fifteen years' work in the form of an extensive atlas profusely illustrating the remarkable transformation of his organism from the vegetable to the animal kingdom and back again. It is remarkable with what persistence Neissen has pursued his phantom. His is a case of "love's labor lost," for his results have never been confirmed.

Somewhat on the same order has been the work of Siegel,[2] who, in 1905, described his *Cytorrhyctes luis* along with cultural and inoculation experiments. Siegel's work attracted a great deal of attention, and, while the majority of observers failed to confirm Siegel's findings, a few, notably Merk,[3] Freund[4] and Jancke,[5] did confirm them. As a court of last resort, Schaudinn was selected to pass judgment on the cytorrhyctes, which he did very shortly, failing to confirm Siegel's work and announcing his own discovery of the *Spirochæta pallida.*

At the present time there is probably no one who believes in the cytorrhyctes, except Siegel and his pupils, and they were until recently busily engaged in explaining the cytorrhyctes as one of the developmental stages of the *Spirochæta pallida.*

Schaudinn and Hoffman[6] announced their discovery in May, 1905; and it is remarkable with what unanimity confirmatory observations were reported from all quarters. The bibliography on the subject is already enormous.

The organism, as described by Schaudinn, is an extremely slender thread, closely wound in the form of a spiral similar to a corkscrew. In length it varies from 7 to 21 microns. The ends are pointed and provided with flagellæ. It stains with most of the anilin dyes, but only very faintly; the best staining method is probably that of Giemsa, which stains the organisms a pale red. In tissues the best method of staining is that of Levaditi.

There have been many attempts made to grow the spirochete on artificial media, but they have been uniformly successful. Recently Schereschewsky[7] has reported successful results. Levaditi and others have reported a seeming increase in the number of organisms when grown in collodion sacs in the peritoneal cavity of rabbits. They have also been obtained in pure culture after inoculation into the anterior chamber of the eye of rabbits and other animals.

This brings up the question of inoculation experiments. Metchnikoff and Roux,[8] in 1903, demonstrated the susceptibility of the anthropoid apes to syphilis. Haensell,[9] in 1881, and Klebs,[10] Siegel[11] and Schultz[12] had all reported successful inoculation experiments, but on account of the absence of secondary manifestations or subinoculations their results are doubtful.

At the present time, however, there are numerous observations showing the pathogenicity of the spirochete. Finger and Landsteiner inoculated monkeys with spirochetal material and transmitted the infection from animal to animal through forty-five different monkeys. Metchnikoff and Roux, Neisser,[13] Hoffman and Brüning,[14] Mühlens[15] and many others have made successful inoculations and recovered the spirochete.

Bertarelli[16] was the first to demonstrate the susceptibility of rabbits. His results have been confirmed by Scherber,[17] Greef and Clausen,[18] Kraus and Volk[19] and many others. Bertarelli and Tomasezewski[20] carried the spirochete from rabbit to rabbit, and later to monkeys and guinea-pigs.

Hoffman[21] and Brüning have obtained positive results in dogs. It seems probable that most of the lower animals are susceptible to inoculation with the spirochete; only the higher monkeys, however, show evidence of secondary syphilis, the lower animals reacting only by the production of a local lesion at the site of the inoculation. Neisser[22] has shown, by experiments on several hundreds of monkeys, that, in spite of the fact that the lower monkeys do not develop evidence of general syphilis, the virus is distributed throughout the body.

In the face of so much confirmatory evidence it would seem useless for any one to deny the specificity of the spirochete; and yet there have been many who have done so.

It is manifestly impossible for the spirochete to pass through a Pasteur filter; yet Jancke,[23] a pupil of Siegel's, reports a successful inoculation with syphilitic material which had been passed through a Berkefeld-Chamberlain filter. This is in direct contradiction to the results obtained by Klingmüller and Baermann,[24] Metchnikoff[25] and Siebert.[26] Since Jancke did not find any spirochetes, nor did he make any subsequent inoculation experiments, it is possible that from the syphilitic toxins injected he obtained a local syphilid, analogous to the toxic tuberculids obtained by Zieler,[27] von Pirquet and others.

Another short-lived objection to the spirochete theory was the question of the identity of the so-called silver spirochetes obtained by the Levaditi[28] method of staining. They were held to be nerve fibrillæ, cell borders, fibrin, etc. The introduction of the dark-ground illuminator effectively put an end to this controversy.

Neisser ably sums up the question of the specificity of the spirochete as follows:

> As long as we are not in a position to obtain the spirochete in pure culture, and with such a culture produce syphilis in the lower animals, the proof of the specificity of the *Spirochæta pallida* depends essentially on the demonstration of its constant presence in all syphilitic lesions and its constant absence in non-syphilitic lesions.

What are the facts in the case?

It may be said that the spirochete can be demonstrated in all chancres, and in their regional adenitis, and in all condylomata and mucous patches. Noeggerath and Stachelin[29] found them in the circulating blood. Rolshoven[30] found them in the blood in thirty out of forty cases; in one case, three weeks before the eruption. Hoffman[31] produced a successful inoculation of a monkey with blood from a man whose syphilis was of six months' duration and who had a profuse secondary syphilis. Bandi and Simonelli[32] obtained the organisms in the blood from a patch of secondary erythema. Veillon and Girard[33] found them in the capillaries of an erythematous patch. Jacquet and Sevin[34] found them in all secondary lesions. They have been found innumerable times in papular syphilids. Spitzer[35] found the organisms in a case of ulcerating syphilid of eight years' duration, also in a gumma of the scalp. Doutrelepont and Grouven[36] and Tomaszewski,[37] Schaudinn,[38] Hoffman, Neisser and many others have found the spirochete in gummata. They have been found by numerous observers in the placenta and umbilical cord. They are found in the great majority of cases of congenital syphilis and in all organs and tissues of that condition. Meyer[39] examined eighteen macerated non-syphilitic fetuses and failed to find any spirochetes.

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[2] Siegel: München med. Wchnschr., 1905, lii, 1321.
[3] Merk: Wien. klin. Wchnschr., 1905, xviii, No. 36, p. 926.
[4] Freund: München med. Wchnschr., 1905, lii, No. 38, p. 1819.
[5] Jancke: München med. Wchnschr., 1905, lii, No. 45, p. 2183.
[6] Schaudinn and Hoffman: Arb. a. d. k. Gsndhtsamte, 1905, xxii, No. 2, p. 527.
[7] Schereschewsky: Deutsch. med. Wchnschr., 1909, xxxv, No. 19, p. 835.
[8] Metchnikoff and Roux: Etudes expérimentales sur la syphilis, Ann. de l'Inst. Pasteur, xvii, No. 12.
[9] Haensell: Arch. f. Ophth. (Graefe's), xxvii, p. 93.
[10] Klebs: Arch. f. exper. Path., 1879, v, 161.
[11] Siegel: München med. Wchnschr., 1905, lii, 1321.
[12] Schultz; Med. Klin., 1905, i, No. 19, p. 466.
[13] Neisser: Deutsch. med. Wchnschr., 1905, xxi, No. 19, p. 748.
[14] Hoffman and Brüning: Berl. klin. Wchnschr., 1905, xlii, No. 46, p. 1450.
[15] Mühlen's: Deutsch. med. Wchnschr., 1907, xxxiii, No. 30, p. 1207.
[16] Bertarelli: Centralbl. f. Bact., xl, 64.
[17] Scherber: Wien. klin. Wchnschr., 1906, xix, No. 24, p. 726.
[18] Greef and Clausen: Deutsch. med. Wchnschr., 1906, xxxii, No. 36, p. 1454.
[19] Kraus and Volk: Wiener. klin. Wchnschr., 1906, xix, No. 21, p. 620.
[20] Quoted by Grouven: Med. Klin., 1907, iii, No. 26, p. 774.
[21] Hoffman: Deutsch. med. Wchnschr., 1907, xxxiii, No. 14, p. 553.
[22] Neisser: Die experimentelle Syphilis-Forschung nach ihrem gegenwärtigem Stand, Berlin, 1906.
[23] Jancke: Med. Klin., 1907, iii, No. 17, p. 486.
[24] Klingmüller and Baermann: Deutsch. med. Wchnschr., 1904, xxx, No. 21, p. 766.
[25] Metchnikoff: Ann. de l'Inst. Pasteur, 1904, xviii.
[26] Siebert: Deutsch. med. Wchnschr., 1905, xxxi, No. 41, p. 1642.
[27] Zieler: München med. Wchnschr., 1908, lv, No. 39, p. 2046.
[28] Levaditi: Compt. rend. Soc. Biol., 1905, lvii, 652.

They have been found many times in various internal organs in acquired syphilis; notably in the heart and blood vessels, especially in cases of aortitis and endarteritis, in the liver in syphilitic hepatitis, and in the kidneys in syphilitic nephritis. In spite of the increasing evidence of the syphilitic etiology of tabes and paresis, I have never heard of the *Spirochæta pallida* being found in the central nervous system in acquired syphilis. Gaucher and Merle[40] found the organisms in the cerebrospinal fluid of a patient with cerebral syphilis. Neisser[41] in a case of secondary syphilis found the spirochete in the spinal fluid. It is remarkable, however, how few observations there are on this subject.

To sum up, it may be said that the *Spirochæta pallida* has been found innumerable times in all the lesions of every stage of syphilis. In fact, the presence of the organism is the cause of the lesions. In studying these lesions one is struck with the marked variation in the number of organisms present. As a general rule, it may be said that the more acute the lesion the greater the number. The organisms, as a rule, occupy the intercellular lymph spaces, although it is not uncommon to find them within a cell. They are more numerous in the center of the lesion, diminishing toward the periphery, but extending even into the non-inflammatory area. A remarkable circumstance noticed by all observers is the vast number of organisms in congenital syphilis and the slight evidence of inflammatory change.

The discovery of the *Spirochæta pallida* has resulted in an entirely new pathogenesis for the disease. It has been found in the experimental work that the most successful method of inoculation is by rubbing the virus into a scarified area of the skin; this in addition to the fact that the genital region of animals is the most susceptible part of the body may account for the sexual transmission of the disease and the relatively small percentage of extragenital infections.

Given an inoculation, the infection for a time is purely local; during the period of incubation the virus proliferates until the irritation becomes sufficient to cause the tissues to react by the production of a local inflammatory area, which tends to necrosis, but undoubtedly may resolve. From this local focus a dissemination of the infecting organisms takes place, the most usual route being by way of the lymph channels, although there is no doubt that at times the dissemination is hematogenous. Wolters[42] and others have demonstrated sections of chancres showing the spirochete in the blood vessels. This opens up an interesting and important point, as to the time at which this dissemination occurs. There is not much doubt but that this varies within wide limits. Neisser[43] in a large series of experiments attempted to solve this question by excising the inoculated area at varying intervals of time. His results were not conclusive. He found that in six cases excision at periods from ten minutes to twelve days prevented dissemination; on the other hand, in ten other cases excision was useless, even when done as soon as eight to fourteen hours after inoculation.

In whatever manner and at whatever time dissemination takes place, it is eventually by means of the blood stream that the spirochetes are distributed throughout the body. They do not remain in the circulating blood, but locate in the tissues. They show a predilection for certain tissues and organs, notably the skin, lymphatic tissues, the circulatory system, glandular organs, and, as Neisser has shown, the bone-marrow. Wherever they locate they may cause an inflammatory reaction, which is more or less characteristic, aside from the spirochetal content.

From the results obtained by the Wassermann[44] reaction, it is evident that pathologic changes are much more frequent in the internal organs than we have heretofore suspected.

As dermatologists, we are particularly interested in the cutaneous localization of the spirochete. We no longer recognize a toxic syphilid; all the cutaneous manifestations of the disease represent foci of spirochetal growth in which the spirochetes may persist for long periods, and from which a new local or general dissemination may occur. This remarkable quality which the spirochetes possess of lying dormant for long periods, their presence seemingly causing no pathologic changes, accounts for many of the characteristic late secondary eruptions, such as the annular, circinate and corymbose syphilids.

This tendency of the infection to become latent accounts in part for the marked chronicity of the disease. Füresz[45] examined lesions from twenty-four cases to determine the effect of mercurial treatment on the presence of the spirochetes. In spite of the fact that the cases had from ten to fifty-five inunctions, spirochetes were found in seventeen cases. They could be found as long as the least grade of infiltration was present. In fact, the organisms have been found at the site of a previous eruption.

The question of immunity has taken on new life since the discovery of the spirochete. It has always seemed rather illogical that a syphilitic should be immune to heterogenous virus and not immune to his own virus. The experiments of Finger and Landsteiner and Neisser show that, strictly speaking, there is no immunity. The apparent immunity, such as expressed by Colles' and Profeta's law, has been shown by the results of the Wassermann reaction to be due to a latent syphilitic infection. This is also true of 47 to 57 per cent. of syphilitics after the usual treatment.

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[29] Noeggerath and Staehelin: München. med. Wchnschr., 1905, lii, No. 31, p. 1481.

[30] Rolshoven: Med. Klin., 1907, iii, No. 33, p. 989.

[31] Hoffman: Berl. klin. Wchnschr., 1905, xlii, No. 46, p. 1450.

[32] Bandi and Simonelli: Centralbl. f. Bact. u. Parasitenk., xl, 64.

[33] Veillon and Girard: Compt. rend. Soc. biol., 1905, lvii, 652.

[34] Lesaurd: Ann. de dermat. et de syph., June, 1905.

[35] Spitzer: Wien. klin. Wchnschr., 1905, xviii, No. 31, p. 822.

[36] Doutrelpont and Grouven: Deutsch. med. Wchnschr., 1906, xxxii, No. 23, p. 908.

[37] Tomaszewski: München med. Wchnschr., 1906, liii, 1301.

[38] Levy-Bing: Le micröorganisme de la syphilis, Paris, 1907, p. 211.

[39] Meyer: Centralbl. f. Bact., 1. Abt., xlvi, No. 4.

[40] Gaucher and Merle: Compt. rend. Acad. d. Sc., 1909, iii, 29.

[41] Neisser: Abstr. in Berl. klin. Wchnschr., 1909, xlvi, No. 20, p. 934.

[42] Atlas der actiologischen und experimentellen Syphilis-Forschung, Berlin, 1908.

[43] Neisser: Die experimentelle Syphilis-Forschung, p. 80.

[44] Wassermann: Berl. klin. Wchnschr., 1907, xliv, No. 1, p. 12.

[45] Füresz: Med. Klin., 1907, iii, No. 35, p. 1045.

Admitting the etiologic rôle of the spirochete in syphilis, the question naturally arises: Of what value is the organism for diagnosis? Aside from the Wassermann reaction, the demonstration of the spirochete is the most reliable means at our disposal for the diagnosis of syphilis; as it is, these two factors give us practically absolute control of the diagnosis of syphilis in all its stages.

The greatest field for usefulness of the demonstration of the spirochete is in the diagnosis of primary syphilis; here it is far more reliable than the Wassermann reaction and much simpler. The spirochete can be demonstrated in every chancre and its contiguous enlarged lymphatic glands. I believe with Rona[46] that the finding of the spirochete permits a positive diagnosis to be made earlier than any other symptom. The Wassermann reaction in primary syphilis is not nearly so reliable and is infinitely more difficult of performance. The percentage of positive reactions increases in direct ratio to the duration of the infection; therefore the statistics of different observers vary greatly. When one considers the duration of the chancre, one finds that a positive Wassermann reaction is unusual before the third week, and that after that time the percentage of positive reactions increases up to the time of the general eruption, when it is practically 100.

Hoffman, Blumenthal and Roscher[47] all hold that in primary syphilis, diagnosis by means of the spirochete is simpler, quicker and more certain than the Wassermann reaction.

After the primary stage, the Wassermann reaction is so much more reliable that I have substituted it for the demonstration of the spirochete in doubtful cases.

The great drawback to the more widespread use of the demonstration of the spirochete for the diagnosis of primary syphilis has been the difficulty of staining the organism. Since the introduction of the Reichert dark-ground illuminator this is no longer a valid reason for the non-use of this most reliable means of diagnosis. By means of this instrument we are in a position to diagnose syphilis from the moment the initial lesion is first noticed. The method is so reliable, so simple and consumes so little time that there is no reason why it should not supplant all other methods of diagnosis.

As seen with the dark-ground illuminator the *Spirochæta pallida* is so characteristic that there is absolutely no difficulty in identifying it. The chief characteristics are as follows:

1. Size.—The spirochetes vary in length from 7 to 21 microns, being from one to three times the diameter of a red blood cell. It is not uncommon to see the organism longer than this, but I believe such forms to be composed of two or more individuals.

2. Shape.—They are seen to consist of an extremely slender thread closely wound in a corkscrew form, the windings being very acute. In fresh preparations the windings are absolutely regular, but as the specimen gets older the organism changes form, the most frequent change being an irregularity or obliteration of the windings in the central portion.

3. Position of Ends.—The ends of the pale spirochete are sharp and terminate on the periphery of the spiral and not in the center as in the other forms of spirochetes. This peculiarity is very characteristic, but is seen only when the organism rotates on its long axis.

4. Motility.—When the specimen is freshly prepared the organism is very active and possesses the following motions: (A) A rotation on its long axis in either direction; this motion is very rapid, but not necessarily accompanied by a change of position; as the specimen gets older this motion grows less. (B) It progresses from place to place, but not so rapidly as the other forms of spirochetes commonly met. (C) it has a quick and spasmodic bending or twisting motion. This form of movement increases as the specimen gets old, and at times one sees an organism bent in the form of a circle, resembling somewhat a crenated red blood corpuscle. It is not uncommon to find two organisms joined end to end. Again, one sees two or three organisms lying side by side.

The number of organisms found varies in the different lesions. They are most numerous in chancres, condylomata and mucous patches and vary from two or three in a field to sixty or eighty. Patients who have received some treatment show fewer organisms than the untreated ones. A few days' local treatment with calomel or other mercurial preparations causes a marked diminution in the number present in the chancre, although they are very numerous in the enlarged inguinal glands.

I have been using this method for two years and have never failed to find the organisms in chancres, mucous patches and condylomata. In our first communication,[48] Dr. Corbus and I reported finding the spirochete in mucous patches in three cases in which the syphilis was from one to three years old. Recently we found them in a mucous patch in which the infection was of eight and one-half years' duration. Neilsen[49] reports a case with a papulo-erosive syphilid of the mouth in which he demonstrated the spirochete nine years after the infection. Hoffman has reported a similar case and Papée[50] has reported one thirteen years after the initial lesion. These observations are important in view of the fact that some authorities are apt to belittle the contagiousness of syphilis after the fifth year.

Considering the simplicity and reliability of the dark-ground illuminator for the diagnosis of syphilitic lesions it is very strange that the method has not had a more universal application. We can explain this circumstance only by assuming that the profession has not a proper appreciation of the necessity for an early diagnosis. An early diagnosis permits us to institute a logical treatment; such a treatment should consist in the removal or destruction of the infected area at the earliest possible moment and the immediate institution of energetic mercurial medication.

In commenting on the results of excision in his experimental work, Neisser[51] says:

> These results are not very satisfying. In spite of them, however, I think now, as before, that excision should be done wherever possible. The value of excision is not affected by

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[46] Rona: Wien. med. Presse, 1907, No. 34.

[47] Hoffman, Blumenthal and Roscher: Med. Klin., 1909, v, No. 7, p. 241.

[48] Harris, Frederick G., and Corbus, B. C.: The Clinical Value of the Spirochæta pallida in the Diagnosis and Treatment of Syphilis, The Journal A. M. A., Dec. 5, 1908, li, 1928.

[49] Neilsen: Monatsh. f. pract. Dermat., xlviii, No. 2, p. 5.

[50] Papée: Monatsh. f. pract. Dermat., xlviii, No. 8, p. 347.

[51] Neisser: Die experimentelle Syphilis-Forschung, p. 81.

these experimental results, since under all circumstances it must be useful to get rid of such an important focus of poison, as the chancre.

Hoffman says:[52]

> Since the microscopic examination now allows us to diagnose the chancre early, we must try the effect of excision or destruction of the chancre at the earliest possible time, even if the experimental work does not permit us to expect to cure the disease. Still, the removal of such a large amount of virus, perhaps, may make the disease milder, especially when combined with energetic mercurial treatment.

The list of adherents of the method of excision and early treatment of syphilis is a growing one and includes such names as Neisser, Hoffman, Hallopeau, Volk, Scherber, Rona and Lukasiewicz. All authorities are agreed on the question of antispirochetal action of mercury, but the work with the Wassermann reaction has shown us that it is necessary that the treatment of syphilis should be more energetic and more individual than has been the custom. In fact, I believe that the control of the treatment, by means of the Wassermann test—the so-called biologic treatment—is a great advance in the therapeutics of syphilis.

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ABSTRACT OF DISCUSSION

Dr. G. A. DeSantos Saxe, New York City: Our knowledge of the *Spirochæta pallida* has progressed remarkably within the past two years, since Edward Spitzer, of Vienna, first showed the value of the dark-ground illuminator in recognizing this organism. There is still, however, a great deal to be learned, not only about the biologic character of the spirochete, but also about the practical aspects of the diagnosis of syphilis. Dr. Harris is very pessimistic on the subject of staining. The only method I know of that will give satisfaction in a fair proportion of cases is that of Schereschewsky, which was described in the *Centralblat für Bakteriologie*, October, 1907. This author was the first to recognize the difficulties of staining the *Spirochæta pallida*. They are twofold. First, the difficulty in spreading the smear in such a way that the erythrocytes will be sufficiently far apart to get the dye directly on the spirochetes. Second, the difficulty of avoiding precipitation in this delicate stain.

In order to obviate this, the following technic has been suggested by Schereschwesky: The clear serum from the sore, etc., obtained by means of a small curette, is spread on the slide and fixed with heat. The cubic centimeters of a 0.5 per cent. solution of pure glycerin and 13 drops of Giemsa's solution are heated in a test tube, which must be absolutely clean. The slightest trace of acid in the tube causes a precipitate, and renders the stain useless. Contact of the slide with any grease or acid, or traces of dye cause a precipitate. The slides, therefore, should never come in contact with the fingers, but should be stained on clean glass supports. The heated stain is allowed to remain for ten minutes, and is then washed off. This method has been used in a large series of cases by White and Avery, and with it they found the spirochete in 100 per cent of chancres. I have found the method very satisfactory when all the precautions mentioned were used. I was able to find the spirochete in chancres in 100 per cent. of the untreated cases, and these results were verified by control experiments with the dark-ground illuminator. After treatment with mercury, however, the number of cases in which the spirochete was found was reduced to 50 and even 25 per cent., according to the extent of the treatment. The dark-ground illumination method takes less time and is more satisfactory than the staining method, but it is not always convenient to have the dark-ground condenser at hand.

This brings up the question: With what shall we dilute our drop of secretion in preparing it for the dark-ground illumination? I have obtained the best results by using either water or salt solution. This point may seem a trifling one, but if the results without water and with water be compared, it will be found that the spirochete is three times as distinct after using water. It swells up, becoming more refractive, brilliant and distinct. The refractive index of the serum is such that dark-ground illumination does not show the spirochete so distinctly in serum as in water. This dilution process has one disadvantage, namely, that the spirochete loses its motility more quickly, but the organism can be kept alive for a sufficient time to make a satisfactory examination. This observation has also been made by Commandon.

Sometimes, if the motions of the spirochetes are watched for some time, one can see two of them come together, join heads or tails, and wind round each other for a part of the way, and sometimes for the entire way. Sometimes one of the organisms seizes a bit of protein matter and floats about with this tiny ball, just as with a headlight. These peculiarities are, as yet, unaccounted for, and much research is needed in this field.

Dr. Howard Fox, New York: I should like an expression of opinion about the different apparatus used. For the past year I have tried both the Reichert and the Leitz dark-field illuminators. The instruments that are placed on the stage of the microscope such as the Reichert and Leitz (condenser B) are certainly much more convenient and cleanly than those inserted from beneath and that take the place of the Abbe condenser. I have used the Nernst lamp of from 50 to 60 candle power and it seems to me a perfectly satisfactory source of illumination. Does Dr. Harris for ordinary use consider the small arc light preferable to the Nernst lamp?

Dr. Maximilian Herzog, Chicago: Doctor Harris has not been the only or first one in Chicago who examined primary and secondary luetic lesions for spirochetes. I took up this work three years ago, on my return from the Philippine Islands, where I first became interested in it. I can confirm the observation of those who claim that the spirochetes are found in the great majority of cases in the primary and early secondary lesions. My first work was done before the dark-field condenser had been recommended and I had no great difficulty in finding the spirochetes in stained specimens, although it may take a great deal of time to find them in some instances, particularly in the late secondary lesions. Subsequently, I used the dark-field illuminator, but I generally found that if I could not detect the spirochetes after a prolonged search of stained specimens, I could not find them with the dark-field illuminator. I have frequently used a 50-candle power stereopticon incandescent lamp, in front of which I have a dark shield, and I employ the ordinary condenser, which is put on top of the stage. Dr. Saxe mentioned round, luminous bodies which he has found in connection with the spirochetes. These are probably due to optical effects and I would not attach much importance to the theory that the spirochete possibly feeds on these round bodies.

Dr. William S. Gottheil, New York City: I should be the last to deprecate these newer methods of diagnosis, and yet I think that we are perhaps attributing a little too much importance to them, to the exclusion of the older and established methods, very much as was the case with the surgeons and the Roentgen ray. I had occasion, a number of months ago, to see a physician with a lesion of the finger which looked very much like a chancre. I sent him, not to a tyro, but to an expert, who examined the secretion from the lesion, and the report came back, "no spirochetes." The doctor returned to me a week later and said: "I know that this is an initial lesion." A second bacteriologic examination was made, and again the report came back, "no spirochetes." One week after that he developed a pigmented papular syphilide. I mention this case only that it may serve as a note of warning against the neglect of the ordinary and customary and long-established and satisfactory methods of chancre diagnosis.

Dr. Douglass W. Montgomery, San Francisco: The assertion, I think, was made that amputation of the primary sore should be done to rid the patient of that much infection. I can not see very well how that would rid one of any considerable amount of infection. The primary sore is usually very small, no larger than a papular syphilide, and if the assertion made by Dr. Harris would hold good, it might be considered proper to excise every papule of a papular syphilide in order to get rid of so much more infection. That would be an equally logical proposition, and as a result, the patient would certainly be well tattooed. I would ask: What grounds are there for amputating the chancre with the idea of ridding the patient of that amount of infection?

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[52] Hoffman: Deutsch. med. Wchnschr., 1905, xxxi, No. 4, p. 1712.

Dr. M.S. Heidingsfeld, Cincinnati: I concur with Dr.Gottheil that we are in danger of placing too much reliance on comparatively new tests. While the value of the laboratory tests can not be questioned, they must still be regarded in the light of aids to clinical diagnosis rather than as absolute methods. The reports that emanate from the laboratory and which receive widespread attention are apt to lead the profession into serious error. I have known the diagnosis of syphilis essayed purely on laboratory tests in cases of suspected initial lesions which at the time were clinically negative and failed to show any confirmation after months of careful observation. I do not believe that the laboratory tests in syphilis have yet reached the degree of perfected development that they overshadow the clinical features in importance. With reference to the syphilometer: I found the syphilitic regulation test of two drops to be entirely too small to convey any degree of accuracy. The manufacturers kindly supplied me with a half pound of the taurin solution and when I repeated the test, using one or two grams of clear serum in place of one or two drops, they became uniformly positive in character, irrespective of the syphilitic or non-syphilitic character of the case.

Dr. F. G. Harris, Chicago: In regard to the method of demonstrating the spirochete, to which several of the speakers referred, I worked for a long time with the staining method, with uniformly poor results. My organisms were indefinite in outline, and I was unable to identify them positively. We must have a live organism in order to make a positive diagnosis, an organism which is not deformed.

In my work, I employ the Reichert apparatus, which I prefer on account of its convenience. I use an arc light, although one may also use a Nernst lamp; with the new model of the Reichert apparatus the ordinary inverted Welsbach light may be employed.

To obtain the material, I simply irritate the chancre or mucous patch and collect the serum in a capillary tube, from which it is then blown on a clean cover glass, which is inverted on a clean slide. The specimen must be as thin as possible. If the preparation is too thick or the slide is too thick, the rays of light will not be focused at the proper point.

The characteristic movement of the spirochete in a fresh preparation is rotary, like that of an auger-bit, and that is one thing that we do not see in the stained specimen. The windings are absolutely regular in a fresh specimen, but later become somewhat irregular. In the stained specimen few of the organisms are characteristic, most of them have lost their regular windings, due to the traumatism of preparation.

As to Dr. Montgomery's question whether or not it would be proper to excise all the possible foci of infection in secondary syphilis, he misunderstood the purpose in view in amputating the original chancre. With the dark-field illumination method we are able to make the diagnosis from the very beginning of the chancre. I have found the spirochete in chancres one day old. In such cases, by amputating that focus and putting the patient on immediate treatment, we hope to abort the syphilis. Scherber, in the case referred to by Dr. Pernet, amputated the chancre and gave the patient two courses of inunctions and there were no further symptoms during the three years that he was kept under observation. By means of the dark-field illumination method we can make the diagnosis of syphilis very early, and the reasons for amputating the chancre are mainly for the purpose of preventing dissemination, just as the surgeon would remove the primary source of any other kind of infection. We remove the primary and chief focus of infection by excising the chancre, and depend on the mercury to destroy any spirochetes that are left behind. Why should we wait until the body is permeated with them?

Dr. Maximilian Herzog, Chicago: I do not think that there was any possible mistake about the character of the organism that I demonstrated in Chicago in the shape of photomicrographs. The smears had all been prepared from typical primary lesions, the cases in fact were followed up to the secondary stage. It would indeed have been strange if I should have had the misfortune to find only the *Spirochæta refringens* in typical primary lesions. Such a claim need hardly be discussed.

REGENERATION OF THE CORNEA *

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It has long been known that the epithelium of the cornea would regenerate itself after being destroyed intentionally or by accident.

Haller[1] as early as 1763, in his "Elementary Physiology of the Human Body," asserts that regeneration of the cornea takes place, and even the oldest ophthalmologists[2] assume that regeneration of corneal tissue occurs. In fact, Desmarres[3] states that, in experimenting on transplantation of the cornea, he has noted an increase in length of the corneal flap, and even a true regeneration. Mauchart,[4] Mead and Larry,[4] Wardrop,[4] Gulz[5], and Malgaigne[6] resected corneal scars, and found that healing took place with little or no scar. What is extremely interesting in the light of our present knowledge of the effect of an opium derivative, dionin, is the work of Muehlbauer[7] and Beger,[8] who resected the superficial layers of the cornea and succeeded in obtaining a clear cornea following the application of laudanum. Desmarres was unsuccessful in his attempt to verify these results, since the rabbits on which he operated contracted a severe purulent inflammation (infection?), resulting in heavy scars.

It is a matter of common observation that corneal wounds following cataract extractions heal so that it would be difficult to find the line of incision. Also numerous corneal opacities clear in time, where the question might easily arise as to whether there might not be a true regeneration of transparent corneal tissue in these cases.

The first systematic research for actual proof of corneal regeneration was made by F. C. Donders[4] in 1846, who suspected that it occurred, but did not think that there was sufficient proof to establish the fact. He accordingly conducted a series of experiments on twenty-two rabbit eyes, from which he resected a flap of cornea from one-third to two-thirds of its thickness, including generally about one-half of the area of the cornea or more. He examined six eyes microscopically and gives a tabulated report showing (1) the thickness of the cornea cut away, (2) the thickness of the uncut cornea, (3) the thickness of the operated part a definite period after operation, and (4) the thickness of the regenerated part in hundredths of millimeters.

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[1] "Vulnerato ex succo effuso pellucida renascitur, ut coram video, et late deleta nova redit, omnino ut epidermis." Haller: Elementa physiologiæ corporis humani, Lausanne, 1763, 363.

[2] Mauchart, B. D.: De ungue oculi pure inter lamellas corneæ (defendet C. F. Bilger), Diss. Med., Tübingen, 1742; in Hallerus, Alb., Disputationes chir. selectæ, i, 394, Lausanne, 1755; abstr. in Donders, Note 6.

[3] Desmarres: Ann. d'ocul., 1843, x, 5.

[4] Donders, F. C.: Untersuchungen über die Regeneration der Hornhaut, Holländ. Beitr. zu d. Anat. u. Physiol. Wissensch., 1846-8, i, 387 to 400.

[5] Gulz: Oesterr. med. Wchnschr., 1842, No. 2.

[6] Ann. d'ocul., Fl. Cuniere, 1845, xiii, 211.

[7] Himley: Die Krankheiten und Missbildungen des menschlichen Auges und deren Heilung, 1843, ii, 56.

[8] Ueber die Verwundbarkeit des Auges und seiner Haute. nach Versuchen an Thieraugen, Ztschr. f. d. Ophth. (von Ammon's), iii, Nos. 2 and 4

He concludes that the epithelium on the injured part grows thicker than on the normal cornea; that the newly formed true corneal tissue never reaches the same thickness as that removed, but that the longer the time elapsed from the time of operation to the time of examination, the thicker it becomes; that when one-half to two-thirds of the thickness of the cornea is removed, neither inflammation nor any other abnormality occurs; and that epithelium covers the exposed surface within two days after the operation, with a gradual regeneration of cornea, slowly assuming its normal characteristics.

The only one following Donders, so far as I have been able to find, who conducted experiments on animals and made microscopic examinations of the regenerated cornea was Reich.[9] He operated on thirty-two rabbit eyes and made twenty-two microscopic examinations with results similar to those of Donders. The longest time between operation and examination was nine months. His conclusions are that the reaction and the remaining scar are so slight that the removal of thick corneal opacities by the knife are not contraindicated, but that almost always irregular astigmatism and marked light diffusion results.

Waldeyer[10] says that Sanftleven, pupil of Cohnheim, admits the possibility of regeneration of the corneal cells.

The few clinically reported cases of regeneration, all except one, followed destruction of the corneal tissues from purulent ophthalmia. Kaempf[11] reports a case of pyorrhea in a soldier in whom, after the swelling of the lids had sufficiently subsided to permit an examination of the eyeball, an apparent complete destruction of the cornea was revealed, the surface being covered with slough. Within three weeks there was a regeneration of clear cornea, except in the central part, where there was an anterior synechia in both eyes. Four months later an iridectomy performed above and outward in either eye gave useful vision.

N. D. Staicovici[12] reports a case of complete regeneration of the cornea after its destruction down to Descemet's membrane following suppurative conjunctivitis.

A case is reported from Darier's clinic[11] in a man 67 years of age who had been blind for ten years with complete destruction of the cornea with a central prolapse of the iris. The prolapsed iris underwent an inflammation from infection during which the entire cornea sloughed off, leaving only Descemet's membrane, a final regeneration of clear cornea taking place.

H. Armaignac[13] observed, in a patient suffering from a very severe acute purulent coryza, a complete destruction of the cornea with the exception of Descemet's membrane. There was an almost complete staphyloma of the cornea with a central perforation. When the patient went home there was a ring of redness surrounding the cornea two millimeters wide composed of small capillaries which had the appearance of a new growth. The patient was given a 1 per cent. solution of picric acid to instill into the eye. Armaignac was astounded when, a month later, the patient returned to him with a complete regeneration of clear cornea. True, it was traversed by very fine capillaries and sprinkled with small vague opaque spots. The anterior chamber was re-established without synechia. Unfortunately, oblique illumination revealed the pupil almost blocked by a membranous exudate. The patient could distinguish the movement of fingers at thirty centimeters. Atropin failed to break up the adhesions, but one month later vision had reached one-twentieth. The same author[14] reported a case of regeneration of the cornea after a complete destruction of the membrane following purulent ophthalmia in a woman 60 years of age.

Peter A. Callan[15] saw the cornea regenerate after its destruction from ulcus serpens. The patient, a boy 17 years of age, appeared at the New York Eye and Ear Infirmary, Oct. 6, 1903, twenty-four hours after having been struck in the eye by a rivet. There was a circular ulcer three mm. to four mm., involving all the layers, filled with a creamy white mass, umbilicated in the center. Despite cauterization and other treatment, the ulcer increased in size until on October 11 the entire cornea was involved and on October 12 the anterior chamber abolished. The next day the slough disappeared, leaving Descemet's membrane exposed. October 14 there was no more suppuration and the eye was bandaged. On October 16 cicatrization was observed over the intact Descemet's membrane. Dionin in increasing strength was given, when by March the upper half had cleared so that the pupil was visible. On June 13 vision with + 3.5 D. cyl. ax. 105 degrees was 8/70. The cornea was quite clear in the upper third, but lower two-thirds more or less hazy, resembling an eye after recovery from a severe attack of interstitial keratitis.

H. L. Wolfner[16] reported a case in which a woman 32 years of age came with gonorrheal ophthalmia of right eye. The left eye had been removed in childhood. The socket of the left eye was also infected with gonococci. When first seen there was ulceration of the right cornea, which progressed until the entire cornea down to Descemet's membrane was destroyed. Neither Wolfner nor Dr. A. Alt, who saw the case in consultation, believed that there was any hope of preserving vision. Within six weeks to two months the cornea was practically regenerated. There resulted a very thin but clear cornea, except from a faint cloud just below the center, with a slight tendency toward keratoconus and a small deposit on the anterior capsule; vision, 14/120.

In view of the partial success of the results already obtained along this line, and encouraged by the knowledge accumulated by modern studies on regeneration in general, as well as by the fact that our former investigators had no knowledge of aseptic surgery, late in July, 1908, I began a series of experiments on rabbits. From then to March 10 thirty-one rabbit eyes have been used for experimentation. Five rabbits died before notations were finished, and these have been excluded from the report. The rabbits were cocainized and wrapped in a long towel, with only their heads projecting, which served to keep them immovable. A thread was then passed through the conjunctiva and subconjunctival tissue so as to help fix the globe, which was held by the assistant who separated the lids. A flap of cornea was then dissected away varying from one-half to a little over two-thirds the thickness of the cornea, and including one-half, two-thirds, or even the entire area of the cornea, the extent of surface bared seeming to have little or no influence on the general healing process or regeneration. The only difference was that the smaller area was sooner covered by epithelium. Aside from taking general aseptic precautions at the time of the operation, no special means were taken for their after-care, the rabbits being placed in the cages without dressing or bandage. Only where occasionally there seemed to be a purulent or mucopurulent discharge after a day or two, a little powdered xeroform was dusted once daily over the cornea until the infection was controlled, which was usually within a few days. Also wherever there happened to be an unusual amount of secretion, purulent or otherwise, which might tend to agglutinate the lids, the lids were washed with warm water and the secretion removed. Following the operation the rabbits seemed to suffer no pain or inconvenience, the palpebral opening being held as wide open over the eye operated on as the sound eye, with no photophobia.

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[9] Reich, M.: Ueber die Regeneration der Hornhaut, Klin. Monatsbl. f. Augenh., 1873, xi, 197-211.

[10] In de Weeker and Landolt: Traité complète d'ophthalmologie, ii, 35.

[11] Regeneration des grossten Theils der Hornhaute nach Pyorrhoe, Oesterr. Ztschr. f. pract. Heilk., 1868, xiv, 77-80.

[12] Staicovici, N. D.: Doua cazuri de regenerere complecta a corneei in urma destructiunei complecta a acestei memb. membrane, prin procese de supurantiune conjunctivala, Rev. de chir., Bucharest, 1903, vii, 20.

[13] Armaignac, H.: Regenerazione del tessuto cheratico, Boll. d'ocul., Firenze, 1897, xix, 161-164

[14] Armaignac, H.: Un cas de règénération complète de la cornée aprés un sphacele total de cette membrane consécutif à une conjunctivite purulente chez une femme de 60 ans, Bull. et mém. Soc. Franc. d'opth., 1899, xvii, 287.

[15] Regeneration of cornea. Report of case of ulcus serpens. Am. Med., July 9, 1904.

[16] Regeneration of the Cornea; report of case at Ophthalmic Section of St. Louis Medical Society, June 10, 1908.

Where only half the cornea was removed, the posterior was selected as being more readily managed on account of escaping the incidental action of the membrana nictitans. The section was commenced by making a vertical incision from above downward through the median line from the upper corneal margin to the lower corneal margin, going as deep as judgment from experience would permit without puncturing Descemet's membrane. Then from the center of this line a similar cut was made horizontally backward to the posterior limbus. The triangular was then grasped with a fine conjunctival forceps, and with slight tension, and the knife held flat, the corneal tissue was easily peeled off. Sometimes where the flap looked thin a further attempt to resect another layer was made, but this usually ended disastrously by puncturing Descemet's membrane. When this occurred an ectasia corneæ, or even staphyloma of the cornea, almost invariably took place. Twenty-four hours after the operation there was usually some slight conjunctival injection. The resected surface had a stippled appearance as though covered with a thin layer of serum or lymph, but wiping the surface with a wet sponge did not seem to change its aspect. The cut edges had a slightly raised but rounded-off look. The transparency, however, was surprisingly little disturbed. This was also the case after forty-eight hours, when the raised edges had encroached several millimeters over the raw surface. There were at this time, however, no blood vessels over the cornea except that there was an increased vascularization at the limbus.

On the third day there is generally a small milky spot about the center of the resected area, but this usually disappears within a few days, when the cornea again shows a smooth surface, being completely covered by epithelium. The resected area now shows a general infiltration or haziness which is greatest at the line of incision, but at no time to such an extent that the pupil can not be seen throught it, unless infection supervenes. This haze gradually clears until about four to six weeks after the operation a casual examination would not determine an opacity, which can only be revealed in certain positions or by oblique illumination.

In those rabbits which have been kept several months the cornea is generally apparently perfectly clear by oblique illumination as well as by transillumination, with the exception of an occasionally small, slightly hazy area.

Microscopic serial sections have been made showing the fresh cornea immediately after resection; after twenty-four hours; after forty-eight hours; four days; seven days; two weeks; one month; two months, and so on up to seven months. The specimens show a gradual thickening of the cornea the longer the period from the time of operation. Experiments are also under way on other animals than rabbits. Since, however, enough time has not been had to complete the series, I have refrained from presenting at this time the results of microscopic examination, not wishing to draw too hasty or indefinite conclusions. This is consequently offered as a preliminary report.

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ABSTRACT OF DISCUSSION

Dr. John Green, Jr., St. Louis: Through the courtesy of Dr. Wiener I had an opportunity of examining the animals operated on by him. The line of incision was represented by a very delicate linear scar and the area corresponding to the exsected portion was faintly nebulous. The nebula was visible only by oblique illumination. The contour of the cornea in the exsected portion seemed to be about the same as in the unoperated part. In future experiments it would be well to observe the reflections of the cornea from Placedo's disc before operation and for some months afterward, to determine, if possible, how much distortion of the corneal surface had occurred, and whether regular or irregular astigmatism had developed. Two facts have been brought out which indicate that a true regeneration has taken place: First, the absence of any notable opacity shows that a very small amount, if any, of scar tissue has formed; second, the evenness of the corneal surface, there being no irregularities of the epithelium.

Dr. William Zentmayer, Philadelphia: Recently in a case of nodular keratitis I dissected out a nodule down to the membrane of Descemet and I can say that after a few weeks the corneal tissue apparently had been regenerated, as the resulting space was filled in almost to the level of the surrounding corneal level. I did not examine it with the loup, but with the naked eye it appeared transparent.

Dr. R. L. Randolph, Baltimore: I have been very much interested in these observations of Dr. Wiener, and have been long impressed with the reparative activity in the rabbit's eye particularly and in the eyes of the lower animals generally. Some years ago in some experimental work in the reproduction of the crystalline lens I succeeded in getting as many as three lenses from an eye in the course of a year. Whether this reproductivity finds any analogy in human beings is doubtful, but I cannot help thinking that what we call secondary cataract is perhaps an effort on the part of Nature to form a new lens. We know that the lens in the lower animals is formed by the reproduction of the cells on the anterior capsule by the growth of these cells into spindle cells and subsequently into lens fibers, and we have pretty much the same process in human beings. As regards the rabbit, I have been astonished at the quickness with which superficial abrasions of the cornea get well. A fine scratch across the cornea in the case of the rabbit will disappear absolutely in two or three hours, where it is perfectly possible in the human being still to reveal it late in the day with the aid of fluorescin. This is very surprising in view of the fact that the bacterial flora of the conjunctiva in the rabbit is practically identical with that of the human being; in other words, its cornea has much the same conditions to contend with as has the human. What this is due to I have never been able to say. It is suggested that the leucocytes in the rabbit's cornea are exceedingly active. I am a little skeptical as to the repair of so serious a wound in the human as Dr. Wiener has spoken of.

DR. A. R. BAKER, Cleveland: No doubt all of us have seen cases of ophthalmia neonatorum in which there is an anterior polar cataract and doubtless there must have been a perforation of the cornea; and yet we have seen those persons later in life when little or no opacity of the cornea existed. I have seen several cases with 20/20 vision after the lens has been removed, so that it seems probable there may be a regeneration of the cornea in young persons. I do not think that I have ever seen this occur in adults, although we have all seen cases in which the epithelium has been entirely restored. Only recently in the case of a burn from an explosion of chemicals the corneæ of both eyes were entirely opaque. The physician in attendance gave a verdict of total blindness, yet in a few hours the entire epithelium peeled off and in the course of a few weeks the patient recovered perfect vision. We have all seen these cases. I must confess, however, that I am pessimistic as to the permanent result of regeneration of the deeper portions of the cornea. Many years ago I made experiments on guinea-pigs similar to those of the essayist; results were favorable at first, but disappointing later. Transplantation of the cornea has been one of the dreams of the oculist for hundreds of years. The primary results are always flattering, but the ultimate ones are disappointing.

DR. R. F. MILLER, St. Louis: Through the courtesy of Dr. Wiener I had an opportunity to see the animals he operated on, and I would like to say that many of these cases showed very beautiful results. I also happened to be present when he operated on the human, and I must say that from all appearances the outlook is certainly beautiful, and, as the doctor reported, about three days afterward the condition seemed to be about the same as in the animals. So I think the doctor has opened up a subject again which has been tried many times, but perhaps with careful detailed work he will be able to accomplish a great deal more than was accomplished twenty-five years ago. The work was very interesting to me and I think with future trials will give very good results.

DR. M. WIENER, St. Louis: In regard to the corneal reflections in these photographs which I pass around, there is one rabbit which shows the regular reflection of the window in the eye, while the other eye shows an irregular reflection of the window. In one eye we got a clear cornea after resection and in the other we got a fairly clear cornea. The reason we got the clear cornea is that I believe the cornea was dissected out as it should be, that is, in layers. The piece should not be taken out irregularly in ridges, but evenly, and it can easily be done, almost peeled off in separate layers. I think this is essential in order to get a clear and regular surface. So far as having a regeneration, one microscopic specimen surely shows thickening of the cornea in the late specimens from that of the earlier ones; also, immediately after the operation, microscopically we can see a distinct depression, which later smooths out perfectly. Dr. Randolph believed it could not be done in cases in which there had been serious inflammation. These experiments were done on account of my having read of and seen a case of regeneration of the cornea after a gonorrheal ophthalmia, and that is certainly a severe process of inflammation. If the cornea can regenerate after a gonorrheal ophthalmia we ought to be able to take a clean scar and resect it. Dr. Baker thought it would be feasible, perhaps, only in the young. I have taken old animals as well as young, and the regeneration of the cornea mentioned in this paper was in an adult. I mentioned in the paper that after the operation these animals were put in the cages and nothing done with them at all. Their eyes were left open. If there was an unusual amount of secretion it was wiped off from day to day and possibly a little antiseptic powder used. Now I have started a series of experiments to determine whether there is any more rapid regeneration or clearing in eyes not treated as compared with eyes treated with dionin.

Knowledge of Drugs.—"Learn how to prescribe remedies and you will complain less of their inefficacy and their dangers."—Cappiovaccio of Cremona in the sixteenth century.

THE OPERATIVE TREATMENT OF GLAUCOMA BY CYCLODIALYSIS *

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The operation of cyclodialysis suggested by Heine in 1905, consists in making an artificial communication between the anterior chamber and the suprachorioidal space, allowing a new channel for the escape of the aqueous humor and thus reducing intraocular tension. The operation is performed under local anesthesia by making an incision in the sclera 6 to 8 mm. posterior to the sclerocorneal junction after reflecting a conjunctival flap and with a bent spatula, separating the ciliary body from the overlying sclera and breaking through the pectinate ligament. A quadrant of the iris periphery is then detached. I have performed this operation in eighteen cases specially selected to test its merits. These cases have now been observed for a sufficiently long time to permit an opinion on the value of this operation.

The cases can be arranged in the following groups:

A. CHRONIC GLAUCOMA

These are cases in which an iridectomy did not succeed in permanently reducing the tension, or a contra-indication to an iridectomy was present.

CASE 1.—R. B. M. Age 55. L. Vision=20/20—. T. (Tension)+1. Fn. (Field normal) Nov. 14, 1905; Iridectomy. T. again increased after six weeks. June 2, 1906: Cyclodialysis. At operation some difficulty in breaking through pectinate ligament. Aug. 1, 1906: Tn. V.=20/30. Dec. 1, 1906: Some opacities in posterior cortex of lens. Tn. (Tension normal) March 22, 1909: T. has remained normal without any miotics; cataract nearly mature.

CASE 2.—E. M. R. Age 60. Aug. 1, 1905: Iridectomy. Notwithstanding drops, eye showed tendency to be hard. V. = 20/30. F. contracted nasally and below. May 21, 1906: Cyclodialysis. During operation anterior chamber filled with blood. This was evacuated by paracentesis two days later. V.=20/40. On the last visit, May 6, 1908, V.=20/30; F. no change. Tn. Has occasionally used miotics.

CASES 3 AND 4.—S. G. Age 45. R. absolute glaucoma. L. 20/100. T.+. F. contracted nasally to 10 degrees. March 20, 1906: R. cyclodialysis. April 1, 1906: No reaction. No chorioidal detachment appreciable. Tn. April 4, 1906: L. cyclodialysis. April 20, 1906: R. T.+; L. Tn. March 10, 1907: R. T.+. L. 20/70. F. no change. T+½. To use drops. April 3, 1908: L. tension kept slightly elevated, hence cyclodialysis repeated in left eye. F. nasally contracted to 5 degrees. Incision in sclera external to old one. On introducing spatula instrument passed into anterior chamber without encountering any resistance. June 17, 1908: L. Tn. 20/70. R. T.+. Dec. 30, 1908: L. Tn. Feb. 24, 1909: L. Tn. R. T.+.

CASE 5.—M. W. Age 56. Marked arteriosclerosis. R. widely dilated pupil. T.+. Od. cup with atrophy. V.=20/100. F. nasal contraction to 5 degrees. May 2, 1907: Cyclodialysis. Uneventful. June 17, 1908: R. 20/200. Tn. No miotics. March 2, 1909: Tn. V.=20/200. No drops.

CASE 6.—P. P. Age 61. R. iridectomy, 1905. May 1, 1907: R. V.=20/200. F. 15 degrees nasal. 30 degrees temp. T.+ Cyclodialysis. Uneventful, June 10, 1908: R. 20/200—; T.+?. F. Slightly more contracted. March 8, 1909: T.+.

CASE 7.—A. G. Age 42. R. 20/200. F. 80 degrees temp. 35 degrees sup. 35 degrees inf. 30 degrees nasal. T.+. Aug. 27, 1908: Cyclodialysis. During operation anterior chamber filled with blood. That evening attack acute glaucoma, re-

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lieved by hot applications, eserin (physostigmin) and dionin. Nov. 28, 1908: T.+. Arc of iris detached showed atrophy of stroma. Feb. 24, 1909: T.+.

Cases 8 and 9.—J. S. (R. and L.) cup with atrophy. July 31, 1908: R. cyclodialysis. Aug. 7, 1908: L. cyclodialysis; both uneventful. Aug. 20, 1908: T.— in both. R. V.=m. h. (movements of hands) L. V.=20/70. F. 25 degrees nasal, 30 degrees sup. 10 degrees inf. 45 degrees, temp. September 9, 1908: Tn. each Oct. 12, 1908, last visit, Tn. each.

Case 10.—F. W. Age 40. L. od. cup with atrophy. V.= hand movements in temporal field. T.+ Sept. 29, 1908: Cyclodialysis. Some hemorrhage and posterior adhesions. Oct. 13, 1908: T.—. Small hemorrhage on disc. November 27, Tn. F. had enlarged. March 29, 1909: L. opac. vitr. T.—. V. no change. F. enlarged.

Case 11.—R. F. Age 50. L. iridectomy two years ago. Deep cup with atrophy. V.=20/100. F. contracted to small temporal area. T.+. June 27, 1908: Cyclodialysis. Uneventful. Feb. 20, 1909: V. 20/70. Tn. Field enlarged.

Case 12.—T. C. A. Age 60. Feb. 27, 1907: L. V.=10/200. F. contracted to temporal half. T.+. Nov. 27, 1907: Cyclodialysis. Uneventful. T. reduced. Optical iridectomy later for old opacity of cornea. April 4, 1908, last visit, 10/200. Tn.

Case 13.—A. S. Age 62. Chronic glaucoma with atrophy. L. 20/70—. T.+. Dec. 2, 1908: Cyclodialysis. Very difficult to enter anterior chamber. Jan. 26, 1909: Last visit. L. 20/100. Field enlarged out and down. Tn. (no miotics).

Cases 14 and 15.—M. L. Age 26. V. always poor, especially for last six months. R. 20/200. T.+. F. irregular contraction. L. m. h. T.+. F. contracted to temporal and superior quadrant. Very deep cup. Pronounced atrophy. Dec. 18, 1907: R. cyclodialysis. T. reduced and remained minus. Dec. 26, 1907: L. cyclodialysis. After 1 week, T. rose again. Jan. 6, 1908: Repeated operation. T.— since. Jan. 20, 1908: R. 20/200. L. 20/200. Fields enlarged. Aug. 28, 1908: R. T.+ again. L. T.+. R. cyclodialysis repeated. Favorable except that it was followed by retinal hemorrhage in macula. Sudden attack acute glaucoma requiring paracentesis. Jan. 7, 1909: R. cyclodialysis repeated. Down and out. T. very soft. Cornea slightly collapsed. V. eccentric 3/200. L. T.— V.= 20/200. F. enlarged.

B. CONGENITAL GLAUCOMA

Case 16.—J. G. Age 1 year. Parents first cousins. At six months diagnosis made. July 1, 1908: Deep cup. Prescribed pilocarpin. Eyes enlarged. Corneæ dull. Cyclodialysis in both. Sclera very thin. No resistance whatever at ligament. Aug. 1, 1908: R. again hard. L. Tn. Mother thought that child could now see. Dec. 30, 1908: Tn. each. Jan. 6, 1909: R. Tn. L. T+. Using pilocarpin 2 per cent.

C. EXTENSIVE CAPSULAR ADHESION TO CORNEA

Case 17.—A. C. Age 30. Dec. 2, 1907: Struck in eye with stick. Transverse wound of cornea. Irideremia. Broad adhesion of lens capsule to corneal scar. T. remained hard notwithstanding all medicinal treatment. Jan. 20, 1908: Cyclodialysis. On passing spatula an obstruction encountered more posterior than usual. A quadrant detached. T. not perceptibly reduced. On following day eye very hard. This continued; tension somewhat reduced by daily pilocarpin sweats. Jan. 26, 1908: T.+. June 3, 1909. Glaucoma absolute and degenerate eye.

D. GLAUCOMA SECONDARY TO NEURORETINITIS WITH VASCULAR CHANGES AND RETINAL HEMORRHAGES

Case 18.—S. Age 46. Acute glaucoma not controlled by miotics, sweats, and mercurial injections. Cyclodialysis. T. reduced for two days, then relapse. Patient lost sight of.

In brief the operation has failed in congenital glaucoma (Case 16), in glaucoma secondary to extensive capsular adhesion to the cornea (Case 17), and in glaucoma secondary to neuroretinitis with endarteritis and hemorrhages (Case 18). It has been partly successful in cases of chronic glaucoma (Cases 1 to 15) as will be seen in the following summary:

Case 1.—T. remained normal without miotics to present date, a period of two years, nine months.

Case 2.—T. remained normal with occasional use of miotics to date of last visit, two years.

Case 3.—T. remained normal for one year then became hard.

Case 4.—T. remained down for one year and a half, then operation repeated and T. has remained down to present date, eleven months.

Case 5.—T. has remained down to date, one year, ten months. No miotics.

Case 6.—T. remained down for one year, has now been somewhat raised for ten months, incompletely controlled by miotics.

Case 7.—T. reduced for four months. Has now been elevated for three months.

Cases 8 and 9.—T. down at last visit, two months, without drops.

Case 10.—T. down now for six months since operation.

Case 11.—T. down now for nine months.

Case 12.—T. down during five months' period of observation.

Case 13.—T. down at last visit, two months.

Case 14.—T. down for one year, eight months, with enlargement of field; operation repeated then (August, 1908), followed by hemorrhage in macular region, attacks of acute glaucoma; operation repeated in January, 1909. T.— since. V. very much reduced as field is eccentric.

Case 15.—T. down for one week. Operation repeated. T.— since; period of observation one year, three months. V. and F. improved.

These were all cases selected to test the value of cyclodialysis, in which an iridectomy had been performed with no permanent benefit or in which, on account of the advanced stage of the glaucoma, the atrophy of the optic nerve, the restricted field or the condition of the iris, not much result could be expected from an iridectomy. Of these the tension was reduced in eleven for observation-periods varying from two years and nine months to two months. In the remaining four the tension again became hard.

The operation is technically easy, much easier than a correct iridectomy. The difficulties encountered in breaking through the pectinate ligament differed and were readily recognized. In one in which at the second operation the same quadrant of iris was displaced, no resistance at all was felt as if a firm adhesion had not reformed. In one case this segment of iris subsequently developed distinct atrophy of the iris stroma. In one of the most favorable cases a cataract developed, the opacity beginning in the posterior cortex. It is impossible to say whether the cyclodialysis was responsible for this. The operation did not aggravate the condition except for a macular hemorrhage in one, and attacks of acute glaucoma in two. No vitreous disturbance or detachment of the chorioid were observed. The operation was repeated with benefit in three cases. In one (Case 14), the eye subsequently exhibited marked hypotony which apparently was not harmful but this again is a point requiring further observation. Why the operation succeeded in some, and in apparently similar cases the tension again rose, can not be explained.

It can be conservatively stated that cyclodialysis is of value in certain limited conditions; it is indicated in the advanced cases of chronic glaucoma, especially those in which iridectomy has not succeeded in reducing the tension. It can not in any way replace the classical operation of iridectomy or its recent modifications in incipient cases of chronic glaucoma.

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ABSTRACT OF DISCUSSION

Dr. E. V. L. Brown, Chicago: My experience with cyclodialysis extends over a period of but 16 months and has been confined to twelve operations on nine glaucomatous eyes, in which iridectomy could not be done or was inadvisable. A tabulation[*] of the data available at this time covers the following points: Name, address, age, type of glaucoma, cause of the glaucoma, duration of the preceding eye disease, probable duration of the increased tension, previous operations for glaucoma, reason why iridectomy was not done, date of cyclodialysis, eye operated on, site of scleral incision, extent of the separation of the root of the iris from the sclera, complications at the time of the operation, tension before operation, immediately after and three days after operation, as well as when the patient was last seen, any other cyclodialysis or iridectomy operation necessary, vision before and after operation, depth of the anterior chamber and dimensions of pupil, respectively before and after operation, subsequent elevation of tension, period of observation in which tension has remained normal, and a notation as to whether or not I consider the particular operation a success or a failure at this time.

The data may be summarized as follows: the operation was successful in five cases, 1, 2, 4, 5, 8 (55 per cent.) and was unsuccessful in four cases, 3, 6, 7, 9 (45 per cent.). In two of the successful cases (1 and 2) the patients required a second cyclodialysis to reduce the tension permanently, and a third eye (Case 3) had to be enucleated because increased tension and pain persisted after two cyclodialyses; in a fourth (Case 9) increased tension returned, and was permanently relieved first by iridectomy.

All the successful results were in secondary glaucoma cases; three were chronic glaucoma, two secondary to adherent leucoma (Cases 2 and 5), and one secondary to anterior iris root synechia (Case 1), and one was subacute and secondary to adherent leucoma (Case 8), and one was an acute case secondary to traumatic dislocation of the lens into the vitreous (Case 4). The increased tensions before operation were respectively +1, +1, +2, +1, +¾; average, +1. The probable duration of the preceding eye disease in these five cases was respectively, 9, 5¾, 2, 6, and ¾ months; average, 4¾ months. The probable duration of the increased tension was respectively about 1, 4, 4, 2½ and 1 week; average, 2 weeks. The subsequent period of freedom from glaucomatous tension has now been respectively over 13, 1½, 14, 11 and 12 months, or an average of ten months of normal tension.

The vision in the three chronic cases was and has remained *nil*; in the subacute case it improved from the counting of fingers at 3 meters to 20/30 with correction; in the acute case it improved from *nil* to 20/200. The depth of the anterior chamber was improved in only the two cases of adherent leucoma.

The four unsuccessful cases were all chronic, one of them secondary (to plastic iritis, Case 3) and three of them were of the primary type of the disease (Cases 6, 7, 9). The tensions before operation were +2, +2, +1, +1; average, +1½; the probable duration, 5, 9, 18 and 0 months; average, 6½ months. In the secondary glaucoma case another cyclodialysis was of no avail, and as no iridectomy could be performed the eye was enucleated. In one of the three primary cases (Case 9), the anterior chamber was so deepened that a successful iridectomy could be performed, and in the remaining two patients (Cases 6 and 7), there has been entire freedom from inflammation, tenderness and pain for 11 months in each case, although the tension is now +2 in each. I do not, therefore, consider these last two cases unqualified failures, although I have listed them among the failures; on the other hand, a second cyclodialysis may permanently relieve the increased tension in these cases, as it did in Cases 1 and 2. The patients have each consented to a second cyclodialysis.

From my own cases, I am therefore in favor of giving cyclodialysis a further thorough, and if necessary, repeated trial in glaucoma, at least in eyes blinded by chronic increased tension, and especially that form caused by and secondary to anterior synechia and adherent leucoma, in which an iridectomy can not be performed or is inadvisable.

Dr. H. Gifford, Omaha: This operation is an excellent example of one which was conceived on a wrong principle, but has turned out to do pretty good work. I think if you expect it to produce a permanent opening from the anterior chamber into the suprachoroidal space you are going to be disappointed. The results of the microscopic examination do not bear out any such theory, and on general principles it is absurd to expect it. What this operation does do is to cause a certain atrophy of the ciliary processes, which are factors in producing the hypertension. I think it is important to recognize that this is the way it reduces the tension, because if a second operation is to be done it ought not to be done in the same place, but in a different one, so as to produce as much atrophy of the ciliary processes as is safe. Some will remember a series of experiments by Deutschmann many years ago in which he excised the ciliary processes without serious reaction and without interfering with the general macroscopic appearance of the eye, except by reducing the tension very materially. That, I think, is an explanation of the results of this operation. I might say a similar explanation has been suggested by Krauss of Breslau.

Dr. W. H. Wilder, Chicago: I am not prepared to draw any definite conclusions from the limited experience I have had with this measure, but I have tried it in four cases, in one of which the result was most surprising and gratifying. It was a case of acute glaucoma with tension plus 2, vision 20/100, steamy cornea, contracted fields, especially at the nasal side and shallow anterior chamber. On preparing to do an iridectomy, the chamber seemed so extremely shallow that I decided to do a cyclodialysis, as a preliminary to a later iridectomy. The operation was done with cocain anesthesia, and without difficulty. The following day the tension was normal and the pupil became smaller. In a few days the central vision began to improve, and at the end of two weeks I was pleased to note that the patient had 20/30 of vision, and that the fields had improved to about the normal limits. This fortunate condition remained for a period of four or five months, during which time I was studying the case, and then the man passed from my observation.

The operation might be performed as a substitute for anterior or posterior sclerotomy in those cases of acute glaucoma in which one wishes to lower the tension before attempting the more difficult iridectomy. If it is possible, as claimed by some observers, to reduce the tension gradually by proper and careful manipulation of the instrument with which the ligamentum pectinatum is detached, I can see now the operation might be valuable in cases of hemorrhagic glaucoma or in patients with extremely high tension in whom we fear hemorrhage or some serious accident in doing an iridectomy, or even a sclerotomy. In the other cases I had the results were doubtful, to say the least. In one it was repeated three times without good effect, but even a later iridectomy failed to relieve the condition.

Reinfection with Syphilis.—F. John has compiled 356 cases of reinfection with syphilis as recorded in international literature. The list includes 34 in which the first infection was inherited. His work is published as Nos. 525 of the *Sammlung klinischer Vorträge*, just issued, and forms a volume of 248 pages. The various cases are grouped in tables according to the manifestations of the second infection, and the opinions of 66 well-known clinicians are appended, some accepting the possibility of reinfection and the others doubting it. Neisser's experience with monkeys has converted him to the former view. John's conclusions from this material are that the evidence as to reinfection is not very conclusive to date, but that it seems probable that the acquired immunity is not absolute and becomes attenuated in time. Reinfection is no proof of the curability of the disease as it can occur with existing tertiary lesions. Reinfection is observed almost exclusively among the well-to-do. On the whole, he adds in conclusion, the majority of cases of reinfection on record are apocryphal.

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[*] Because of lack of space this table is omitted from The Journal, but it appears in the Transactions of the Section. A copy of the table will be sent to any one requesting it within four weeks and enclosing a stamped addressed envelope.

THE GENERAL PRACTITIONER AS AN ANESTHETIST *

DOUGLAS C. MORIARTA, M.D.
SARATOGA SPRINGS, N. Y.

My subject is of great importance to every practitioner of medicine, as there is none of us who does not have occasion at some time either to give an anesthetic or have one given. Any untoward result from the anesthetic affects the reputation of the operator; it matters not whether he is an isolated practitioner or a busy operator in one of our large clinics; for even if one expert in the administration of an anesthetic be in charge of the case the patient still looks to his surgeon for his safety and expects him to guard it.

You will agree with me that posing as a critic is not a pleasant position to assume, neither is it apt to be a popular one. Yet "fools rush in where angels fear to tread," and I shall venture to present my opinions in this very important field of our professional work. I feel sure it is the one field in the practice of medicine in which there is seemingly indifference and lack of proper comprehension.

At the beginning, I might say, I have reached the conclusion of many others, i. e., the danger of anesthesia is largely due to the anesthetist. I do not mean by this that there are not pathologic conditions necessitating a particular anesthetic which, when administered, may result disastrously for the patient, and the result be due entirely to the drug. But I do say that I believe it is safer for the average patient to have one of the more dangerous anesthetics, chloroform, for instance, administered by one competent to give it, than it is to have ether, the safest of all anesthetics, given by an indifferent practitioner. And by "indifferent practitioner" I mean a person who is careless in observing the physiologic action of the drug, or the pathologic condition produced by it; this, either through ignorance or because the anesthetist becomes interested in the operative procedures, or allows his attention to be distracted by those present, either nurses or visitors. Morally, I believe that we are occasionally responsible for a fatal anesthesia, and technically such a result approaches malpractice (and that we have not been called on to defend our acts in these cases, in civil procedures, is fortunate). That this is so is, to my mind, a stigma against our profession; for why should not a patient have as much right to expect and exact skill in this branch of medicine as in the treatment of a fracture, in a pneumonia or typhoid fever? And if a civil action were brought to recover alleged damages, and your attorney attempted to prove you qualified as a competent anesthetist at the trial, how much teaching or clinical instruction could you certify as having had? About all that the average practitioner could say, if called on to show himself qualified, would be that he was a regularly graduated physician and surgeon, and supposed to know and be familiar with anesthetics, their administration and resulting anesthesia. And, I ask, what percentage of us have received clinical training or instruction in the administration of anesthetics? The number is so small that it is a disgrace to our colleges. And the general teaching has not materially improved. Even at this present writing there are only a few of our colleges where this most important branch of our curriculum is taught clinically; and, to repeat, is it not a disgrace to those in which it is not? And, if the actual state of affairs were appreciated by the public, even by the board of regents, would not a reform be demanded in this particular?

Those of us who were not taught the proper administration of anesthetics while at school, and who realize our lack of education and skill and seek to inform ourselves in the art, must visit for this purpose the leading clinics of the country; for at what other place or institution can the knowledge be acquired? But the one who does so visit these clinics will do well if he is not deceived by the procedures of the anesthetists, who may there be witnessed doing their routine work. For I unhesitatingly state that during the past few years I have seen some of the most atrocious examples of this work in the clinics of surgeons of national and even international reputation that I have ever observed anywhere. I mention with much pleasure, however, two clinics where the technic in anesthesia seems ideal; I refer to the clinics of the Mayos of Rochester, and Crile of Cleveland.

The amount of information to be acquired in this art by a visit to either place, if you are accorded the privilege of observing their methods, is marvelous and well worth the time of any practitioner. If one has not the opportunity for such observation at these places, then some other instructive clinic should be substituted, or this particular work should be refused until the proposed anesthetist has properly prepared himself.

I purpose discussing the anesthetist only on the clinical side, and I state without fear of contradiction that those of us who are doing this line of work—I speak, of course, of the profession as a whole and do not include the few who have become proficient in the art—do not seem to realize or appreciate the responsibility or dangers, or our lack of the qualifications necessary, in order skilfully to perform the work we are undertaking. For surely, if we stop to think, we must know that the life, as well as the immediate comfort of the patient, is in our hands. In making these statements, I do not have in mind the desperate cases, which tax the skill of the trained anesthetist; nor yet the skill needful to determine the particular anesthetic indicated in some few pathologic conditions; or the method to be employed in particular cases. But I refer to the ordinary physician, administering an anesthetic as he is wont to do in his routine work, when the patient is considered to be in a safe condition to endure such procedures as are anticipated by the operator. Thus I believe the proper amount of care is not generally exercised in administering anesthetics, and I am constrained to say so, because my deductions are drawn from many observations, including my own work.

I may justly be criticized, and the question may be asked why I do not improve my methods, if I am convinced, as I have stated, of existing defects. My reply would be that it is easier to ask the question than to answer it with the proper justification. I admit that the fact that a patient can not pay for the skill of a trained anesthetist is no justification; neither is the fact that precedent directs that an interne must acquire the knowledge incident to the proper administration of anesthetics, as a matter of convenience, a justification; or that some associate is willing to serve in this capacity, although deficient in experience. And I might further emphasize the situation by saying that if we accept work necessitating an anesthetic, and serious complications follow its administration, there is no justification for us, unless a competent anesthetist was administering the anesthetic. For it goes without saying that all pa-

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* Read before the Saratoga County Medical Society, Feb. 14, 1909.

tients are entitled to, and should be given, the safest possible care when they place their lives in our hands, and how they may have it is the problem always confronting us. I am growing more and more to believe that only a few are adapted to this work; some will never be safe when serving in this capacity, regardless of opportunity or experience. Perhaps, like those in other special lines, anesthetists are "born, not made."

But to whom are we to trust our patients requiring an anesthetist, and what should be the qualifications of the one whom we shall select for this duty? The first part of this query seems easy to answer, and one might say, "Employ only a competent person." But how is the general practitioner, the occasional operator, or the small hospital always to secure a competent anesthetist? The only reply is that we should acknowledge our defects, if they exist as I have stated, and proceed to correct them by raising the standard of the whole profession in this art.

In opposition to this statement, it might be urged that the task, when the entire profession is considered, is too great, and it can never be accomplished. On the contrary, in my judgment, as soon as the necessity is appreciated by the profession at large, it will be met, as well and as easily as was the acquiring of aseptic methods in our surgical work five years ago, at which time it was shown that the safety of our patients demanded it.

The second part of the query is not difficult to answer, because a safe and proper technic is known; and it only remains for us to inform ourselves in regard to its details. Surely an anesthetist should be thoroughly familiar with, and trained in, the administering of the drug; he should know its action and peculiarities in different instances, and thus be able to recognize the earliest danger symptoms, and know how to meet them.

Watchfulness will prove a valuable prophylactic measure. The successful anesthetist will be an individual of keen perceptions, of good judgment, of a pleasing personality, and one capable of securing the confidence of the patient, and of controlling and arranging all details incident to the anesthesia, from the time he commences the anesthetic until the surgeon has finished.

Finally, an accurate knowledge of the relative sensitiveness of regional fields is imperative. No person who dislikes administering an anesthetic, or who has an irritable temperament, or gruff manners, and can not appear to be interested in the patient's welfare, or one who is habitually in a hurry or can not give his entire thought to the anesthesia, should ever be allowed or attempt to give one.

In every case in which an anesthetic is administered, there are certain imperative cardinal principles which should be scrupulously observed.

The anesthetist should never be in a hurry, as his apparent haste is apt to alarm the patient, while a few moments spent with the latter in quiet conversation is of the greatest benefit and invariably a time-saver. He should examine and determine for himself the condition of the lungs and heart, and if not previously informed should learn the condition of the urinary secretions. At this time he can also ascertain if there are any loose teeth in the mouth and determine if the patient is properly clothed. He should also explain that the sensation of choking produced by the anesthetic is a common one and is not attended with danger; and that if at this time the patient can control himself he will drop off to sleep quietly and easily.

Before commencing the anesthetic, emergency remedies should be at hand and ready for use. The time at which he should begin the anesthetic should be planned with the operator, so that the patient will not have to wait for the operator, as it is decidedly better and safer practice for the operator to wait for the patient.

The anesthetic to be used should be determined by the anesthetist and operator, and the method should be the one with which the individual is most familiar, and by which he can safely and easily produce the lightest anesthesia under which the operator may proceed. He should be in touch with the operator in the steps of the procedure that the sleep may be as light as possible and yet the operator not be delayed by too slight an anesthesia. A profound anesthesia is always dangerous and should be avoided if possible.

Once the anesthetist has begun, all unusual noise, bustle or excitement should cease. I do not mean that the usual preparations should not proceed, but they should be carried on in an orderly and methodical manner, that there may be no unusual noise to disturb the patient.

I am sure that there is a positive psychical advantage in the anesthetist's keeping up a conversation and talking to the patient from the time he starts the anesthetic; it reassures patients and quiets them and they will drop off to sleep more easily. Under no condition should he ever direct the patient to take a full long breath; and from the time the patient goes to sleep until the operation is finished he should be on the alert to the patient's condition, carefully watching the vital forces, as well as observing the earliest manifestations of approaching danger. I believe that the anesthetist should remain with the patient until he is safely in bed and in the hands of some one competent to determine postoperative complications.

In conclusion, I believe that the Anesthesia Commission of the American Medical Association should formulate specific directions for the guidance of the general practitioner, which should be an exact and concise description of the one best method to be generally followed, and this should represent the consensus of opinion. In making this statement, I am not unmindful of the value of the information contained in the report of this commission at Chicago in 1908, in which has been fully outlined the advantages of and contraindications against each of the several anesthetics, as well as the various devices employed in its administration. But I believe and know that the isolated general practitioner would very much appreciate and be greatly benefited by a direct expression concerning one method which he could adopt and feel secure that he was backed by such an authority. The directions should be concise, and yet in sufficient detail; possibly the advantages of such uniform procedure might extend to others who believe themselves competent. It would then only be necessary for the practitioner to differentiate in exceptional cases.

Resistance.—Dr. S. Flexner gives in his university lecture on "Public Health" at Columbia University (*Popular Science Monthly*, July, 1909) a clear exposition for intelligent laymen of the resources of the body for the resistance of disease and the artificial means of increasing them, developed by modern biologic research. The fact is clearly brought out that so far serum treatment has been successful chiefly in a prophylactic way because, when used with the disease well established, the destruction of a large number of bacteria is liable to set free an amount of poison with which the organism in unable to cope. This fact clearly appreciated by laymen, should give an added reason for attention to the public health.

THE ROENTGEN RAYS IN DENTISTRY *

G. E. PFAHLER, M.D.
PHILADELPHIA

That the Roentgen rays are useful in dentistry needs no argument before this Section, and that they should be more generally used I believe will be affirmed by all who have had experience with them. Most of the patients who are finally sent to the roentgenologist for examination have usually suffered months and even years with conditions that only needed a Roentgen examination to make the diagnosis clear and the line of treatment definite. As a matter of fact, most of the patients that come to me are those who have finally reached the consultant, who recognized the importance of an examination. Some of these patients had been tampered with for months or years by general practitioners of medicine or dentistry, and often teeth have been unnecessarily sacrificed. Surely the dentist with the greatest experience needs this exact method of diagnosis least; and yet, I repeat, nearly all my patients come from the consulting dental surgeon.

There is scarcely a case in dentistry in which some definite information can not be obtained, but it would be absurd to say that every patient should be examined with the Roentgen rays. It is, however, only fair to patients that every chronic or obscure case should have the benefit of this method of exact diagnosis. The skill of the modern dentist is simply marvelous and it is the most expert who welcome aid in diagnosis.

OBJECTIONS TO AN X-RAY EXAMINATION

To-day there can be no real objection to an *x*-ray examination. It is clean, aseptic, painless, and absolutely without danger in the hands of an expert. The reason for discussing this subject is the morbid fear that has often been aroused in the minds of patients by stories published in lay journals. Most of these stories have been true, but the facts have been misinterpreted and misapplied. That the rays have done damage no one can deny, but practically all damaging results occurred in the early days of roentgenography or in the hands of incompetent men.

During the past nine years in which I have been specially interested in dental roentgenography I have never had a harmful result following one of these examinations. To-day they are made with a few seconds' exposure, usually not over five, and never over thirty seconds. Any danger present to-day comes to the operator, who should do no work until he has learned to protect himself.

The fluoroscope has no place in dentistry. It is clumsy, inaccurate and dangerous to both the patient and operator. Lange[1] says:

> To the indiscriminate use of the fluoroscope many of the early errors in *x*-ray work can be directly traced. The image on the screen bears no comparison to the fine detail and distinctness which is obtained in the photographic plate or film.

A FEW HINTS IN TECHNIC

The rays should be confined to the area examined. They should be directed accurately to the point of greatest interest. This can be accomplished by means of the localizer which I described two years ago[2] before this Section. The same result can be fairly well accomplished when small cylinders are used. Secondary rays should be eliminated by means of diaphragms and cylinders.

When the disease or symptoms are confined to a few teeth or roots, and especially when affecting the upper jaw, the best results are obtained by placing a small film in the mouth. In this way the film is brought into almost direct contact with the teeth and the alveolar process, and the most beautiful detail is obtained. If, however, the bone, the accessory sinuses or large dental areas are to be studied, the roentgenograph is best obtained by the use of a plate placed outside of the mouth or face. Before this Section two years ago I described the technic by which every part of both the upper and the lower jaws could be clearly shown on the plate. Generally speaking, one should expect only two or three teeth clearly shown on either film or plate, and on this account the dentist should designate as nearly as possible the area to be examined.

The use of the plate is absolutely necessary in the study of the bone or the accessory sinuses, but it is also very desirable in searching for missing or unerupted teeth, in which instance a small film might not include the missing tooth and might thus lead to an error. Generally I use both film and plate and thus make one confirm or rectify the other.

The roentgenograph or *x*-ray picture is an accurate photographic record of the variations in density of the tissues traversed by the rays. The rays obey absolute physical laws, and when there is any error from their use it is due to the one who uses them or the one who interprets the plate, and not to the rays. The interpretation of the plate or film is much more difficult than the making of it. For the proper interpretation of the negative one should know the conditions under which the plate was made and the appearance of the normal tissues under such conditions; also, one should in a general way be familiar with the pathologic appearance of the tissues. I believe that the best results will be accomplished if the roentgenologist and the dentist confer on each difficult plate.

The degrees of density as measured by the rays are, in order, as follows: The greatest density is shown by metallic fillings, then by root fillings; next in density is the enamel, then the dentine, and finally the cancellous structure of the maxilla and alveolar process.

The value of a roentgenograph depends very much on a careful study of details, and therefore one of the first requisites is that it show rich detail. For observing the fine lines of the tooth-structure and of the alveolar process the negative or film itself must be used, and this must be good. Much is lost in any reproduction.

THE STUDY OF THE NEGATIVE

Next in importance for reading a roentgenograph is a careful lighting of the film or negative. A uniform white light is necessary. This white light can best be obtained by means of an illumination box, or by light reflected from a sheet of white paper, or by light reflected from the northern sky. The film or negative should be surrounded by a black surface so that the eye can be concentrated on the small point of study. If attention be given to these points, almost every one can appreciate the value of the examination. Very often good negatives are condemned by untrained men, because they see little or nothing when they hold the negatives before a gas or electric lamp. This gives a yellow light and the beautiful detail is thus lost.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] Lange: Lancet-Clinic, May 16, 1908.

[2] Pfahler, G. E.: The Roentgen Rays in Oral Surgery, The Journal A. M. A., 1908, l, 432.

If studied by correct methods, the ordinary film should show that the root is smooth in contour, although it may be variously curved, and that the cancellated alveolus hugs the tooth closely. The root canal can usually be easily recognized and is smooth in outline. The dentine is normally uniform in density. The alveolar process is uniformly mottled and shows the beautiful cancellous network.

ROOTS, ROOT-ABSCESSES, EXOSTOSES, AND PULP STONES

Now, what are the pathologic appearances and conditions that may be observed? Points of decay or abscess within the root itself show an interrupting disturbance in the dentine indicated by a light area.

Incomplete filling of the root canal may be shown. A pericementitis is shown by a light space between the root surface and the alveolus, and the root surface is roughened. Abscesses about the tip of the root or in the alveolus are likewise recognized by light areas in which no cancellous structure can be made out.

Many of the cases coming before the dentist present symptoms of obscure origin; sometimes sinuses exist whose source is a riddle, and these may persist for a long time. Probing seems to be attended with some danger of spreading the infection to healthy tissues. Sometimes these abscesses follow dental work, either crowning or filling. At other times inflammation may exist simultaneously with the dental work, but in no way connected with it. The dentist will feel much relieved when it can be clearly demonstrated that his work is not responsible for the inflammation and pain. Schamberg says: "It has become an invariable rule with me to take a radiograph of every chronic abscess before performing any operation, and occasionally I take a second or third radiograph to note the progress of the case."

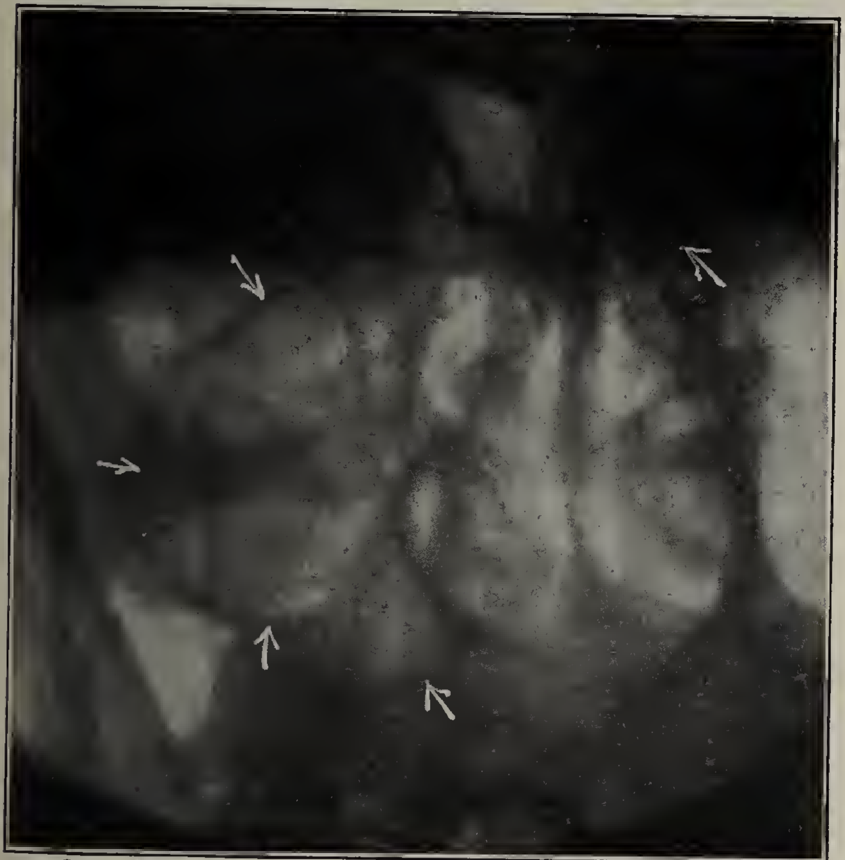

Fig. 1.—Pus in right antrum. See clear left antrum. Case of Drs. Gleason and Starr.

When men like Cryer, whose wide experience and skill in the use of the probe is recognized by all, make constant use of the rays as a diagnostic agent, its superiority over other methods can not be questioned.

The roentgenograph will make plain whether the root or only the alveolar process is involved, and consequently help to decide whether the abscess should be drained through the pulp canal or through the alveolus, and if through the alveolus whether a simple curettage would suffice or whether apical excision be necessary to eradicate the infection. Furthermore, the roentgenograph should show how much of the root should be removed. Dray says:

> Much untold suffering could be avoided, many guilty blunders obviated, many blessings bestowed on the dentist by the use, in the hands of the expert, of the *x*-rays. The dentist who fails to use this wonderful adjunct of modern dental diagnosis and therapeutic agency must go through life with a blunt or troubled conscience.

Lange asks:

> Would it be ultrascientific to suggest the aid of the skiagraph in all operations on the root canal? In the various manipulations on the root canal the dental surgeon is working more or less in the dark. In cleaning out such a root canal, owing to varying shapes and lengths of roots, it may be impossible to determine whether or not the apex of the root has been reached. By inserting a fine broach into the canal and skiagraphing the tooth with the broach in position this point may be cleared up. In drilling out a root canal for the insertion of a pin or post for anchorage, this same procedure will tell whether you are drilling in the right direction and whether deep enough or not.

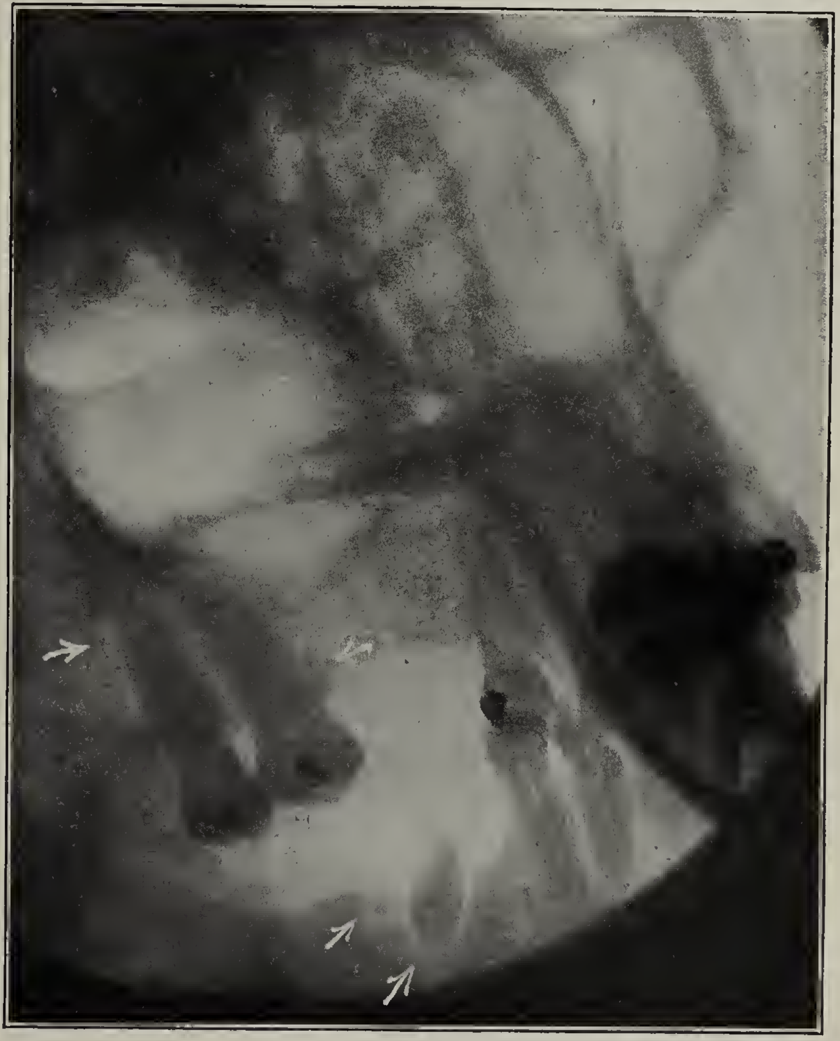

Fig. 2.—Shows cause of pus in Figure 1. Abscess about root, with pericementitis.

In several cases in which the roots were curved, I have found that the drilling extended through the side of the tooth and into the alveolar process instead of to the tip of the root canal.

Exostoses of the roots seem to be rather frequent. They cause much suffering and often explain failures in removing roots in the process of extraction.

Whorls (dense areas of bone) have been found by Cryer to explain some of the obscure cases of neuralgia.

Pulp-stones, by no means rare, cause much suffering and may be demonstrated in the roentgenographs as shown in one of my slides.

UNERUPTED, IMPACTED, SUPERNUMERARY, AND ENTIRE ABSENCE OF TEETH

One of the most important uses of the rays is the detection of unerupted, impacted, supernumerary teeth and the absence of those that should normally exist. The development and eruption of the teeth can be followed from the very beginning, and if the rays are used early the orthodontist can surely correct more easily the deformities that occur. If one follows the development of a tooth from its very incipiency, one first detects the formation of the enamel cusps, then the crown; later the root of the complete tooth with its pulp canals.

Unerupted teeth sometimes assume such freakish positions that it seems unwise to wait and guess, when we have at hand a painless and accurate means of diagnosis. Much suffering and annoyance may thus be avoided.

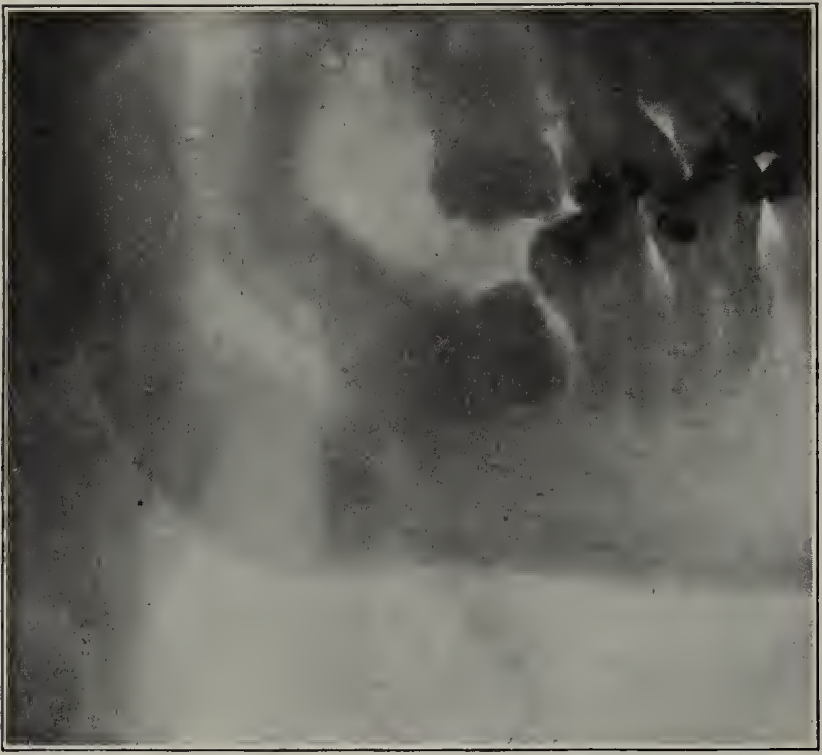

Fig. 3.—Impacted third molar. Dr. Dray's case.

Impacted teeth are rather common; the trouble affects especially the third molar, though any of the teeth may be affected. The tooth may even be inverted and be growing in the opposite direction to the normal position. These impactions usually cause great suffering and often the destruction of adjoining teeth, leading to abscess formation with surrounding inflammations, etc., which interfere with mastication and deglutition and lead to serious conditions. These impactions are often the cause of obstinate and persistent neuralgias.

All orthodontists agree that the deciduous teeth are often sacrificed too early, leading to undevelopment or later deformities of the jaws. On the other hand, a deciduous tooth often interferes with the eruption of the permanent, and causes much unnecessary suffering. What other accurate guide have we in the control and observation of erupting teeth?

THE MAXILLA AND THE ACCESSORY SINUSES

The affections of the maxilla and the accessory sinuses are generally brought to the attention of the general medical or dental practitioner. If he fails to realize the possibility of disease in these areas and fails to use the roentgenograph as an aid in diagnosis, much valuable time will be lost and much unnecessary suffering will result.

In the lower jaw we must consider especially fractures, necrosis, tumor formation, and cystic degeneration. The location of a fracture is indicated by a transparent line, usually jagged in outline. Its union is indicated by the gradual disappearance of this line and by the formation of callus. Non-union is indicated by the persistence of and widening of this line and by the formation of sinuses, and often by the formation of excessive but unhealthy callus. The roentgenograph will thus aid materially in deciding on the line of treatment and especially determining whether the interdental splint should be used, or whether the case calls for the wiring procedure. If wiring be decided on the roentgenograph will indicate the best points for the drill holes. Not infrequently these fractures will be found to have been preceded by abscess formation at that location. The knowledge of the presence of an abscess will surely be important in deciding the line of treatment.

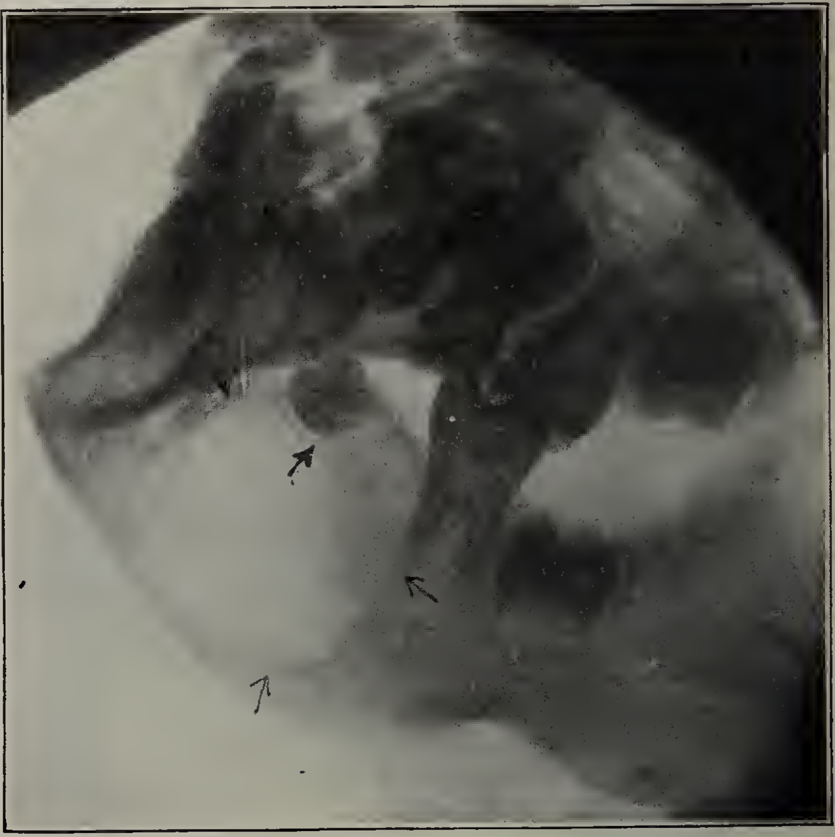

Fig. 4.—Bone cyst. See inversion of erupting teeth. Dr. Schamberg's case.

Necrosis is indicated by a disturbance in the fine network of the cancellous structure of the bone, usually consisting in increased transparency due to destruction of the bony elements.

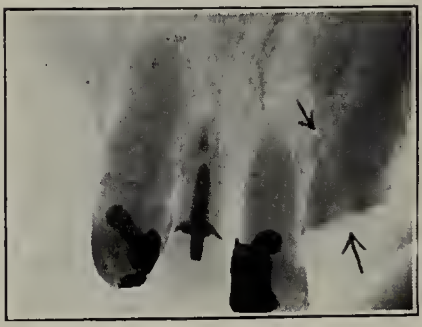

Fig. 5.—Curved incisor, showing hole drilled through the side of the tooth. Dr. Ickes' case.

Tumors of the lower maxilla are shown by a destructive disturbance in the cancellous structure of the bone, but it is less definitely outlined than in necrosis and abscess formation, fading more gradually into the healthy bone, and is often associated with the formation of new tissue. Carcinoma seems to cause more destruction of bone and less formation of new tissue than sarcoma. Most of the tumors seem to be sarcomata and the rays will assist in determining whether only the periosteum or the bone itself is involved. The extent of the disease can also be determined and thus material assistance be secured in outlining the treatment.

Cystic degeneration in the bone is comparatively rare, but it should be borne in mind in obscure cases and it can only be accurately diagnosed by means of the rays.

If the upper jaw is involved by necrosis or the formation of a tumor, its demonstration is more difficult than the same in the lower mandible. Affections of the antrum as well as of the other accessory sinuses leading to the accumulation of pus or tumor formation can be nicely demonstrated and often the cause can be shown by the use of the *x*-ray. It is well to know whether the pus in the antrum is due to a decayed tooth or not. The *x*-ray will also show at what point the antrum should be drained; the most dependent portion of the antrum can be determined and the best drainage obtained.

THERAPEUTIC APPLICATION OF THE RAYS

The application of the rays therapeutically has been less extensive, though there have been sufficient scattered reports of good results to justify its consideration in obstinate cases and when other methods have failed.

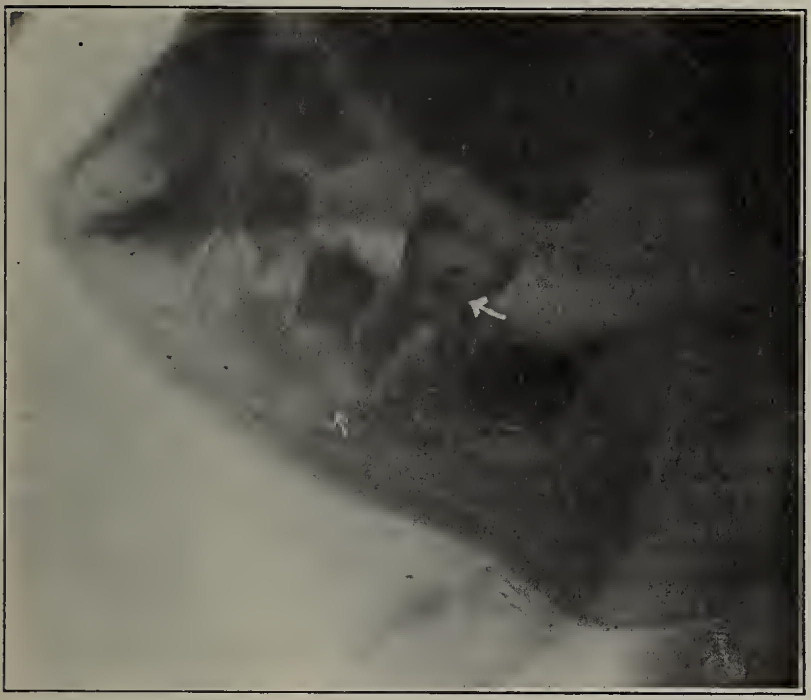

Fig. 6.—Showing pulp stone in crown, and abscesses at the root. Dr. Schamberg's case.

I have myself seen marvelous results in the treatment of sarcoma of the bones and sinuses of the face. I have seen pyorrhea of the antrum that resisted all other forms of treatment, including repeated curettement, get well under the influence of the rays. Obstinate cases of idiopathic neuralgia will sometimes yield quickly. I have seen good results in old and obstinate cases of pyorrhea alveolaris. Dr. Weston A. Price, of Cleveland, has made the best reports[3] on this subject.

CONCLUSIONS

1. There should be a more general use of this valuable diagnostic and therapeutic agent in dentistry.
2. It is without danger in the hands of an expert.
3. It is a painless, aseptic and accurate means of diagnosis.
4. All parts of the jaws can be shown on the plate. The finest details of the tooth structure and alveolar process can be best obtained by using a film within the mouth.
5. This method of diagnosis should be used in obscure cases, especially in chronic abscesses, the examination of roots and pulp canal fillings, etc., of offending teeth with persistent non-yielding pathologic conditions.

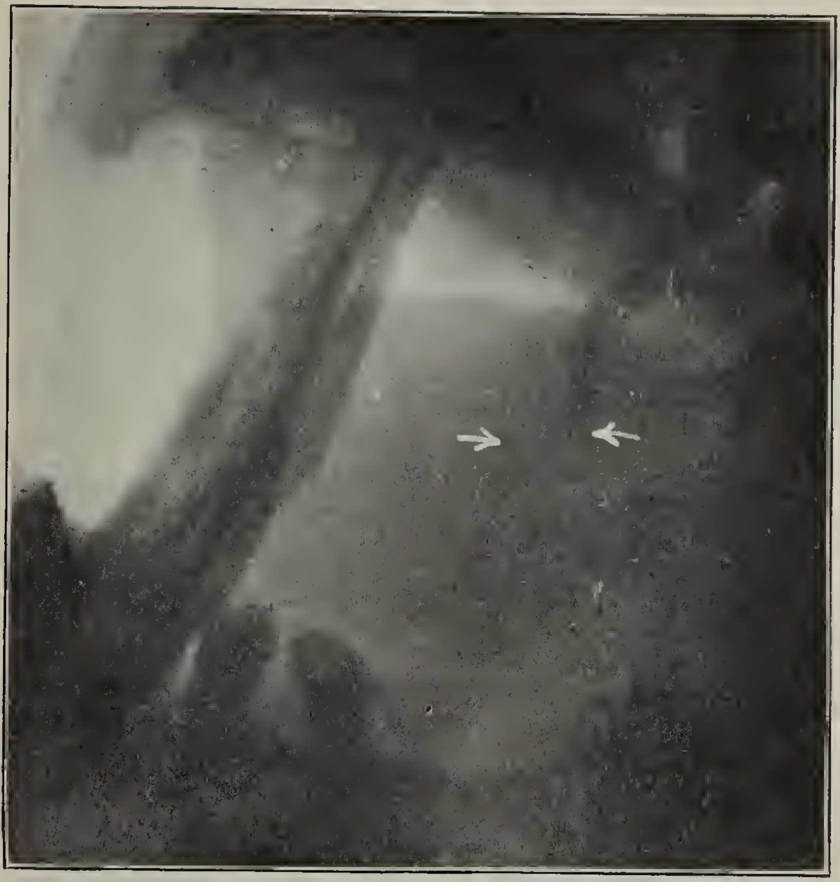

Fig. 7.—Fracture of styloid process due to pressure by dentist back of the angle of the jaw. Dr. Laplace's case.

6. The rays are particularly useful in diagnosing unerupted and impacted teeth, root abscesses and alveolar abscesses, exostoses, tumors and necrosis and, last but not least, pulp stones.

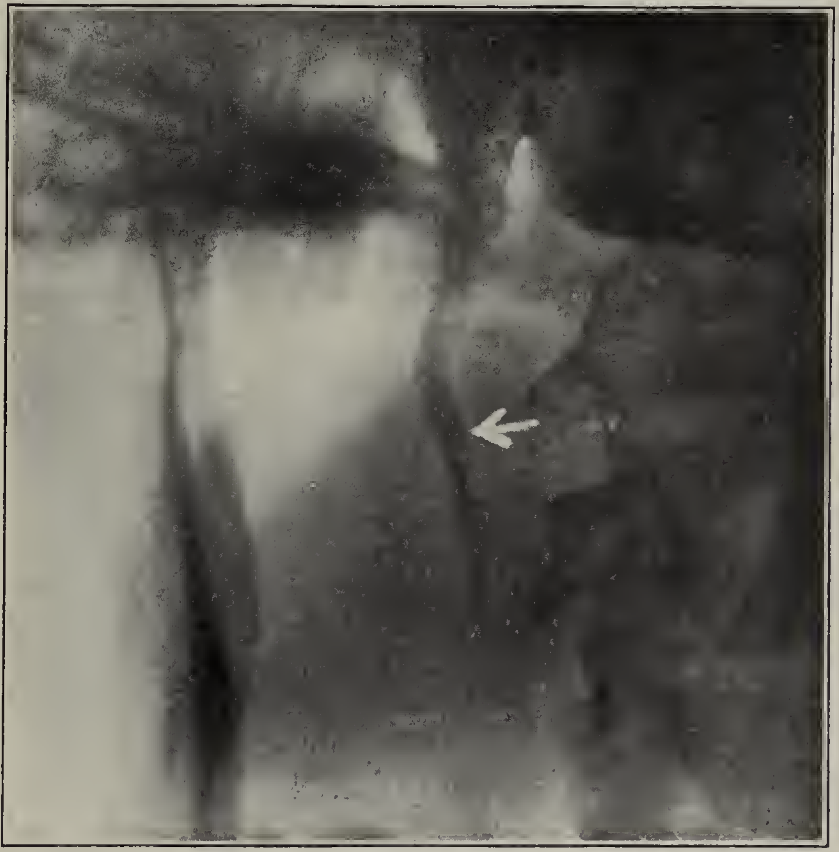

Fig. 8.—Same case as Figure 7. Healthy side. Shows abnormally long styloid process.

Finally, I desire to express my appreciation of the courtesy of Drs. Cryer, Dray, Schamberg, Cameron, Warren, Faught, Mershon, Babcock, Cupid, Bernds and Gray and others in referring these cases.

1321 Spruce Street.

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[3] Cleveland Dental Society, Jan. 4, 1904.

ABSTRACT OF DISCUSSION

Dr. Sidney Lange, Cincinnati: The picture of the pulp stone in the pulp chamber was of especial interest to me. I have seen a number of patients with so-called facial neuralgia (for want of a better term) who had gone from dental surgeon to rhinologist and back again without getting relief. In this class of cases the *x*-ray will often indicate the source of the trouble and in not an inconsiderable number I believe the cause will be found to be a pulp stone irritating the nerve endings. The aid which the *x*-ray lends will certainly be most grateful to these patients. Another method in *x*-ray diagnosis has served me in good stead and that is the tracing of sinuses and areas of necrosis by injecting a bismuth suspension and then skiagraphing. This method is especially valuable in outlining areas of necrosis between the inner and outer plates of the alveolar processes. The picture of the fractured styloid process was a revelation to me. Attention is now being directed to injuries of this bony process and the value of the *x*-ray in this connection is inestimable.

I recall an unusually interesting case of a type not touched on by Dr. Pfahler in his demonstration. The case was one of intra-alveolar fracture of the root of the tooth from a blow on the crown. The patient complained of soreness and pain on pressure yet the tooth was apparently sound and firm. The *x*-ray revealed a transverse fracture of the root not far from its apex.

Dr. Arthur R. Dray, Philadelphia: Recently a well-known dentist of Philadelphia, talking on the subject of *x*-ray in dentistry, said something as follows: "I have been considering the use of the *x*-ray in dentistry for several years, and have come to the conclusion after an exhaustive study, that it is useless." The truth is that the *x*-ray is very valuable in dentistry, as Dr. Pfahler has most conclusively shown. First, in detection of undeveloped teeth; then in detection of impacted teeth with abscesses. The pulp stone may be detected by the *x*-ray—the neuralgic symptoms produced by other conditions are so similar to those produced by pulp stones that only the *x*-ray can determine the true cause when it is pulp stone that is the factor. The results of *x*-ray treatment in pyorrhea have been remarkable. Antral troubles, exostoses, erosion of the roots, areas of necrosis, cysts, different tumors, fractures of the jaw and the roots of teeth, can all be wonderfully cleared up by the use of the *x*-ray. In some cases—sarcomata, carcinomata, fractures, etc.—we are absolutely dependent on the *x*-ray; and last, but not least, in detecting perforation of roots and lost portions of the instruments left behind by the absent-minded dentist. We need the *x*-ray to help us to progress with modern science.

Dr. Charles K. Teter, Cleveland: I can not understand how any dentist of to-day could state that the *x*-ray is of no use in dentistry. It would be a good thing for many of the dentists if they could have the *x*-ray thrown on their work after they are through with it, especially in treating root canals. Not long ago I heard a dentist say there was not a root he could not fill to the apex. We arranged an experiment where the roots were placed in plaster and given to this dentist to fill, which was an easier proposition than it would have been in the mouth. I am not in a position to give the absolute number of teeth that were filled, but less than a fourth of the number were filled to the apex. If they could all have the *x*-ray thrown on their work afterward they would know the exact conditions. Another point: the value of the *x*-ray depends to a large extent on the manner in which the pictures are interpreted; it takes a trained man to interpret them correctly. The average man can not do it.

Dr. Arthur Zentler, New York City: Dr. William B. Dunning read a paper some time ago before the Institute of Stomatology in New York, describing a new method of filling root canals with a combination of paraform, paraffin and zinc oxid. This method, which undoubtedly is known to a good many of you, consists in melting this solid mass at the orifice of the root canals, introducing it by capillary attraction up to the apex. The question is raised whether capillary attraction will carry the melted substance to the extreme end of the roots, in which case after solidifying it would act as a permanent, good root canal filling. There is no other way of proving conclusively that it reaches the end of the root canal except by the radiograph, which in this, as in other cases mentioned by the essayist and other speakers, remains the decisive test.

Dr. Stewart L. McCurdy, Pittsburg: I have been impressed with the value of the *x*-ray as a method of making diagnosis in every branch of surgery for a great many years, and have been using it constantly. The question of *x*-ray interpretation referred to by Dr. Teter is important. It would be impossible for a man who did not know the normal anatomy of the face to interpret these pictures properly. It is only by constant and repeated readings, with the normal skull present, that these interpretations can be made correctly. The method of focusing the *x*-ray at various angles is of value in giving us a view of the entire field. The constant presentation of the subject by the men who believe in it and a campaign of education among the dentists is the only thing that will bring the *x*-ray to its proper plane of usefulness.

Dr. Arthur R. Dray, Philadelphia: There is one phase of the subject I would like to ask Dr. Pfahler to lay stress on, viz.: the all-important fact that it depends on the skill of the one who manipulates the *x*-ray apparatus whether we will discard it or accept it. This was brought to my attention forcibly some time ago. A patient was brought to me for treatment who had been told by his medical adviser that he was suffering from a malignant growth of the inferior maxillary bone. I requested an *x*-ray examination to be made by Dr. Pfahler. It showed what I had suspected, an encysted unerupted tooth. The patient was about 70 years of age and gave a history of the teeth having been removed years previously, thus throwing the medical man off his guard.

I found out months afterward in talking with this patient that an *x*-ray picture had been taken of this same case, before Dr. Pfahler examined him, which did not show anything of the encysted tooth so clearly demonstrated in the second picture.

Dr. G. E. Pfahler, Philadelphia: The only safe way is to have the work done by a man who is thoroughly competent. I think that poor work in this line is worse than none at all. The dentist and the *x*-ray man should work together. The dentist should give all the information he can as to the probable location of the lesion. After the picture has been taken, I always try to have a conference with the dentist, either by sending in my report with the plate and discussing it afterward, or by meeting and conferring personally. While many negatives are clear in diagnosis and could be read by any one, others are obscure and could only be safely interpreted by conference.

RECONSTRUCTION OF THE BILE DUCTS *

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NEW YORK

This paper is an outgrowth from one branch of work done for Dr. J. W. D. Maury (Associate in charge of Surgical Laboratory) in his search for the cause of death in high intestinal obstruction.

The available literature fails to reveal a method for the construction of an intra-abdominal sinus for biliary drainage. This procedure depends on the use of a rubber tube, at one end of which a rubber sponge, or an ordinary surgical sponge, is securely attached (Fig. 1). The tube should be approximately the size of the common bile duct, and the diameter of the sponge should not be greater than one-half the diameter of the duodenal lumen. The length of the tube depends on the length of the biliary passage to be reconstructed.

The operative technic followed in this experimental work is roughly as follows: The common bile duct is exposed, ligated and cut across just above the ligature. Two plain catgut No. 1 sutures are introduced in the opposite edges of the gaping duct, and in the rubber tube, in such a manner that when the sutures are tied down, the knots will be on opposite surfaces of the duct, and the tube drawn within the lumen of the duct a distance of approximately 1 cm. (Fig. 2). The tube is then applied to the anterior surface of the duodenum (Fig. 4), and at approximately every inch is sutured to the duodenal wall with fine catgut. At a point about opposite the ampulla of Vater, an incision is made in the duodenum, just large enough to allow the insertion of the sponge and attached tube into the lumen of the intestine. The sponge is shoved down inside the intestine, and the opening in the duodenum is sufficiently repaired so that the cut edges snugly encircle the tube. At this point—where the tube penetrates the intestinal wall—a No. 1 plain catgut suture is inserted, taking a good bite of duodenum and a small bite of the tube, so as not to encroach on the lumen of the tube. This suture does two things—it prevents the peristaltic pull on the sponge from tearing the two duct sutures free, and it minimizes biliary colic, as has been demonstrated in dogs. The duodenal walls are then sutured over the tube so that for about 2 cm. before the tube penetrates into the intestine, it runs in a canal made by overlapped duodenum. The great omentum is then drawn up, and a suitable area selected with which to cover the exposed portion of the tube. This area is traumatized by slightly drawing a dry sponge over it a few times, and similar friction is applied to the duodenum and gastro-hepatic omentum on either side of the tube. The omentum is then placed so as to cover the tube and extend beyond it a centimeter or two in all directions, and is held in position by several fine catgut sutures (Fig. 5).

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* Read before the Surgical Section of the Academy of Medicine, New York City, and before the Surgical Association of the Alumni of the College of Physicians and Surgeons.

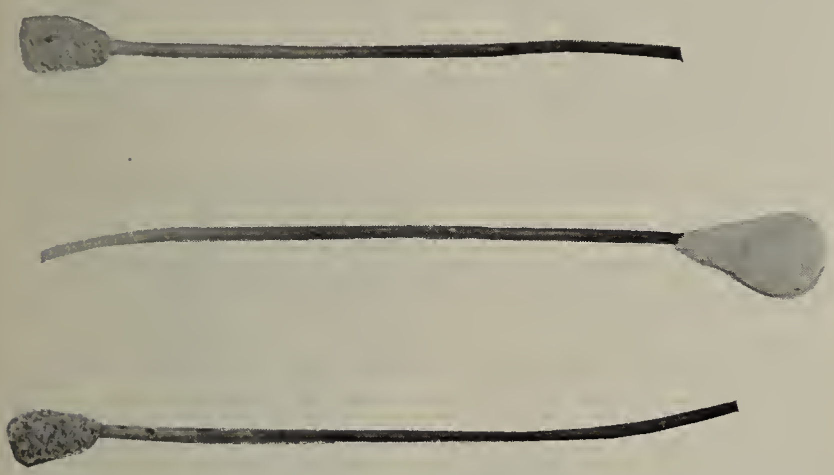

Fig. 1.—Types of tubes and sponges used in reconstructing bile ducts.

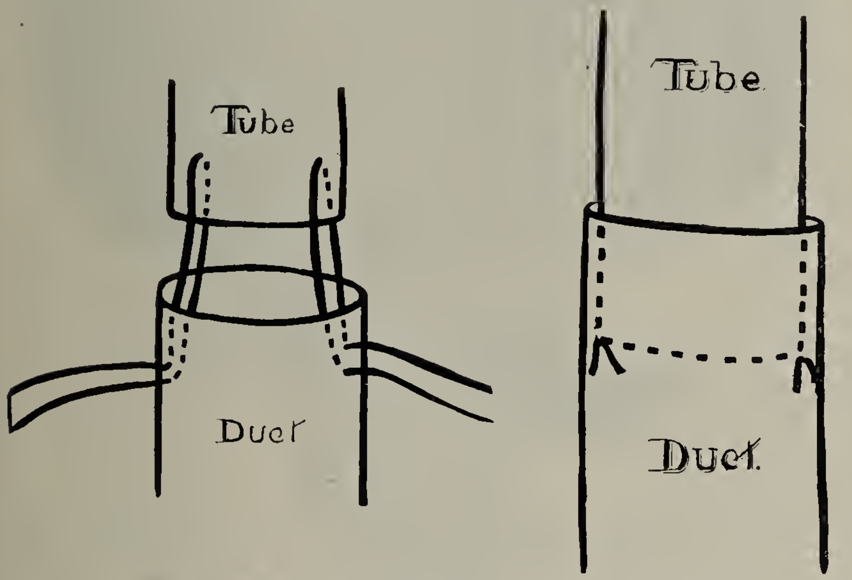

Fig. 2.—Method of suturing tube into duct.

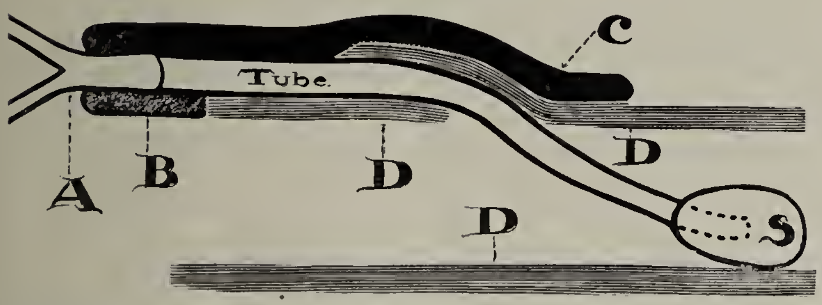

Fig. 3.—Diagram showing introduction of tube and sponge into duodenum. A, hepatic duct; B, gastrohepatic omentum; C, great omentum; D, duodenal walls; S, sponge.

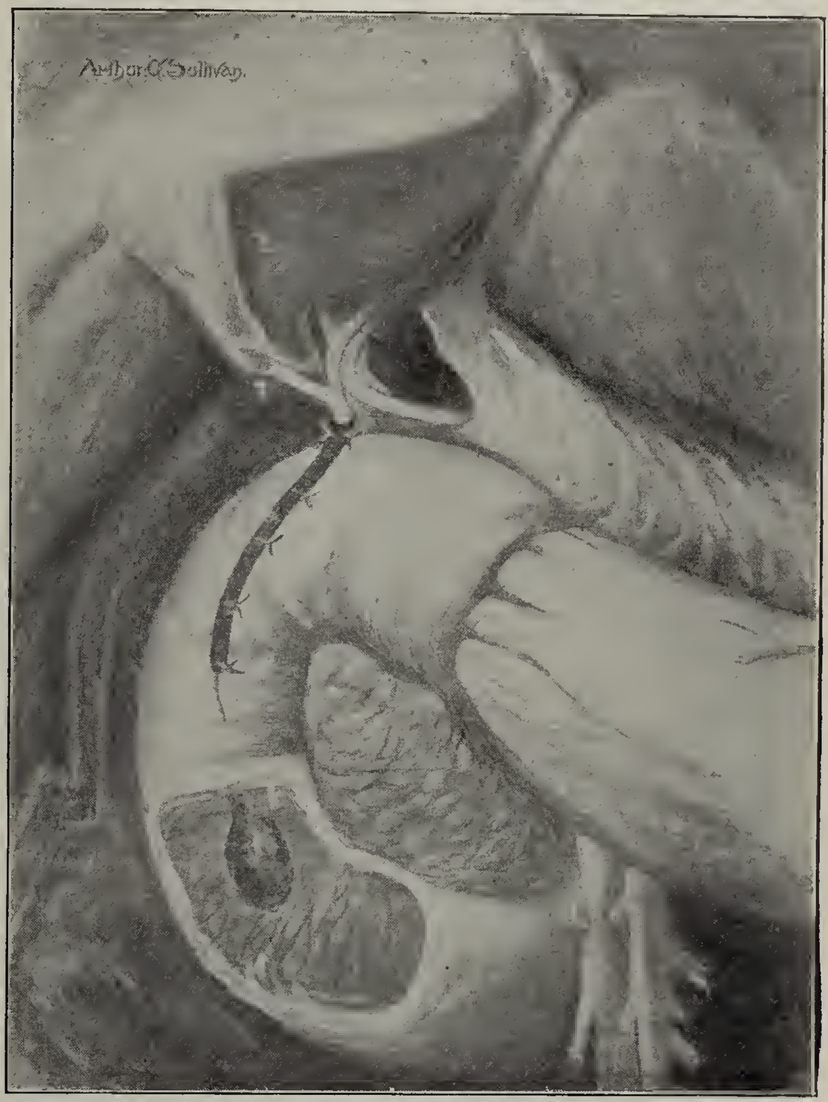

Fig. 4.—Tube sutured to duodenal walls; adapted from one of W. J. Mayo's drawings.

Eight dogs have been operated on in this manner, and the following facts observed:

Dog 1 was operated on eleven weeks ago, and a plain tube, without sponge attached, was used. Fifteen days later his abdomen was again opened, and the tube drawn out through a buttonhole incision in the duodenum. The ease with which the tube slipped out suggested that the peristaltic action of the intestine could well supplant the second operative procedures.

Dog 2 was operated on nine weeks ago, and a tube with a rubber sponge tipped end was inserted. Owing to my anxiety to have the peristalsis fulfil anticipation, I used very fine plain catgut throughout (No. 00), with the result that tube and sponge were passed sixty hours later. No harm resulted, however.

Dog 3 was operated on seven weeks ago. The rubber sponge was passed two days later, it having torn from the tube because of faulty ligation. Consequently the tube itself was removed several days afterward, through very small incisions in the abdominal wall and duodenum, as in Dog 1.

Dog 4 had a tube and rubber sponge inserted in him five weeks ago, and passed both intact seven days later.

It occurred to me that a rubber sponge might not be procurable in case of emergency, and consequently I took a surgical sponge, stitched it so that it would not unfold, sutured it to a rubber tube, and introduced it into the next subject.

Dog 5 had the surgical sponge and rubber tube inserted, and eight days later tube and sponge were passed.

Dogs 6 and 7 were operated on three weeks ago, and *Dog 8* two weeks ago. Cholecystectomy was done in all three, and hepaticus was connected with the duodenum, the usual technic being employed. Dog 6 passed his tube on the eighth day, Dog 7 on the sixth day and Dog 8 was killed by ether a few days after his operation to secure a specimen (Fig. 6), which shows the tube *in situ*, connecting hepaticus and duodenum, with the gall bladder removed.

Another specimen (Fig. 7) was taken from Dog 5 two days after he passed the gauze sponge and tube. From the latter specimen several microscopic sections were taken and the pathologist reported that the mucosa had grown upward from the duodenum, and downward from the duct, into the new formed tube. At its middle part the walls are composed of peritoneal tissue. There is absolutely no evidence of inflammatory deposit. It will be noted, as shown in Figure 3, that the new-formed tube is made up of peritoneal tissue in its entire extent.

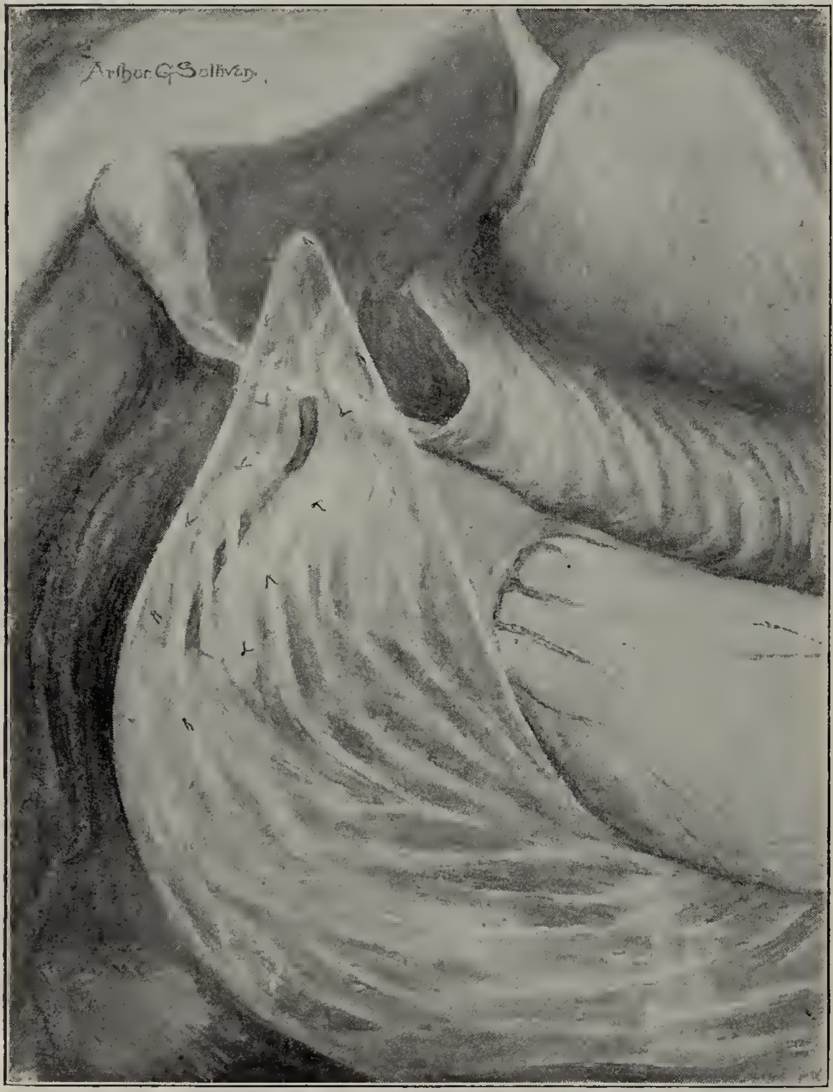

Fig. 5.—Great omentum drawn up and sutured to form anterior wall of reconstructed passage.

Nothing which could be called unusual postoperative care was given these animals. Their regular diet was allowed them within thirty hours, and yet all, save those from which specimens were removed, are delivering bile in normal amounts, to say nothing of being alive, well, and in the best of spirits. Careful watch was kept of all feces and no sign of acholia appeared, nor was there a symptom of leakage or peritonitis.

On analyzing the constituent steps in this work, it is at once apparent that the operation is merely a combination of more or less accepted technical details. The drainage of the hepatic duct by rubber tube, set forth by Abbe, is recognized. Witzel's method of gastrostomy is roughly similar to my method of implanting the tube in the duodenum. Kehr has successfully used gastric wall to bridge over a deficiency in the wall of the common duct; and the use of omental grafts to cover such apertures is a fairly common proceeding.

For the benefit of those who might feel inclined to perform this experiment on dogs, I wish to emphasize the necessary steps.

1. It is essential that the tube be placed within the duct, and not in the reverse order.
2. The duodenal wall must be folded over the tube for a distance of 2 cm. before it plunges into the lumen of the intestine.
3. The restraining stitch, which temporarily prevents traction on the upper portion of the tube, should be put in.
4. The tissues forming the walls of the tube must be lightly traumatized.
5. The sponge should not occupy more than half the lumen of the intestine and especially when a gauze sponge is used.
6. In case cholecystectomy is done, the gall bladder fossa should be obliterated by stitching the lobes of the liver together, thus avoiding hemorrhage, which is difficult to control in dogs.

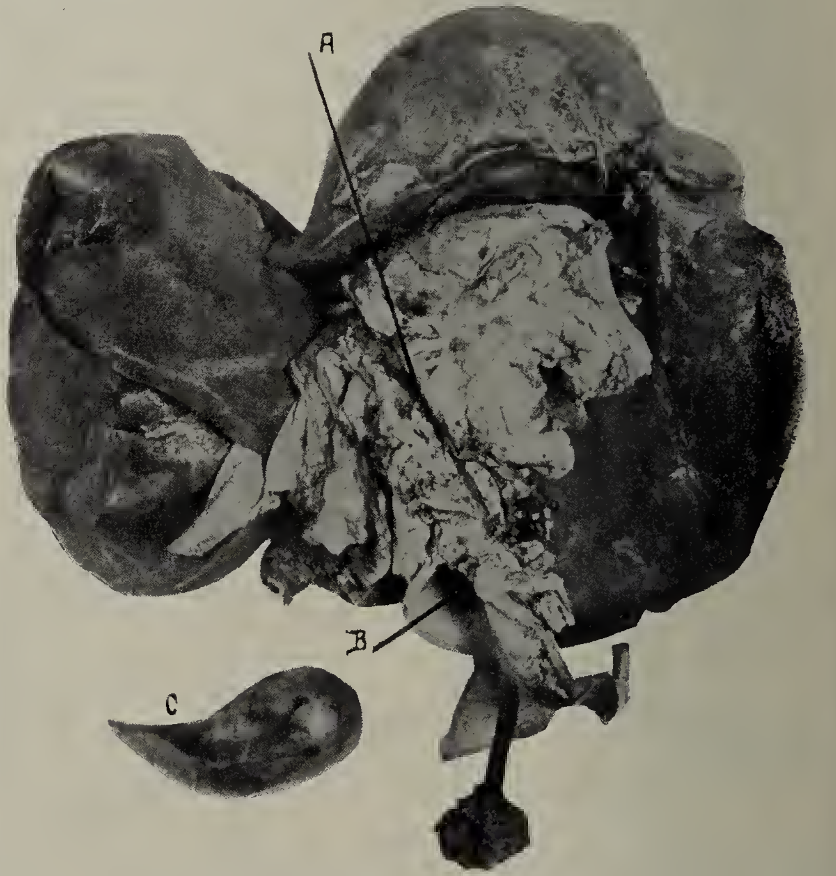

Fig. 6.—Specimen from Dog 8. A, omentum cut away to expose tube; B, duodenal lumen; C, gall bladder.

In the last two operations, the sponge which was inserted was compressed as much as possible, by taking several turns of No. 3 plain catgut around it. My experience has been that catgut in the lumen of the dog's duodenum is disintegrated about three times as rapidly as that placed in the body tissues. So by using the heavier gut, with which to compress the sponge, one very greatly diminishes the peristaltic tug on the tube for a few days after the operation, until finally, the sponge breaks its bonds, expands, and is then ready to do active work at approximately the same time that the catgut holding the tube in the duct is absorbed. The advantage of having the tube undisturbed the first few days is obvious. I have one dog which was operated on 104 days ago. At that time I put a tube in him with the idea of keeping it *in situ* permanently. He is in the best of health and no signs of discomfort from the tube are apparent.

This is the "reconstruction of the bile ducts," an operation which I believe involves a new surgical principle. If the dogs survive a month or two longer without untoward symptoms and present the same, or more favorable pathological findings, then as now, I advocate this technic in persons requiring artificial connection between the biliary passages and the intestine.

If a single hepatic duct, or the common hepatic duct, needs repair, a small tube, properly fenestrated so that it will not occlude the biliary tributaries, or the duct of Wirsung, might be passed from within the duodenum through the ampulla of Vater, up the common duct to the point where reconstruction is desired. This would more closely approximate normal conditions.

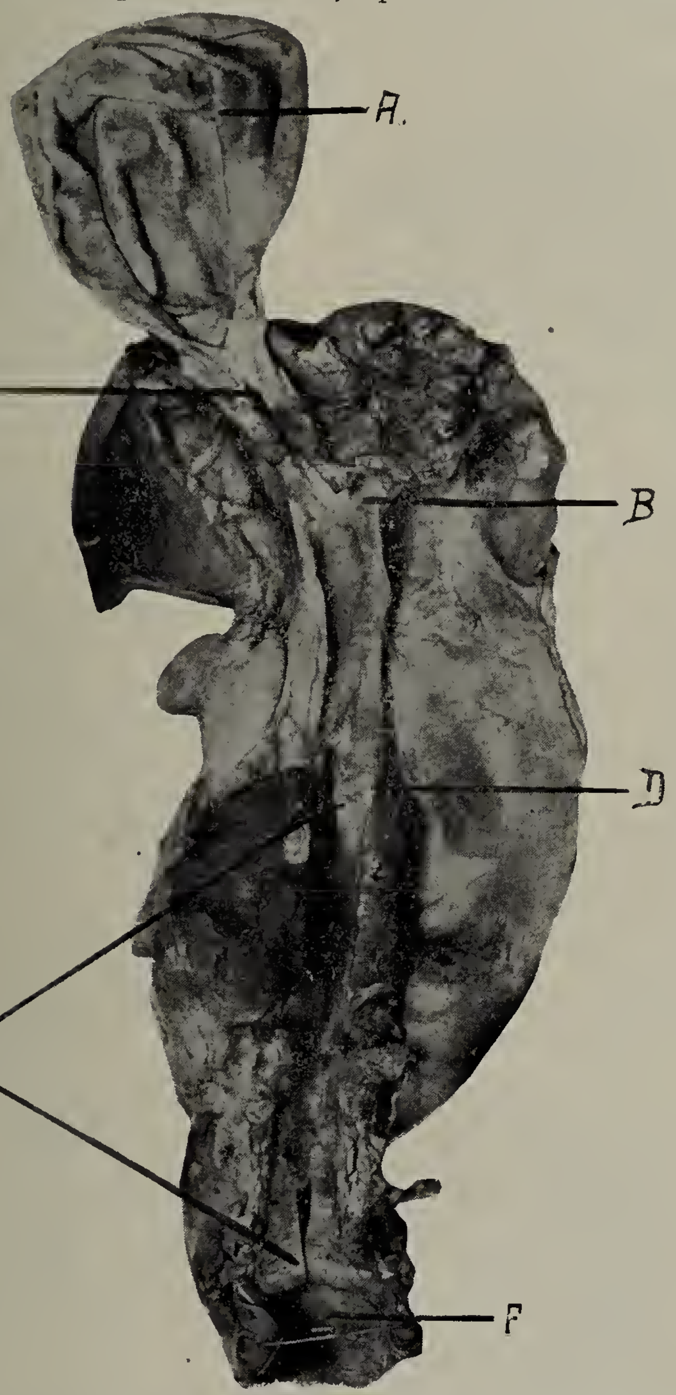

Fig. 7.—Specimen from Dog 5.—The aperture in the floor of the reconstructed duct, just as it enters the duodenum, is the result of a section taken for microscopic examination. A, interior of gall bladder; B, hepaticus; C, cysticus; D, end of common bile duct; E, reconstructed duct; F, duodenal lumen.

SUMMARY

1. There is no technic for duct reconstruction in general use.

2. In the operation described the reconstructed canal is made of formed tissues, rather than inflammatory deposits.

3. Both ends are protected by mucosa.

4. There was no mortality in eight cases.

I am much indebted to Drs. H. H. Janeway and J. W. D. Maury for their kind aid.

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EXPERIENCE IN THE EXPRESSION OF CATARACTS IN THE CAPSULE BY THE SMITH METHOD *

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When Major Smith's article[1] on the extraction of cataract within the capsule by external manipulation appeared I became interested in the possibilities of the method and gave it such trial as I was capable of at that time in twenty-two cases. These were hastily brought together and not selected. The results were thought to be not satisfactory at the time and were so reported,[2] but further observation has shown that a very fair percentage of the patients did well. In the beginning it should be stated that I have only included in these later statistics cases of operation in which I have supervised the after-treatment and determined the refraction.

Of all the operations which have been proposed for the removal of cataract, no one of them and no combination of them offers such a complete and satisfactory disposition of the capsule, which is the beginning, middle and end of most of our after-troubles, as extraction within the capsule.[3] This is so evident that if any added risk is incurred in doing the operation it seems more than offset by what is gained in the comparative freedom from the complications which are liable to follow the regular operation. Regarding these complications, Knapp long ago called attention to the fact that iridectomy alone was a comparatively safe procedure, but that opening the capsule and extracting the lens added other elements of danger to the traumatism of the iridectomy, and changed the condition to one of danger to the eye in a certain proportion of cases. These elements of danger consisted in the mechanical irritation of the lens débris to the cut and torn surface of the iris.[4] Hess and Schirmer regard this irritation as due to infection.[5] "It seems more than probable that the inflammation is due to the chemically altered lens substance which acts as an irritant, but whether it is trauma, infection or chemical irritation, it is generally acknowledged that the postoperative dangers—iritis, cyclitis or iridocyclitis—are in some manner attributable to the cortical débris."[6] If the true explanation of the causes of these postoperative inflammations is to be found in either of these theories, such sequelæ should not follow delivery in the capsule, and experience shows that delivery in the capsule furnishes a high degree of immunity from them. The combined operation, in the hands of the best operators of this and other countries in 1,032 operations, according to Ring, furnished a loss of vitreous in 7.23 per cent., iritis in 13.15 per cent., incarceration of iris in 4.32 per cent., and discission was required in 26.61 per cent.[7] According to Smith's statistics three years ago, in 2,616 operations he only had 6.8 per cent. of loss of vitreous and 0.3 per cent. of iritis in 2,494 operations when the lens came

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Arch. Ophth., June, 1906.

[2] Ophthalmology, January, 1907.

[3] In connection with this statement the following articles will be found of interest: Capsular Complications After Cataract Operations, Brit. Med. Jour., 1905, p. 433; Knapp: The Lens Capsule in the Operation of Cataract, Tr. Am. Acad. Ophth. and Oto-Laryngol., 1905, p. 4.

[4] Arch. Ophth., xii, 98.

[5] Wooten, in Claiborne's Cataract Symposium, p. 163-164.

[6] Stricken: Innutrition of the Lens in its Relation to Cataract Formation, Ann. Ophth., viii, No. 4.

[7] Med. Rec., Feb. 23, 1905.

away whole, but when the capsule was opened intentionally or ruptured in delivery, and had to be left behind, iritis was observed in 5 per cent. of the cases.[8] Dr. Arnold Knapp, after a visit to Major Smith's clinic at Jullundur in 1906,[9] practically confirmed these statistics. We must, therefore, accept these percentages and seek their explanation in the marvelous skill of the operator and the comparatively early age at which cataracts develop in India. Cases of cataract, I understand, develop in persons between five and ten years younger in India than in this country. The degenerative changes of the vitreous are more marked in the ten years between sixty and seventy than at any prior period, and the condition of the vitreous is the essential all-important element which influences statistics as to its loss, the shape of the pupil, iris entanglements, etc., in the operation.

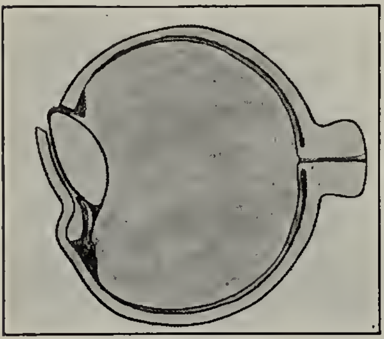


Fig. 1.

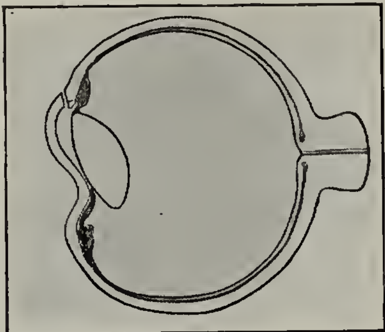
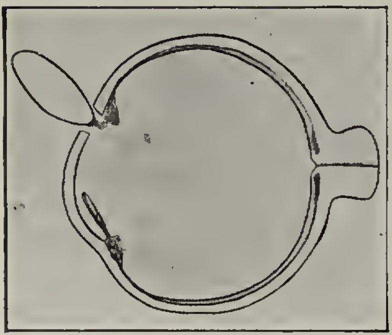


Fig. 2.

Fig. 1.—These figures are a schematic representation of the accouchement of the lens in its capsule. Fig. 1 shows the indentation of the cornea and zonula below and the slight protrusion of the lens above.

Fig. 2.—Rupture of the zonula below and lens dropping back.

Attention is called to the fact that the average age of my patients has been high (67.7 years). Largely because of this I think my percentage of vitreous loss has been high also. In making these later operations I had the advantage of having seen Smith perform it; I have learned by experience that the percentage of success depends more on the attainment of a high degree of skill, technical knowledge and the imitative faculty than on any skill acquired in making the regular operation. Theoretical considerations avail little or nothing in considering its place among cataract operations. The operation can be learned only at the elbow of one who is capable of demonstrating it. Without having this advantage and experience in the after-treatment of cases, no one is capable of passing judgment on the merits or demerits of the operation.



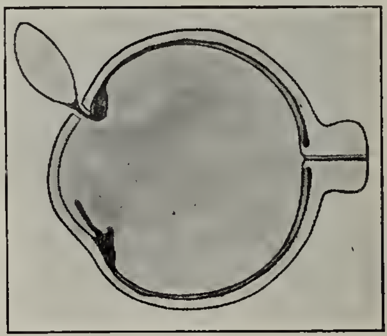


Fig. 6.

Fig. 5.—Lens almost delivered.

Fig. 6.—Lens is wholly out but is held by some of the superior fibers of the zonula. These fibers are torn by a slight lateral rocking motion of the lens produced by the use of the hook. The lens is now delivered in its capsule.

In July of last year, through the courtesy of Dr. Arnold Knapp, I saw Major Smith make three operations in New York City. So large a crowd was present that my view of the operations was not satisfactory, but I afterward spent several hours with him listening to descriptions of his method and seeing him demonstrate it until I thought I had a fair understanding of his technic. Major Smith regards the operation as in process of evolution. I quote from a late letter: "When once we have convinced ourselves that we are right, and have the doggedness to go ahead, our ultimate success is assured." Again he says: "You can not teach a man to do this operation by mere demonstration. He must do the operation before the teacher sufficiently often to acquire confidence in himself; and, further, a trained assistant who can properly expose the eye and at the same time take off all pressure is scarcely less important to the success of the operation than the operator himself." In this connection his address[10] before the American Ophthalmological Society at New London, Conn., last July, should be read. After describing the operation, he says:

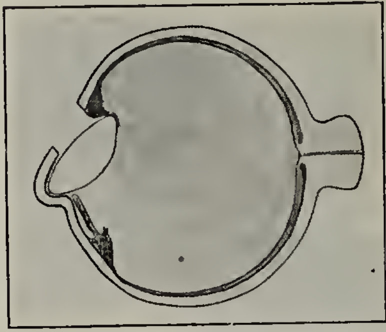


Fig. 3.

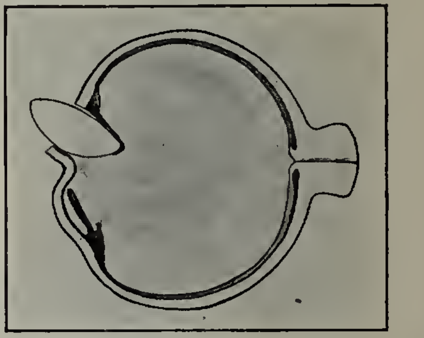


Fig. 4.

Fig. 3.—Lens is beginning to turn. The hook alone is used now and follows up the lens.

Fig. 4.—The lens has turned and is partially delivered.

> The treatment of immature cataracts which I have practiced extensively, and which I am an ardent advocate of, which I regard as the operation of the future, which will leave senile cataract a much rarer condition than at present, is extraction of the lens in the capsule, a procedure to which immature cataracts are admirably suited. I hold that, if for no other reason than for the treatment of immature cataract, every ophthalmic surgeon should be familiar with the art of extracting the cataractous lens in its capsule.

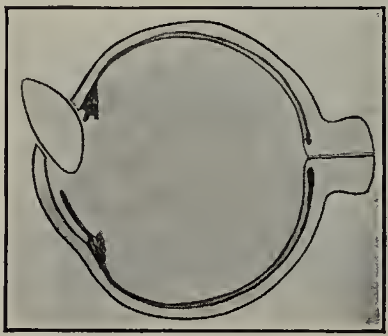


Fig. 7.—Shows the delivery of the lens in the capsule when the superior fibers of the zonula give way at the same time that the inferior fibers do. This occurs in 15 to 20 per cent. of all cases. It is in these cases that the loss of vitreous is most frequent, and that the spoon is sometimes inserted in the wound above to aid in the delivery.

I submit with diffidence that three years ago I called attention to these same points in the treatment of immature cataract,[11] and further experience has confirmed my belief that the method is superior to any other method of extracting such cataracts, or to any method of artificial ripening. It is in the treatment of immature cataract that I think the Smith operation will receive its first recognition, because, if I understand the opinion of the profession on this point, it is not favorable to extracting unripe cataracts by regular methods. Major Smith has told me that just this line of reasoning and observation with capsulotomy methods and secondary operations and accidental deliveries in the capsule are what led him to seek a method of delivering all kinds of cataracts, which would at the same time remove the capsule with the lens, because he believes such disposition of it to be good surgery.

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[8] Arch. Ophth., xxxiv, 601.

[9] Arch. Ophth., January, 1908.

[10] Tr. Am. Ophthal. Soc., 1908; Arch. Ophth., November, 1908

[11] Ophthalmology, January, 1907.

While writers from the time of Pagenstecher to the present have considered hypermature cataracts specially suited for removal in the capsule, my experience has been that these are usually the most difficult to express. The vitreous is often fluid, the strength of the zonula, while usually frail, can not be foretold, and the milky cortex will be forced by the pressure to occupy one end of the capsular bag and the small disc-like nucleus will float to the other. I have seen this hour-glass appearance several times. These are the cases which require careful handling, since they furnish a high percentage of loss of vitreous, but the same would be true if extractions were done by regular methods. In this connection we should remember that cataractous eyes are always diseased eyes, as Risley and others have so well shown. While it is my desire to discuss the operation from my personal experience, I recognize the difficulty of placing my experience, which is limited, but, on the whole, *is favorable to the Smith operation,* in opposition to the theoretical considerations which have influenced men against delivery in the capsule, and for comparison with the vast number of reports of regular operations and published statistics by innumerable observers there are no extensive statistics of delivery in the capsule available. The fact that possibly but one operation in the capsule to five thousand or more by capsulotomy methods has been made, ought not, *per se,* to prejudice men against accepting a new procedure which, to say the least, is theoretically desirable, because from the beginning the desire of the profession has been for a method which would remove the capsule with the lens. All have recognized the undesirability of leaving it behind and the surgical incompleteness of all operations which do so. Witness the early efforts of Richter and Beer, the later efforts of Sperino and de Wecker, and the still later method of Pagenstecher and Macnamara to accomplish this end. Loss of vitreous, as a rule, in my experience, has been more the fault of the patient than of the operation. This statement does not help the matter, but it puts the blame where it usually belongs.

The fear of retinal detachment from loss of vitreous seems to be the *bête noir* of all men with whom I have discussed the operation, yet this danger is not supported by the available statistics, and it really seems to be very small. Pagenstecher more than forty years ago, in 600 operations, saw only one case of detachment of the retina, and that in a highly myopic eye with chorioiditis. Wetzel and Beer long ago stated that they had not seen harm resulting from a loss of one-third of the vitreous (by volume). Smith has stated that in his experience the same is true. Captain Lister of the Indian Medical Service, a former pupil of Major Smith's, has examined 100 cases of from one to seven years after loss of vitreous. He read a report at the Bombay Medical Congress in February; his conclusions have not yet been published, but Smith has stated that Lister did not find a case of detachment of the retina among them. It must, however, be admitted in this connection that loss of vitreous is looked on by the majority of men in this country with apprehension. Whether they overestimated its importance or not, time and observation alone can tell. I myself have seen only two cases in which vision following the operation merely equaled perception of light, which could be attributed to detachment of the retina after the loss of about one-half of the vitreous. In these cases there was delayed healing, gaping of the wound and an ingrowth of corneal epithelium, and reduction in size of the cornea in healing, so that no view of the fundus could be had. I have not been certain as to the cause of loss of vision in these cases because P. L. remained. Several times after a slight loss of vitreous I have smoothed out the iris and have seen many cases in which it would be impossible to tell that the lens had been removed in the capsule. On the other hand, in a few instances I have bandaged up an eye with a keyhole pupil and have found the wound open, vitreous presenting and the iris entangled in the angles at the first dressing. The same condition is observed after the regular operations. These conditions are usually observed in nervous and restless patients with high blood pressure.

Loss of vitreous should not be the sole measure by which the operation is judged; if it is as serious as many think, the danger is yet to be proved. The statistics we have do not prove the danger to be great, and Smith's statistics show that with select cases it is possible to reduce it to the percentage of the regular operation or even below it. Surely comparative freedom from inflammation and high-class visual results count for more than slight loss.

Perhaps of more importance to the future integrity of the eye than loss of vitreous is the fact that no discission is necessary. It requires no argument to show that the risk of an operation increases in proportion to the number of times a knife-needle or scissors are passed into the eye. This is also one of the essential points on which those favorable to the Smith operation based their contention, *that it is both safer and more complete than the regular operation,* even if the loss of vitreous is greater for the average operator, *which must be conceded.* This liability to accident seems more than offset by the comparative infrequency of the reactions that are liable to follow a discission. Having had a large experience with extraction and after-treatment with capsulotomy methods, I have not seen such smooth and uncomplicated healing, all things being equal, in any other series of cases; there can be no question as to the correctness of this observation, and it is in harmony with the experience of all who are familiar with delivery within the capsule. On this point I do not wish to be misunderstood. I have encountered certain reactions, but they have not been of an inflammatory character (except in the few cases shown in the statistics), but have been connected with the healing of the section and have usually been associated with ruptures of the capsule, incarceration of iris, or cystoid healing, and blood pressure above 160 mm. Hg. in nervous and restless patients. Only two cases of iritis sufficient to cause pain and require treatment have been observed. Both followed rupture of the capsule. A few times I have observed the intrusion of a bead of vitreous into the section at the first dressing, or even later when none had presented at the time of operation. It has not been sufficient as a rule to abscise it because more will take its place, but I have always secured firm union by repeatedly tapping the chamber below, and the same practice has been successful in cystoid healing after excising the cyst.

My experience with the operation has been largely with patients of advanced years in my clinic at the National Military Home, at St. Elizabeth's Hospital, this city (and in private practice) in whom the conditions of the vitreous and fundus are frequently unfavorable to high-class results.

I pass rapidly over the corneal incision, which should be an enlarged de Wecker without a corneal flap. I have tried making a large iridectomy, and have found it to have some advantages in the delivery of the lens, but, on the other hand, as the tendency is in the direction of too large a pupil, I have made a small iridectomy as a rule. The patient can look down during the completion of the section and the iridectomy, but during the expression of the lens must look straight ahead or slightly upward, *never downward.* I have seen more loss of vitreous from the patient violating this injunction than from any other cause.

Smith's late manipulation with the end of the spatula and strabismus hook, over the lower third of the lens, by which it is dislocated, has been the most difficult step to imitate. I am conscious that failure to make this manipulation properly has been the weak point in my technic, and has materially increased my percentage of vitreous loss. I have dispensed entirely with the speculum while making the section and the iridectomy and have had my assistants use the Fisher and later the Noyes lid-elevator instead. The assistant changes to the large hook after the iridectomy, and lifts the upper lid as Smith has directed. The operator should make light or moderate pressure to and fro over the lower third of the lens with the tip of the strabismus hook. At this stage the operator will see the lower border of the lens mapped out through the cornea and iris advanced slightly, then with moderate pressure with the small end of the spatula applied edgewise across the lower sclerocorneal border the lens will advance still farther toward the incision, the zonula will give way, and the top of the lens will often tilt slightly backward. If the pressure is continued around the lower border of the lens, and the tip of the hook inserted under or behind it, the intraocular pressure will aid in causing the lens, which is now only anchored above, to describe a half-circle. The wound will gape, and the lens will emerge bottom edge upward, leaving only a small band of zonula to be loosened. This must be done slowly and with the utmost gentleness by drawing it back and forth through the incision. Otherwise the capsule will rupture and recede into the eye. It is still possible to catch it with forceps if the operator be dextrous. Vitreous is seldom lost when the lens is delivered in this way. In more than half of these cases the lens has been delivered thus. In other cases the zonula will rupture first at one of the angles of the section; then if the vitreous is fluid some of it is easily lost. It is at this point that familiarity with what may happen and skill and technic in meeting the emergency obviates some mishaps.

Before leaving these steps in operation I wish to call attention to the perfect control the assistant has over the orbicularis with the large strabismus hook under the upper lid. Slight traction with it will break the power of the muscle by bending it at a sharp angle. With a small piece of gauze on the face of his thumb the assistant pulls down the lower lid. With a trained assistant it is practically impossible for the patient to squeeze out normal vitreous. Unfortunately not all patients have normal vitreous and it is easy for the patient to lose fluid vitreous not only by attempts at squeezing but by suddenly and forcibly looking down. So far as I am able to learn, the particular design of this large hook, and the use to which it is put, the control of the lower lid in the way described and the use of the smaller hook for delivering the lens, must be credited to Major Smith. To his credit also, I think, belong the manipulation in emergencies with the double-ended spatula, one end of which is passed through the vitreous presenting behind the lens. It should not be passed deeper than the posterior pole of the lens, while pressure through the cornea below will cause the lens in its capsule to glide up this inclined plane to its exit. In my judgment these three instruments are the best additions that have been made to the armamentarium of the ophthalmic surgeon in many years. Since I have been making more pressure with the tip of the spatula and done less rubbing over the lower third of the lens the number of cases of striped and latticed keratitis have markedly diminished, and I have not seen either remain and lower vision in any of these cases. I never use bichlorid solution in cataract operations; therefore it could not be responsible for the keratitis. There are no rules governing the amount of pressure to be used in delivering the lens. Each case is a law unto itself. Three points should be remembered: 1. The pressure should never be excessive, but steady and equal. 2. The cornea should be kept moist. 3. There should be no pressure or rubbing over the center of the cornea.

It is in connection with these manipulations that men become prejudiced against the operation when they see it performed for the first time, because they overestimate the force of the steady pressure required to rupture the zonula and dislocate the lens, and consider the manipulations rough and unscientific. I have satisfied several who have visited my clinics that the degree of pressure used is not great, but is much more apparent than real. In other words, they have unlearned some of their misconceptions regarding this important step of the operation.

The lens having been delivered, the iris, if prolapsed, should be returned and smoothed out, but the danger of loss of vitreous should not be forgotten in doing this. Usually it is best to bandage the eye as soon as possible. Intrusion of fluid vitreous into the wound has not influenced the healing materially. The toilet should be made according to the taste of the operator. I prefer a half-round dry cotton patch between layers of gauze laid on the closed lids of each eye. The irregularities are filled out with small pledgets of picked cotton which are held in place by pieces of adhesive straps. I prefer a flannel bandage for the class of patients on whom most of my operations have been performed—old soldiers, many of them feeble in mind and body, bad subjects, as a rule, for any operation. The eye should not be open for three or four days unless the patient complains of pain, which is so exceedingly rare that freedom from discomfort or pain can be regarded as one of the striking characteristics of the method. On removing the dressing freedom from discharge and the normal appearance of the eyelid are usually noticeable. As a rule, the wound will be found closed and the chamber established at this first dressing; if not closed the usual conditions will be found present. The appearance of the clear black pupil is very gratifying and the distinct tracery and pattern of the iris, and its response to atropin, if used, shows its freedom from inflammation. The conjunctiva usually takes on a blush of irritation or congestion. Rarely will the deep redness and chemosis of inflammation be seen. The amount of photophobia and lachrymation will vary with the condition of the wound. I have seen only two cases of genuine iritis in these seventy-five cases. In each the capsule had ruptured and only two scissors operations have been made for up-drawn pupils in these same cases. Striped and latticed keratitis have caused more uneasiness and required more treatment than any other complication, yet, as already stated, I have not seen either remain and lower vision in any of these cases, and the same can be said of disturbance in the epithelial layer of the cornea from the pressure.

As a rule vision is not high at first, because of ker-

TABLE OF RESULTS OF SMITH OPERATION IN 75 CASES

No.	Age.	Eye.	Condition of Cataract.	B. P.	Lens Delivered.	Capsule.	Vitreous Loss.	Iris.	Chamber Formed.	Vision.	Remarks.
1	73	L.	Im.	140/100	......	......	......	......	3d day.	20/20	
2	71	R.	M.	190	......	......	......	......	14th d..	20/30	Presenting vitreous; tenth day passed knife through wound; firm union.
3	61	L.	M.	190	......	......	......	......	3d day.	20/20	
4	60	L.	M.	210/130	......	Ruptured, retained.	......	Iritis.	14th d..	20/20	Discission.
5	75	R.	Hm.	160/120	......	......	......	......	3d day.	20/20	
6	68	R.	Im.	190/120	......	......	......	......	4th d..	20/30	
7	49	R.	M.	120/100	......	......	......	......	2d day.	20/15	
8	76	R.	M.	200/130	......	......	......	......	3d day.	20/20	Wound opened after 1 week. T = + 1: chamber formed next day.
9	60	L.	M.	190/130	Spatula..	......	Slight	......	4th d..	20/70	Myopia and chorioiditis.
10	65	L.	Hm.	165/130	......	Ruptured..	......	......	3d day.	20/50	Some capsular remains;
11	70	L.	M.	190/140	......	......	......	......	14th d..	20/30	Delayed healing; vitreous protruded 3d day; seven punctures made; firm union.
12	75	R.	Im.	210/160	......	......	......	......	2d day.	20/70	Feeble minded; delusions; vision partly estimated.
13	58	R.	Im.	180/140	......	......	Slight......	......	3d day.	20/50	Incipient chorioiditis.
14	56	R.	Im.	145/110	......	......	......	......	5th d..	20/30	
15	67	L.	M.	180/130	......	......	......	......	3d day.	20/20	
16	60	R.	Hm.	190/130	Spatula..	......	Slight......	......	4th d..	20/70	Myopia and chorioiditis.
17	45	R.	M.	140/100	......	......	......	......	2d day.	20/30	
18	61	R.	M.	190	......	......	......	......	3d day.	20/20	
19	76	L.	M.	200/130	......	......	......	......	3d day.	20/20	
20	50	R.	Im.	136	......	......	......	......	5th d..	20/15	
21	72	L.	M.	115/75	......	......	......	......	4th d..	20/20	
22	76	L.	Im.	250/175	......	......	......	......	4th d..	20/40	Slight keratitis cleared up; incipient chorioido-retinitis.
23	71	R.	Im.	140/90	......	......	......	......	3d day.	20/20	
24	63	L.	M.	190/115	......	......	Slight......	......	12th d.	20/20	Delayed healing; no cause apparent.
25	62	L.	M.	170/130	......	......	......	......	5th d..	20/20	
26	62	R.	Im.	165/130	......	......	......	......	5th d..	20/20	
27	65	R.	M.	180/130	......	......	Slight......	......	3d day.	20/20	Small hemorrhage into anterior chamber.
28	75	L.	M.	......	......	......	......	......	2d day.	20/20	
29	64	L.	M.	145/105	......	......	......	......	4th d..	20/20	
30	70	R.	M.	150/110	......	......	......	......	2d day.	20/20	
31	62	L.	M.	150/110	......	......	......	......	4th d..	20/20	
32	68	L.	M.	130/90	......	Ruptured, retained.	......	Iritis......	3d day.	20/50	Oct. 20, '08, iridotomy; Jan. 29, '09, iridotomy.
33	64	L.	M.	160/120	......	......	Considerable..	Incarcerated..	14th d.	20/30	Pterygium, cystoid healing, abscised; healed.
34	87	R.	M.	180/140	Spatula..	......	Marked	......	3d day.	20/50	Feeble mentality; vision partly estimated.
35	77	R.	M.	140/90	......	......	......	......	3d day.	20/30	
36	77	L.	M.	230/150	......	......	......	......	3d day.	20/20	
37	70	R.	M.	170/130	......	......	......	......	4th d..	20/40	Feeble mentality (complained of pain during convalescence.)
38	70	L	M.	170/130	......	......	......	Incarcerated..	14th d.	20/50	Feeble mentality; vision partly estimated.
39	65	R.	M.	160/110	......	......	......	......	4th d..	20/30	
40	68	L.	M.	140/110	......	......	......	......	4th d..	20/40	
41	76	L.	M.	150/100	......	......	......	......	2d day.	20/30	Delayed healing; a bead of vitreous abscised on fifth day. Prompt healing.
42	76	R.	Im.	150/100	......	......	......	......	5th d..	20/50	
43	77	R.	M.	160/110	......	......	......	......	4th d..	20/30	
44	73	L.	M.	220/160	......	......	......	......	3d day.	20/20	
45	73	R.	M.	220/160	Spatula..	......	Excessive......	......	......	P. L.	Restless; unruly; fluid vitreous.
46	77	R.	M.	230/150	......	......	......	......	4th d..	20/20	
47	87	L.	M.	180/140	......	......	......	Incarcerated..	17th d.	20/30	Feeble mentality.
48	64	R.	M.	160/120	......	......	Slight......	......	4th d..	20/30	
49	71	R.	M.	200/140	......	......	......	......	5th d..	20/20	
50	66	L.	M.	150/110	......	......	Slight......	......	7th d..	20/20	
51	75	R.	M.	150/110	......	......	......	......	4th d..	20/20	
52	73	L.	M.	160/120	Spatula..	......	......	Incarcerated..	19th d.	20/30	
53	69	L.	M.	150/120	......	......	......	......	3d day	20/20	
54	74	R.	M.	170/120	......	......	......	......	2d day.	20/20	
55	66	L.	M.	210/140	......	......	......	......	7th d..	20/20	
56	66	R.	Im.	210/140	......	......	......	......	2d day.	20/20	
57	86	R.	M.	170/130	......	Ruptured..	......	......	7th d..	20.50	Feeble-minded.
58	74	L.	M.	210/150	......	......	......	......	3d day.	20/50	
59	63	R.	M.	220/140	Spatula..	......	......	......	7th d..	20/20	
60	61	L.	Im.	185/110	......	......	......	......	7th d..	20/30	
61	67	L.	M.	160/120	......	......	......	......	14th d.	20/40	
62	72	R.	M.	190/140	......	......	......	......	3d day.	20/30	
63	72	L.	Im.	190/140	Spatula..	......	Slight......	......	3d day.	20/30	
64	67	R.	M.	200/150	......	......	......	......	3d day.	20/30	Slight keratitis cleared: very unruly
65	63	R.	M.	150/120	......	......	......	......	5th d..	20/30	
66	53	L.	Im.	140/100	......	......	......	......	10th day	20/15	Striped keratitis. Cleared up.
67	81	R.	Im.	......	......	......	......	......	3d day.	20/70	
68	73	L.	Im.	200/160	......	......	......	......	4th d..	20/20	Slight keratitis cleared up.
69	67	R.	M.	150/120	......	......	Slight......	......	3d day.	20/20	Unruly; vitreous escape after delivery.
70	76	R.	M.	160/120	......	......	......	......	3d day.	20/40	
71	70	L.	Hm.	140/120	......	......	......	......	3d day.	20/70	Incipient macular chorioiditis.
72	74	R.	......	......	......	......	......	......	3d day.	20/50	
73	70	R.	M.	......	......	......	......	......	3d day.	......	
74	88	R.	M.	......	......	......	......	......	......	......	Infection; panophthalmitis (chronic cystitis.)
75	66	L.	M.	150/110	......	......	½	......	7th d..	P. L.	Very unruly; globe collapsed: salt solution injected; invagination corneal flap; probable hard detachment of retina.

atitis in some cases, but more often from disturbance in the anterior layers of the vitreous which resemble miniature ridges and valleys, running perpendicularly. These have not the appearance of striped keratitis. Pagenstecher noted this condition.[12] They seem to smooth down gradually and vision reaches its best in from one to two months. The degree of astigmatism, which is usually from 2 to 4 D., has not varied much with the healing, when primary union has taken place.

For the purpose of comparing the results obtained with the combined method of extraction, I have appended the statistics of the last 75 operations in the Soldiers' Home Hospital, with the statistics of 75 cases in which operation was done by the Smith method; 52 of them in the Soldiers' Home Hospital and 23 in St. Elizabeth's Hospital. The conditions have been as uniform as possible. The average age of the patients operated on by the regular method was 69.76, and for the Smith operation 67.7 years. The number of patients operated on by each method is too small to draw any definite conclusions from, yet they are believed to have sufficient value to justify comparing them.

Expression within the capsule offers the following advantages:

1. A cataract can be removed at any stage.
2. No discission is ever necessary.
3. There is comparative freedom from postoperative inflammations.
4. There are no capsule entanglements; prompt healing is the rule.
5. The method is especially adapted to institutional work; one operation does all.
6. No ripening methods need be tried.
7. The result is better average vision, which does not change with time, if the fundus conditions remain favorable.

The disadvantages of the method are the following:

1. The only important one is greater liability to loss of vitreous for the average operator.
2. From a cosmetic point of view the wide updrawn pupil (if it results) mars the appearance of the eye, while it may not be a disadvantage to vision.
3. And lastly, a skilled assistant is always necessary in performing the operation.

It is not my desire to be considered a champion of the Smith operation until I have seen more of the ultimate results which follow it, among white people, living under different climatic and dietetic conditions than average Indians, but having emphasized its strong points, and admitted its weak points as I have seen them, I can not avoid the conclusion that it is a long step toward the ideal operation which we are all seeking. Perhaps it will not be so in the hands of every one, but in the hands of the few who will learn to do it well I believe it has a promising future. The statistics which follow have been compiled by my hospital associate, Dr. J. W. Millette. It is a pleasure to acknowledge the thorough and careful manner with which it has been done.

These statistics do not include all the operations I have performed. Cases have not been selected, but I have excluded all cases in which I have not given the after-treatment and done the testing for vision and also those cases which from the condition of the cornea, vitreous and fundus, were not proper ones from a visual point of view. Two patients whose cases were considered proper had excessive loss of vitreous and vision only equal to P.L., which are fairly chargeable to the operation; one has dense vitreous opacities, probably from hemorrhage, the other lost about half of the vitreous. He has an up-drawn pupil, and no view of the fundus can be had. I am not certain as to the cause of the loss of vision in either case, and one other case was lost from infection.

Summary of Visual Results

Total Number.

Cases.	Vision.
3	20/15
30	20/20
18	20/30
4	20/40
9	20/50
5	20/70
2	P. L.
1	0
3	No record
75	

With Loss of Vitreous.

Cases.	Vision.
4	20/20
2	20/30
3	20/50
2	20/70
2	P. L.
13	

With Rupture of Capsule.

Cases.	Vision.
1	20/20
3	20/50
4	

Average vision for 72 better than 20/30 about 20/27, to be exact.

Summary of Accidents and Blood Pressure

Vitreous loss; healing delayed more than five days.

Cases.	B. P.	Cases.	B. P.
3	150	2	150
2	160	2	160
3	180	2	170
3	190	1	180
1	200	1	185
1	220	3	190
		2	210
13	Average B. P. 175.4	1	230
		14	Average B. P. 174.6

For comparison, with results obtained by the Smith operation, I submit the following statistics from my last seventy-five regular operations compiled by my assistant, Dr. W. C. Cook, National Military Home:

Cases.	Vision.		
10	20/20	5	20/200
16	20/30	1	Fingers at 6 feet
17	20/40	1	P. L.
10	20/50	1	0
5	20/60		
2	20/70	75	Average vision 20/40
7	20/100		

One patient had slight loss of vitreous; 2 had slight attacks of glaucoma; 20 had a degree of iritis requiring treatment; 35 eyes required discission; 9 patients whose eyes needed discission refused it; 1 eye was lost by iridopyelitis after a secondary operation.

THE EXPRESSION OF CATARACT IN ITS CAPSULE

WITH REPORT OF FORTY OPERATIONS *

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Delivery of the lens in its capsule has been an occasional accidental accompaniment of the cataract operation experienced by most operators ever since the beginning of cataract extraction, by reason of unwonted pressure on the globe by the operator or by the patient squeezing his lids (Case 10), during which more or less vitreous has been lost. It may also be occasioned knowingly, though unwillingly, by reason of rupture of the zonula after incision of the cornea when the operator has passed a spoon behind the lens lifting it out, or when he has premeditatedly removed a dislocated lens by the same means. Over-ripe and Morgagnian cataracts have occasionally likewise been removed by much the same procedure. Those of us who have been operating for a score of years will doubtless remember many such experiences and our surprise at the unusually good visual results obtained even in some instances in which considerable vitreous was lost. The deliberate routine extraction of all senile cataracts in their capsules was first introduced by A. Pagenstecher (September, 1865) at the Heidelberg Ophthalmological Congress and has been followed since that time by him and his brother, H. Pagenstecher[1] in a large proportion of their cataract operations.

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[12] Ann. d'oeul., September-October, 1871.

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

> *Nach dem Drittelbogenschitt nach oben mit Bindehautlappen wird iridectomiert und hierauf die Linse, entweder durch das blosse Druckmanöver oder mit dem flachen Löffel der bloss als gleitfläche dient, entbunden.*[2]

The lens is expelled after incision of about one-third of the circumference made with a conjunctival flap and an upward iridectomy, either by means of gentle pressure or with the flat spoon acting purely as a gliding surface.

The above description of Pagenstecher's operation on cataract in the unopened capsule is as short and accurate as has yet been given. Examine these words closely, the various essays of Pagenstecher, digest them, then follow up by reading the essays of subsequent writers as Cassiani,[3] Gradenigo,[4] Gayet,[5] Landesberg,[6] and other foreign authors, Roosa,[7] Andrew,[8] Henry Smith,[9] Oxley,[10] Maynard,[11] Herbert,[12] Cheney[13] and Greene,[14] then come back to the original of Pagenstecher and give credit for the devising of this operation in all its details where it belongs, not to later operators, even though of astounding skill, sufficiency and experience.

The recent revival from the antipodes has awakened new interest in this operation, largely occasioned by the astounding number of cases reported by Major Smith, of Jullundur, India, who has had an experience of about 20,000 operations, about 17,000 being in the capsule, among them many incipient cataracts.[9] While this vast experience has authoritatively established expression as successfully applied to the removal of senile cataract, yet the method should not be denominated "Smith's operation," even though he claims "the details of the operation are my own"[9] and has been accorded these claims in some quarters. In common with Major Herbert, I fail to see any substantial reason for such claims. "The operation is merely ordinary combined extraction, with the omission of one step—the opening of the capsule" (Herbert).[12] Smith insists that men must see it done in order to learn the method completely. By examination of the literature we "find no detail which has not been practiced earlier by others." "Those who have seen Smith operate do not appear to have benefited much, judging from their results" (Herbert).[12] I have not yet had the opportunity of seeing this master hand at work, but his writings certainly do not give us anything beyond the "omission of detail" (Herbert).[12]

I find nothing original except the use of the large squint hook for delivery of the lens, a minor and useful adjunct, but one which I have myself used since 1888, and probably many others have used a similar instrument for this purpose. A. and H. Pagenstecher have used a curved spoon since 1865. The large old-fashioned rounded strabismus hook is a perfectly adapted instrument for this purpose—its convexity indents the cornea properly and its concavity follows up the cataract until delivery through the open wound is completed, with much less force than by finger pressure through the lid, with more dexterity than by use of the Pagenstecher spoon, and with much less danger of bursting the hyaloid membrane and consequent prolapse of vitreous.

Until I got the Smith hook I used a crochet hook which I devised in 1889 (but never reported) for ocular muscle operations. Last year (1908) I devised a large hook with a blunt crochet end. The latter is useful just as the lens is being delivered, to lift it out of the wound. Smith's new spoon is very like the old spoon of Pagenstecher; comparison of the two will not show any appreciable difference. In common with others I believed for many years that the insertion of the spoon behind the lens or into the vitreous back of the hyaloid membrane was the distinguishing mark of the Pagenstecher operation; but on referring to the original author and in correspondence with German writers I now fully agree with Elschnig (editor of Czermak's *Augenärztlichen Operationen*) in his letter to me of Feb. 1, 1909, in which he says: "Pagenstecher's operation is quite the same as Smith's."

Pagenstecher seems to have been the first to express the lens by external pressure (1871[1]) and Terson (1872[15]) and Wolkow (1894[16]) next report such procedure. Smith does not write until 1900.[9] Pagenstecher used his spoon to press the posterior lip of the wound back and to slide the lens thereupon. Smith[9] now passes the spoon behind the edge of the lens to assist its birth or extrusion, passing it into the vitreous on occasion of a hard delivery. So did A. and H. Pagenstecher and so did all of us.

The modifications of the Pagenstecher operation have varied from bizarre changes in place of section (Macnamara, outward, 1871[17]), introduction of spoon, hook or loop (Caspar, 1878[18] Higgens 1888[19]), tearing of zonula (Andrew, 1883[8]), dislocation of lens into anterior chamber by sclerotic puncture, Canstatt (1870[20]), Roosa (1885[7]) tore the zonule by partly dislocating the lens with the Graefe knife, Gradenigo (1895[4]) used a zonulotome, Wolkow (1894[16]) used two spoons for pressure and counter-pressure, etc. Mulroney, at Amritsar, India, began in 1890 to make a downward section without iridectomy, and this procedure has been adopted by Smith[9] (with upward corneal section), "who now has many imitators."[12]

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[1] Pagenstecher, H.: Extraction de la cataracte sans ouverture de la capsule, Ann. d'ocul., 1871, lxvi, 126; Zur pathologischen Anatomie des Glaskörpers, Zentralbl. f. d. med. Wissensch., 1875, p 708: Die Extraktion des grauen Staars in der geschlossenen Kapsel, Wiesbaden, 1877; Ueber Extraktion der Katarakte in der geschlossenen Kapsel, nebst Bericht über 117 Fälle, Arch. f. Augenh., 1881, x, 166; Ueber Staarextraktion mit ohne Entfernung der Kapsel, Arch. f. Ophth., 1888, xxxiv, 145; Ueber die Kataraktextraktion in der geschlossenen Kapsel, Ber. d. VII internat. Ophth.-Kong. zu Heidelberg, 1888, 506.

[2] Czermak, edited by Elschnig, A.: Augenärtzlichen Operationen, 1908, li, 524 et seq.

[3] Cassiani, Ingoni: Dell' estrazione capsulo-lenticolare della cataratta, Ann. di ottal. 1897, p. 460.

[4] Gradenigo: Estrazione di cataratta capsulo-lenticolare perlscleram, Ann. di ottal., e lavori d. clin. ocul. di Napoli, 1902, xxxi, 702: De l'extraction de la cataracte dans la capsule par la sclérotique après zonulotomie, Ann. d'ocul., 1903, cxxx, 25.

[5] Gayet: Rapport sur l'opération de la cataracte, Ber. d. VII. internat. ophth. Kong. zu Heidelberg, 1888, p. 108.

[6] Landesberg: Ber. über 123 Staaroperationen, Arch. f. Ophth., 1878, xxiv, 59.

[7] Roosa: Remarks on the Extraction of the Crystalline Lens in its Capsule, Tr. Am. Jour. Ophth., 1885, ii.

[8] Andrew: The Operation of Senile Cataract in its Capsule, Brit. Med. Jour., January, 1883, p. 41.

[9] Smith, Henry: Indian Med. Gaz., June, 1900; Extraction of Cataract in the Capsule, Brit. Med. Jour., Sept. 26, 1903; Extraction of Cataract in the Capsule, Arch. Ophth., 1905, xxxiv, No. 6; Arch. of Ophth., March and May, 1906; Treatment of Immature Cataract, Arch. Ophth., November, 1908.

[10] Oxley: Cataract Extraction in the Capsule, Indian Med. Gaz., December, 1905.

[11] Maynard: Cataract Expression in the Capsule (Smith Operation), Ophth. Rev., 1906, p. 225; Manual of Ophthalmic Operations, 1908, pp. 106 et seq.

[12] Herbert: Extraction of the Lens in the Capsule, Ophthalmoscope, 1906, p. 113; Text-Book of Cataract Extraction, 1908.

[13] Cheney: Extraction of Cataract in the Capsule: Report of Ten Cases, Ophthalmology, October, 1906, iii, No. 1.

[14] Greene: Extraction of the Cataract within the Capsule, Ophthalmology, January, 1907, iii, No. 2; Visual Results After Cataract Extraction, Ohio State Med. Jour., Sept. 15, 1906; Further Experience with the Smith-Indian Operation in the Extraction of Cataracts, Ophth. Rec., October, 1908; Tr. Sec. on Ophth. A. M. A., 1909.

[15] Terson: De l'extraction du cristallin et de sa capsule, Rev. méd. de Toulouse, 1872, Nos. 3 and 4; Ann. d'ocul., lxvii, p. 313.

[16] Wolkow: Ist die Kapsulotomie bei der Extraktion des Altersstaars nötige? Vestnik oftalmol., 1894, xl, 366.

[17] Macnamara: A Manual of the Diseases of the Eye, 1871, ed. 11.

We will now take up the operation itself according to my experience, leaving other phases and details to our confrère, Dr. Greene.

I do not deem the purely corneal section acceptable, for this is followed by slow healing, iridic prolapse (Herbert[12]), distorted pupils (Greene, 1906[14]) and excessive astigmatism, neither is the operation without iridectomy, on account of iridic prolapse. My experience has shown the 2/5 sclerocorneal section with conjunctival flap, as where this is made delayed union is unknown (Maynard[11]), combined with a very small iridectomy and extraction of the lens, *i. e.,* the regular operation less a capsulotomy, in immature and hypermature cataracts, is the only all-round satisfactory operation. The ordinary run of mature cataracts may be as well operated on with less risk in the average hands by the generally adopted combined flap extraction with capsulotomy; cataract in children and traumatic cataracts by discission.

The "absence of details," *i. e.,* the least handling of the eye and the fewest instruments possible, is the characteristic of this operation and what with the *tactus eruditus* makes it successful in the hands of Smith, Greene and others; while in some other hands—notably the critics of the method—especially those of India—"do not appear to have benefited much, judging from their results."[12] It is no operation for a beginner, neither is it for the average operator.

A stop speculum should not be used on account of the ever-present danger of vitreal prolapse. The lifting of the upper lid by a squint hook seems crude. I use the lidholder of William Fisher, of Chicago, and have the patient's upper lid—the only one of moment—under full control, and thus lose vitreous in not more than 5 per cent. of cases either with or without capsulotomy. The eye is fixed by catch forceps, the knife is entered (the only instrument entering the eye), and a corneoscleral section with a conjunctival flap is made. A very small iridectomy is made, the section of the iris only embracing the pupillary margin and edge of the sphincter muscle, by pressing the ends of iris forceps on the cornea over the upper part of the pupil, when the iris will usually prolapse, the edge being seized by the forceps, the iridectomy is completed by a single cut of the scissors. The bend of a large hook is then pressed moderately, slowly and continuously on the cornea at the lower edge of the lens, that tilted backward, the pressure gradually relaxing as the upper edge of the lens enters the wound, the body of the lens is lifted up by the pressure of the hook, which follows it in its delivery; the flat spoon of Pagenstecher or Smith may be used to assist the lens to slide out of the eye by offering an inclined and smooth plane for it to glide on. Seldom is the spoon entered into the eyeball; forceps are occasionally necessary to seize the lens when impacted between the lips of the wound; and the act is completed by the crochet end of the hook catching the lens, on its delivery, rotating it out of the wound, the conjunctival flap and the iris stroked back into place, the lids closed and a light bandage applied. This is a brief description of the method I have adopted and adapted. My expression cases are comparatively few, but compare very favorably, and in fact the results are to my mind better than those of about 1,000 regular extractions performed by me within the last twenty years.

My cases, grouped under dates of the expression operations, are as follows:

Case 1.—Oct. 3, 1904: Mrs. S., aged 58. Immature cataracts R. & L. Preliminary iridectomy and direct trituration with Boettmann's spoon by me October, 1903, on L. E.; no ripening. Extraction of cataract with aid of Pagenstecher's spoon which entered the eye, no loss of vitreous. V. + 9.00 ⌒ 1.00, 180° = 6/vi.

Case 2.—Oct. 15, 1905: Same as Case 1. I had done preliminary iridectomy without trituration on this eye in October, 1903. Normal expression operation on mature cataract of R. E. V. + 9.00 ⌒ + 1.50, 165° = 6/vi.

Case 3.—March 12, 1906: Mr. F. D., aged 65. R. immature, L. mature. Small iridectomy, normal expression in capsule of L. V. + 12.00 ⌒ + 2.00, 90° = 6/xii. See also (12).

Case 4.—March 9, 1907: Mrs. Z., aged 61. Hypermature black cataract, small iridectomy, expression with slight loss of vitreous, corneoconjunctival stitch after. V. + 10.00 ⌒ + 3.00, 180° = 6/xxiv.

Case 5.—March 18, 1907: Mrs. S., aged 59. Mature cataract, small iridectomy normal expression. V. + 10.00 = 6/xii.

Case 6.—March 23, 1907: Mrs. E. J. J., aged 60. Mature black cataract, small iridectomy, expression normal until lens was pinched in wound when a portion of the anterior capsule tore off, sticking in wound, removed by forceps without entering the eye, a slight iritis developed; the hyaloid membrane apparently participating in the opacifying process, as several months afterward a fine membranous opacity was observable on focal illumination. I have not seen this occurrence before or since. V. + 10.00 ⌒ + 150, 15° = 6/vi; but on development of the hyaloid opacity was reduced to 6/viii with correction.

Case 7.—April 10, 1907: C. C., aged 48. Mature cataract, small iridectomy, normal expression. V. 10 days later with 10.00 about 6/xxiv. I did not have the opportunity of prescribing lenses or observing the vision later as he did not return after leaving the hospital.

Case 8.—June 19, 1907: B. O., aged 65. Mature cataract, normal expression except capsule ruptured, lens removed by sliding on spoon and capsule pulled out of wound with forceps without entering the eye. V. + 10.00 ⌒ + 2.50, 180° 6/viii.

Case 9.—Nov. 6, 1907: R. W., aged 45. Immature cataracts, small iridectomy, normal expression, corneal incision (the typical Indian operation), very slow healing of wound, iritis, four weeks in hospital. High astigmia followed, although visual acuity was very good. V. + 11.00 ⌒ + 4.00, 135° = 6/xviii.

Case 10.—Nov. 11, 1907: Mrs. A. S. Hypermature cataracts with tremulous irides and synchysis vitrei. There being fair perception and iris reaction in the left, I attempted ordinary combined extraction, corneoconjunctival stitch (Kalt) placed before incision, but lens popped out in the capsule with considerable loss of vitreous. Result for a few months was V. = movements of hands and large objects. Further degeneration set in so that in May, 1908, eye was blind. (See Case 19).

Case 11.—Nov. 12, 1907: Mrs. S., aged 70. Hypermature cataract, small iridectomy, capsule ruptured and was not en-

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18. Caspar: Ueber Extraktion der kataraktosen Linse in geschlossener Kapsel, Inaug. Diss., Berlin, 1878.

19. Higgens: Extraction of Immature Cataract, Lancet, London. 1888, No. 19.

20. Canstatt: Briefl. Mitteilung betreffend eine neue Idee sur operative Heilung des grauen Staars, Klin. Monatsbl. f. Augenh., 1870, pp. 131-133.

tirely removed from eye on account of rupture of hyaloid with slight loss of vitreous, caused by attempt at removal by iris forceps entering the eye, conjunctival stitch. Four weeks in hospital with iritis. V. two months afterwards + 12.00 = 6/xxxvi.

Case 12.—Dec. 13, 1907: Patient in Case 3 returned on account of satisfactory result on L. E.; V. then being 6/viii with old correction, increased to 6/vi + 2 with decreased cylinder. Normal expression, immature cataract, small iridectomy. V. + 12.00 ⊃ + 1.00, 90° = 6/viii.

Case 13.—Jan. 6, 1908: C. C., aged 40. Morgagnian cataract, normal expression, small iridectomy, lens aided in delivery by forceps as it became impacted into wound, no entrance of forceps. V. good. Refraction not recorded.

Case 14.—Jan. 29, 1908: C. W., aged 69. Immature cataracts both eyes. V. 6/lx and 3/lx. L. E., corneal incision, small iridectomy, normal expression except that lens came out very slowly and seemingly took considerable pressure in delivery. Striped keratitis for two weeks. Very high immediate corneal astigmia (6.00, 180°). V. + 11.00 ⊃ + 5.50, 180° = 6/xxxvi. Astigmia reduced in May, 1908, to 3.00, 180°.

Case 15.—Feb. 21, 1908: E. B., aged 58. Immature cataract, rather large iridectomy, expression followed by small bead of vitreous, conjunctival stitch. V. + 10.00 = 6/xii.

Case 16.—March 21, 1908: O. P. H., aged 75. Robust health, two years blind with mature cataracts. R. E. chronic conjunctivitis and dacryocystitis. L. E. apparently normal, no pus germs on microscopic examination, three days' bichlorid of mercury treatment to eye and Seiler's solution in nose. Small iridectomy normal expression, brown cataract. Corneal astigmia 1.50, 180° V. + 10.00 = 6/xxiv. Increased in May, 1908, to + 11.00 = 6/xii. (See Case 18).

Case 17.—May 5, 1908: Mrs. S., aged 64. Mature cataract, normal expression with rather large and uneven iridectomy. V. + 11.00 ⊃ + 1.50, 15° = 6/viii.

Case 18.—May 21, 1908: Patient in Case 16. April 1, 1908, I excised the lacrimal sac according to Meller's[21] method securing union by first intention and kept him under antiseptic treatment with bichlorid of mercury solutions locally until May 22, 1908, when I made normal expression of the right cataract with small iridectomy. V. + 10.00 = 6/xxiv.

Case 19.—May 21, 1908: Patient 10 returned with L. E. blind from degeneration, and as a last resort I made expressive operation on the R. E., which only had poor perception and projection, Morgagnian cataract, synchysis vitrei, having no complications and to my surprise getting 6/lx vision with + 10.00, but a few months later vision further deteriorated and the end results are unknown.

Case 20.—June 5, 1908: Mr. S., aged 43. Morgagnian cataract, normal expression, small iridectomy. V. + 10.00 = 6/lx.

Case 21.—June 19, 1908: Mrs. H. W., aged 61. R. mature L. immature cataracts, normal expression with small iridectomy R. except that capsule ruptured within the eye and some remained. Opacity cleared up under dionin. V. + 11.00 = 6/xxiv. (See also Case 28.)

Case 22.—June 20, 1908: Mrs. M., aged 60. R. E. blind from previous iridocyclitis following attempted extraction of cataract by another operator. L. E. poor perception and projection. L. E. Morgagnian cataract expressed aided by forceps which entered the eye, much loss of fluid vitreous. Cataract with black nucleus. No result as eye went on to iridocyclitis.

Case 23.—July 16, 1908: M. O., aged 63. Immature cataract, expression with small iridectomy, capsule ruptured before delivery, extracted with forceps entering the anterior chamber, small bead of vitreous extruded and was cut off, conjunctival stitch. V. + 10.00 ⊃ + 1.75, 180° = 6/viii.

Case 24.—July 21, 1908: N. O., aged 69, had an attempted extraction done by another surgeon in L. E. with result of incarceration of iris and partially dislocated immature cataractous lens with resultant vision of fingers at 2.00 M. As the vision of the R. E. was less than the L. E. through the lenticular opacity I attempted expression with iridectomy, but the capsule ruptured and vitreous escaped, necessitating entrance of the spoon and delivery of the lens, conjunctival stitch. Patient had postoperative mania occasioned by fear of not regaining vision, owing to his previous experience and from the fact that his brother was totally blind after an unsuccessful cataract operation by the same operator on his only remaining eye, the other being injured and blinded by an accident. Nov. 6, 1908, I made a discission of pupillary membranes securing a clear pupil with normal looking fundus; but patient declared and persisted in the statement that he could not see, becoming very childish, so he was taken home and the end-results are unknown to me.

Case 25.—July 30, 1908: Patient in Case 23 returned and I made normal expression of immature cataract with small iridectomy on left eye. V. + 10.00 ⊃ + 2.00, 180° = 6/vi.

Case 26.—Aug. 3, 1908: Mrs. M. S., aged 51. Immature cataract, normal expression with small iridectomy. V. + 10.00 ⊃ + 1.00, 180° = 6/xxx. As the other eye has yet good sight she prefers to go without this correction.

Case 27.—Aug. 6, 1908: Mr. F., aged 54. Immature cataract, normal expression with small iridectomy. V. + 12.00 ⊃ + 2.00, 15° = 6/xxxvi.

Case 28.—Sept. 2, 1908: Patient in Case 21. Expression L. with small iridectomy; fluid vitreous escaped, spoon entered eye, conjunctival stitch, hyphema, dionin. Oct. 22, 1908, discission. V. + 12.00 = 6/xxiv.

Case 29.—Sept. 18, 1908: J. R. W., aged 80. Mature cataract both eyes, very smooth normal expression with small iridectomy R. E. Clear black pupil and counting of fingers immediately after operation. Very nervous patient; two days later had postoperative mania, got his fingers under the bandage despite attention of special nurse, infected eye which was lost through panophthalmitis.

Cases 30 and 31.—Nov. 21, 1908: H. B., aged 57. Five years before this date I had extracted an immature cataract from his right eye, finding the zonula weak; the lens came out with the capsule. V. + 10.00 = 6/vi. Nov. 10, 1908, I attempted operation, but on completing sclerocorneal incision found that a bead of vitreous protruded into the anterior chamber, closed up the eye and November 21 made new incision with iridectomy; perfectly normal expression. V. + 10.00 ⊃ + 1.00, 180° = 6/viii.

Cases 32 to 37.—In addition to the above I have made six expression operations at my public clinic, the case histories of which are not complete nor at present accessible. In one of them there was loss of vitreous, in two rupture of the capsule but all recovered with useful vision.

I append three more recent case histories which apply to this subject, although they can not be classed as expression operations, in two of them the lens being removed in its capsule by the aid of the wire loop, in one of which detachment of the retina followed later, and in the other owing to the corneal incision a high degree of astigmia with delayed union followed the operation. In the other the interest centers on the failure of expression, followed later by successful combined extraction.

Case 38.—May, 1897: J. M. C., aged 50. A diabetic and myope of — 4.00 D. submitted to a flap extraction by me in the right eye. On account of rupture of the zonule and loss of vitreous I removed the lens by the wire loop, ten days later, V. with + 8.00 = 6/vii. Gradual loss of sight followed, and when seen a year later detachment of the retina and optic nerve atrophy was found.

Case 39.—May 2, 1908: Patient in Case 38. I made typical flap extraction with iridectomy on the left eye after attempting expression but had to do a cystotomy; the lens capsule, however, was extracted with forceps. V. + 10.00 ⊃ + 2.00, 90° = 6/xxiv.

Case 40.—September, 1908: I operated at a clinic on a man of about 60 in whom an attempt by another operator at extraction of cataract had been made but the lens had not been removed. Here I found a cataract with posterior synechiæ. Ordinary attempts at extraction of the lens after the incision

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[21] Meller: Ophthalmic Surgery, 1908, p. 1 et seq.

Table Illustrating Forty Operations of Expression of Cataract in its Capsule.

No. of Cases.	Type of Cataract.					Visual Acuity.			Complications in Healing.						Gen'l Comps.	Vitreous.		Capsule.		Inst. Enter'g Eye.		Incision.	
	Mature.	Immature.	Hypermature.	Morgagnian.	Complicated.	Good Results. Vision 6/vi to 6/lx.	Poor Results. V = Objects.	Failures.	Infections.	Iridocyclitis.	Iritis.	Striped Keratitis.	Hyaloid Opacity.	Delayed Union and High Astigmia.	Post-op. Mania or Psychic Disturbances.	No loss.	Loss.	No Rupture.	Rupture.	Graefe Knife Only.	Spoon, Loop or Forceps Beside Knife.	Sclero-corneal with Conjunct. Flap.	Corneal.
1.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	..
2.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
3.	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
4.	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..
5.	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
6.	1	..	..	..	..	1	..	..	..	..	1	..	1	..	..	1	..	..	1	1	..	1	..
7.	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
8.	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	1	..
9.	..	1	..	..	..	1	..	..	..	..	1	..	..	1	..	1	..	1	..	1	..	..	1
10.	..	..	1	..	1	..	1	..	..	1	1	..	..	..	..	..	1	1	..	1	..	1	..
11.	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..
12.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
13.	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	..
14.	..	1	..	..	..	1	..	..	..	..	..	1	..	1	..	1	..	1	..	1	..	..	1
15.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..
16.	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
17.	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
18.	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
19.	1	..	..	..	1	1	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..	1	..
20.	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
21.	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1	1	..
22.	..	..	..	1	1	..	..	1	..	1	1	..	..	..	..	..	1	1	..	..	1	1	..
23.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..
24.	..	1	..	..	..	..	..	1	..	..	1	..	..	..	1	..	1	..	1	..	1	1	..
25.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
26.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
27.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
28.	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..
29.	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..	1	..	1	..	1	..	1	..
30.	..	1	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	..
31.	1	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
32 to 37.	3	3	..	..	..	6	..	..	..	..	..	..	..	..	..	5	1	4	2	3	3	6	..
38.	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	1	1	..
39.	1	..	..	..	..	1	..	*	..	..	..	..	..	..	..	1	..	..	1	..	1	1	..
40.	1	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	1	..	1
	18	15	4	3	8	34	2	4	1	2	5	1	1	3	2	30	10	30	10	25	15	37	3

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* 1 ultimate detached retina.

of the sclerocornea without conjunctival flap failing to deliver I passed the wire loop behind the lens and delivered it without loss of vitreous. I understand on good authority that there was slow healing of the wound which possibly may have reopened and the lips of the wound overriding each other being followed by a very high degree of astigmatism 6.00 or 8.00 D. I have, however, not had the opportunity to examine the case since the day of operation.

I am convinced that from the circumstances under which the Indian operators are placed, the apparent lessened susceptibility to infection of their patients, the fact that wounds on Hindoos, like those on the lower races and wild animals, are more prone to heal than in the cultivated classes, and, above all, that these patients disappear from observation soon after the operation, we must depend for the end results on the testimony of others who practice in more civilized countries, where the patient's life history can be followed with more exactions. Therefore, the reports of Cheney,[13] Greene and others, although in proportion showing such a paucity of patients, are of more value to us.

"If the dread of the remote complications is relieved by further experience there is much to be said for the operation" (Elliot[22]). If the ultimate results of the operation are good in the foregoing cases I shall continue to practice it in selected cases.

The operation is not one to be attempted by any but the most skilled operator, and even with him is not to be chosen as a routine method, for it is a far more dangerous operation, except in the hands of an operator whose touch is fine, who has no trembling fingers and whose judgment is the most exact.

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. WÜRDEMANN AND GREENE

Dr. Peter A. Callan, New York: I have never done this operation in uncomplicated cataracts. I have done it with a great deal of comfort to the patient in cases of dislocated lenses, and know of no operation that affords such good results when the lens is dislocated into the vitreous, and when, if proper pressure is made, the lens appears at the lips of the wound and emerges without loss of vitreous. I have been satisfied with the old operation, even if I have to make a secondary operation, and I think the dangers of a secondary operation are all due to choice of method in operating. I have seen Major Smith operate and it appeared to me that it was a contest between how much pressure he would apply and how much the hyaloid membrane would stand; in other words, a great amount of traumatism was required to expel the lens in its capsule, and we all, theoretically, at least, know that the more an operation is accompanied by traumatism the more likely the eye is to become inflamed from germs and infection, or iritis and iridocyclitis result, not to speak of loss of vitreous. There is usually no occasion, or rarely, at least, in the old operation to lose vitreous if the patient behaves himself. I have no doubt that this operation affords a great many possible points of advantage to Dr. Smith. He is a ruler, you might say, of an immense district. These patients come to him, he sees them for about one week, and then they disappear, never to be seen again. They are peasants. They are a class of people who do not demand much. They do not read, they do not write, they are living the simple life close to nature, and I think their eyes will stand a great deal more than our workers in the city would stand. Possibly I have no right to criticise this operation, inasmuch as I have never tried it, but I have been afraid to try it. I did not feel that I had any right to try it, as the methods ordinarily used gave me such good results. I hope that inexperienced men who have not the facility to gain experience will not rush in owing to the success of Dr. Greene and Würdemann, and of Major Smith, who is in a class by himself—a man who might perhaps take any kind of a knife and perform a cataract extraction with possibly perfect safety. It makes all the difference in the world whether one has that wonderful technic that he has. I do not think it is fair to put ourselves in that class. It seems to me that until we become practically perfect we ought to stick to the methods we are accustomed to and in which we are proficient.

Dr. Arnold Knapp, New York: I am very sorry that I can add very little on the subject of extraction in the capsule to what is contained in my description of a visit to Major Smith which was published in the *Archives of Ophthalmology* last year. I should like to say that in my opinion Major Smith's statistics are accurate. The operation is undoubtedly much more difficult than the ordinary one. Its value can only be established by exact statistics on the visual results obtained and by a record of the subsequent life of the eyes which have been operated on after this method. There can be no question but that the loss of vitreous even with the most skillful operators is much greater than in the ordinary operation. Loss of vitreous, to my mind, may mean imperfect healing of the corneal wound, entanglement of the iris, and subsequently a peculiar transformation of the anterior layers of the vitreous into slightly opaque tissue which interferes with vision. Even if the cataract is successfully removed in the capsule, reposition of the iris, straightening out of the columns of the coloboma can not be practiced with any degree of freedom for fear of vitreous prolapse, which is especially apt to occur at the end of the operation; consequently peripheric iritic adhesions or moderate prolapse of the iris were the rule in the cases which I observed. On the other hand, extraction in the capsule is an ideal and beautiful operation when the dislocation of the lens takes place readily. There is no postoperative irritation or inflammation of the iris and no further trouble with the capsule, which in many cases makes the secondary operation more hazardous and difficult than the first. The Indian patients, though younger in years, are about as old as ours, as they mature and grow old earlier. They are usually emaciated and very thin. I did not observe in India any of the fat, plethoric patients who with us are so notoriously prone to postoperative complications. The cataract patient in Jullunder is subjected to practically no preparation and is operated on directly after admission. Perhaps on the whole they are better behaved during the operation. Through the courtesy of Dr. Greene I was able to compare the lenses which he had extracted in the capsule in this country with some that I had brought from India. There was no appreciable difference. I wish to express my admiration for Dr. Greene's excellent results and trust that observation of the subsequent course of these eyes may confirm the claims which have been made for this operation.

Dr. Casey Wood, Chicago: Recently, at the invitation of Dr. D. W. Greene and in the company of Dr. Edward Jackson, I spent two days of about ten hours each in examining patients, witnessing and assisting at the procedure commonly known as Major Smith's operation for cataract. This work, done by Dr. Jackson and myself at St. Elizabeth's Hospital, the Old Soldiers' Home, and in Dr. Greene's private office, included a careful examination with the oblique illumination, the ophthalmoscope, and other methods of precision of patients who had been previously operated on (many of them reported) by this so-called Indian method and in comparing them—especially in the Soldiers' Home—with extractions done at various dates by other methods. In this way I had an excellent opportunity of watching the steps of the Smith operation as performed by Drs. Greene and Bonner in nine cases and of critically reviewing the results of the operation in the persons of 47 other patients who had submitted at the hands of Drs. Greene, Bonner and Millette to the Indian form of extraction from a few days to three or more years previously.

Of the 47 patients examined by the ophthalmoscope, etc., I never saw a single case of glaucoma or detached retina, although Greene, in his paper, reports one or more of the former.

The proportion of unusually good vision (20/15 to 20/30) was, I believe, greater than results from ordinary methods of extraction. I not only found central vision in those cases already reported by Dr. Greene to have been correctly reported but in some six instances to have been better than that set forth in his reports. This is a circumstance that lends plausibility to the claim that, while eyesight tends to deteriorate (chiefly as a result of opacification of the capsule) during the first six months following the older methods, it improves after the Smith operation, owing to the absorption of intraocular bleeding and the re-establishment of normal vascular conditions disturbed by corneal and other traumatism.

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[22] Elliot: Cataract Extraction, Brit. Med. Jour., Dec. 19, 1908.

The eyes operated on showed very few traces of iridic, capsular, hyaloid or pigmentary incarceration; the sclerocorneal wound appeared to have healed as smoothly as in the older forms of operation, and, with few exceptions, by first intention. The media were found to be exceptionally clear and the black, generally large pupil give an unobstructed and well-defined view of the fundus.

On the other hand, patients recently operated on showed, in practically every instance, decided scleral and faint ciliary injection—a vascular engorgement that appeared to me to persist longer than after the classic modes of extraction and to be due to mechanical irritation—traumatism involving the cornea, iris and, possibly, the ciliary body.

Corneal alterations—haze of the *substantia propria*, disturbances of the anterior epithelium, mild forms of keratitis—I saw in several cases of recent extraction; but I do not think that striped keratitis or other forms of the more serious corneal changes were seen more frequently than in the older operations. Properly or not, I regarded these early keratitic sequels as due to the friction of the cornea by the end of the strabismus hook.

Although there were no cases of thickened capsule or of capsular remains (except in a few instances in which the latter had ruptured during the operation but did not obstruct central vision), yet I saw seven instances of decided exudation into the posterior chamber, two evidently vitreous hemorrhages, five of them deposits on the hyaloid membrane.

There were many small, ideally shaped, key-hole pupils, but more than a majority were wide and large, with a tendency to upward displacement—a condition that, of course, marred the cosmetic result, even though it did not interfere with central vision at the near point.

If from this slight experience I might be allowed to venture an opinion as to the place of the Smith operation in ophthalmic surgery, I would say that, given an experienced, intelligent and skillful operator, working in conjunction with a tried and equally experienced assistant and counting success in cataract extraction entirely from the standpoint of the amount, quality and persistence of central sight six months after the operation, the Major Smith procedure is the best method for extracting all forms of senile cataract with which I am acquainted.

Dr. Walter R. Parker, Detroit: I have attempted the extraction of the lens in the capsule in 23 cases. In 3 of the cases I failed. One patient had postoperative mania the night of the operation and the eye was lost through panophthalmitis. This leaves 19 results about which to speak. In the 19 cases the average of vision from 10 days to two weeks after the operation was 6/36, not quite so good as the average of vision in the patients operated on by the regular method. In about 50 per cent. of the cases the lens turned on itself and was delivered in the classical way. The other 50 per cent. presented the upper edge first. There was a slight loss of vitreous in 21 per cent. of the cases. In no case was there any iritis, and in no case was the loss of vitreous so large that it influenced the result in any way. That the operation is a difficult one I think can not be denied. It certainly is more difficult than the classical operation. I have done about 480 extractions, 23 of them being those I have mentioned by this method. The first case I had was simplicity itself. The lens, presented with its upper border, came out very easily, and in that case before the patient left the hospital he had vision 20/20. That is the only case in which I can report the ultimate result. It was reported in the *Ophthalmic Record*, April, 1906. The amount of keratitis is much greater by this method than by the regular method. Dr. Greene has cleared up a point that in the few cases I have done has bothered me very much. If you will examine the eye carefully after operation you will find corrugations running vertically. This condition Dr. Greene attributes to disturbance in the anterior vitreous. That a trained assistant is necessary seems to me certain. The operation has been simplified very much in my hands by the new instruments, the large hooks and the double spatula. I think if one reads the original description by Major Smith one is inclined to believe there must be prolonged constant pressure on the cornea. After the pressure on the lower part of the cornea has ruptured the capsular attachments below, then all the pressure is stopped so that the lens will have an opportunity to come anteriorly, and it can be turned on itself by manipulation.

Dr. W. H. Wilder, Chicago: I think that in arriving at a conclusion on any important procedure which is more or less of an innovation we must study and analyze very carefully the results of any series of cases. Not wishing to offer any captious criticism of these papers, I should like to call attention to the fact that the first essayist whose paper purports to be a record of 40 cases of extraction in the capsule includes 3 extracted with the wire loop when he feared the vitreous might escape, an operation we all do in an emergency. Furthermore, there is no detailed record of the 6 cases from 32 to 37, so it is impossible to see how they can throw any light on the value of the operation.

The first essayist further advises that this operation be performed only in selected cases and "is not one to be attempted by any but the most skilled operator." This is conceded by all, and we must look to these skillful operators to guide us in this new operation.

Major Smith, I think, confesses to a loss of vitreous in from 7 to 8 per cent. of his cases, but the first essayist shows unquestionable skill, for he claims a loss of no more than 5 per cent. Referring to the value of the lid holder in place of the squint hook of Smith, he states that he loses "vitreous in not more than 5 per cent. of cases either with or without capsulotomy." The analysis of his cases, however, tells a different tale.

I do not wish to criticise his results in the least; he must have a great deal of skill, for he has had the opportunity, as he states of operating on 174 cases of cataract in the last two years, else how could his records show 37 of his 40 reported cases done since March, 1907, "selected" and suitable for this operation. I only submit that in offering conclusions to the profession, as guides to practice, one should show extreme care, not only as to statistics, but also as to the degree of enthusiasm manifested for the new method.

The first essayist states in his abstract that he finds this intracapsular operation as successful in his hands as the ordinary method of extraction; another evidence of his great skill, but not a very safe guide for the rest of us.

I have seen a number of these operations done by Dr. Greene at the Illinois Eye and Ear Infirmary, where I have many cases, but unfortunately not so many as 174 in two years, but have not felt it wise to vary from the old method. But I do see, if this can be proved successful in immature cataracts, it will be an extremely valuable method. Dr. Greene kindly consented to do some operations in our clinic and I had the pleasure and profit of assisting him. I wish to compliment him on the way he did them. Of the patients operated on 3 were mine. One patient with Morgagnian cataract got along beautifully. There was violent reaction after several of the operations, and in many of the patients there appeared this latticework keratitis which usually, I understand, clears up, and in most cases did, but not in all. One patient left the house with an opacity of the cornea which might be due to an injury to the membrane of Descemet. But, until we get some more positive statistics than those of Major Smith, the character and temperament of whose patients are so different from ours, we should withhold judgment; and then we should demand that such statistics as are presented to us be reliable in all details, because if we are going to weigh successfully the value of this operation we must know how much loss of vitreous occurs, what vision we get, and whether the after-history of the cases is as favorable as with the old method.

Dr. Percy Fridenberg, New York: It may be of interest to those present to hear of the after-history of the operations done by Major Smith at the New York Eye and Ear Infirmary last summer in the clinic of Dr. Gruening, then under my charge. One patient had had a preliminary iridectomy two weeks beforehand. The operation itself was performed without complications whatsoever, and that the assistant was sufficiently trained may be known from the fact that it was Dr. Arnold Knapp. The thing noticed by all the observers near was that both of these patients complained of intense pain. The second point was that the expression of the lens seemed to take much more time than usual. Dr. Callan has called attention to the fact that it is attended with a great deal of traumatism. When the patients' eyes were bandaged and they were sent back to the wards I asked Major Smith when he wanted them dressed. He said "Let them go four or five days; there are no complications to be feared and there is no necessity for an early dressing." Our practice is to redress them 24 hours after the operation. Acting on his instructions we let them go an extra day. In both cases there was an extreme reaction. In both cases there was very marked striated keratitis. In the case in which the iridectomy had been performed combined with the operation a narrow iridectomy without reposition of the coloboma but immediate expression of the lens, there was very marked iritis which progressed in spite of careful treatment. I had Dr. Gruening come down and see the case. It went from bad to worse and was one of those sluggish cases of iridocyclitis, and at the end of a month vision was practically *nil*. In the other case there was a severe striped keratitis, which gradually cleared up, but on the third day the patient, a woman of 63, complained of a great deal of pain in the eye and herpes of the cornea was found. I do not know whether the traumatism produced that or not, but it cleared up and finally the sight was 20/50 with correction.

Dr. L. Webster Fox, Philadelphia: Two years ago at our Symposium on Cataract before this Section I had assigned to me "The Delivery of the Lens and the Toilet of the Wound." Up to that date and since I made many attempts to deliver the lens in its capsule, after the method of Pagenstecher, and later, following as nearly as I could the Smith method, even going so far as to devise various shaped instruments to assist in the delivery of the lens. As I was searching through the literature I found that Dr. Greene had written the best description on the subject, and that his experience with the operation exceeded that of any other surgeon in our country. Having these facts in hand, I communicated with him. Later he invited me to Dayton to witness eight operations by the Smith method. Having become encouraged by the ease with which Dr. Greene delivered these cataracts in their capsules, I have, since my return home, performed five operations by that method. The first three were ideal; the fourth was performed on an unruly patient, and, while the lens was delivered, yet considerable vitreous was lost; the fifth was similar to the fourth, only the loss of the vitreous was greater and the result was a collapsed eyeball. Notwithstanding the fact that I filled the eyeball with normal salt solution, there was no vision in the eye, although the rotundity of the globe was restored—there evidently was complete separation of the retina. Dr. Greene is right when he asks: Is this operation to take the place of our common practice, or is it too difficult for the average ophthalmic surgeon to follow, or can it only be followed by the most skilled operators. Let the question be settled by those having exceptional opportunities? At present I am non-committal, but intend to follow this method until I have acquired more dexterity than I possess at present. I endorse Dr. Callan's advice that it is not fair to his cataract patient for any surgeon to operate by a new method until he has mastered the technic of that operation on pigs' eyes. I am sure that it is a practice which may well be adopted by all ophthalmic surgeons. This country must decide whether this operation is to be a popular one or not. From what I can learn the ophthalmic surgeons of European countries are not enamored with it, so far they have fixed our methods.

Dr. Frank Allport, Chicago: The first question that I wish to solve is: Am I going to give up an operation with which I am familiar and feel competent to perform and one which yields me excellent results, for one with which I am unfamiliar and one requiring extra skill and much experience to perform satisfactorily? In other words: Which operation in my hands will perform the greatest amount of good to the greatest number of people? The Major Smith operation is undoubtedly an excellent one and frequently yields startlingly brilliant results. In Major Smith's hands, with his constant practice and enormous experience, he is doubtless justified in the continuance of its performance. Dr. Greene, with his large operative material and natural and acquired operative skill, is doubtless justified in this work. I would be glad to trust my own eye in the hands of either of these gentlemen. The questions for me to settle, however, are: Am I going to experiment with this operation? Am I justified with the limited number of cases which I have at my command *per annum* in abandoning a satisfactory procedure for an extra hazardous operation with which I am unfamiliar and which requires an extra amount of skill to perform? I imagine this is a problem which we will all have to solve and I hope it will be solved in a manner which will best subserve the interests of our patients. I am an average operator with an average practice and with an average amount of skill. My senile cataract cases, I am sure, do not exceed 25 a year, and I do not consider that this number justifies me in experimenting with the Smith operation. Does it justify most of the gentlemen here present? I was particularly impressed with one thing that Dr. Greene said, namely, that it seems to be essential to success that the patient must constantly look upward in order to do away with the traction on the part of the inferior rectus muscle. This seems to me to be a great objection to the operation because it is practically impossible always to control the voluntary action of the eye on the part of the patient.

Dr. M. Wiener, St. Louis: I was one of the early enthusiasts regarding this operation. I have attempted 42 extractions in the capsule, 2 of which ruptured and can not be counted; I have had 7 vitreous losses. I abandoned this operation nearly two years ago and I will not perform another for a long while. I have had 3 cases of these 40 patients return with a membrane across the pupil. In 2 of these cases there was no loss of vitreous. One of them occurred a little over two years after the operation. Now if a membrane is going to occur where the capsule is removed I can not see the advantage of it, especially when the operation is very much more difficult than the usual extraction with iridectomy. Another danger which might be mentioned is this: I lost only one eye and that was in a case in which the operation itself was everything that could be asked; the lens rotated properly; but on the third day after the operation the patient developed a cold. He coughed and suddenly complained of pain in his eye. On removing the bandage I found a large bead of vitreous in the wound which I clipped off, but the eye atrophied and no vision was obtained. Of course, this might also happen when the posterior capsule remained intact, but it is not nearly so liable to happen. I think we should hear more of the ultimate results of this operation before proceeding too rapidly.

Dr. Mark D. Stevenson, Akron, Ohio: I have attempted the operation in 14 cases. In 2 I failed by rupturing the capsule. I had 2 losses of vitreous and 1 severe iritis. Every patient has good vision so far. I learned much concerning this operation during some visits I made to Dr. Greene last summer. I wish to emphasize the importance of a large corneal incision—fully the upper half. I do not especially like a conjunctival flap in this operation, especially toward the sides. A small one at the summit of the corneal flap may cause no trouble and be useful. I do not make a wide iridectomy but simply cut the iris through the sphincter, not removing any of the iris. After making the corneal incision and performing an iridectomy I stand at the side of the patient and the assistant stands at the head. By removing the capsule with the lens, there is not only no necessity for future needling, but the troublesome capsular fragments which in other operations lie in the wound, preventing healing, causing iritis, etc., are not present. There is no swollen ring of cortex as in other operations pressing against the iris. At a meeting of the Ohio State Medical Association last month I first heard Dr. Greene state that the lens often turned over in its exit from the eye. Months before and the first time it occurred to me I thought it was an accident, but it was such a successful operation without loss of any vitreous, that I decided in the future to try to make the lens turn over. First I rub the cornea with the end of the hook a little above the lower border and parallel to it, gradually widening my arc until the lower part of the zonula is considerably depressed. Next I rub on the margin of the cornea and even on the sclera pushing it behind the edge of the lens which has been displaced not only backward, but because of its slanting surface, upward. As soon as the lower edge of the lens is in front of the crease pressed into the cornea by the hook, the hook is gradually swept upward and the lens inverted with much less chance of vitreous loss than if it had been pushed directly out of the eye. In this way, the lens comes first and the corneal opening is blocked until it passes. I have found that a properly shaped Pagenstecher's smooth glass rod spatula makes an excellent instrument with which to press the cornea. I think I prefer it to the strabismus hook. I would not advise the use of forceps in delivering the lens, as the capsule would immediately rupture.

Dr. J. W. Millette, Dayton, Ohio: I have assisted in a goodly proportion of these 75 cases and have carefully followed the development of each case and have correlated and prepared the statistics in connection with the paper, and I desire to state that Dr. Greene has approached this work in the true spirit of the student. Recognizing the imperfect character of cataract work, and trying to find some better method, he has given us the truthful record of the results obtained. He requested that I speak briefly of what the assistant does. During the incision and iridectomy the upper lid is retracted by the Noyes elevator. The lower lid is slightly retracted with the face of the thumb or index finger. I most frequently use the finger. The patient's lids are under absolute control, a thing that is not true and can not be true with any speculum with which I am acquainted. The patient can not do harm by squeezing. From the time the incision is finished the patient may do great harm by contraction of the inferior rectus, which opens the flap and exposes the contents. If he will persistently look toward the ceiling, as he lies on his back, he is in as nearly perfect condition as is possible. After the iridectomy is made I lay aside the Noyes elevator and use the large hook. With this the action of the orbicularis is under perfect control.

The operation has some features which will hinder its universal adoption. 1. It requires a trained assistant. Major Smith and many of his followers say that the assistant is almost as important as the operator himself. 2. It requires a greater degree of skill than the capsulotomy method. Sufficient skill may be attained by any man who has skill enough to do the ordinary extraction, if he will practice. I do not advise practice on pigs' eyes, nor calves' eyes, nor sheep's eyes. I have wasted dozens of them. They are most unsatisfactory. But a good live dog, properly bound up, is a good subject. Rabbits are good, the dog is the best in my experience. 3. There is a somewhat greater degree of violence than in the other methods, but the violence to the cornea even is not so great as it seems. I have observed that the men who have been in these clinics and have placed the hook on the cornea have been prone to begin with too much force. A little more force than the weight of the hook is sufficient, together with the pressure in one place with the spud. 4. There is also loss of vitreous more frequently. As to the future of the eye from loss of vitreous, up to one-third, we have no positive statistics. We should hold ourselves agnostic. There may or may not be future evils resulting from this minor loss. 5. The cosmetic effect is not so good, but occasionally we do get that ideal keyhole appearance. Ordinarily the pupil is "U"-shaped with a broad base and frequently displaced upward. However, I believe that there are four considerations to which we must give their deserved supremacy. The first is the permanent disposition of the capsule and its contents. Second, a secondary operation is avoided. Third, postoperative complications are practically *nil.* Fourth, most important of all, we get better vision.

I have had the privilege of studying the 75 operations by the capsulotomy method just preceding these. As nearly the same kind of eyes as one could get, patients of the same character, the same age, operated on by the same operator under conditions as nearly identical as could be, and the vision, as recorded in these records, with the capsulotomy method was 20/40, while with the Smith method it is 20/27. But to know more fully the good and bad qualities of the method and to know if it be generally practicable, we must have the results of more operators carefully and without prejudice recorded. The pioneer work being done in the clinics at St. Elizabeth's Hospital and the National Military Home at Dayton should be emulated. We want to know the best, for the best will never reach the conscientious oculist's ideal for his patient.

Dr. H. V. Würdemann, Seattle: As is to be expected, the sentiment of the Section is somewhat unfavorable from the theoretical side, but, gentlemen, try 10 operations and then come and talk about it. In pushing the lens back I do not think when it turns it goes into the vitreous through the fossa patellaris, through the hyaloid membrane; in the cases in which it makes the characteristic somersault I have not lost vitreous. In the others in which the whole ligament seemed to rupture and the lens came straight out I have had loss of vitreous probably most of the time. There are less postoperative disturbances. I have practically no iritis, 0.5 per cent.—see the statistics of Smith, those of Dr. Greene and my own. Iritis may be due to infection. In some of my early cases I failed to deliver the lens and I went on with the other operation. The central acuity seems to improve after the operation rather than to decrease as after the capsulotomy operation, except in my experience in one case in which hyaloid opacity followed. Striped keratitis, in my opinion, depends as much on the use of strong percentages of cocain and on bichlorid solution or ointment as on the rubbing of the cornea. I beg to correct one of the speakers in that my statistics were somewhat distorted by him. I remarked that I did 154 cataract operations, of which 40 were expression operations, within the course of two years, and printed in the paper is a report of 10 cases out of the 40 with loss of vitreous, making 25 per cent., not quite so good as Smith's, instead of "better." The meat of the cocoanut of this discussion was the fact that this is a better operation for cataract than all others but must be done by skilled men, and even oculists of much experience will have to learn the technic by getting down to pigs' or, preferably, rabbits' eyes, because the lens of the rabbit's eye is more like that of the human eye, and acquire dexterity before operating on the human eye.

Dr. D. W. Greene, Dayton, Ohio: I wish to impress on the members of the section that I have approached this subject in the spirit of a student. I have made 145 cataract extractions since the first day of last August. All except 5 of these have been by this method, so I need hardly tell you that I have not selected the cases. I am not here to champion the Smith operation. Smith will have to take care of that, and ophthalmologists who have sufficient opportunity will have to settle the future of the operation. I am impressed with the operation and the results I have had from it, and I shall continue to practice it until I see some better reason than I have yet seen to depart from it.

In regard to Dr. Callan's statement regarding the pressure, I think that is a point where men make a mistake. There is no great pressure applied. Dr. Casey Wood will bear out this statement. He manipulated the hook in one case, and the lens described all the versions seen in the diagrams and came out whole. Dr. Jackson did the same thing. There was no loss of vitreous. It is not so much the pressure as the manipulation that delivers the lens. Men get an exaggerated idea of it. You have an empty anterior chamber and you are pressing against a soft bag, so to speak, and there is nothing behind to resist you except the vitreous, hence the manipulation seems excessive.

Some one spoke of Major Smith operating on these patients and never seeing them again. He says that is absolutely untrue, but that in India they will hunt him up and he sees them more frequently than he wishes to. I have seldom seen the iris prolapse in healing. This accident is usually associated with high blood pressure, which I have reduced whenever possible.

As to the visual results another mistake is easily made; if you test these cases as after an ordinary cataract operation, you will be disappointed. Visual results, like old wine, get better with age, and one should not refract these patients under thirty days after the operation. Three years ago I reported twenty-two cases of so-called Smith operation at Oakland, Mich. I had one case of glaucoma occurring between my visits to the National Military Home. I visit the Home on Tuesday afternoon, and not again until Friday afternoon. In the meantime, the cases are under the care of an assistant, who is not an oculist. He is a member of the medical staff, and I take him as an assistant for a year and teach him all that I can. This case of glaucoma occurred between my visits and the eye was lost. The other case of glaucoma came on a year after the operation and I do not think had any connection with it at all. These make 98 patients whom I have operated on with one case of glaucoma, up to the time my statistics were compiled.

In regard to keratitis I have been awkward enough to get it, but less frequently now than when I began the operation. If one will make steady pressure and manipulate the hook properly and keep away from the center of the cornea and deliver the lens quickly he is not likely to get it. Thirty to forty years ago Pagenstecher noted the presence of lattice keratitis and also a disturbance in the anterior layers of the vitreous which I have also seen, but they have always cleared up in my experience.

Visual results are better than by the old method and have remained better so far as I have watched them. The future of this operation, depends entirely on visual results. I do not know the future of this method, I am not here to tell you that the smallest loss of vitreous does not harm. I know better than to do that. We do not yet know what the ultimate result of loss of vitreous will be. We have no statistics to determine it, Major Smith is not in a position to determine it definitely, and pathologists can not help us. I can only say that I have not seen any harm result from the loss of one-third up to this time. The future of the method depends on how the profession in this country, men of broad and liberal minds with large operating fields, will accept it. If they are ready to take it up and follow it to its legitimate conclusion, we will soon know its place among cataract operations, which will be largely determined by the percentage of vitreous loss and the harm, if any, which ultimately results from moderate loss. In my opinion, these questions will never be settled by theoretical or *a priori* reasoning, but must be settled by cold statistical facts and figures.

SECTION COMMITTEE REPORTS

[Editor's Note: The following reports of committees were presented before the Sections at the Atlantic City Session, June 7 to 10, 1909. They are referred to in the minutes of the Sections which appeared in The Journal, July 3.]

Report of the Committee on the Revision of the Pharmacopeia *

It has not been the aim of this committee to do more than bring forward what seemed to be the changes which might advisedly be made in the revision of the Pharmacopeia from the standpoint of the clinician. There are many points which the general committee on the revision have to consider which do not specially concern us. As is well known there are many interests to be considered, perhaps how many only those on the committee have any idea. The discussions of these, however, is not in place here, and it seems advisable to take up only those points which may profitably be considered by the clinician.

What should the Pharmacopeia include? Should it be kept to the smallest limits or allowed to expand? Should every drug which is included in it be carefully scanned at intervals to see if its position is still deserved? Should additions be looked at with careful scrutiny or should we go on the principle that everything which the profession uses should be included? Should combinations of drugs be admitted or not? Should proprietary or patented remedies be admitted to it? Should Tct. X Co. be in the Pharmacopeia when Tct. Y Co is not? Ask yourself some of these questions put them to your friends and you begin to realize how many views there are. It is probably not our province to pass on these, but still we may say something.

Under the title, "The Capture of the Pharmacopeia; With Suggestions for its Recapture," Leffman[1] has pointed out what a small proportion of the committee on the last revision was composed of clinicians, the majority being pharmacists. A reversal of these numbers would seem to be in order—yet it can safely be said that the majority of the profession take little interest in the Pharmacopeia, know little about it, and do not feel that it really concerns them. This is a matter which we should regard very seriously and anything which can aid in making the Pharmacopeia more used as a handbook by the profession is well worthy of consideration. Of course there are many causes for this and the remedy lies in various lines, such as the proper instruction of students in their attitude towards and knowledge of it. But these hardly come in the province of this discussion.

It will be granted that it would be a great advantage to have the profession more familiar with it and as far as possible using the drugs therein contained. That there are certain drugs which will be used and can not be admitted is evident. For one thing the revision takes place only at intervals and new substances protected by a trademark or patent must be considered. At present many of them are in extensive use. But the great bulk of the drugs which we need to use are found in it. Probably a certain number of the profession will use substances or combinations which can never be admitted. The more they know about the Pharmacopeia the fewer will belong to this class. To have the Pharmacopeia used more extensively by the profession seems an important matter and the more convenient it can be made, the more closely we can bring the drugs in it to correspond with the ones in active use, the better.

An important point which should be kept in mind is the possibility of making the Pharmacopeia something which will come into constant use by the members of the profession generally. In bringing this about one important thing is the reduction in size, which seems to be a point worth considering. Might it not be possible to omit the appendix? The reply may be made that this is an integral part of what the Pharmacopeia should be and yet for the medical profession it is of little importance. Perhaps an edition for the profession might be published in which the various directions regarding preparations, which belong more strictly to the pharmacy side, might be omitted. Another point which is put forward for discussion is in regard to the publication of an annual bulletin, such as has been brought out by the American Medical Association. The value of this to the profession has been tremendous and we owe a great many thanks to those who have done the work of its preparation. Would it be possible to have a somewhat smaller publication in association with the Pharmacopeia brought out every year or every second year? If this were done the profession would probably regard the Pharmacopeia more as a volume dealing with everyday things than as a record of the past. It may be the general opinion that this is better left to the American Medical Association, but the advisability of the other course seems worthy of consideration. This would not exclude the work at present being done and might be carried on in conjunction with it.

Another point is as to the advisability of introducing any substance "which cannot be produced otherwise than under a patented process or which is protected by proprietary rights." The advisability of doing this is hinted at in the eighth Pharmacopeia. Your committee feels that this would be a mistake and that the position taken in the last Pharmacopeia should be maintained. To do otherwise is to admit the thin edge of what would prove to be a very large wedge. Certain drugs might be omitted without any harm being done but who is to draw the line? It seems safer to hold by the present rule; there is less danger in that than in the other case. How many of the preparations which would have been admitted ten years ago, would be considered worthy of a place to-day? How many which might be regarded as worthy of a place to-day would be retained ten years from now? At the same time one must recognize that there is much to be said for the other view, that under proper safeguards some of them might be admitted.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Read before the Philadelphia County Medical Society, March 24, 1909.

Drugs which should be dropped from the Pharmacopeia. It may be thought well to retain some of these in the National Formulary for various reasons. The majority do not seem to deserve a place and should be dropped for want of sufficient recognition and use. Some are used in certain localities, but this should not justify their retention.

Acetum Opii.
Acidum Camphoricum
Aconitina: (This should be dropped on account of its strength and variability as well as the dangers of poisoning.)
Adeps: (The use of this has almost entirely ceased. It has been replaced by more suitable substances.)
Althea.
Anthemis.
Berberis: Fluidextractum Berberidis.
Calamus: Fluidextractum Calami.
Calendula: Tinctura Calendulæ.
Cassia Fistula.
Chimaphila: Fluidextractum Chimaphilæ.
Chirata: Fluidextractum Chiratæ.
Cimicifuga: (Tincturæ Cimicifugæ; Fluidextractum Cimicifugæ; Extractum Cimicifugæ.)
Cinchonidinæ.
Cinchoninæ Sulphas.
Cypripedium: Fluidextractum Cypripedii.
Euonymus: (Fluidextractum Euonymi; Extractum Euonymi.)
Eupatorium: Fluidextractum Eupatorii.
Frangula: Fluidextractum Frangulæ.
Gambir: (Tinctura Gambir Composita; Trochisci Gambir.)
Geranium: Fluidextractum Geranii.
Hedeoma: Oleum Hedeomæ.
Krameria: (Tinctura Krameriæ; Fluidextractum Krameriæ; Extractum Krameriæ; Syrupus Krameriæ; Trochisci Krameriæ.)
Lappa: Fluidextractum Lappæ.
Linimentum Saponis Mollis: (This causes confusion as it is not intended to be used as an embrocation. The same might be changed.)
Marrubium.
Matico: Fluidextractum Matico.
Matricaria.
Mezereum: Fluidextractum Mezerei.
Oleum Coriandri.
Oleum Erigerontis.
Oleum Sabinæ.
Oleum Sinapis Volatile.
Pareira: Fluidextractum Pareiræ.
Phytolacca: Fluidextractum Phytolaccæ.
Pimenta: Oleum Pimentæ.
Piperina.
Pulvis Acetanilidi Compositus: (There does not seem any reason for retaining this combination.)
Quillaja: (Fluidextractum Quillajæ; Tinctura Quillajæ)
Rhus Glabra: Fluidextractum Rhois Glabræ.
Rubus: (Fluidextractum Rubi; Syrupus Rubi.)
Sabal: Fluidextractum Sabal.
Safrolum.
Salvia.
Scutellaria: Fluidextractum Scutellariæ.
Staphisagria: Fluidextractum Staphisagriæ.
Stillingia: Fluidextractum Stillingiæ.
Unguentum Potassii Iodidi.
Unguentum Zinci Stearatis.
Unguentum Hydrargyri and Unguentum Hydrargyri Dilutum: (Much confusion is caused by these two ointments and one should be dropped.)
Xanthoxylum: Fluidextractum Xanthoxyli.

In regard to the question of additions, the committee recommends that the physiologic standard for the strength of certain drugs be adopted. Among these we should suggest digitalis, strophanthus and ergot. At present various methods are used, and it would seem wise that a definite standard should be laid down. Regarding the drugs which should be added, the following seem worthy of consideration:

Calcium Lactate: This is being used more and more and is rapidly replacing calcium chlorid.

Phenolphthalein: This has come quite extensively into use and its value seems to be definitely established. It might possibly be wise to add the preparation which can be given hypodermically.

Arsenic: The use of arsenic has increased a great deal of late, especially its hypodermic administration, and it seems wise to have some preparations in the Pharmacopeia which can be readily used in this way. Of these the value of sodium cacodylate and sodium aminophenyl arsenate seems definitely established.

Theobromin: The value of this seems sufficiently established.

Bile Salts: The suggestion that their inclusion be considered seems worthy of consideration.

Diacetyl-morphin and *Theobromin-sodio-salicylate* are extensively used and worthy of being added.

It may seem that the number of drugs to be included is in striking disproportion to the number struck out. The overgrown condition of the Pharmacopeia supports the advisability of this. There seems good ground for the feeling that we should go slowly in adding to what has too much already.

Joseph A. Capps, Chicago.
Joseph H. Pratt, Boston.
Thomas McCrae, Baltimore.
John T. Halsey, New Orleans.

ABSTRACT OF DISCUSSION

Mr. M. I. Wilbert, Washington, D. C.: From a pharmaceutical point of view the report is a very pleasing one. There can be no doubt but that members of the medical profession should absolutely dictate the contents of the Pharmacopeia. That is their province, it is their duty. The Committee on Revision of the Pharmacopeia is often mistaken for the revision convention. We frequently hear that the clinician, the medical practitioner, is not represented on the revision committee; as a matter of fact the clinician requires no representation on the revision committee at all. There is nothing in connection with the work of the revision committee that is of any direct interest to him, or to which he can contribute materially; he would hamper rather than aid the work of revision. The medical profession should dictate what the Pharmacopeia should contain and the method of providing it.

Much has been said about the size of the Pharmacopeia. Here again the medical man should insist that a more distinct division be made between pharmacopeial matters proper and the chemical tests. Much of the material now in the Pharmacopeia itself could be relegated to this appendix, and thus divide the Pharmacopeia into two volumes; one the Pharmacopeia proper which the physician could use and which would contain all the information he wanted, while the combined volumes should contain all the information the pharmacist needs and must have. As the report states, the function of the Pharmacopeia is primarily one of standards; it should be simply one of standards and not a medical lexicon. If the standards are correct they do not need changing annually and only such changes need be made as are found necessary to correct palpable errors. The more or less ephemeral drugs are sufficiently well defined by the Council on Pharmacy and Chemistry of the American Medical Association in "New and Nonofficial Remedies."

Ninety years ago, when the United States Pharmacopeia was originated, it was in the hands of medical practitioners who had a wide scope of vision. They wished to make the book valuable and to keep it in harmony with the standards established abroad. Singularly enough, that idea prevailed until the Pharmacopeia came to be revised by pharmacists and converted into a book on pharmacy. In 1902, an international congress was held in Brussels for the purpose of establishing standards for potent medicaments. Among the articles acted on was mercurial ointment; a 33 per cent. ointment of mercury was adopted as an international standard. The Committee on Revision of the United States Pharmacopeia, in attempting to comply with the international requirements, introduced a diluted mercurial ointment, or blue ointment, which, by the way, is not blue at all, but green, and does not comply with international standards except so far as its strength is concerned. If the Pharmacopeia is to meet the needs of the medical profession true international standards must be insisted on.

I wish to congratulate the profession on the tone of the report. If the medical practitioners of the country will assume a more dictatorial policy, the next Pharmacopeia of the United States will be of value to the medical man and a real necessity to the pharmacist.

Dr. Lewis A. Conner, New York: The difficulties attending the selection of the more or less obsolete drugs to be dropped from, and the new drugs to be added to, the Pharmacopeia are many and great. The recommendation of the committee as to the drugs to be dropped will, I think, be generally approved. They can all well be spared. The number of drugs recommended for admission, however, is, it seems to me, regrettably small, and the reason for this lies in the fact that the committee has decided not to recommend any drug which has been patented. However much we may prefer to use unpatented drugs, the fact remains that practically all the modern, synthetic drugs are so patented, and among this number are many remedies in constant, daily use, which could not be dispensed with without the serious crippling of our therapeutic resources. Such drugs, for example, as aspirin, adrenalin, argyrol, heroin, ichthyol, veronal—to mention only a few out of many—shall we abandon their use merely because they are patented? I think few would venture to recommend so radical a course. But, if we are to continue to use them, should they not, if they have proved their usefulness, have a place in the Pharmacopeia? It seems to me that they should.

It will be generally admitted, I think, that the Pharmacopeia at present fails to meet the needs of the practicing physician and has lost its position as guide and book of reference in his daily work. The reason for this is chiefly that in it he seeks in vain for information concerning many of the drugs is general use. It is idle to expect that he will abandon the use of drugs merely because they are not to be found in the Pharmacopeia. It is much more likely that he will discard the Pharmacopeia itself. One of the very best evidences that the Pharmacopeia does not at present meet the requirements of physicians is the fact that this Association has felt it necessary to publish the two admirable little volumes, "Physicians' Manual of the Pharmacopeia and National Formulary" and "New and Nonofficial Remedies."

If the Pharmacopeia is to regain its position of prestige and usefulness, so far as it concerns physicians, some radical changes in its policy are necessary. In my judgment, the most important of these are: First, the publication of a greatly abridged "Physicians' Edition," as has been suggested by Mr. Wilbert. Second, the inclusion of the more trustworthy and useful of the modern, synthetic drugs, whether they be patented or not. Third, the issuance at frequent (perhaps yearly) intervals of bulletins recording the changes which have been made, the new drugs introduced, the undesirable ones dropped. With the enormous yearly output of new drugs, a certain small proportion of which are really valuable, it is idle to suppose that a volume of this sort which is revised only once in a decade can keep abreast of current practice. The needed flexibility can be obtained, I think, only by the publication of such bulletins at comparatively short intervals.

Dr. John F. Anderson, Washington, D. C.: One very important agent has been omitted from the list of proposed additions to the Pharmacopeia, namely, tetanus antitoxin. Diphtheria antitoxin was admitted to the Eighth Decennial Revision of the Pharmacopeia following the promulgation of a standard unit for diphtheria antitoxin by the U. S. Public Health and Marine-Hospital Service. On Oct. 25, 1907, a standard American unit for measuring the strength of tetanus antitoxin was promulgated by the same laboratory. The great value of tetanus antitoxin as a prophylactic alone certainly entitles it to admission to the Pharmacopeia, and I hope that it will be included in the next revision.

Dr. M. Clayton Thrush, Philadelphia: A smaller edition of the Pharmacopeia for the use of clinicians should include the Latin and English name of each drug, its synonym, a description of the important characteristics of the drug, its dose, solubility and compatibility, with therapeutic action expressed in a few words, and a few other particulars; which is all the average clinician wishes. Such a book could be bought for about fifty cents. A book entitled the "Physicians' Manual of the Pharmacopeia and National Formulary," published by the American Medical Association, contains those very facts; it is a small book and gives the official name, synonyms, characteristics, doses, therapeutic indications, etc. This is really all the physician needs. Therefore, why not supply ourselves with such a manual; in it could be inserted year by year the drugs that the Council on Pharmacy and Chemistry has examined and recommended.

With regard to the admission of new drugs, there is one drug that is largely used at the present time and under so many different names, viz., the active principle of the adrenal gland. This is supplied under different names by the different manufacturers, but all preparations are of the same strength, 1 to 1,000 in normal salt solution. Why not make this official? At present the gland itself only is official. But only about one physician in one thousand uses the gland; all others always use the active principle. It is certainly difficult to decide what is best to add, and what to dismiss.

With regard to dismissals, with such drugs as saw palmetto, for example, there is much adverse criticism. Hallberg collected one million prescriptions in order to show what drugs were most used in this country. He found that saw palmetto, while only prescribed about three times in a thousand prescriptions in Philadelphia, was prescribed over thirty times in Chicago, and so it is with all those drugs if we but investigate. There are drugs used in one portion of the country that are not at all used in another portion. A Pharmacopeia should not be one designed for Philadelphia alone, but for the United States. Therefore, it is important that all the drugs in use all over the country should be included. Here is another point that should be borne in mind; while these drugs are practically of no use, I believe they should be placed in a special place and not entirely dropped, for they may be of some service to certain practitioners in certain localities.

Report of the Committee on Proposed Alterations in the United States Pharmacopeia *

Your committee, appointed by the Chairman of this Section to examine into the merits of various remedies alleged to be of value in ocular diseases, begs to make the following report:

With a view of choosing what seems to be of distinct value to the practitioner and, as such, proper additions to the United States Pharmacopeia of 1910, they decided to settle the matter by a vote of members of the Section. As a preliminary to this action, it was resolved to consider only those remedies that had been investigated by the Council on Pharmacy and Chemistry of the American Medical Association. As is well known, most of the remedial agents recently recommended, generally in glowing terms, to the ophthalmologist are strictly proprietary. As a rule, neither the trade name nor the literature sent out by their owners, gives more than an inkling of their real character, nor do they throw any light on the process of manufacture. He who prescribes such a remedy is altogether in the dark in these important particulars, and might almost as well study his therapeutics in the advertising columns of a trade journal. Fortunately, we have an agency (for which we have mainly to thank Dr. Leartus Connor and its present secretary, Dr. George H. Simmons) that analyzes the constituents and reports on the pharmacal and therapeutic characters of every drug that gains, by advertisement or other means of exploitation, any considerable degree of notoriety or public favor. We refer to the Council on Pharmacy and Chemistry whose reports are published, first of all in The Journal, and subsequently in a periodical entitled "New and Nonofficial Remedies." The great majority of new proprietary and other remedies exploited during the past ten years have been investigated by the Council and described in this publication.

From the long list of drugs thus treated your committee first chose fourteen, as representing the most desirable additions to the new Pharmacopeia from the purely ophthalmic standpoint. After some consideration of the subject, it was decided that this number might well be reduced to six. To this end a postal-card vote of the Section (about 930 members) was taken with the following result:

Adrenalin hydrochlorid received	552 votes
Dionin	538 votes
Argyrol	474 votes
Fluorescein	407 votes
Protargol	285 votes
Holocain hydrochlorid	257 votes

The variation in these numbers is to some extent explained by the fact that quite a few members voted for fewer than six remedies—a proceeding that has the sympathy of a portion of your committee, who feel that extreme caution should be exercised in giving official sanction to any new remedy; especially to one that has not satisfactorily stood the test of time.

In our opinion the ophthalmologist may easily dispense with some ocular remedies official in the Pharmacopeia of 1900, and this fact might be profitably urged on the Revision Committee in 1910. Among these your committee would suggest the following, as having fallen into general disuse, and we recommend that they be dropped from the revised Pharmacopeia:

Argenti nitras mitigatus or "mitigated stick;" the oleate of cocain; the oleate of atropin; the salicylate of physostigmin (eserin); the Extractum Scopolæ and the Extractum Stramonii.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

It is further recommended that, admitting the therapeutic value of hyoscin hydrobromid, scopolamin hydrobromid be dropped; that it is not necessary to retain two salts of hyoscyamin and that either the sulphate or the hydrobromid be rejected by the Committee on Revision.

Finally, the Council on Pharmacy and Chemistry of the American Medical Association has recently asked your committee the following question: "Does homatropin hydrochlorid offer any advantages over the official homatropin hydrobromid, or does the latter answer for all purposes?" As this committee has before it no reliable data on which to estimate the relative merits of these two salts, it was decided to submit the matter to the Section, declaring at the same time its belief that homatropin hydrobromid appears to meet all the demands made on it as a satisfactory ocular remedy. It has few objectionable incompatibilities, does not readily undergo decomposition, is very soluble in ordinary menstrua, is practically non-irritant, and is readily absorbed by the ocular tissues. *A priori*, there seems to be no reason why it should be displaced by the hydrochlorid.

All of which is respectfully submitted.

Edward Jackson. Casey A. Wood, Chairman.
T. B. Schneideman. A. Edward Davis.

Preliminary Report of the Committee for the Study of the Relation of Tuberculosis to Certain Diseases of the Eye *

The Chairman of the Section requested me to form a committee for the collective study of the relation of tuberculosis to certain diseases of the eye whose etiology is in many cases obscure. It was thought that a number of observers could in time accumulate enough data to draw conclusions that might not be warranted by the smaller number of cases that would be available to a single individual. The following gentlemen have signified their interest in the subject and their willingness to engage in the work of investigation according to the plan agreed on:

C. S. Bull, New York City.
Arnold Knapp, New York City.
F. Park Lewis, Buffalo.
L. Webster Fox, Philadelphia.
W. C. Posey, Philadelphia.
G. E. de Schweinitz, Philadelphia.
H. F. Hansell, Philadelphia.
Harry Friedenwald, Baltimore
R. L. Randolph, Baltimore.
Hiram Woods, Baltimore.
G. S. Derby, Boston.
W. H. Roberts, Pasadena.
Melville Black, Denver.
David H. Cooper, Denver.
H. C. Parker, Indianapolis.
A. E. Bulson, Fort Wayne, Ind.
L. W. Dean, Iowa City.
E. R. Lewis, Dubuque.
W. H. Wilder, Chicago.
Charles H. Beard, Chicago.
E. V. L. Brown, Chicago.
William E. Gamble, Chicago.
H. Gradle, Chicago.
C. D. Wescott, Chicago.
Oscar Dodd, Chicago.

The committee will be pleased to have the cooperation of others who will study cases according to the plan outlined, keeping careful records on blanks prepared for the purpose. The examination of patients with eye disease suspected of being tuberculous is made according to the following outline:

EXAMINATION OF CASES WITH DISEASE OF THE EYE FOR SUSPECTED TUBERCULOSIS

1. A thorough physical examination of nose, throat, lungs, joints, etc.
2. A careful statement of the diseased condition of the affected eyes.
3. Examination with tuberculin.
   (a) *Cutaneous Test:* One drop of old tuberculin to be gently rubbed into two scarified points on the arm about 5 cm. apart. For control one drop of 0.5 per cent. carbolic glycerin should be gently rubbed into a scarified point midway between and a little to one side of the line of the other points.

°Tuberculin.
°Control.
°Tuberculin.

The scarified point need not be over 1/12 inch in diameter and care should be taken not to draw blood, but to see that serum begins to exude.

   (b) *Conjunctival Test:* This should be practiced simultaneously with the cutaneous test if one is to all appearances sound and there is no history of previous disease in it. One drop of 1 per cent. solution of old tuberculin in physiologic salt solution should be dropped into the conjunctival sac, and the patient's eyes kept closed for three minutes. The case should be observed twelve hours, twenty-four hours and forty-eight hours after the test to note the reaction, if any.

Reactions: Time when reaction to cutaneous test occurs should be noted, and the case should be seen in the first twenty-four hours. Size of areola should be measured in millimeters and the intensity of the reaction noted. Temperature should be taken and general condition noted. Vaccination point should be observed twenty-four and seventy-two hours after test, especially if reaction is delayed. The degree of conjunctival reaction should be noticed within twelve hours after the test and a careful record kept of its character and duration so as to compare with cutaneous test. If both these tests are negative at first they should be tried again in the same manner after three or four days. If the tests are still negative, and the observer has reason to suspect that the case, from its clinical appearance, is of tuberculous origin, the subcutaneous test should be used.

   (c) *Subcutaneous Test:* The patient should be in the hospital, or may be instructed (if intelligent enough) to take his own temperature at home. The temperature should be taken every two hours for two days prior to the injection. If it is found to be normal the test may be practiced according to the method of Koch. One mg. of old tuberculin first injected. If result is negative at the end of three days, 3 mg. may be used. If the result from this is negative at the end of three days a 5 mg. dose may be used. If this is negative one may assume that active tuberculosis does not exist. If result is positive a record of the temperature should be made every two hours and the character of the reaction described. Particular notice of the affected eye is important to see if a local reaction is present. This should be indicated by increased ciliary injection or an aggravation of the original trouble. Careful note should be taken also of the point of puncture, for reaction here is very delicate.

It is thought that the following diseases may be profitably studied by this method: Blepharitis, particularly chronic, ulcerative cases; chalazion; follicular conjunctivitis or adenoid hypertrophy of conjunctiva; phlyctenular disease of the conjunctiva and cornea; scrofulous pannus; interstitial keratitis (non-syphilitic); episcleritis; scleritis; sclerosing keratitis; chronic iritis and iridocyclitis when etiology is obscure (relapsing or recurrent forms are especially suspicious); uveitis with hyalitis; choroiditis.

If several observers are working in the same hospital, it would be convenient to have all cases of one kind assigned to one man in order to simplify the work. This, however, is a question of convenience. All the observers engaged in this work are supposed to use in their tests tuberculin from one factory, that of H. M. Alexander & Co. It is hoped that at the next meeting, as a result of this cooperative work, there may be something of interest to report.

William H. Wilder, Chairman.

Report of the Committee on Collective Investigation Concerning the Ocular Muscles *

Almost immediately after the chairman of this committee was asked to undertake the work he associated two others with himself, Dr. Howard F. Hansell of Philadelphia, and Dr. Edward Jackson of Denver. The latter found it impossible to continue on the committee, and later his place was taken by Dr. T. B. Schneideman of Philadelphia.

The first step was to ascertain who were at all interested in such a study. Accordingly a circular letter was issued to each member of the Section on Ophthalmology. A copy of this letter is here appended as Exhibit A.

The total number of replies received to this was one hundred and twenty-five. It was gratifying to find that every member thus replying expressed approval of the effort, although forty found it impossible for various reasons to join in the study. An examination of these replies and certain considerations led the committee to decide that it was advisable to study several unanswered questions concerning the anatomy and physiology of the muscles, before attempting any cooperative investigation relating to their pathology.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Accordingly, a series of twenty-four questions was drawn up with considerable care, and different groups of the members were asked to investigate these different points. The letter explaining more in detail the scope and the general outline of the work, is also attached with this report, and is marked Exhibit B. Several of the members did not find the questions which were assigned to them entirely of their taste, and were accordingly asked to take other questions for study.

In making these arrangements, the committee has therefore sent out about 850 of the first circular letter and 85 of the second circular letter, and in addition has written thus far about 130 letters.

As a result, however, we have now over 80 members who are studying with more or less exactness these different questions concerning the anatomy and physiology. It is probable that a number finding that any real work demands time and patience will promptly give up the effort; but it is also probable that some will persevere, and we shall be able in this way to establish a certain few underlying facts. These, with other data which we already have, will give a broader and firmer foundation for any study of the pathology of the muscles, which may be elaborated by members of our section or by others in the future.

EXHIBIT A

American Medical Association

Section on Ophthalmology

COMMITTEE ON THE COLLECTIVE INVESTIGATION OF QUESTIONS CONCERNING THE OCULAR MUSCLES

183 Delaware Ave., Buffalo, N. Y., December, 1908.

My Dear Doctor:—At the last session of the American Medical Association, Dr. Wilder, then the chairman of the Section on Ophthalmology, advocated the same system of collective investigation for that Section as had been adopted with advantage in other societies.

In acordance with that suggestion Dr. Alvin A. Hubbell, present chairman of the Section, has constituted the undersigned a committee for the collective investigation of questions concerning the ocular muscles. For the sake of uniformity this committee will not only select the question or questions for study, but arrange other details of the work. If sufficient interest is shown in the subject by members of the Section, various phases of different questions could be studied by different subcommittees. In any case, however, the results obtained by each individual would be kept separate. The object is not to deal with theories, but to collect FACTS, which are carefully observed and accurately recorded. As every ophthalmologist meets daily with unsolved problems concerning the muscles, perhaps some data can ultimately be obtained which would be useful to all, without great effort on the part of any one.

The committee hopes to keep the bibliography of the subject complete, and to make it useful to students whether they cooperate in this investigation or not.

The Section will probably confirm the action of the Chairman in making permanent these committees on special investigation. If that is not done, the work could continue just the same, and if the results are of any value, ample opportunity would be afforded for publication.

Instead of confining the effort to a few, it seems best to issue this circular letter inviting the cooperation of every one in the Section. Among the younger members, especially, there are probably many who have not only the time and energy, but the training necessary for such work.

If, therefore, you are sufficiently interested to cooperate, even to a slight extent, please answer the following questions, and mail them in the enclosed envelope before the middle of December.

Lucien Howe, Buffalo N. Y.
Howard F. Hansell, Philadelphia.
Edward Jackson, Denver.

1. Do you care to take any part in the proposed collective investigation of some question concerning the ocular muscles?
2. What suggestion have you to make if any, as to which aspect of the subject could be studied first to best advantage?
3. Have you any preference as to exactly which part of that question or any other you would like to have assigned to you?
4. Have you opportunities for work if desired, in some well-equipped laboratory? If so, is that physiologic, pathologic, ophthalmologic or of what kind?
5. Are you connected with any hospital or dispensary?
6. Have you access to a good medical library, or can you obtain books through some incorporated library, from the library of the Surgeon-General?
7. Have you an easy reading knowledge of German or French or both?

Name and Address..........................

EXHIBIT B

American Medical Association

Section on Ophthalmology

COMMITTEE ON THE COLLECTIVE INVESTIGATION OF QUESTIONS CONCERNING THE OCULAR MUSCLES

183 Delaware Ave., Buffalo, N. Y., January, 1909.

My Dear Doctor:—The committee on the investigation of questions concerning the ocular muscles wishes to acknowledge your reply, and that of many others, offering to cooperate in the proposed study.

The nature of these replies, with other considerations, have convinced the committee that it would be worse than useless to attempt to deal with phases of pathology or treatment, until we can first agree on certain propositions, still doubtful, concerning anatomy and physiology.

The following general plan has therefore been adopted, for the beginning:

1. A given question will be placed, if possible, in the hands of some colleague who has already studied it, or who has expressed a desire to study it.

2. Each colleague is expected to obtain cooperation from others, physiologists, chemists—any one, anywhere—only being certain that apparent facts are really facts, accurately observed and carefully recorded.

3. In physiologic experiments the term "normal eyes" will be understood as those whose manifest ametropia does not exceed 0.05 D., whose proximate point is in proportion to the age, the individual being in good health and entirely free from asthenopic symptoms.

Experience has shown that it is most convenient for a student of these questions to use his own eyes for experiment, if they are sufficiently near the normal type; if not, the eyes of some member of his household. Typical subjects for study can usually be found among soldiers (including members of the National Guard), or others who lead an out-of-door life.

4. For the sake of uniformity each subcommittee or individual is expected to report to the central committee, if requested, two or three times a year concerning the progress made.

5. As accuracy and truth are the prime considerations, it is not desirable to hurry to conclusions. But if a given piece of work in the hands of a subcommittee or of an individual lags unnecessarily, some one else will be invited to study that question.

6. A colleague can feel free to publish his work anywhere and at any time. But if it is to form a part of any report formulated by this central committee, then

A. The article must be in the hands of this committee at least four months before a meeting of this Section.

B. If it has been already published, only a brief abstract would be made of it—sufficient to show its value as a link in the chain of facts.

C. If it has not been already published, an abstract will also be made, but the communication, with abbreviations, if necessary, would be referred to the committee on publication, in order that it may form part of the Transactions of the Section.

7. The central committee, if requested to do so, will furnish references to the bibliography of the questions proposed by them.

If you wish to join in this investigation will you please inform the chairman of this committee before the — of January whether:

A. You will accept the suggestion to study the question given below; or

B. If you prefer some other question, please state what it is.

The central committee appreciates that many who promptly accepted the invitation expecting to make clinical observations, will not care to study first anatomy or physiology. The cooperation of such colleagues must therefore be deferred or unfortunately lost entirely.

But the favorable replies to the first circular letter have been sufficiently numerous, and from men of sufficient standing, to warrant the hope that those who do cooperate will be well repaid by the satisfaction of contributing a little to our knowledge, and by the honor of being connected with a work which may ultimately prove of some credit to American ophthalmology. Truly yours,

The Committee,
Lucien Howe, Buffalo.
Howard F. Hansell, Philadelphia.
T. B. Schneideman, Philadelphia.

Report of the Committee of Revision of the United States Pharmacopeia *

To the Chairman and Members:—Your committee takes pleasure in presenting the following report on the revision of the United States Pharmacopeia. Perambulatory, it may be remarked that the committee has restricted its work to such drugs as are generically termed "dental remedies."

PROPOSED ADDITIONS

General Anesthetics: Nitrous oxid gas in its pure state or combined with oxygen is by far the most used general anesthetic in dental surgery. On account of its relative safety and quick action, it is especially adopted for those cases of minor surgery in which a general anesthetic is indicated Liquid nitrous oxid gas and liquid oxygen are recommended for adoption in the U. S. P. Recently, various mixtures of general anesthetics which are principally composed of ethyl chlorid, methyl chlorid and ethyl bromid have been freely discussed in current dental literature. These mixtures are not recommended for admission to the U. S. P., as they offer no material advantage over pure ethyl chlorid. The latter drug has been admitted to the eighth decennial revision of the Pharmacopeia.

Local Anesthetics: Ever since the introduction of cocain as a local anesthetic, chemists have been busy looking for substitutes to overcome the many side-effects of cocain as pointed out to them by the clinicians. Of the many substitutes offered, the following are the most important ones: Alypin, anesthesin, the encains, holocain, novocain, the orthoforms, stovain, tropacocain and chlorbutanol (chloretone). After a careful investigation of these various products, novocain (see New and Nonofficial Remedies) seems best suited for anesthetic purposes in dental surgery. It is five or six times less poisonous than cocain, absolutely non-irritating to the tissues and of an equal anesthetic power when combined with the alkaloid of the suprarenal capsule. For external application the orthoforms deserve to be recommended. On account of the relatively low poisonous nature of novocain, the latter may be successfully used as a substitute of the orthoforms. Novocain is to be recommended for admission to the U. S. P.

The addition of the alkaloid of the suprarenal capsule to local anesthetics has placed the administration of these latter chemicals on a comparatively safe basis. According to modern conception, rational local anesthetization of the oral tissues is safely and effectively accomplished by the combined action of the anesthetic and of an agent which produces local anemia. The alkaloid of the suprarenal gland is eminently suited for this purpose. Recently, a synthetic product has been introduced as a substitute of the natural alkaloid of the suprarenal capsule. The admission of the alkaloid of the suprarenal capsule or its synthetic substitute and their solutions is to be recommended to the U. S. P.

The Antiseptics: Among the modern organic metallic salts used as antiseptics, the silver compounds occupy a prominent place. Of the many preparations, only two are mentioned here, for the reason that they have shown real merit and that they are apparently more in general favor than the balance. They are protargol and argyrol. One or the other of these preparations is recommended for admission, the selection is left to the discretion of the proper committee of the revision of the U. S. P.

Among the many new compounds which evolve nascent oxygen, magnesium dioxid and sodium perborate deserve to be mentioned. Magnesium dioxid may be advantageously added as an antiseptic to tooth powders. Its advantage over other oxygen compounds (calcium or strontium dioxid, etc.) is obvious. Sodium perborate, when dissolved in water, furnishes an alkaline solution of hydrogen dioxid of a fairly reliable strength (with limitations).

Recently a stable 30 per cent. solution of hydrogen dioxid has been introduced under the name of perhydrol (see New and Nonofficial Remedies). It is free from acid and may be mixed with water in all proportions. For dental purposes, it is far superior to the concentrated ethereal solution of hydrogen dioxid and is comparatively free from danger. It is especially serviceable as a bleaching agent and as a caustic. Magnesium dioxid and perhydrol are recommended for admission to the U. S. P.

Trioxymethylen, a polymerized form of formaldehyd gas (see New and Nonofficial Remedies), has been employed in operative dentistry with so many gratifying results that it deserves to be recommended for admission to the U. S. P.

Soap solutions containing formaldehyd gas in definite quantities have been largely used as hand and instrument disinfectants and have proven to be very efficacious. These solutions have certain advantages over other solutions which are used for this purpose, viz., the compound cresol solution, as being comparatively odorless. A solution of this nature corresponding to veroform (see New and Nonofficial Remedies) deserve to be recommended for admission to the U. S. P.

The eighth decennial revision of the Pharmacopeia has admitted a preparation known as Liquor Antisepticus, apparently as a substitute for the many proprietary preparations of a similar nature. The taste of the official preparation is unpleasant, and, as taste is a very important item in regard to the continuous use of an oral antiseptic by the patient, the composition of the preparation should be changed. Your committee recommends that Liquor Antisepticus should be omitted from future editions of the Pharmacopeia and that an improved preparation should be added to the National Formulary, where it rightly belongs.

Styptics: The surgical treatment of dental hemorrhage does not differ from that which occurs in any other accessible part of the body. Nevertheless, we meet with cases in which the use of styptics is indicated. For such purposes, cotarnin hydrochlorid (stypticin) and cotarnin phthalate (styptol) (see New and Nonofficial Remedies) have proven to be of good service. These remedies are certainly superior to any other styptic to be found in the present Pharmacopeia and either one of these compounds deserves to be recommended for admission to the U. S. P.

Antipyretics and Antineuralgics: Of the many compounds which have been advocated as antipyretics and antineuralgics, acetylsalicylic acid, known as aspirin (see Notes on New and Nonofficial Remedies) deserves to be recommended for admission to the U. S. P.

Analeptics: A useful restorative agent in cases of collapse, syncope, etc., is validol, either alone or as validol camphorate, *i. e.*, a solution of 10 per cent. camphor in validol. (See New and Nonofficial Remedies.) Its usefulness has been frequently tested and it deserves to be recommended for admission to the U. S. P.

PROPOSED CHANGES

Shorter titles or synonyms should be given to the following drugs: Acetphenetidin, hexamethylenamin, sulphonethylmethan and sulphonmethan.

Your committee further recommends the adoption of the following resolution by this Section:

Whereas, the Section on Stomatology of the American Medical Association is taking special interest in the Revision of the Pharmacopeia of the United States, and,

Whereas, at present no provision is made for representation of the dental profession of the United States in the United States Pharmacopeial Convention, therefore be it

Resolved, that the Section of Stomatology of the American Medical Association should be entitled to one delegate who represents this body on the Committee of the Revision of the United States Pharmacopeia.

Respectfully submitted,
Hermann Prinz, Chairman.

Thyroid Administration in Children.—L. Williams, in the *British Journal of Children's Diseases*, June, 1909, states that as thyroid insufficiency is characterized by a subnormal temperature and sensations of chilliness, it might be expected that thyroid excess would be accompanied by a supernormal temperature and intolerance of heat; and such is the clinical fact. Experience has taught him when giving thyroid extract to children over considerable periods of time that the thermometer is as necessary a guide as the weighing machine. So long as the subnormal readings persist, the drug may be continued; as soon, however, as the temperature reaches normal, caution is necessary; and at the first indication of a rise beyond normal, the drug may be suspended.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

Clinical Notes

STAPHYLOCOCCUS VACCINE IN INFLAMMATORY CONDITIONS OF THE GENITO-URINARY ORGANS *

W. M. ROBERTSON, M.D.
ST. LOUIS

My attention was called to the staphylococcus vaccine by the following case:

Case 1.—*History.*—Mr. N. was referred to me in May, 1908, by Dr. M. B. Clopton. The patient was 18 years old, and had never had any venereal disease until the preceding November, when he contracted gonorrhea. From the time the disease first manifested itself, he had been treated by men both in St. Louis and New York City, who are well-known to be capable of treating such diseases. When I first saw him there was a profuse purulent discharge containing gonococci from the urethra; the first, second and third glasses of urine were so cloudy as to be termed milky; the prostate was enlarged, soft, sensitive on pressure and the expressed secretion contained only pus. There was present some frequency and urgency of urination.

Treatment.—I treated the patient for about three months according to the well recognized methods of treating such conditions, but met with no better success than had my colleagues who had previously treated him. So far as I could see there was absolutely no improvement in his condition, and I began to despair of being able to do anything for him. About this time he developed a suppurative folliculitis of the bearded portion of his face for the treatment of which he was referred to Dr. M. F. Engman. Ten days later, after having treated him to no avail for three months, and without any change in treatment, there was a marked improvement in his condition. In three weeks the urine was clear and in six weeks the patient was entirely well.

In speaking with Dr. Engman about the case, he told me that he had been giving the patient injections of staphylococcus vaccine. It then occurred to me that in these rebellious and obstinate infections of the prostate and bladder we have to deal, perhaps, with a staphylococcus and not a gonococcus infection; that while the gonococcus was the cause of the original infection after a time it lost its virulence and left to the staphylococcus the task of keeping up the disturbance which it had begun. This supposition was further strengthened by the fact that, while the gonococcus vaccine has been given an extensive trial in these conditions, few observers make for it any claim as a curative agent. Acting on this belief, I obtained staphylococcus vaccine to carry out my investigations.

At this time I had under treatment, or, more correctly speaking, under observation, at the genitourinary clinic of the Washington University the following patient:

Case 2.—*History.*—J. D., aged 20, laborer, contracted gonorrhea about one year ago, and was "cured" in four weeks. Three weeks ago, following some dissipation, but not having indulged in intercourse, the discharge again appeared. It became very profuse, but at the time when I saw him was slight and no gonococci could be found. Both glasses of urine were very cloudy; urination was frequent, painful, urgent and followed by much tenesmus. The prostate was much enlarged and painful and the secretion contained only pus. The patient was in destitute circumstances, his nights being spent in a box car or one of the city parks, and his meals were irregular and uncertain. His general condition was miserable, but on account of an ignorant prejudice he would not consent to go into a hospital.

Treatment.—I gave him the best treatment I could under the circumstances, but after two weeks his condition remained unchanged. I then began giving him hypodermic injections of staphylococcus (albus) vaccine, all other treatment being discontinued. The further progress of his case is as follows:

On August 29 and 31 and September 2 and 7 respectively 1 c.c. staphylococcus (albus) vaccine was given. At the end of this time the patient felt well, had no pain and no disturbance with urination. First glass of urine was cloudy, the second was clear, the prostate much diminished in size, and was not very painful on pressure.

On September 12 and 16 respectively 1 c.c. of staphylococcus (albus) was given. At that time he had no pain, no discharge, no disturbance with urination, both glasses of urine were clear, prostate was normal in size but the expressed secretion contained much pus.

On September 20 1 c.c. staphylococcus vaccine was again given.

On October 5 the patient had not returned for treatment as he had been feeling perfectly well. The urine was clear, the canal was free, the prostate normal in size, shape and consistency, and the expressed secretion was normal.

Case 3.—*History.*—E. D. first consulted me Oct. 15, 1908. He had contracted his first case of gonorrhea two months previously and on account of suppurative folliculitis had been in a hospital for two weeks. When I first saw him there was a slight discharge from the urethra containing gonococci; frequent urination, both glasses of urine being cloudy. The prostate was enlarged and the expressed secretion contained only pus. After having treated him for two weeks according to well-recognized methods of treating such diseases, his condition remained about the same. He then went away for a week and returned on November 7, complaining of pain in the right testicle and cord, pain in the back, frequent urination, in fact all the symptoms of impending epididymitis. He had to urinate every fifteen or thirty minutes and the urine was thick with pus. The prostate was enlarged and very sensitive.

Treatment,—I began the injections of staphylococcus vaccine, suspending all other treatment. After three injections, on November 7, 9 and 11 of 1 c.c. each, all of the subjective symptoms had disappeared. I then began prostatic massage and permanganate irrigations, injecting the staphylococcus vaccine every six days. This treatment was continued until December 21, when the patient was discharged cured.

Case 4.—*History.*—E. R. had had one attack of gonorrhea five years previously. On Oct. 28, 1908, two days after sexual and alcoholic dissipation, he developed acute prostatitis. Urination every ten or fifteen minutes, pain, urine very cloudy, prostate much enlarged and very sensitive. No discharge from the urethra.

Treatment.—I advised rest, hot sitz baths, opium and belladonna suppositories, and santal oil. This treatment was continued until November 7, with some relief, but the patient was still in great pain. I then discontinued this line of treatment and on November 7, 9 and 11 gave him 1 c.c. of staphylococcus vaccine. After the third injection all symptoms disappeared as if by magic. I then began prostatic massage and irrigations, giving the staphylococcus injections once a week. The expressed prostatic secretion was at first thick, yellow pus, but after continuing this treatment until December 21 it became almost normal and the patient has had no further trouble.

Case 5.—*History.*—F. D. first consulted me Jan. 4, 1909. He had contracted gonorrhea three weeks previously; first attack. When seen he had a profuse discharge containing gonococci, both glasses of urine cloudy, no disturbance with urination. He was treated by a hand injection of protargol and a preparation of santal oil. On January 23 he developed acute prostatitis. The prostate was enormously enlarged and very painful, urination every few minutes very painful and followed by much tenesmus. The discharge from the urethra had ceased.

Treatment.—Staphylococcus vaccine (1 c.c.) was administered, other treatment being discontinued. On January 25 1 c.c. staphylococcus vaccine was again injected. Condition about the same. Patient very uncomfortable. On January

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* Read before the Medical Society of the City Hospital Alumni, June 3, 1909.

28 1 c.c. staphylococcus vaccine injected. Patient felt much better; second glass of urine almost clear; had little pain. On February 2 staphylococcus vaccine, 1 c.c. The patient was perfectly comfortable, no pain, urination about normal. First glass of urine was slightly cloudy, second clear; prostate much reduced in size. Prostatic massage and irrigations were then begun, the staphylococcus vaccine being injected every five days. In two weeks both glasses of urine were clear, and with the exception of some pus in the expressed prostatic discharge, the patient seemed entirely well. On February 25 he was discharged cured.

Case 6.—*History.*—Mc. E. contracted gonorrhea three years before he consulted me, Feb. 8, 1909. He had been subject to frequent recurrences of gonorrhea and occasional attacks of acute prostatitis. He was a traveling salesman and had a physician in almost every town in several states. I had treated him a year previous for three weeks for an aggravated case of acute prostatitis with only indifferent success. When he returned to me this time he was in about the same condition as when I first saw him. No discharge from the urethra, urination every few minutes and very painful, prostate enlarged, painful and very sensitive on pressure.

Treatment.—I gave him three injections of staphylococcus vaccine, 1 c.c. each, giving the injections every other day. Two days after the last injection, the urine was perfectly clear, the first glass only containing a few shreds. Urination was normal and the patient felt perfectly well. The prostate was much reduced in size and there was little pain on pressure. The patient then left St. Louis and I know nothing further of the progress of the case.

I could report many similar cases, but the record of cases becomes tedious and, to my mind, does not prove as much as does the opinion of the observer as to the efficacy of a certain remedy. I have used staphylococcus vaccine in twenty cases of acute prostatitis and cystitis in which there had been a history of gonorrheal infection dating back from a few weeks to many years, and have not yet met with a case in which the subjective symptoms have not been relieved after the third injection, these injections being given every other day. If continued every five or seven days, with other appropriate treatment, my cases have gone on to complete recovery with surprising rapidity. I have used these injections along with other treatment in cases in which the only symptoms were pus in the expressed prostatic secretion and recurrence of the urethral discharge following dissipation or sexual excesses. I am uncertain as to their efficacy in these cases, but my experience leads me to believe that they are worthy of further investigation.

I have used them in cases of lesions of the spinal cord and in cases of senile hypertrophy of the prostate in which either retained and decomposed urine, or instrumentation or both had caused troublesome bladder symptoms. In these cases where the infection was due to the staphylococcus, as it has been in many cases which have come under my observation, the result has been gratifying to both myself and the patient.

In one case of tabes of fifteen years' duration with an old chronic inflammation of the bladder, which I saw in consultation with Dr. Given Campbell, recurring chills followed by high temperature, the general condition of the patient, and the condition of the urine indicated an ascending suppurative renal affection. The improvement following the injections of the staphylococcus vaccine was so prompt and so marked that I am undecided whether to attribute it to the injections, to a mistaken diagnosis or to chance. At any rate, after having been confined to his bed most of the time for seven weeks and presenting at this time every symptom and indication of a marked septic condition, nine days after the first injection was given, the patient's condition was such that we felt justified in allowing him to undertake a European journey. After the first injection, there were no more chills, and no more fever, and at the end of a week there was a marked improvement in the condition of the urine.

I have used them in one case of incipient renal tuberculosis in a patient who, with Dr. C. Fisch, I am treating with tuberculin injections and in which there was a marked staphylococcus infection. The ordinary urinary antiseptics aggravated the condition and I began injections of the staphylococcus vaccine. In less than a month Dr. Fisch reported a marked improvement in the urine, but whether this was due to the staphylococcus or the tuberculin, or either, I do not know.

It is my custom to give the injections every other day for three injections. I then give them every five or seven days as long as they seem to be indicated. I have used only the *Staphylococcus albus,* using at each injection 1 c.c., which represents 400,000,000 bacteria. I have given several hundred injections. I have never had an abscess following them, nor have I had a patient complain of pain or any bad after-effects.

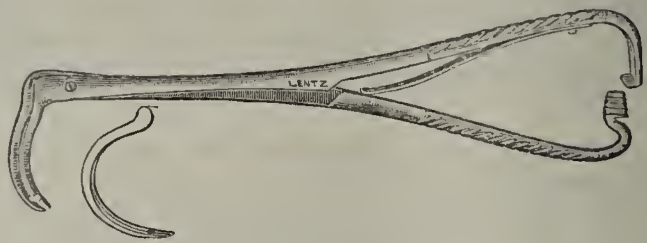
I hope that I am not overenthusiastic over the results which I have obtained by the use of staphylococcus vaccine. Acute inflammation occurring in cases in which an old gonorrheal infection existed may show the gonococcus or may not, but the staphylococcus is always present and, while the gonococcus was the original cause of the infection, I believe that after preparing the soil it lost its virulence and left to the staphylococcus the task of keeping up the mischief. It is in this class of cases only that I make an unqualified claim for the staphylococcus vaccine. In the other conditions in which I have used it, the small number of cases or other circumstances have prevented me from forming a positive opinion.

Humboldt Building.

A LIGATURE-CARRIER

CHARLES B. REYNOLDS, M.D.
PHILADELPHIA

The ligature-carrier here illustrated I have devised for ligations of the broad ligaments and deep pelvic vessels especially. The instrument is nine inches long and composed of two pieces, with a deep curve, each containing one-half of the eye of the needle. The handle is large, of the ratchet type, and contains a strong spring.



A new ligature-carrier.

The ligature material is threaded through the eye of the needle, which is passed beneath the vessels or ligament to be ligated; the ligature is grasped with the fingers or forceps, the handle compressed and the halves of the needle forced apart by the spring and withdrawn. This obviates the difficulty of drawing the ligature through the eye, as in the old-style pedicle needle. Any ligature material may be used without danger of cutting it.

2003 Diamond Street.

HAND CRUSHED: INFECTED WITH GAS BACILLUS OF MALIGNANT EDEMA

AMPUTATION OF FOREARM: RECOVERY *

G. PAUL LAROQUE, M.D.
RICHMOND, VA.

Were it not for the fact that the patient recovered from an infection which is alleged to be almost uniformly fatal, a single case report of an extremely rare infection would scarcely be worth while. On account of the fact, however, that patients infected by the so-called gas-producing bacillus of malignant edema nearly always die, even after the most radical and high amputations, a case of recovery following conservative treatment should be recorded.

Until the present case came under my observation I had seen only one case. This occurred in the practice of my former chief, Dr. Edward Martin, of Philadelphia. The patient was a young woman who suffered a compound fracture of the ankle and died within three days in spite of amputation at the hip joint. Another case occurred in the University Hospital in Philadelphia a short time before my period of service as resident surgeon in that institution, and this patient died in spite of high amputation. The following case is the only one I have heard of in Virginia in which the organism was demonstrated bacteriologically:

Injury.—R. C., a colored man, aged 32, while engaged in shucking corn with a machine on a farm about ten miles from Richmond, suffered a severe crushing of the left hand. He was at once referred by Dr. W. A. Campbell to Dr. Stuart McGuire's clinic at the Virginia Hospital. On examination of the injury by the resident surgeon, Dr. W. D. Carr, it was obvious that, on account of the extensive injury of the hand and wrist, amputation was indicated. I saw the patient about 8 p. m. of the day of admission. There was extensive mutilation of all the soft parts and bones of the hand and wrist and the tissues injured had already become black and obviously gangrenous. There was the characteristic gangrenous odor, and the hand and soft parts were infiltrated with gas to about two inches above the wrist. A diagnosis of gas-bacillus infection was at once made. A smear from the injured hand, examined microscopically by Dr. Guy Hopkins and Dr. G. H. Baerecke, showed the characteristic organism of malignant edema, together with some mixed infection.

Treatment.—Amputation of the middle of the forearm was at once performed by the resident surgeons, Drs. Carr and Booker, under my instruction. The next day the stump appeared black in color and a foul odor was emitted. Some of the bloody discharge from the stump was examined microscopically and the bacillus of malignant edema was found to be present. This caused us immediate alarm, and we at once took into consideration higher amputation. The patient's temperature was 103, pulse 120. In order to determine whether or not the infection was limited to the stump or whether it was being conveyed into the general circulation, we secured blood from the regional veins leading from the stump and also from the veins of the opposite elbow. Both of these specimens were submitted to the bacteriologists for examination, and in neither specimen was the organism present. Believing that consultation should always be held before any amputation is done, I called Dr. W. Lowndes Peple to see the patient. After discussing the matter for about half an hour, we concluded that, inasmuch as the patient's general condition was good and the local condition of the arm above the stump was good, higher amputation would not be justifiable. We therefore removed all the stitches and left the wound wide open to be treated with antiseptics and oxidizing agents, since it is a well-known fact that these organisms do not live in the presence of oxygen. Local applications of hydrogen peroxid, potassium permanganate and oil of turpentine were made to the raw surface and the stump enveloped with a dressing wet with 1 per cent. solution of chloral hydrate. The next day we made another examination of the blood leading from the stump and found it sterile. Two days later smears were made of the discharge from the stump and the bacillus of malignant edema was not to be found. The patient's condition remained good and recovery ensued as soon as could have been expected from a suppurating wound.

219 East Grace street.

EXFOLIATIVE NEONATAL DERMATITIS

J. C. MATTHEWS, M.D.
SPRINGFIELD, MO.

The object in reporting this case, which might be termed dermatitis exfoliativa prenatal rather than neonatal, is to call attention to the undoubted development of this disease, or condition *in utero*.

Ritter, in 1878, was the first to call definite attention to this condition; but in all cases reported by him and others since that time I failed to find a case reported as existing at birth. From two to five weeks after birth is given as the usual time of development of symptoms.

Patient.—Baby R., male, was born at term, Feb. 8, 1909; normal labor; weight was 6½ pounds; the child was well-developed and seemingly of good vitality, as he breathed and cried well.

Condition at Birth.—When the arms and hands were delivered I noticed an unusual condition of hands, and on careful inspection of child, after delivery, I discovered that the hands and feet were denuded of epidermis. This condition included the fingers and toes, except their tips, and back to the wrists and ankles. The nose, penis and margin of umbilicus were also denuded, appearing dark red, not unlike a burn of the second degree caused by steam or hot water. The lesions were exuding serum as would a burn, and shreds of cuticle were hanging at the margins.

Treatment and Course of Disease.—The child was dressed and put to breast, which it nursed in a normal way. The raw surfaces were dressed with boric acid and sweet oil. On February 9 I saw the child in company with Dr. Anderson; we found it in a weakened condition, its face pinched and drawn, the clothing and bandages saturated with serum, and with some bleeding from the nose and margin of the umbilicus. We also found, on dressing it, that the exfoliation had extended up the arms and legs for from one to one and a half inches, and in pockets under the cuticle a clear serum similar to a blister caused by a burn was found. During the past twenty-four hours the child had nursed a little, bowels had acted, urine had been voided, and the child had cried a great deal. Temperature was 97 in the rectum.

February 10: The child was much weakened, it had not nursed since the last visit. The clothing and bandages were saturated and stiff with serum and blood; the surface of the body was cold, skin was pale and wrinkled; breathing was shallow. The heart sounds were weak, and attempts to cry produced only a weak moan.

During the night the child died. No postmortem examination was made.

History of Parents.—The mother was a decided blond, well developed, weight 118 pounds, age 18. This was her first child. Labor and recovery were normal. History of herself and parents was good, though she sunburns easily. The father is a medium blond, aged 21, healthy and hearty; weight 145 pounds. There is no history of syphilis or hereditary disease on either side.

Purity and Digestibility of Foods.—"The first requisite which we should make for foods for invalids is that they should be pure. The next most important thing is to find a pure food which the invalid can digest."—H. W. Wiley in the *New York Medical Journal.*

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*Reported at the Richmond Academy of Medicine and Surgery, January, 1909.

Therapeutics

DIET IN TYPHOID FEVER

It seems almost impossible to settle this much discussed subject definitely, and it is doubtful if it ever will be determined that any one diet is the only correct one for typhoid fever. The patient, his dietary habit, and his ability to digest certain foods during typhoid fever must all be individualized. Therefore, a diet correct for one patient may be absolutely incorrect for another.

The recommended diets vary from nothing but water, or no diet, through absolute milk, entire absence of milk, liquid foods other than milk, cereal foods, to actual solid foods, including meat.

The diet in typhoid fever should never be discussed without due consideration of the management of the bowels. This means whether diarrhea should be allowed, whether laxatives should be given, or whether constipation should be caused.

In the first day or two of the fever the temperature is likely to be higher than it is on the days that immediately follow. This temperature is lowered, the tongue improved, and the patient made generally better by free purging, and a diet of little more than plenty of plain water. The purgative selected may be calomel, or may be castor oil administered in some pleasant form. Such a purgative may be repeated in two or three days if deemed advisable. There can be no question that a clean alimentary canal modifies greatly the severity of the early typhoid symptoms.

It has been lately shown that fecal deposits, seeds or other food débris may become lodged in the lower corner of the ascending colon, the cecum, and may cause inflammation or symptoms of appendicitis, and may even be a subsequent cause of appendicitis. Hence it may be found to be good treatment, in the first few days of typhoid fever, to give colon enemas of from one to two quarts of warm water, the patient lying on his right side, to aid in washing away the possible accumulations in the cecal region. Such colon washings can certainly do no harm in the first days of typhoid, and may be of marked benefit in the future course of the disease. In other words, the more thoroughly the pathologic process in the intestines, in typhoid fever, is considered from a surgical standpoint, with the aim to keep these ulcers and the inflamed intestinal mucosa as clean as possible, the less will there be secondary infection, the less will there be tympanites, the less will there be deep ulcerations, hemorrhages and perforations, the less high the fever, and the better the whole prognosis. Consequently, not only should the bowels be cleared at first, but subsequently the bowels should be moved daily. This is best done by administering every other day some gently acting saline laxative, which cleans the upper part of the intestines, tends to drain the portal circulation, to keep the liver, our Pasteur filter, in a healthy condition, and to cause an easy watery movement. Any tendency to a diarrheal condition or to too many movements from such a laxative may be stopped by the administration of 1/10 grain of morphin. The bowels are thus cleaned and subsequent excessive peristalsis inhibited, and the patient is generally at rest for the remainder of the day. On the alternate day a small glycerin enema, administered with a glass syringe, consisting of a tablespoonful of glycerin and a tablespoonful of water, will cause within ten minutes a movement of the bowels that will at least empty the descending colon and cause the expulsion of gas. Such management of the bowels seems contraindicated only by intestinal hemorrhage, signs of perforation and great prostration. Such treatment also prevents secondary infections that keep the temperature high. In other words, less antipyretic measures are needed, if the abdomen is flat, tympanites is not present, and the patient's bowels have moved daily artificially, and the movements are not caused by diarrhea due to irritation from the disease.

The fact should be emphasized that tympanites is not a symptom of typhoid fever, but is a symptom of mismanagement, a symptom of a mistake either in the diet or in the management of the bowels. Tympanites not being present, the danger from hemorrhage and perforation is reduced to a minimum. If the patient's bowels are properly managed in typhoid, tympanites will rarely occur.

As above stated, the exact diet that is best for the individual typhoid patient must be determined by his ability to digest, by the height of the temperature, by the behavior of the stomach (i. e., whether there is distress, nausea, or vomiting), by the amount of intestinal flatulence, and somewhat by the character of the stools. Any food, however advantageous theoretically, or however satisfactory for other patients, is contraindicated if it causes indigestion in any form, or is not digested. Theoretically, the food that causes the least mass of intestinal débris would be indicated on account of the less likelihood of food that is almost entirely digested in the upper alimentary tract forming a favorable medium and mechanical protection for pathogenic germs in the lower intestine. For this reason large amounts of milk would seem to be contraindicated, and certainly the all-milk diet is not the best for most patients who have typhoid fever. On the other hand, milk is too good, simple and generally well-digested a food for its use to be condemned in this disease. A solid diet as advocated by some, also, seems generally inadvisable. When it is considered that both high temperature and nervous disturbance caused by the disease, and also the general depression of the system, cause an interference with the production of normal gastric juice, food that requires normal conditions for digestion would seem to be contraindicated. Therefore, ordinarily a mixed diet representing the different elements of nutrition needed to protect the system against drain and loss and consequent unnecessary debility, the so-called typhoid state, and a diet that is varied sufficiently to prevent the patient from dreading the feeding hour is the one indicated. Any nutrient that is abhorrent to the patient should not be administered, as it is well understood that the digestive secretions are not produced so well when the patient dislikes, or is disgusted by, a food.

A good mixed diet for twenty-four hours, suitable for an ordinary adult ill with typhoid fever, is represented by one pint of milk; two eggs, or the whites of three eggs; one cup of thoroughly cooked, thin oatmeal gruel; the juice expressed from a pound of chopped, round steak; a small cup of coffee, in the morning; a small portion of wine, orange, or lemon jelly made from gelatin; and enough salt and sugar in the above to make them palatable.

The milk may be administered, hot or cold, with or without salt, with or without Vichy, with or without lime water, in two or three doses, as deemed best in the individual instance. Sometimes koumys makes a valuable substitute for ordinary milk. Sometimes buttermilk may be used, and this in larger quantities.

The eggs may be given raw, beat up with a little milk, or given with lemon juice on cracked ice, may be poached, or, if the temperature is not high, soft boiled or in the form of boiled custard.

The oatmeal gruel should generally be made with milk, and thoroughly cooked, strained, and salted to suit the taste.

Meat juice is best prepared by just covering the chopped steak with water, and allowing it to stand for an hour and a half. The water and juices are then expressed out of the meat. This watery extract will then contain, besides the blood of the meat, actual muscle serum, which is a decided tonic, especially to the heart. This expressed fluid is then kept on the ice and administered, properly salted, in two or three doses.

While gelatin is generally pleasant to most patients, it also has some nutritive value, and possibly tends to aid normal coagulation of the blood, and perhaps prevent capillary bleedings from the inflamed intestines.

A patient who is accustomed to his morning coffee need not be deprived of that pleasure because he has typhoid fever, unless there are meningeal symptoms, or meningitis is actually present.

If for any reason it seems inadvisable to administer meat juices to typhoid patients, and surely, if the patient is anemic, one or two doses of iron in the twenty-four hours should be given. The iron may be administered in five-drop doses of the tincture of the chlorid, in lemonade, once or twice in twenty-four hours; or a three-grain saccharated oxid of iron tablet (*Eisenzucker*) once or twice a day, or a capsule containing three grains of carbonate of iron, or reduced iron, may be administered once or twice a day.

The constant object in mind should be to administer protein (meat, eggs, milk), carbohydrate (oatmeal, sugars, or something similar), alcohol if deemed advisable, a mild cerebral stimulant (coffee or tea if thought advisable), iron, calcium (gelatin or lime water), sodium chlorid (perhaps dilute hydrochloric acid later), and water, enough of all to keep the physiologic processes as near normal as possible, while the patient is going through the long, tedious, feverish illness.

Experience seems to teach that it is best to administer nutriment to the typhoid patient in small amounts at three-hour intervals. It should, however, be arranged that the patient has normal rest. In other words, he should not be awakened from a comfortable sleep because it is time to do something to him or for him, and at regular three-hour feeding intervals should be the periods at which he is to be disturbed for other treatments. During the night, if he is not seriously ill, he should not be disturbed as often as every three hours.

With the treatment outlined, and with proper care of the mouth, the patient's tongue is rarely badly coated and should be moist, there should be no nausea, and there should be no tympanites.

The question that constantly arises in conjunction with the nutrition in typhoid fever is of what value are the so-called intestinal or bowel antiseptics. It is certain that the lower part of the small intestine can not be rendered aseptic. It is also just as certain that the stomach and a short distance at least of the small intestine may be made uninhabitable for pathogenic germs, without poisoning the patient. Perhaps the best stomach antiseptic is gastric juice, containing its normal amount of hydrochloric acid. If the hydrochloric acid is insufficient, pathologic germs may be present in the stomach, and certainly are likely to be present in the duodenum. Therefore, if it is considered in typhoid fever, at any period, that the hydrochloric acid is insufficient, a few drops of the dilute acid may be administered several times a day. If sodium chlorid is normally supplied to the patient, except possibly in the latter part of the fever, the hydrochloric acid is probably normally present, and except for the advantage of compelling the patient to drink more acidulated water, the necessity of administering hydrochloric acid is perhaps doubtful. Certainly a too acid stomach is not desirable.

Various preparations have been offered for intestinal antisepsis which contain an extra molecule of oxygen, or are really peroxid preparations. These are also taken with large quantities of water and probably do a great deal of good.

The best antiseptic to the upper part of the intestines seems to be salicylic acid in some form, and one of the best forms is the combination with phenol, viz., phenyl salicylate (salol), which may be given in capsules without any disturbance of the stomach, as it is there undissolved and breaks up into its component parts of salicylic acid and phenol in the duodenum. A small dose of this drug (0.25 gram or 4 grains) every six hours may be given continuously through the disease, unless there is a diminished excretion of urine, or albuminuria develops, or the urine shows darkening from the phenol, which would be very rare from this sized dose. Even the non-believers in bowel antiseptics must admit that whether the colon bacilli or typhoid bacilli come to the upper part of the intestine by migration, or reach these regions through the blood stream, that it would not be so healthy for them provided salicylic acid was present in the upper intestine as though it were not present.

How good a bowel antiseptic hexamethylenamin (urotropin) is has not been determined, but in post-typhoid conditions when typhoid bacilli or colon bacilli may be present in the pelvis of the kidney or may be present in the gall bladder, it has been shown that administration of hexamethylenamin is the best treatment to prevent their remaining permanently and causing inflammation in these regions.

Thus far sour milk treatments, lactic acid germs and the administration of yeast have not been mentioned. Certainly bowel infections of most kinds are made better by the administration of yeast. The value of sour milk treatments in typhoid fever must be determined by experience. A patient, however, who is not doing well on the diet above suggested should be put on the sour milk treatment. One of the principal objections to such treatment is that the patient's stomach soon objects to any one diet that is to be long continued, although for a few days he might accept the soured milk. On the other hand, most patients do not object to the sour drink produced either by a tablespoonful of upper brewer's yeast in a glass of water, or by the solution of a five-eighths inch cube of a compressed yeast cake in a glass of water, given two or three times a day.

Portable Shower Baths.—A simple way of providing shower baths for the multitude has been in operation in Baltimore. On open lots tents were divided by cloth into sections for towel-room, waiting-room, dressing-room, and several bath compartments. There was a wooden floor and a wood frame carrying water-pipes and shower-heads with regulating valves within the reach of the bather. Drainage was provided to the street gutter. This outfit cost about $150. It could be maintained for $25 a week, including two men attendants. Later, portable wooden bath houses covered with galvanized iron were used, and hot water supplied from a small coal stove with a water jacket and a tank.

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[*For other information see second page following reading matter*]

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USING THE DAYLIGHT

Human nature has a curious tendency, once started in a wrong direction, to continue by inertia until something untoward turns up to modify the tendency or until some definite movement is organized to prevent further progress that may be serious. There are many illustrations of this principle, though perhaps the well-known tendency of the so-called middle C of the musical scale furnishes the best known example. Theoretically this should have 256 double vibrations a second. Instruments were gradually tuned higher and higher, however, making it more and more difficult for the human voice to reach notes that had been reached with comparative ease before, until a definite movement was organized to prevent further heightening and even then the tendency was not entirely overcome. We are in something of the same condition of affairs as regards light as is thus illustrated in sound. When illumination was poor, people went to bed shortly after nightfall and arose at daybreak. As illumination has become better, they have gone to bed later and later, especially in the cities; and the hour of rising has grown later until, in the summer at least, many persons sleep as much during daylight as in the dark.

This is of course unfortunate. Sleep is never so restful—at least for most persons—during the hours of light as when it is dark. Everyone knows this from personal experience. The old saw was that two hours of sleep before midnight were worth twice that amount afterward; and while this may not be literally true, the truth in it is that if sufficient sleep is to be obtained after midnight, then much of it must be secured after darkness has ceased when sleep is not so beneficial. Everywhere one hears the complaint that people are becoming more nervous and are losing the power to rest thoroughly. Undoubtedly, some of this—probably much more than we suspect—is due to the fact that so much of sleep in city life where the increase in nervousness is particularly noticeable must under present conditions be obtained during hours of daylight. Even though most individuals do not get up, some of the workers must be about their duties, so that while the sleeper's eyes are disturbed by light, his ears are vexed by noises; and, though the light and sounds may not actually wake him, yet they make sleep a much less complete refreshment of tired organs.

There is excellent reason, then, for welcoming the movement of the National Daylight Association, which is endeavoring to secure, as we have noted[1], more daylight for work and more of the night for sleep. A practical method for the first step in this direction is outlined in the bill introduced into the British parliament, which proposes to set all the clocks of the kingdom forward an hour in May and to change back again in October.[2] A similar bill, as we have said,[1] is before the Canadian parliament and seems likely to become a law. The movement has attracted much less attention in this country, but it is needed here above all. Some time ago we deprecated the foundation of a day-and-night bank, open every hour of the twenty-four, because this made a definite precedent for the extension of business hours beyond the legitimate time. Men may apparently accomplish more work by crowding some hours of the night with it, but they draw drafts on time that are sure to be presented by Nature, often with no days of grace; and in the end it is probable that their actual capacity for business is shortened.

There are many reasons besides those that we have suggested why physicians should interest themselves in the new movement. Undoubtedly the ever-lengthening use of eyes under artificial light is the main cause for the growing number of people who must use spectacles at ever-earlier years. While a definite effort is still made in cities to send children to bed early, this is not nearly so successful as it used to be, and bedtime for them is advancing as for adults. This is one reason why more city children need spectacles and nerve tonics, for their sleep is even more likely to be disturbed by the light in the morning than that of their elders. In a word, we have very probably in this movement for prolonging the usefulness of daylight one of the most important hygienic ameliorations that can now be made for all classes of people. Doubtless the working classes would benefit even more than most others, because, while their fatigue requires them to go to bed early, the activity of life around them often seriously disturbs their sleep during the hours before midnight which should be so precious. Let us hope that so simple and efficient a means of lessening one of the unhygienic tendencies of our day will receive the consideration it deserves.

HEXAMETHYLENAMIN AS A PROPHYLACTIC

The knowledge that the gall-bladder may become a habitat for *B. typhosus* and account for "chronic bacillus-carriers" has stimulated considerable search for a drug which will disinfect the biliary passages. Studies of Mosler, Meder, and Vieillard have shown that certain substances like potassium iodid, sodium salicylate, and mercuric chlorid are excreted in the bile, but none is excreted in concentration sufficient to be serviceable.

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[1] The Journal A. M. A., July 31, 1909, liii, 383, 387.

[2] The Journal A. M. A., July 25, 1908, li, 324, 328.

Crowe, in 1908, chose hexamethylenamin for his experiments because (1) of its known effect on typhoid bacilluria (Richardson; Churchman) and (2) of its easy recognition. Crowe's experiments on dogs showed that the drug, administered by mouth, was rapidly absorbed and remained in the circulating blood in recoverable amounts for twenty-four hours. He found it in the bile, secreted not only by the liver, but also, in even larger amounts, by the way of the gall-bladder itself.

Applying these results therapeutically in a number of human cases of postoperative biliary fistulas, he determined by careful bacteriologic and chemical study that, if the dose by mouth be large enough (75 grains per diem), the bile is rendered sufficiently antiseptic to inhibit the growth of bacteria. He then recommended its use (1) in acute infection of the gall-bladder, (2) as a prophylactic before gall-bladder operations, and (3) to lessen the occurrence of gallstones and also of chronic bacillus carriers after typhoid fever.

During his work Crowe demonstrated the presence of the drug in the bile, synovial fluid, saliva, pleural fluid, circulating blood, and cerebrospinal fluid in man after administration by mouth. Recently (1909) he has published the results of a series of experiments attempting to overcome artificial meningeal infections by hexamethylenamin. In forty experimental observations the animals received the drug before infection. Many survived, and the others lived longer than animals receiving it after inoculation, and much longer than the controls to which the drug had not been given.

In man he found the hexamethylenamin present in amounts sufficient markedly to inhibit the growth of organisms inoculated in the cerebrospinal fluid removed by lumbar puncture. In one case purulent meningitis from an infected cerebrospinal fistula cleared up under its use.

Apparently Crowe has thus shown that hexamethylenamin will do also for the cerebrospinal fluid what it has been known to do for the urine. He recommends its administration (1) in cases of fracture of the skull, (2) in cases of gunshot wounds of the head, (3) as a preliminary to ventricular and lumbar puncture and to spinal and cerebral operations, and (4) in cases of extracranial infections where extension to the meninges is feared, as in otitis media and suppurations of the sinuses. Should it prove as preventive as is hoped it will be a boon to the ear and nose specialist and a most important advance will have been made in the field of prophylactic therapeutics.

A POISONOUS HAIR DYE

On another page[1] in this issue we record three more cases of poisoning from the use of a preparation known as Mrs. Potter's Walnut Juice Hair Stain. This makes eight cases that have been reported to THE JOURNAL within the past six months. It would seem that the time is about ripe for some action to be taken either by state or federal authorities to limit or prevent the further sale of a preparation which has proved dangerous. According to the chemists of the North Dakota Agricultural Experiment Station, this hair dye depends for its action on paraphenylene diamin, a substance which when oxidized by means of a solution of hydrogen dioxid becomes an intense black. The poisonous qualities of this substance have been long known. Eighteen cases of poisoning have been recorded by Cathelineau,[2] who has reported somewhat exhaustively on the subject. Its physiologic effects have been studied by Laborde and Mellière[3] and also by Dubois and Vigum.[4] Hypodermatically administered to dogs, it produces tenesmus, diarrhea and salivation, followed by lowered temperature, opisthotonos and death in from ten to twenty hours. In Mellière's patient the urine was mahogany-colored, though apparently this effect is not always produced. The dermatitis caused by paraphenylene diamin is not always a light attack. L. Brocq[5] described a severe form in which the glands are affected, there is high fever, with a violent eruption and extensive desquamation. A case of poisoning has been reported by Balzer[6] due to wearing hose which had been dyed with the chlorate of paraphenylene diamin. A case of dermatitis from the use of a hair dye having as its base the hydrochlorate of paraphenylene diamin was reported at some length by A. D. Mewborn,[7] who gave a bibliography of cases of poisoning due to the drug and described at some length the preparation, reaction and method of use. The dangerous character of this chemical should in itself be a sufficient reason for controlling its indiscriminate sale to the laity. If Mrs. Potter's Walnut Juice Hair Stain depends for its action on paraphenylene diamin instead of on walnut juice, this fact alone plainly constitutes misbranding within the meaning of the national Food and Drugs Act. To the advertisements of the preparation which state that it "contains no poisonous dyes" the eight cases reported in THE JOURNAL give the "lie direct."

RECONSTRUCTION OF THE BILE DUCTS

Dr. Sullivan's article in this issue giving an account of the ingenious operation which he has contrived and of which he has experimentally demonstrated the feasibility, seems worthy of some special notice. The utilization of the peristaltic tug in the intestines to remove by that route the foreign body, the rubber tube used in restoring the bile passage, is a novelty. Should the further observations on the experimental animals prove that it is not followed by any serious symptoms or complications it may be recommended for practical use in suitable cases in the human subject. The dangers as they appear to us would be in properly securing against leakage in the peritoneal investment, or the too premature expulsion of the rubber tube before the tissues of the new channel have become properly adapted to their new function. These risks, however, seem to be negligible ones in the dog and, so far as purely experimental methods can be trusted, the operation seems likely to be a success. Whether the principle of attaching a sponge and using the peristaltic action of the intestines to complete the operation for internal drainage has any wider application or not does not matter—it appears certainly to be an advance in the surgery of the biliary tracts. As Dr. Sullivan says, the other steps in the operation are more or less already accepted details.

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[1] Queries and Minor Notes Department, p. 809.

[2] Ann. dermat. et de syph., 1898, p. 63.

[3] Tribune méd 1901, pp. 172 and 193.

[4] Arch. de physiol. norm. et path., 1898.

[5] Bull. méd., 1898, p. 237.

[6] Ann. dermat. et de syph., 1898, p. 683.

[7] THE JOURNAL A. M. A., May 18, 1901, p. 1389.

Medical News

CALIFORNIA

A Case of Bubonic Plague.—The first case of bubonic plague to be discovered in the state for a year was discovered in Alameda county August 6. The patient, a boy of 13, is supposed to have contracted the disease through handling infected squirrels killed by him on a hunting trip. In consequence of this case, there is renewed activity in the campaign of extermination against the ground squirrel.

Personal.—Dr. Charles C. Stephenson, formerly secretary and president of the Arkansas Medical Society, and professor of ophthalmology and otology in the College of Physicians and Surgeons, has left Little Rock on account of ill-health and located in Los Angeles.——The degree of LL.D. has been conferred on Dr. Francis M. Pottenger, Monrovia, by his alma mater, Otterbein University of Westerville, Ohio.——Dr. George H. Fay, East Auburn, has been appointed local surgeon for the Southern Pacific Railway.——Dr. Lulu H. Peters has been placed in charge of the pathologic work at the Los Angeles County Hospital.——Dr. Antoinette M. Bennette, San Bernardino, has accepted the position of resident physician and superintendent of nurses at the San Bernardino County Hospital.——Dr. Philip V. K. Johnson, city physician of Los Angeles, has resigned.——Dr. Gustave Wilson, first assistant physician of the Southern California Hospital for the Insane, Patton, has resigned.——Dr. David Gochenauer, San Diego, who has served as general manager of the Angelus Hospital, Los Angeles, for a year and a half, has returned to his home in San Diego.——Dr. Charles F. Wade, Los Banos, is reported to be critically ill.——Dr. Wallace I. Terry, chief surgeon of the San Francisco Emergency Hospital Service, announces that he will resign in October.——Dr. J. B. Rogers has been appointed a member of the Alameda Board of Health.

DISTRICT OF COLUMBIA

Personal.—The Cross of the Legion of Honor has been conferred by the French government on Dr. Harvey W. Wiley, chief of the bureau of chemistry.——Dr. G. Lloyd Magruder is the representative of the departments of state and agriculture at the International Medical Congress, Budapest.

ILLINOIS

Personal.—Dr. Lewis A. McFadden, Peoria, who was operated on recently in St. Francis' Hospital for intestinal obstruction, is reported to be improving.——Dr. Edward Hasson, Peoria, was operated on for appendicitis, August 10, at the Proctor Hospital.——Dr. Charles W. Gould, Fairdale, has started for the west and will later go abroad.——Dr. John M. Phifer, Stewardson, has been appointed assistant surgeon of the Atchison, Topeka and Santa Fe Hospital, Topeka, Kan.——Dr. Henry M. Bascom, Ottawa, has been appointed chief surgeon of the Illinois Traction System and of the hospital association of that system.——Dr. Olof Nordvall, Rockford, has returned from Europe.——Dr. Daniel W. Gross, Watseka, has been made a member of the Iroquois county board of U. S. pension examining surgeons, vice Dr. Robert Lumley, deceased.——Dr. and Mrs. R. Jay Atwood, Paxton, sailed for Europe August 11.——Dr. W. E. Taylor, superintendent of the Watertown State Hospital, has been granted six months' leave, becoming effective August 1.

Chicago

Day Nursery Opened.—The Clara Palmer Goetzinger Free Day Nursery of the Esther Falkenstein Settlement House, which will accommodate more than 100 babies, was opened August 16.

Outdoor School.—The first week of the operation of the Outdoor School for Tuberculosis Children showed gratifying results. About thirty of the children of the stock-yards district availed themselves of the opportunity, and they not only derived physical benefit, but obtained ideas regarding hygiene which should benefit them after the closure of the school.

Milk Examination.—During the week ended August 28, bacteriologic examination was made by the health department laboratory of 144 samples of milk and ice cream. The average bacteria count of raw milk was 6,660,290, and of pasteurized milk 378,300; in other words, the raw milk contained 139,600 more bacteria to the drop than the pasteurized milk. The ice cream averaged 10,537,915 bacteria to the cubic centimeter.

Medical Research Institution Founded.—The widow of Nelson Morris has given $250,000 for the erection and complete furnishing of the Nelson Morris Memorial Institution of Medical Research, to be connected with Michael Reese Hospital. The building will be constructed according to the ideas of Dr. James W. Jobling, pathologist of the hospital, and recently pathologist at the Rockefeller Institute. He will also direct the scientific work of the institution.

Personal.—Dr. Anton J. Carlson has been appointed associate professor of physiology, and Dr. H. Gideon Wells, assistant professor of pathology in the University of Chicago.——Dr. and Mrs. Fenton B. Turck and Dr. Louis L. McArthur have gone abroad.——Dr. G. N. Wassom has moved to Oelwein, Iowa, and has been appointed local surgeon for the Chicago Great Western Railroad.——Dr. Truman W. Brophy fell in his room in Berlin, August 19, and sustained painful injuries.

MARYLAND

Personal.—Drs. William J. Todd, Mount Washington, L. Gibbons Smart, Lutherville, and J. H. Jarrett, Towson, have been appointed censors of the Baltimore County Medical Association.——Dr. Henry L. Naylor, Pikesville, has been appointed a member of the State Commission on Pure Food, and on the subcommittee to draft a pure food law.

Prevention of Ophthalmia of the Newborn.—Mrs. Joseph Colt Bloodgood, Baltimore, secretary of the new Maryland Society for the Prevention of Blindness, has issued a circular which has been sent to all physicians in the state, asking them to pledge themselves to use some approved method of prophylaxis of ophthalmia neonatorum in their obstetric practice. The circular states that one-fourth of the blindness of children and one-eighth of all blindness is due to ophthalmia neonatorum.

Baltimore

Death from Pellagra.—A woman, aged 52, from Washington, D. C., died at Mercy Hospital, Baltimore, August 21, from pellagra. This is the third case of the disease observed in Maryland.

Cholera Ship on the Way.—Considerable anxiety exists in health circles over the announcement that the steamer *Andyk* from Rotterdam, a port infected with cholera, sailed for Baltimore August 25, and is due September 8. So far as known no case of cholera existed on the ship at the time of leaving port.

New Wards.—A new ward to cost about $140,000 is to be constructed at Bayview Asylum. It will be four stories in height, constructed of brick and re-enforced concrete, will be fireproof, and will contain a gymnasium and dormitory.——A new building is to be erected by the Church Home and Infirmary for a nurses' home and ward for children, at a cost of about $25,000. The building will accommodate from forty to fifty nurses.

Personal.—Dr. Percy M. Dawson, associate professor of physiology in Johns Hopkins Medical School, has resigned to take up the study of theology.——Dr. E. A. Erlanger has been made associate professor of physiology and Dr. C. D. English has been promoted to fill the vacancy caused by Dr. Erlanger's promotion.——Dr. Thomas C. Worthington has sailed for Europe.——Dr. John Doyle, interne at Mercy Hospital, was operated on for appendicitis at that institution, August 18.

MASSACHUSETTS

Personal.—Dr. and Mrs. Richard C. Cabot, Boston, have sailed for Scotland.——Dr. Samuel A. Green, formerly mayor of Boston, was overcome by the heat, August 9, and fell and sprained his ankle.

Tuberculosis Camp Opened.—Prendergast Tuberculosis Camp at Mattapan opened August 6, for the reception of patients. The camp comprises twenty acres, on which has been erected a large one-story wooden building, equipped with electric lights, shower bath, dormitory and refectory, accommodating 12 men and 20 children. The children stay at the camp during the day, and the sleeping accommodations are for former sanatorium patients who have been discharged as cured, but wish to continue the open-air treatment. Once a week the children are sent to the Boston City Dispensary for examination.

MICHIGAN

Peninsula Physicians Meet.—At the annual session of the Upper Peninsula Medical Society, held in Calumet August 4, Sault Ste. Marie was selected as the next place of meeting, and the following officers were elected: President, Dr. Edward T. Abrams, Dollar Bay; and vice-presidents, Drs. Robert B. Binnie, Sault Ste. Marie, and John MacRae, Calumet.

State Society Meeting.—The Michigan State Medical Society will hold its annual meeting at Kalamazoo, September 15 and 16. The Kalamazoo Academy of Medicine will act as host of the organization. The general meetings will be held in the Congregational church, and the house of delegates will hold its session in the rooms of the Academy of Medicine. Dr. Archibald Church, Chicago, will deliver an address on "Mind Cures in General and Emmanuelism in Particular."

MISSOURI

Demands Clean Cars.—Governor Hadley has sent a letter to Dr. Albert H. Hamel, St. Louis, president of the State Board of Health, requesting that the board confer with the general managers of the railways in the state for the purpose of obtaining compliance with such sanitary regulations as he deems it advisable to adopt.

Personal.—Dr. Wilson J. Ferguson, Sedalia, has been appointed examining physician for Pettis county for the Missouri State Sanatorium.——Dr. Frank B. Hiller, Kahoka, has been elected secretary of the State Board of Health, vice Dr. James A. B. Adcock, Warrensburg, resigned.——Dr. John A. Riley, Fulton, has been appointed first assistant physician of the State Hospital, Patton, Cal.——Dr. William J. Calvert, Columbia, has been appointed professor of medicine in the Baylor University College of Medicine, Dallas, Texas.

NORTH CAROLINA

Personal.—Dr. John T. Battle, Greensboro, who was operated on for appendicitis at St. Leo's Hospital, is making a good recovery.——Dr. Chalmers M. Van Poole, Craven, has been elected president of the Rowan Farmers' Mutual Insurance Company.——Dr. Andrew W. Goodwin, Raleigh, who was recently suspended from the Wake County Medical Society, has resigned as professor of diseases of the skin and of the genito-urinary system in the University of North Carolina Medical School, and also as professor and demonstrator of anatomy in the Leonard Medical College in the same city.——Dr. Henry B. Marriott, Battleboro, has been appointed director of the State Hospital for the Insane, Raleigh, vice Dr. William H. Whitehead, Rocky Mount, deceased.——Dr. William W. Stancell, Margarettville, has been elected assistant physician at the State Hospital for the Insane, Raleigh, vice Dr. Charles L. Jenkins, Raleigh, transferred as physician in charge of the epileptic group or colony building.——Dr. William J. McAnally, High Point, is seriously ill from the bite of a poisonous spider.

NEW YORK

Personal.—In the recent fire at Monticello the home of Dr. John F. Curlette was entirely destroyed.——Dr. Nathan E. Beardsley, Dunkirk, was seriously injured in an automobile accident recently.——Dr. A. C. Kniskern has been elected president of the board of education of Mechanicsville, vice Dr. Walter C. Crombie.

Objections to Water Pollution.—Dr. Eugene H. Porter, State Commissioner of Health, announces that there are three reasons why there should be no pollution of the state's natural water courses—the protection of public health, the prevention of public nuisances and the safeguarding of riparian rights. In general, he is of the opinion that the greatest damage to riparian rights and the most widely felt interference with the use of streams for manufacturing and agricultural purposes results from the discharge of untreated industrial waste rather than from the discharge of domestic sewage.

Tuberculosis Campaign Bringing Results.—The war against tuberculosis in New York State is beginning to show results. ——Dr. E. H. Porter, State Commissioner of Health, has authorized the establishment of a camp at East Bloomfield, Ontario county.——Rochester is to have a city hospital.——Yonkers is doing creditable work for its tuberculous.——Ontario county has made an appropriation for a tuberculosis hospital.——Ex-Governor Odell has endowed a hospital for Orange county at Newburgh and Elmira has received a similar donation from Mr. and Mrs. Rapelyea.——Poughkeepsie has a model day and night tuberculosis camp.——Buffalo and Rochester have also made special provisions for the care of their tuberculosis patients.——The Woman's Antituberculosis League of Albany has planned for a "Button Day" on Labor Day, September 6.

Sanitary Conditions of Summer Resorts.—The sanitary inspection of summer resorts, which was first taken up by the State Department of Health in 1906, has been continued. In the Long Island district, five out of twenty-seven resorts were found to be in insanitary condition. At the reinspection last year, conditions had been corrected in two instances, and at the second inspection in June, 1909, the insanitary condition had been removed in one instance and partially removed in a second, while at the third, sanitary work was being carried on. In the Catskill resorts, nineteen out of sixty-four were found to be in insanitary condition, and at the 1908 reinspection, twelve were found to have corrected the nuisance, while at the reinspection in June, 1909, two of the remaining seven have made improvements, and the proprietors of the remaining five promised to make the desired changes in sanitary arrangements. In the Raquette River and Saranac and St. Regis watersheds, forty-two resorts were inspected, in twenty-four of which insanitary conditions were found to exist.

New York City

Inspectors Dropped.—Notices were sent August 20, to thirty-three medical inspectors who were appointed February 25, that their services would be dispensed with after August 25.

Personal.—Dr. Alpheus Freeman sailed for Europe August 28.——At the semi-milennial anniversary of the University of Leipzig, the degree of doctor of medicine was conferred on Prof. E. B. Wilson.——Dr. J. Richard Kevin, Brooklyn, has succeeded Major Henry L. Cochran as surgeon of the Twenty-third Infantry, N. G. N. Y.

Hospital Improvements.—Plans have been filed for a nine-story annex to the Babies' Hospital at Lexington avenue and Fifty-ninth street, which will cost $50,000.——Plans have also been filed for a new private laboratory for the professors of the College of Physicians and Surgeons of Columbia University to be built on the roof of a corridor connecting two wings of the college. This improvement will cost $3,000.

Epidemic of Paralysis.—In the Brownsville section of Brooklyn an epidemic of infantile paralysis has broken out which has afflicted more than 200 children between the ages of 1 and 5 years. Physicians and parents charge the Health Department with laxity as it is claimed that cases were reported two weeks ago and no measures were taken to investigate the nature and causes of the epidemic.

Academy News.—The Wesley M. Carpenter Lecture of the New York Academy of Medicine for 1909 will be delivered October 21, at 8:30 p. m., by Dr. Howard T. Ricketts, professor of pathology in the University of Chicago, on "Some Aspects of Rocky Mountain Spotted (Tick) Fever, as Shown by Recent Investigation." On November 18, the anniversary address will be delivered by Dr. Louis Livingston Seaman on "Personal Observations of the Sleeping Sickness in Central Africa."

Holmes Centenary.—The county medical society, on October 9, will hold a meeting commemorative of the eminence as a physician of Dr. Oliver Wendell Holmes. The meeting will be held at the New York Academy of Medicine, and addresses will be made by Dr. Maurice H. Richardson of Harvard Medical School on "Personal Reminiscences of Dr. Oliver Wendell Holmes," by Dr. Edward O. Otis, Boston, on "Dr. Holmes' Achievements as a Physician," and by Dr. William H. Thomson, New York City, on "The Many-Sided Holmes."

City Children and Tuberculosis.—An investigation made during the summer at the Sea Breeze Hospital, maintained by the Association for Improving the Condition of the Poor, indicates that from 25 to 30 per cent. of the small school children in the poorer tenement districts of the city are infected with tuberculosis. Up to the middle of August 728 children had been tested for tuberculosis at Sea Breeze, 381 boys and 347 girls. Of this number 205 and 281 respectively showed a positive reaction to the tuberculin test. The percentage of reaction among the girls was much higher than among the boys. The reaction in many instances may have meant only a tuberculous gland which would probably lead to nothing serious.

PENNSYLVANIA

Farmers and Tuberculosis.—At the farmers' meeting at Landenberg, August 27, 5,000 people were in attendance. The important phase of the gathering was the launching of the antituberculosis campaign for pure milk. The meeting was addressed by dairymen, physicians and educators from various parts of the country.

Fight on Witchcraft.—"Hex" and "Pow-Wow" physicians, who have had a strong hold on the superstitious portion of the population of Reading and surrounding country for many years, and who are said to be responsible for the deaths of six infants, are to be prevented from doing business by the health authorities. The coroner of Berks county is using every effort to bring the guilty persons to justice.

Personal.—Mr. Wallace Hatch, executive secretary of the Pennsylvania Society for the Prevention of Tuberculosis, has resigned.——Dr. William J. Davidson, physician at the plant of the Pressed Steel Car Company, McKee's Rocks, was wounded severely in the neck and arm during the riots, August 22.——Dr. John Hoskins, Chester, was thrown from his carriage, August 22, and seriously injured.——Dr. Albert Ellershaw, Bridgeport, has sailed for Europe.

Medical Missionary Society.—Application has been made for the incorporation of the Pennsylvania Medical Missionary Society with the objects of assisting students of evangelical faith, preparing for medical missionary work; of diffusing knowledge and arousing interest in medical missions; of obtaining contributions of money for their support; and of establishing and maintaining homes or residences for the use of missionaries and students preparing for missionary work.

Philadelphia

Personal.—Dr. Walter W. Roach has been appointed assistant medical inspector in the bureau of health, vice Dr. William Drayton, Jr., resigned.——Dr. John L. Borsch, Jr., has been decorated by the Italian government for professional services rendered the king of Italy.——Dr. Charles F. W. Plass has returned from Europe.——Dr. Mortimer Herzberg, assistant bacteriologist to the bureau of health, has resigned to accept the professorship of pathology and bacteriology in the University of South Dakota.——Dr. Charles S. Barnes has sailed for Europe.

Bags for Milk.—The director of health and charities, on August 20, began the distribution of bags, in which it is proposed milk dealers shall place the supply of bottled milk served to customers. The bags, besides protecting the food supply, have printed on them advice regarding pure milk, which is as follows:

> Buy milk from a RELIABLE DEALER, where you get it clean and fresh.
>
> Keep the milk ALWAYS on ice. Don't leave it standing for several hours on the doorstep.
>
> Keep bottles and every utensil coming in contact with milk ABSOLUTELY CLEAN.
>
> Feed at regular intervals. Keep baby clean. Bathe every day. Keep rooms clean.
>
> Keep child in shade and in open air as much as possible.
>
> If you obtain milk in bottle (the best way) allow it to stand on ice for a few hours before making the day's feeding. Shake the bottle before using. If obtained in can or pitcher, COVER it to prevent dirt from entering.
>
> If the milk mixture does not agree with the baby, try for one or two days, removing one-half the quantity of boiled water and in its place add the same quantity of BARLEY WATER (made by boiling one tablespoonful of pearl barley in one quart of water for one hour, and then straining).
>
> If the child vomits, has loose, green passages, or is otherwise sick, procure medical aid, without delay.
>
> At all ages between feeding give freely to the baby water previously boiled
>
> Do not give any other liquids or any solid food, except on advice from a physician.
>
> For detailed information apply or write to the Bureau oof Health, Room 712, City Hall.

VIRGINIA

Typhoid Study.—The Virginia Department of Health has announced that Staunton will be the center of the new movement for the study of the typhoid fever situation in the valley. A traveling laboratory will be established in charge of Dr. A. P. Waddill, under the supervision of Assistant Health Commissioner A. W. Freeman and Dr. H. T. Marshall.

Personal.—Dr. John R. Bagby, health officer of Newport News, has resigned.——Dr. J. Frazer Jones, Richmond, was operated on for appendicitis, August 9.——Dr. W. L. Statewood has succeeded Dr. T. F. Jarrett, resigned, as assistant physician at the Central State Hospital, Petersburg. Dr. Thomas W. M. Long has been appointed second assistant physician, Dr. James C. Bardin, pathologist and bacteriologist, and Drs. Meade S. Brent, Northumberland county, and Robert A. Davis, Newport News, have been appointed additional assistants.——Dr. Lawrence T. Royster has been elected chairman of the school board of Norfolk.

GENERAL NEWS AND COMMENT

Obstetricians to Meet.—The annual meeting of the American Association of Obstetricians and Gynecologists will be held in the Hotel Anthony, Fort Wayne, Ind., September 21-23, under the presidency of Dr. William H. Humiston, Cleveland, Ohio.

Guarding Against Bubonic Plague.—To guard against the introduction of bubonic plague in United States ports, the Public Health and Marine-Hospital Service has directed its surgeons at leading shipping ports to enforce the rules safeguarding vessels bound for American ports against infection by rats. In eastern ports, vessels bound for America are not allowed to go alongside wharves, and are required to have rat guards on all lines before bills of health are furnished them.

Personal.—Surgeon Henry R. Carter, P. H. and M.-H. Service, director of hospitals of the Canal Zone, and family, sailed from Cristobal for New York, August 11. Dr. Carter has had more than five years' service in the isthmus and will not return at the expiration of his leave of absence.——P. A. Surgeon Donald H. Currie, P. H. and M.-H. Service, has gone to Bergen, Norway, as a delegate to the International Leprosy Congress.——Surgeon-General George H. Torney and Major Paul F. Straub, Medical Corps, U. S. Army, are representing the Army at the International Medical Congress, Budapest. During General Torney's absence, Col. Valery Havard will act as Surgeon-General.——Dr. Duke W. Goodman, U. S. P. H. and M.-H. Service, Fort Limon, is reported to be seriously ill with cerebral hemorrhage.

Army Instructs National Guard.—The Medical Corps of the Army has made experiments this summer in establishing camps of instruction for the medical department and hospital corps of the national guard of the various states. These three camps were established at Antietam, Md., Sparta, Wis., and the Presidio of San Francisco, under the charge of officers of high rank in the medical corps of the army, and were kept open for two periods of fourteen days each. The officers attending the camp were furnished pay, transportation, and subsistence, and the work undertaken included hospital corps drill, first-aid work, military hygiene, medical service in campaign, administration, and practical field work. Great interest was taken in the course of instruction by the students and it is to be hoped that the government will see fit to continue this excellent and valuable work.

Warning Concerning Alleged Agent.—The profession is warned against a man who pretends to represent the William Meyer Company, manufacturers of electrotherapeutic apparatus, Chicago, but who, the firm says, is swindling doctors by obtaining money without giving any return. The man is reported as a Swede or German-American, with a broken accent, about five feet, six inches tall, heavily built, clean shaven, with a very full face, a pasty white complexion, a rather protruding lower lip and dark moist hair; he is well dressed, has a suave manner, displays several valuable diamond rings and wears a large blue stone in his shirt front. He has given the name of Amos Cato, but he has given many other names. The William Meyer Company state that he does not represent them and that warrants are out for his arrest at Tacoma and Seattle. His method of swindling is to solicit orders and to obtain money as payment or partial payment for the goods, without making a return for the money.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Aug. 19, 1909.

Reform in Pharmaceutical Studies

The superior council of public instruction has during its last session been considering the reform of the course of studies leading to the pharmacists' diploma. According to the new plan, which will go into force Nov. 1, 1910, the pharmaceutical course will last five years; one year of apprenticeship or *stage* in a laboratory (to be required without exception), and four years of academic work. The apprentice or *stagiaire* must be 16 years old and have graduated from the secondary schools. On completion of the *stage* the candidates will pass an examination; during the four academic years, candidates will take sixteen quarterly terms of school work and will pass six examinations.

The Selection of Physicians by Pauper Patients

The law of July 15, 1893, in regard to medical charity, permits each community to choose the method of dispensing this charity; thus there are two systems in use. In fifty-nine departments the pauper selects his own physician, while in others, especially in Paris and in the Department of the Seine, the administration selects a physician. In Paris these physicians, numbering 240, are chosen for three years by the prefect of the Seine and their appointments are renewed from one three-year term to another. They receive a salary in proportion to the number of paupers in the districts which they have to visit, without regard to the number of visits. This system is to-day in disfavor. The municipal council inclines toward permitting the patient to select his physician and the Chamber of Deputies is considering an amendment of the law to this effect. The law on industrial accidents recognizes the principle that to deny the patient the right to select his physician is to interfere with personal liberty, and various medical associations are demanding that the same liberty should be accorded to paupers as to the victims of industrial accidents. Under the new system physicians would be paid according to the legally established scale for industrial accidents, which is lower than the ordinary scale of fees, and it is said that the expenses would be no higher than under the present system.

A New University

As soon as it meets the Senate will consider a bill passed by the Chamber of Deputies to reorganize the Schools of Higher Education of Algiers into a university, and to change the School of the Practice of Medicine and Pharmacy of Algiers to a mixed college of medicine and pharmacy.

An Educational Campaign Against Quackery

A medical periodical, the *Médecin de campagne* has inaugurated a contest open to French-speaking physicians, the object being the composition of an antiquackery circular, intended for the public at large, to be written in a clear and striking style on the dangers of quackery, the methods and the sources of the fortunes of quacks, their exploitation of the credulous, and the difference between men of real scientific achievement and commercial promoters. Thousands of copies of this circular will be given out by the *Médecin de campagne* to medical societies and to physicians for circulation among their patients.

French Association of Urology

The thirteenth session of the French Association of Urology will be held Oct. 7-9, 1909, at Paris at the College of Medicine under the presidency of Professor Guyon. The subject for discussion is "Calculi of the Ureter;" the essayist is Dr. Jeanbrau, professor *agrégé* of the college of medicine of Montpellier.

The Tillaux Monument

The monument erected to the memory of Professor Tillaux will be dedicated Oct. 7, 1909, at the amphitheater of anatomy of the hospitals.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Aug. 11, 1909.

Personals

Death is claiming our distinguished gynecologists at a fearful rate. While Pfannenstiel and Runge have left us within the last few weeks, Prof. v. Rosthorn at Vienna has just succumbed to an apoplectic stroke while hunting. [A notice of this death appeared in The Journal, August 21, page 647.] The deceased was closely related to us in Germany, as he was for some years director of the gynecologic clinic of Heidelberg. From thence he was called two years ago to Vienna.

The filling of the position of director of the medical clinic at Greifswald has taken a singular course. In a quite unusual way Professor Stern, at Breslau, who received a call last April (after repeated refusal of other professors), has twice accepted and again declined the position. I am unaware of the reasons for this conduct. The first assistant of Professor Kraus has now been appointed in his place, and it is to be hoped that the Greifswald clinic has at last a director.

The director of the medical policlinic in Strassburg, Professor Kohts, has resigned his position, and the assistant of Professor Müller in Munich, Dr. E. Meyer, has been appointed chief of the policlinic. A rearrangement of the university faculty has also occurred at Freiburg. In place of Professor de la Camp, who, as I reported sometime ago, is the successor of Bäumler as director of the medical clinic, Privatdocent Dr. Morawitz of Heidelberg has been appointed. In addition, a new extraordinary professorship for children's diseases has been established, and Professor Salge of Göttingen, a pupil of Heubner, has been selected for the chair.

Duke Karl Theodor of Bavaria, the well-known ophthalmologist, celebrated his seventieth birthday, August 9. This princely colleague is the author of a number of very creditable scientific articles in the field of ophthalmology. For many years he has had an extensive practice, and his skill, particularly in cataract operations, is celebrated. However, as he treats the patients gratis he infringes considerably on the practice of the neighboring ophthalmologists, and these have often complained regarding this matter. Nevertheless, the duke enjoys a remarkable degree of respect among physicians in Bavaria with regard to professional relations since, so far as consistent with his position, he has supported the efforts of physicians for the improvement of their economic condition and social standing. Munich and the well-known health resort, Tegernsee, where the duke resides most of the time, have given him the freedom of the city on the occasion of his birthday.

The Campaign Against Quackery

The medical profession in western Bavaria, the Rheinpfalz, have adopted a new method of combating the patronage of quacks by the public; they have passed a resolution to refuse medical aid to such families as first call in a physician in case of injury and then, with reckless disregard of the same, allow quacks to assume the after-treatment. A single visit in case of necessity is to be excepted. It can not be denied that such a resolution will restrain many from carelessly exchanging the physician for a quack, but this measure will secure as little real success as others, and, moreover, may be the occasion of hardships to many.

Spread of Typhoid

This year as usual a relatively larger number of typhoid cases occurred in the German empire in the months of July and August. To what this explosive increase of typhoid morbidity at this time of the year is to be referred has not been surely determined. It is partly due to the greater movement of the population which takes vacation journeys in these months, and partly to the harvest work which is distributed over large areas of land. In almost all these cases the occurrence of the typhoid epidemic is due to water infection. Such has been shown to be the cause of a marked epidemic which prevailed in Altwasser, a large village of upper Silesia, which is inhabited chiefly by miners and factory workers. In this relatively small district in the course of a few weeks 622 cases of typhoid occurred, fortunately with the light mortality of 32 (5.1 per cent.). Moreover, the military maneuvers which take place in these months give occasion for the origin and increase of typhoid. Thus in Hanover 21 cases of typhoid fever were found in one army corps, and those attacked had taken part in an exercise of the ambulance corps, during which the infection must have occurred, according to the investigations made. In this epidemic there were no deaths. The mortality of typhoid is less than formerly. Great stress is laid on rendering typhoid bacillus carriers harmless, as their importance for the spread of typhoid is becoming more and more recognized. The government of Saxony published an edict in June according to which district physicians must direct their attention to individuals who permanently excrete typhoid bacilli, report them to the authorities and inform the persons concerned regarding the danger for their environment which they constitute. Bacillus carriers who deal with food supplies must abandon such an occupation.

The Isolation of Advanced Consumptives

While extensive provision is made for consumptives in the initial stages the care of those in advanced stages leaves much to be desired. They are not received into the sanatoria, as a cure is out of the question, and the funds must not be sacrificed for useless therapeutic efforts. On the other hand, it is generally recognized that there is a constant danger of the spread of tuberculosis especially by these patients. B. Fränkel. and especially Robert Koch, have for many years emphasized the fact that the important factor in fighting tuberculosis consists less in curing consumptives than in the making incurable consumptives harmless. All measures which have been used heretofore to secure the isolation of such patients have had little success. The construction of special invalid homes or separate departments for such patients in the hospitals with rest-rooms and gardens has been tried. But such institutions have naturally the character of houses to die in, and are therefore feared and avoided by the patients. For this reason the isolation of these patients in institutions in which both curable and incurable patients may find a place in separate departments is favored. Moreover, the attempt to place consumptives in small cottage homes in the neighborhood of their previous home must be regarded as hitherto a failure. The number who can be isolated in this way is relatively so small that it has no influence on the suppression of tuberculosis. Under the circumstances it is necessary at present to leave these patients in their homes and to secure their isolation as far as possible by means of instructions and nursing. An improvement could be secured if the introduction of compulsory notification of tuberculosis should provide a legal ground for the removal of patients from their homes and their isolation in hospitals. To be sure, the prospects for such a measure, which is already in existence in other countries, is very small in consideration of the present composition of our legislative bodies.

Division of the Ministry of Education

A reorganization of the Prussian ministry of education (*Kultusministerium*), the necessity for which I have formerly noted, will, as I can authoritatively state, be accomplished in a short time. The department, which consists of three divisions, will give up the medical bureau, which will be attached to the department of the interior, so that the *Kultusministerium* will hereafter include only matters of education and the affairs of the church. Whether this transfer of medical affairs to the department of the interior will be of advantage for the public health and for physicians I very much doubt. On the whole, the business will be conducted in the same way as heretofore. A positive advance can be secured only by another organization, that is to say, by the unification of all sanitary matters which are now distributed through a series of departments (thus, railroad hygiene is cared for by the department of railroads, hygiene of trades and buildings by the department of public works), and by granting a greater independence to the medical division. The establishment of a special medical department would be of the greatest importance, but there is no prospect of carrying out such a project, aside from other difficulties, in consequence of the present unsatisfactory financial condition of Prussia in spite of the financial reform.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Aug. 15, 1909.

Death of Eminent Viennese Professors

Within a short time, two gynecologists of our university senate died unexpectedly, and their loss is deeply felt by the profession. The younger, and the better known of the two, Prof. Alfons von Rosthorn, was only 52 years old. He was in his younger days assistant to Breisky and Chrobak, both well-known obstetric and gynecologic surgeons, whose professorship in the Vienna Allgemeines Krankenhaus meant an epoch of brilliant scientific achievements. Rosthorn soon was offered a professorship in Graz, later on in Heidelberg, and when two years ago Chrobak retired from his post in Vienna, the brilliancy of Rosthorn's researches and his fame as a surgeon prompted the Vienna medical faculty to elect him as Chrobak's successor. Under his supervision, in cooperation with Schauta, the new clinics were finished and many valuable suggestions were offered by the newly appointed professor. When in 1908 he finally took over the charge of the new clinic, he laid special stress on the teaching of the students, imbuing them with the motto: "Primum non nocere." He soon drew many students to his lectures, for he had the gift of filling their minds with the enthusiasm of the investigator.. The short space of time in which he had the opportunity to make himself prominent in Vienna only showed how much we have lost by his death. Rosthorn's chief attention was directed to the diseases of the adnexa of the female genitourinary system, and his main merit during his short activity here lay in the fact that he insisted on a prolonged term of service for each student as an interne at the hospital. The other man whose death came as a shock to his numerous friends and pupils was G. C. Lott, professor of obstetrics and gynecology, and director of the gynecologic department of the Poliklinik. Lott was a conservative but energetic surgeon, whose anatomic researches form the foundation on which the teaching of the pathology of the lower uterine segment is based. He reached the age of 66 years.

Pellagra in Austria: New Report

Since 1905 the action of the government in suppressing pellagra has been going on and including all affected areas. Altogether a population of 2,250,000 has been investigated with the result that about 78,163 persons (3 per cent.) were found to be suffering from one form or another of the disease. Certain districts were more affected than others, and as a rule, the poorer classes succumbed more easily than those who could procure the food regarded as necessary. The measures of the government have been of a prophylactic nature. Apart from instituting bakeries with an ample supply of good flour, where the people could obtain good bread at a minimum price, salt and quinin were distributed freely, it having been observed that the exhibition of these substances had a marked effect on the course of the disease. The action of the government (described in The Journal, Aug. 1, 1908, li, 420) has since last year cost about $45,000, and the benefit derived by it has prompted several corporations in the affected eastern provinces of the empire to assist the board of health in its efforts by generous gifts. Thus the funds at disposal will enable the extension of the action to all afflicted districts. Out of the cases treated within the last two years, there were recurrences in 126.

Regulations Concerning General Anesthesia

Some regrettable accidents, among them a death from the effects of narcosis before operation, have prompted the government to revise the regulations dealing with general anesthesia for hospitals. The following points have been especially worked out: In a hospital anesthesia must not be produced except by a special anesthetist. In no case may a surgeon anesthetize and operate at the same time, except in an emergency, when necessary to save life. If in a hospital a nurse or student is entrusted with the administration of the narcotic substance, such individual must be controlled and assisted by a qualified surgeon. The surgeon should select the kind of narcosis as well as satisfy himself of the purity of the chemicals used, as the entire responsibility rests with him. Whenever possible, the open method should be preferred, and the A. C. E. mixture is recommended, unless pure ether is required. Special stress is laid on the necessity of examination for the presence of the much-feared "status lymphaticus." Every month reports of the number of anesthesias, the duration and the result, along with the kind and quantities of narcotic substance used, have to be sent to the board of health. Needless to say, in each case of fatal narcosis a very strict postmortem examination has to be made to find out the reason for the death.

Correspondence

The Turner Memorial Fund

To the Editor:—The late Dr. J. Edward Turner, the founder and projector of the first inebriate asylum in the world, built at Binghamton, N. Y., died in indigent circumstances and was buried at Wilton, Conn. No stone or monument marks his burial-place.

Dr. Turner was the first man to point out the practical possibilities from the medical study and treatment of inebriates in an institution, and to indicate that the great alcoholic problem must be solved by a scientific study of the inebriate and the nature and influence of alcohol. His views were severely ridiculed; and he was persecuted as a crank, but this only increased his ardor, energy and self-sacrifice. He was a century ahead of his day and generation, and his writings and books indicate a knowledge of the subject which even now is just beginning to dawn on the minds of the most advanced students.

Now that the alcoholic problem is coming into prominence, and is so intimately associated with the great hygienic problems of the day, it should be the privilege as well as the duty of American physicians to recognize Dr. Turner's marvelous work and studies in some manner.

A committee (of which I am chairman) has been appointed by the Society for the Study of Alcohol and Other Narcotics to solicit subscriptions for the purpose of erecting over Dr. Turner's grave a monument costing about $600 or $700. Dr. L. D. Mason, 171 Joralemon street, Brooklyn, the treasurer of the Turner Memorial Fund, will receive and acknowledge contributions of any amount for this purpose. Subscribers to the fund will receive a copy of Dr. Turner's "History of the First Inebriate Asylum in the World," a volume of 500 pages, published a short time before his death, and containing an account of the struggles and beginnings of the first institution at Binghamton. It is proposed to hold, when the contributions are sufficient, a formal dedicatory service at Wilton, Conn., at which addresses will be delivered in memory of Dr. Turner and his work.

Correspondence is solicited either with Dr. Mason or with the undersigned. T. D. CROTHERS, M.D., Hartford, Conn.

The Pneumococcus-Carrier a Possible Danger

To the Editor:—"An Epidemic of Empyema," reported in THE JOURNAL, Aug. 14, 1909, p. 529, leads me to ask if one case developed in advance of the others, and if the author, or some other person had, within a few hours following a visit to the home of the first pneumonia patient, come in contact with the persons who afterward developed pleuritis?

It is interesting to know how extremely susceptible some persons are to pulmonary infection, especially the old and the young and those having a tendency to such troubles.

I conducted a series of experiments on the possibility of the conveyance of infection in the laboratory of the late Professor Miller of Berlin in which the saliva of a visiting physician was found to contain the elements of the diseases of the various cases, seen by him, more than an hour after leaving them. Among these were pneumonia cases. I found that after the mouth and nares were sterilized the saliva would not produce pneumonia, septicemia, etc., as it did before sterilization.

I am inclined to believe that pneumonia as well as measles, scarlet fever, diphtheria, etc., might be carried from house to house, causing epidemics, unless the physician and visitors are sterilized after leaving the sick chamber.

It seems to me that this is a subject worthy of consideration by the U. S. Public Health and Marine-Hospital Service.

G. LENOX CURTIS, New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POISONING FROM MRS. POTTER'S WALNUT JUICE HAIR STAIN

To the Editor:—In THE JOURNAL of August 14, I noticed a report of a dermatitis following the use of Mrs. Potter's Walnut Juice Hair Stain. I wish to report another due to the same preparation.

History.—On July 6, 1909, I was called in to see a middle-aged woman who, for a week, had had a dermatitis of scalp, back of neck and ears, shoulders and scapular region. She complained of intense itching and soreness.

Examination.—The skin over the scalp, back of neck and ears and shoulders was very red and swollen; scattered here and there were papules, vesicles, pustules and scabs. The scalp especially was very pustular. Itching and pain were severe especially in scalp. The patient said the eruption had broken out immediately following a second application of Mrs. Potter's Walnut Juice Hair Stain, first application having been just two days preceding second application.

Treatment.—I advised washing the hair and scalp with green soap and water daily and using a soothing antiseptic ointment. The dermatitis cleared up in four days.

WILLIAM W. WOOD, M.D., Jamestown, N. D.

To the Editor:—My excuse for reporting the following case of dermatitis venenata caused by the use of Mrs. Potter's Walnut Juice Hair Stain is based on two grounds: Marked edema and induration of tissues involved and the intractable course of the disease.

History.—The patient, a woman aged 59, called me May 20, 1909, to prescribe for an eruption on head and neck of several days' duration. The use of a hair dye was at once surmised owing to the peculiar greenish-brown color of the hair with gray roots underneath. The patient admitted having used Mrs. Potter's Walnut Juice Hair Stain on two occasions, two days apart, the eruption appearing within 48 hours after the last application.

Examination.—The face and neck were covered with a papular eruption, the inflamed borders of which had coalesced presenting a uniform deep, dusky red color extending from the hair line to the clavicles. The lower eyelids were very edematous and the left ear was indurated and swollen to twice the normal size. The right ear was of a dusky red color, but without papules or swelling. Heart and kidneys were apparently normal, temperature and pulse remaining normal throughout the course of the disease.

Treatment.—The itching and burning were relieved for a short time only by cooling lotions, the prescriptions having to be changed at frequent intervals, to give continuous relief. The usual antipruritic ointment gave no relief at all, the patient declaring that "salves" made the itching worse. While the symptoms were reasonably relieved by treatment, the dermatitis with the edema of eyes and thickening of ear persisted for six weeks. In the third week a scattered papular eruption appeared on the chest and shoulders. In this location the itching was not so intense. At the end of six weeks the eruption had faded and the edema had almost disappeared, the sensation of burning remaining—without itching—for some time after the skin had cleared up.

E. A. HANNUM, M.D., Cleveland, O.

To the Editor:—I have just seen a patient poisoned as described by Dr. Schalek (THE JOURNAL, Feb. 13, 1909) by the Potter hair dye. This woman had used several other so-called walnut juice stains, but was not poisoned until she applied the Potter product.

EDWARD NORTON EWEN, M.D., Oakland, Cal.

COMMENT.—Other cases of poisoning due to this preparation have been reported in THE JOURNAL as follows: One case Feb. 13, 1909; one case March 6, 1909; two cases April 3, 1909, and one case Aug. 14, 1909. The subject is referred to editorially in this issue.

PROPOSED SECTION ON PSYCHIC FORCES

To the Editor:—The suggestion by Gustavus Werber in THE JOURNAL, August 28, p. 731, to establish a section on psychic forces in the American Medical Association merits the encouragement of the members of the profession.

Around the accredited and orderly facts of our science of medicine there floats a sort of dust cloud of exceptional phenomena at times and places that can not readily be ignored but which always is more easy to ridicule than to explain. No part of this mystical phenomena has been treated with a more contemptuous scientific disregard than the mass of phenomena generally termed psychic. Lord Kelvin, then Sir William Thomson, in the president's address of the British Association for the advancement of science in 1871, laid down a dictum that should be the motto for all true scientists the world over. He then said: "Science is under bonds, by the eternal principles of honor, to look fearlessly in the face of every problem that is presented to her." The physician is now interested in psychotherapeutics and this subject no doubt can not gain much progress until a lot of other phenomena along that line shall also receive the attention that they rightly merit.

In Europe many of the leading scientists and physicians are interested in these phenomena. I heartily agree that we in America can not afford to lag behind in this movement and believe that the medical man is the right man to study it, for he of all others is best prepared and has the best opportunity.

DANIEL S. HAGER, M.D., Chicago.

The Public Service

Medical Department of the Army

Changes for the week ended Aug. 28, 1909:

Rhoads, Thomas L., major, August 20, left Walter Reed Army General Hospital on 10 days' leave.

Hughes, Leonard S., 1st lieut., M. R. C., August 15, left Department Rifle Range, Cal., en route to Fort Lawton, Washington, for duty.

Wells, F. M., 1st lieut., M. R. C., August 18, left Fort Robinson, Nebr., en route to Fort Leavenworth, Kan., for duty with troops to Des Moines, Iowa.

Tukey, Willim H., 1st lieut., M. R. C., granted 21 days' leave of absence about Aug. 20, 1909.

Harris, Jesse R., capt., ordered to proceed from Fort George Wright, Wash., to Boise Barracks, Idaho, for temporary duty.

Baily, Howard H., capt., granted 15 days' leave of absence when his services can be spared.

McLellan, George H., 1st lieut., M. R. C., ordered to proceed from Fort Crook, Nebr., to Fort Des Moines, Iowa, for duty with troops of the 2d Cavalry to Des Moines Iowa.

Brown, O. G., capt., ordered to proceed from Fort Robinson, Nebr., to military tournament camp at Des Moines, Iowa, for duty with Second Squadron, 15th Cavalry from Fort Leavenworth, Kan.

Allen, John H., capt., granted leave of absence for two months.

Snyder, Henry D., major, ordered on expiration of present leave of absence to proceed to New York City on business connected with the Medical Supply Depot, and on completion of same to proceed to St. Louis, and assume charge of the Medical Supply Depot in that city, relieving 1st lieut. Ferdinand Schmitter, M. C., who will return to Jefferson Barracks, Mo.

Barney, Fred M., 1st lieut., M. R. C., granted 15 days' leave of absence about Sept. 10, 1909.

Clark, Joseph T., major, Brown, Orville G., capt., Van Dusen, James W., capt., McLellan, George H., Bastion, Joseph E., Miller, Albert L., Wells, Francis M., Burket, John A., 1st lieuts., M. R. C., ordered to proceed to Des Moines, Iowa, to arrive not later than September 17, to participate in a military tournament at that city, September 20 to 25, and on termination thereof, to return to their proper stations.

Sweazey, Verge E., capt., granted two months' leave of absence on surgeon's certificate of disability.

Cutliffe, Wm. O., 1st lieut., M. R. C., granted leave of absence for one month on surgeon's certificate of disability.

Craig, Emmett J., dental surgeon, granted leave of absence for two months.

Mills, Robert H., dental surgeon, ordered to Fort Riley, Kan., for temporary duty.

Sanford, Joseph L., 1st lieut., M. R. C., granted 30 days' leave of absence to take effect on or about Sept. 2, 1909.

Jackson, Thomas W., 1st lieut., M. R. C., on being relieved from temporary duty at Washington Barracks, D. C., by Major C. R. Reynolds, will proceed to Fort Washington, Md., for temporary duty, and on return of Captain Samuel J. Morris, will proceed to Fort Hunt, Va., for duty.

Hart, James W., 1st lieut., M. R. C., relieved from additional duty at Fort Washington, Md., and duty at Fort Hunt, Va., and ordered to proceed to Cayay, P. R., for duty.

Hutton, Paul C., capt., granted leave of absence for one month.

Davidson, Wilson T., capt., relieved from duty in the Philippine Islands, and assigned to duty as surgeon of the transport *Buford,* on the voyage commencing Sept. 16, 1909, and on arrival at San Francisco will report to The Adjutant General of the Army for further orders.

Fox, James S., 1st lieut., M. R. C., ordered to Fort Andrews, Mass., for temporary duty, and on its completion, to return to his proper station.

Stallman, George P., 1st lieut., M. R. C., granted leave of absence for one month, with permission to apply for 15 days extension.

Medical Corps of the Navy

Changes for the week ended Aug. 28, 1909:

Peck, A. E., surgeon, detached from the Marine Recruiting Station, New York, and ordered to the Marine Recruiting Station, San Francisco.

Murphy, J. A., surgeon, detached from the *Olympia*, August 27, and ordered to the Marine Recruiting Station, New York.

Rennie, W. H., P. A. surgeon, detached from the *Rhode Island*, and ordered to the Marine Recruiting Station, New York.

Grieve, C. C., P. A. surgeon, detached from duty at the Naval Hospital, Sitka, Alaska, and ordered to the *Independence*.

Brister, J. M., P. A. surgeon, detached from the *Independence* and ordered home to wait orders.

Sinclair, J. A. B., asst.-surgeon, ordered to command the Naval Hospital, Sitka, Alaska.

Brooks, F. H., asst.-surgeon, ordered to the Naval Recruiting Station, Omaha.

Sterne, C. F., asst.-surgeon, detached from the Naval Recruiting Station, St. Louis, and ordered to duty at the Naval Hospital, Puget Sound, Wash.

Thomas, G. C., asst.-surgeon, detached from the Naval Recruiting Station, Omaha, and ordered to the *Rhode Island*.

Steadman, W. G., asst.-surgeon, discharged from treatment from the Naval Hospital, Norfolk, Va., and granted sick leave for six weeks.

Reed, T. W., asst.-surgeon, detached from the Marine Recruiting Station, San Francisco, and ordered to examination for promotion and then to wait orders.

Bloedom, W. A., acting asst.-surgeon, ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Fauntleroy, A. M., P. A. surgeon, detached from the *Hartford*, August 29, and granted leave for one month.

Johnson, J. T., acting asst.-surgeon, ordered to duty at the Naval Hospital, Naval Home, Philadelphia.

Reeves, I. S. K., P. A. surgeon, discharged from treatment at the Naval Medical School Hospital, Washington, D. C., and granted sick leave for one month.

Reeves, I. S. K., P. A. surgeon, unexpired sick leave revoked, ordered to the Navy Yard, Philadelphia, September 3.

Kuder, W. S., asst.-surgeon, detached from the Navy Yard, Philadelphia, September 3, and ordered to Washington, D. C., for examination for promotion and then to wait orders.

Sutton, D. G., asst.-surgeon, detached from the Naval Academy and from the *Tonopah* and ordered to duty in connection with the *Vestal* and to duty on board that vessel when commissioned.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Aug. 25, 1909:

Kalloch, P. C., surgeon, granted 7 days' leave of absence en route to station.

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from Aug. 22, 1909, on account of sickness.

Geddings, H. D., surgeon, detailed to represent the Service at the 6th International Medical Congress to be held at Budapest, Hungary, Aug. 29-Sept. 4, 1909.

Rosenau, M. J., surgeon, directed to proceed to Philadelphia, on special temporary duty.

Corput, G. M., P. A. surgeon, granted 10 days' leave of absence from Aug. 13, 1909, on account of sickness.

Vogel, C. W., P. A. surgeon, granted 3 days' leave of absence from Aug. 23, 1909, under paragraph 189, Service Regulations.

Gwyn, M. K., P. A. surgeon, granted 7 days' leave of absence from Aug. 17, 1909, under paragraph 191, Service Regulations.

Stimson, A. M., P. A. surgeon, granted 7 days' leave of absence from Aug. 16, 1909, under paragraph 191, Service Regulations.

Ebersole, R. E., P. A. surgeon, on expiration of present leave of absence, relieved from duty at Manila, P. I., and directed to proceed to San Francisco.

Wollenberg, R. A. C., asst.-surgeon, granted 2 months' leave of absence from Sept. 10, 1909.

Altree, G. H., acting asst.-surgeon, granted 30 days, leave of absence from Sept. 2, 1909.

Boyd, Frank, acting asst.-surgeon, granted 22 days' leave of absence from Aug. 20, 1909.

Fogarty, J. N., acting asst.-surgeon, granted 18 days' leave of absence from Sept. 4, 1909, with pay, and 12 days' leave of absence from Sept. 22, 1909, without pay.

Frissell, C. M., acting asst.-surgeon, granted 20 days' leave of absence from Aug. 13, 1909; 9 days with pay and 11 days without pay.

MacCaffry, Ward B., acting asst.-surgeon, transferred from Reedy Island Quarantine Station to Cape Charles Quarantine Station, effective Sept. 1, 1909.

O'Rielly, W. J., acting asst.-surgeon, granted 2 days' leave of absence from Aug. 31, 1909.

Thornton, M. J., acting asst.-surgeon, granted 1 day's leave, Aug. 15, 1909, on account of sickness.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Aug. 27, 1909:

SMALLPOX—UNITED STATES

California: Berkeley, July 24-31, 1 case; San Francisco, July 26-July 3, 1 case.
District of Columbia: Washington, Aug. 7-14, 1 case, 1 death.
Indiana: Fort Wayne, Aug. 7-14, 13 cases; South Bend, 1 case.
Iowa: Cedar Rapids, July 1-31, 1 case.
Kansas: Wichita, July 31-Aug. 7, 2 cases.
Missouri: St. Louis, Aug. 7-14, 2 cases.
Montana: Butte, Aug. 5-12, 7 cases.

SMALLPOX—FOREIGN

Belgium: Antwerp, July 17-24, 4 cases.
Canada: Halifax, July 31-Aug. 7, 1 case.
China: Amoy, June 26-July 3, 8 deaths; Kang Thau, June 1-30, 1 case, April 1-June 30, 7 cases, 1 death; Shanghai, July 3-10, 1 death, among natives.
Egypt: Cairo, July 1-8, 1 case, 1 death.
France: Paris, July 24-31, 1 case.
Italy: General, July 25-Aug. 1, 14 cases; Naples, 22 cases, 2 deaths.
India: Bombay, July 6-13, 7 deaths; Calcutta, June 26-July 3, 5 deaths; Madras, July 3-9, 1 case, 1 death; Rangoon, June 26-July 3, 3 deaths.
Mexico: Guadalajara, July 22-29, 1 death; Monterey, Aug. 1-8, 1 death; Veracruz, vicinity, Aug. 12, 6 cases.
Peru: Lima, July 17-24, 1 case.
Russia: Moscow, July 10-24, 71 cases, 9 deaths; Odessa, July 17-24, 4 cases; St. Petersburg, July 10-17, 18 cases, 3 deaths.
Spain: Barcelona, July 19-Aug. 2, 4 deaths; Tarragona, July 19-26, 1 death; Valencia, July 10-17, 6 cases; Vigo, July 24-31, 1 death.
Tripoli: Tripoli, July 10-24, 17 cases, 6 deaths.
Turkey: Constantinople, July 25-Aug. 1, 1 death.

YELLOW FEVER

Brazil: Para, July 10-31, 8 cases, 8 deaths.
Ecuador: Guayaquil, July 10-24, 6 deaths.
Mexico: Colima, Aug. 19, present; Medida, Aug. 6-13, 1 case.

CHOLERA—INSULAR

Philippine Islands: Provinces, June 26-July 3, 110 cases, 92 deaths.

CHOLERA—FOREIGN

China: Amoy, June 26-July 3, 11 deaths; Hankau, July 10-17, 1 case, 1 death; Kang Thau, June 1-30, 2 cases, 1 death, April 1-June 30, 4 cases, 2 deaths.
India: Bombay, July 6-13, 17 deaths; Calcutta, June 26-July 3, 56 deaths; Madras, July 3-9, 1 death; Rangoon, June 26-July 3, 2 deaths.

PLAGUE—INSULAR

Hawaii, Hilo, vicinity, Aug. 19-20, 1 cases, 1 death; Olas, Aug. 20-22, 2 cases, 2 deaths.

PLAGUE

Azores: Terceira, June 16, 3 cases.
Chile: Antofagasta, July 10, in Lazaretto; Iquique, July 11, 7 cases, July 16, 7 cases.
China: Amoy, June 26-July 3, 95 deaths, July 10-17, 73 deaths; Kang Thau, June 1-30, 37 cases, 19 deaths, April 1-June 30, 117 cases, 59 deaths; Hongkong, July 3-10, 4 cases, 2 deaths.
Ecuador: Guayaquil, July 10-24, 4 deaths.
India: General, July 3-10, 558 cases, 462 deaths; Bombay, July 6-13, 21 deaths; Calcutta, June 26-July 3, 41 deaths; Rangoon, 22 deaths.
Japan: Shikoku, July 28, 5 cases, 1 death.
Peru: General, July 3-10, 10 cases, 8 deaths.
Venezuela: Caracas, Aug. 6, 1 case.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phœnix, October 4-5. Sec., Dr. Ancil Martin.
Colorado: Capitol, Denver, October 5. Sec., Dr. S. D. VanMeter, 1723 Tremont St.
Georgia: Regular, Capitol Bldg., Atlanta, October 12. Sec., Dr. E. R. Anthony, Griffin. Homeopathic: Atlanta, October 4. Sec., Dr. R. E. Hinman, 153 Whitehall St.
Idaho: Boise, October 5-6. Sec., Dr. W. F. Howard, Pocatello.
Illinois: Coliseum Annex, Chicago, October 20-22. Sec., Dr. J. A. Egan, Springfield.
Kansas: Topeka, October 12. Sec., Dr. F. P. Hatfield, Olathe.
Louisiana: New Orleans, October 1-2. Sec., Dr. Felix A. Larue, 211 Camp St.
Michigan: Lansing, October 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
Minnesota: State University, October 5. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.
Mississippi: Jackson, October 12. Sec., Dr. S. H. McLean.
Montana: Capitol, Helena, October 5. Sec., Dr. W. C. Riddell.
New Jersey: State House, Trenton, October 19-20. Sec., Dr. E. L. B. Godfrey, Camden.
North Dakota: Grand Forks, Oct. 5-7. Sec., Dr. H. M. Wheeler.
Oklahoma: Ione Hotel, Guthrie, October 13. Sec., Dr. Frank P. Davis, Enid.
Rhode Island: Room 313, State House, Providence, October 7-8. Sec., Dr. Gardner T. Swarts.
Utah: Room 207, City and County Bldg., Salt Lake City, October 4-5. Sec., Dr. G. F. Harding, 310 Templeton Bldg.
Wyoming: Laramie, October 20-22. Sec., Dr. S. B. Miller.

Additional Data for the Educational Number

In the list of medical colleges given on page 555 of The Journal, Aug. 14, 1909, the Educational Number, the University Medical College of Kansas City should have been included. That college has adopted the requirement of one year of collegiate work for admission in addition to a four-year high school education, the requirement to go into effect with the session of 1910-11.

Dr. Seneca Egbert, dean of the Medico-Chirurgical College of Philadelphia, writes that instead of 56 graduates, as published on pages 538 and 548 of the Educational Number, that college had 78 graduates.

At a meeting of the faculty of the Starling-Ohio Medical College of Columbus, held since the reports were sent to us, Dr. W. J. Means was elected dean, vice, Dr. George M. Waters.

A new medical building which will be completed about January 1, 1910, is now being erected by the Eclectic Medical Institute at Cincinnati. It will be a six-story structure, will cost about $50,000, and will be connected by covered bridge with the Seton Hospital. Special provision is made for laboratories, lecture rooms, offices and a library.

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

The outline for the first weekly meeting of the postgraduate course for the third year is given herewith. Owing to unavoidable delay in preparation of the copy, the pamphlets containing the outline for the third year have not been printed, but are in course of preparation and will be ready for distribution by the middle of the month. County secretaries and others desiring copies of the third year course are requested to write Dr. Blackburn, stating the number of copies desired, etc., as the entire edition will be sent to Dr. Blackburn for distribution.

Third Year—First Month, First Weekly Meeting

SURGICAL DISEASES OF THE THORAX

Anatomy of Thoracic Wall and Diaphragm

Thorax: Shape, size, diameters, variations in sexes; osseous boundaries, sternum, ribs, vertebrae. Sternum, shape, location, costal and muscular attachments. Ribs, number, general characteristics and peculiarities. Dorsal vertebræ, characteristics and peculiarities. Costo-sternal and costo-spinal articulations. Muscles, vessels, nerves.

Sternal Region: Pectorals, triangularis sterni; internal mammary and branches, veins and lymphatics; nerves.

Costal Region: Pectorals, serratus magnus, external and internal intercostals, number, attachments, functions; intercostal arteries, origin, relations, axillary branches; veins; lymphatics; nerves.

Diaphragm: Position, shape, attachments, portions, openings.

Anatomy of Lungs and Pleura

Pleura: Parietal layer consisting of costal, mediastinal and phrenic portions, important relations of each; visceral layer, reflections, relations; pleural sinus. Mediastinum, portions, important contents of each, lymphatic glands.

Lungs: Shape, size, costal and mediastinal surfaces, apex, base, borders, relations of structures forming root of lung, bronchial and pulmonary arteries, nerve supply, lymphatics.

Anatomy of Vascular System

Pericardium: Shape, size, layers, relation to chest wall, to surrounding structures, superficial cardiac triangle.

Heart: Size, shape, position, relation to chest wall, to lungs and pleura, muscular structure, situation of valves.

Aorta: Three portions, boundaries and relations of each.

Surface Anatomy

Regions of Chest: Anterior, posterior, lateral. Outline of heart; apex beat; valves. Outline of lungs; of pleura.

Marriages

H. Brooker Mills, M.D., to Miss Caroline Wagner, both of Philadelphia, June 18.

William E. Peters, M.D., Carlisle, Pa., to Miss Mary L. Cain, of Philadelphia, August 20.

Ralph H. Augur, M.D., Washington, D. C., to Mrs. Stella H. Townsend, at Washington, August 16.

J. Clinton Mobley, M.D., to Mrs. Julia Catherine Hanson, both of Memphis, Tenn., at Marion, Ark., August 8.

Ralph C. Tilley, M.D., Lawrenceburg, Ind., to Mrs. Mattie C. Bell Chanee Calvert Harris, of Chesterville, Ind., recently.

Deaths

Hiram Landis Getz., M.D. Jefferson Medical College, Philadelphia, 1874; for many years a member of the American Medical Association; first vice-president of the Iowa State Medical Society in 1897; president of the International Association of Railway Surgeons in 1901; president of the Iowa State Railway Surgeons Association in 1899; and first vice-president of the Tri-State Medical Society in 1900; formerly professor of obstetrics and diseases of women and children in the Iowa College of Physicians and Surgeons, Des Moines; for several years city physician of Marshalltown, Iowa, and first physician of Marshall county; chief surgeon of the Iowa Central Railway; district surgeon of the Chicago and Northwestern Railway and local surgeon of the Chicago Great Western Railway; formerly captain and assistant surgeon in the Iowa National Guard and later lieutenant colonel and a member of the governor's staff; president of the local board of U. S. pension examining surgeons; president of the board of education of Marshalltown, and postmaster of that city in 1894; was found unconscious in his room in Jacksonville, Fla., from the effects of morphin and died in St. Luke's Hospital, August 19, aged 57.

Lewis Balch, M.D. College of Physicians and Surgeons, New York City, 1870; formerly professor of anatomy and medical jurisprudence in Albany Medical College; consulting surgeon to St. Peter's Hospital, and attending surgeon to the Child's Hospital; health officer of Albany, and secretary to the State Board of Health; a member of the American Public Health Association; formerly surgeon of the 37th, 71st and 10th regiments, National Guard, State of New York; surgeon of the Second New York Infantry, U. S. V., during the Spanish-American war, and afterward a surgeon of volunteers in the Philippine Islands; in 1900 superintendent of sanitary improvements at Colon, Panama; died in his rooms at the Army and Navy Club, New York City, August 9, aged 62.

Edwin Lesley Marechal, M.D. University of Alabama, Mobile, 1870; a member and president of the Medical Association of the State of Alabama; formerly lecturer on hygiene and medical jurisprudence in his alma mater; one of the organizers of the Baldwin County Medical Association, and county health officer for several years; in 1890 organizer and president of the Alumni Association of the University of Alabama, Medical Department; health officer of Mobile county, and president of the Medical Society of Mobile in 1895; a member of the State Board of Censors, and first editor of the *Mobile Medical Journal*; for fifteen years a member, and for seven years president of the school board of Mobile county; died at his home in Mobile, August 19, aged 59.

Robert Wesley Erwin, M.D. Bellevue Hospital Medical College, New York City, 1870; of Bay City, Mich.; a member of the American Medical Association, American Academy of Medicine and Bay City (Mich.) Board of Health; a member of the local board of U. S. pension examining surgeons; a veteran of the Civil War; at one time superintendent of schools of Harrison county, Ohio, and professor of geometry in the Cooper Institute, New York City; died suddenly at Grand Lake, Mich., August 13, from heart disease, aged 67.

George Francis Shears, M.D. Hahnemann Medical College, Chicago, 1880; president and senior professor of surgery in Hahnemann Medical College; and one of the most prominent homeopathic practitioners of the middle west; consulting surgeon to the Cook County, Streeter and Silver Cross hospitals, attending surgeon to Hahnemann Hospital, director of the Chicago Tuberculosis Institute, and assistant editor of the *Clinique*; died at his home in Chicago, August 27, from paresis, aged 52.

Joseph Alison Scott, M.D. University of Pennsylvania, 1889; of Philadelphia; a member of the American Medical Association; fellow of the College of Physicians of Philadelphia, and a member of the Philadelphia Pathological and Pediatric societies; adjunct professor of clinical medicine in his alma mater; visiting physician to the Pennsylvania Hospital; died at the summer home of his sister in Northeast Harbor, Maine, August 13, from heart disease, aged 44.

Casper K. LaHuis, M.D. University of Michigan, Ann Arbor, 1896; of Zeeland, Mich.; formerly of Kalamazoo and a member of the school board; a member of the Michigan State Medical Society and Kalamazoo Academy of Medicine; formerly assistant in obstetrics and gynecology at his alma mater; died at his home, August 12, from tuberculosis, aged 40.

John Wherrell, M.D. Kansas City (Mo.) Medical College, 1889; professor of internal medicine in the Western Eclectic College of Medicine and Surgery, Kansas City, Kan.; founder of the Kansas Normal School, Paola; and for many years superintendent of schools of that city and Leavenworth; died at his home in Kansas City, Kan., August 12, aged 66.

George Washington Moran, M.D. University of Michigan, Ann Arbor, 1892; a member of the American Medical Association; treasurer of the Michigan State Medical Society; surgeon to the American Shipbuilding Company; chief of staff of St. Vincent's Orphan Asylum, Detroit; died in Harper Hospital, Detroit, August 12, from ptomain poisoning, aged 41.

Adelbert G. Gumaer, M.D. University of Pennsylvania, Philadelphia, 1883; of Buffalo, N. Y.; a member of the American Medical Association; for twenty-three years local surgeon to the Lake Shore and Michigan Southern Railway, and surgeon to the Emergency Hospital; died in Santa Monica, Cal., August 1, from heart disease, aged 57.

Peter James Campbell, M.D. New York University, New York City, 1893; a member of the American Medical Association and the Utica (N. Y.) Medical Library Association; formerly health officer of Utica; died at his home in that city, August 10, from acute nephritis, aged 41.

Gioachino Barabini, M.D. University of Palermo, Sicily, 1901; a member of the American Medical Association and the Italian Medical Society; prominent as a worker among the Italian poor of New York City; died at his home in New York City, August 16, from gastroenteritis, aged 34.

Edward Mortimer Hardcastle, M.D. University of Maryland, 1889; formerly principal of the Easton (Md.) High School and Maryland Nautical Academy; a clergyman of the Protestant Episcopal church; died in Easton, Md., August 15, from tuberculosis, aged 41.

Charles Edward Trotter, M.D. Johns Hopkins University Medical School, 1909; acting assistant surgeon U. S. Navy; was drowned August 11, from a life raft, after the sinking of the U. S. Naval tug, *Nezinscot*, off Cape Ann, Mass., aged 25.

George H. Bailey, M.D. Tulane University, New Orleans, 1861; a surgeon in the Confederate service during the Civil War; formerly of Phoenix, Ariz.; died at the home of his daughter in Anaheim, Cal., August 4, from bronchitis, aged 70.

Joseph H. Hobson, M.D. Washington University, St. Louis, 1895; a member of the American Medical Association; formerly a member of the city council and school board of White Cloud, Kan.; died at his home in that city, July 29, from tuberculosis, aged 40.

John T. Martin, M.D. Cincinnati College of Medicine and Surgery, 1871; formerly of Green Camp and Marion, Ohio; a veteran of the Civil War; died in the Old Soldier's Home, Sandusky, Ohio, August 16, from paralysis, aged 65.

John D. Shaw, M.D. Willamette University, Salem, Ore., 1895; of Salem, Ore.; for several years physician to the Oregon State Penitentiary; died in the Salem Hospital, August 6, from cerebral hemorrhage, aged 47.

Joseph Edward Smith, M.D. Georgetown University, Washington, D. C., 1900; a member of the Kentucky State Medical Association; died at his home in Bardstown, August 14, from Hodgkin's disease, aged 32.

Samuel P. Oldham, M.D. Kentucky School of Medicine, Louisville, 1875; died suddenly at his home in New Castle, Ky., August 12, from cerebral hemorrhage, aged 53.

Charles I. Conover, M.D. Albany (N. Y.) Medical College, 1878; died at his home in Charleston Four Corners, N. Y., August 8, from intestinal obstruction, aged 57.

Levi Fulk, M.D. Bellevue Hospital Medical College, 1874; died at his home in New Kingston, Pa., August 8.

Charles Oxford, M.D. University of Berlin, Germany, 1873; died at his home in Omaha, August 6, from pneumonia.

Medicolegal

General Unsoundness of Mind as a Defense to Crime

The Supreme Court of Pennsylvania says, in the homicide case of Commonwealth vs. Hallowell, where the whole defense rested on general unsoundness of mind, that whether this condition can be urged as a sufficient defense against an accusation of crime depends on the extent and degree of the unsoundness. Any variation, however slight, from normal conditions, implies unsoundness in some degree; and ordinarily, when one is said to be unsound mentally, the expression indicates nothing as to the extent or degree of the variation. There is, however, nothing uncertain or indeterminate in these words when they are used to denote the mental unsoundness which exempts from legal responsibility for what otherwise would be felonious and therefore criminal homicide. The words used in this connection have a fixed and definite meaning. They denote a mind so far devoid of understanding that it is unable to distinguish between right and wrong, and is therefore without freedom of moral action. However unsound in mind a man may be generally, it is only when he has lost utterly his power of moral perception that he ceases to be responsible in the eye of the law. Therefore it is that, whenever insanity is set up as a defense to an accusation of crime, it becomes the duty of the trial judge to clearly define to the jury what kind or degree of insanity absolves, to the end that they may intelligently understand the real point at issue and weigh with discriminating judgment the evidence submitted to them.

The trial judge told the jury in this case that the question was not, "was this prisoner of unsound mind? or, if you choose to put it so, was he insane?" Again, he said: "The question is not whether he is eccentric or peculiar, or what these people (witnesses) call unsound." In his instruction the judge was strictly within the law. What the jury were to determine was a question of legal accountability; and, since this could exist even where there was unsoundness, the statement of the judge was not only entirely correct, but, in view of the character of the testimony he was about to review, it was none too direct or positive; for, however correct the defendant's witnesses were in the opinions expressed that the defendant was a man of unsound mind, it was manifest from the facts give by each in support of such inference, with a few exceptions, that the unsoundness they were considering was not that which in law exculpates.

Evidence of general unsoundness is admissible, of course, for it is only when the whole mental condition of the accused is exhibited that the extent or degree of the insanity can be determined.

Admissible Evidence of Injury to Spine

The Court of Appeals of Kentucky says, in Lexington Railway Co. vs. Woodward, a personal injury case brought by the latter party, that a physician who had made an examination of the plaintiff's person qualified himself to testify as an expert, and the examination which he testified he made was sufficient to enable him to give an opinion on the extent of her injuries. He could testify to any physical fact which he found to exist. He was properly allowed to state that the left leg below the knee was smaller than the right, and that this indicated in his judgment a lack of nutrition. It was true that the plaintiff sued for an injury to her spine and hip; but any symptom on the lower part of the leg which would be confirmatory of the testimony as to the condition of the spine and hip was properly admitted. In spinal injury, effects are often shown in other parts of the body, and if there were no such evidence in other parts it would be a circumstance indicating that the plaintiff's spine was not so badly affected as she claimed.

Procedure in Montana After Revocation of License

The Supreme Court of Montana says, in State, on the relation of Gattan vs. District Court, that the relator was, prior to Nov. 23, 1907, a physician duly licensed by the State Board of Medical Examiners. Complaint having been made to the board that he had been guilty of unprofessional and dishonorable conduct, a trial was had and the board revoked his license. He appealed to the District Court, which held trial Nov. 23, 1907, with a jury of six physicians in conformity with the statute, Section 1588 of the Revised Codes of Montana. The trial resulted in a verdict finding the charges sustained and affirming the judgment of the board of examiners, and judgment was by the court entered accordingly.

The relator subsequently filed in the Supreme Court his application for a writ of review to annul the judgment so entered against him. It was alleged that the District Court was without jurisdiction to render and enter the judgment because the jury selected to try the charges was not a legal jury, in that the names of the persons constituting it were not drawn from the regular jury box in conformity with the provisions of law on the subject, but that the jurors were selected under arbitrary order and direction of the court, and that the jury, as constituted, consisted of six persons only, whereas the relator was entitled to have the issue involved tried by a constitutional jury of 12 persons, drawn and impaneled as provided by law for all actions and proceedings in the district. But the application must be denied for two reasons:

1. The relator had a right of appeal from the judgment. While proceedings had under the law before the board of medical examiners touching the granting or revoking of a license may not in any sense be regarded as the administration of a judicial remedy an appeal to the District Court from one of its determinations, whereon a trial of the issue is had de novo (anew), must be regarded as an application to that court for a judicial remedy. The appeal is granted as a method of getting the matter involved before a court that it may be determined judicially. It is a special proceeding commenced in the District Court by the filing of the appeal. In all such proceedings the party aggrieved has an appeal to the Supreme Court, provided he avails himself of his right within one year. He may not permit the time for appeal to lapse and then have the judgment reviewed on writ of review.

2. The application did not question the jurisdiction of the District Court to entertain the appeal from the board to it. The only question made with reference to the proceedings there was as to the action of the court in selecting the jury. Its action in this regard, if erroneous, amounted only to error within jurisdiction, and could not be corrected by writ of review. The application for a writ of review must therefore be dismissed.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

August 21

1 *Life-Insurance in its Relation to Prevention of Tuberculosis. S. A. Knopf, New York.
2 *Report of Nine Cases of Pellagra. E. D. Bondurant, Mobile, Ala.
3 *Value of Microscopic Examination of the Prostatovesicular Secretion in the Diagnosis and Prognosis of Gonococcus Infection. A. L. Wolbarst, New York.
4 *Multiple Sclerosis. C. D. Fox, Philadelphia.
5 Malformations of the Nasal Septum. J. P. Lewis, Waltham, Mass.
6 Flat Feet. M. Strunsky, New York.
7 *Conservatism in the Use of Flatfoot Plates. R. O. Meisenbach, Buffalo.

1. **Life Insurance and Tuberculosis.**—Knopf believes that in the future the insurance companies will be able and glad to aid in the distribution of literature and information on tuberculosis, and especially its prevention among the public with whom they deal; that the life-insurance agent may by word of mouth impart this instruction, that the people who undertake industrial insurance are alive to the necessity of prevention of tuberculosis, and that they will gladly insure their children against tuberculosis. The Metropolitan Life Insurance Company desires to erect a sanatorium for its employés, which may later be used by policy holders.

2. **Pellagra.**—Bondurant observed a considerable number of cases among negroes in the insane asylum at Mt. Vernon, Ala. In his private practice he saw none before August, 1907, but from that time until May 1, 1909, he saw 9 out of 590 cases seen in all. He reports 9 cases in detail, most of them having been fatal.

3. **Microscopic Examination of Prostatovesicular Secretion.**—Only those cases in which 3 or more examinations were made of the prostatovesicular secretion are included by Wolbarst in his paper. He selected 35 cases because these cases emphasize certain features of this subject that are of more than passing interest. From 3 to 19 examinations of massaged secretion were made in each of these cases, a total of 240 examinations. These patients have been divided into two classes: (1) Those who showed clinical symptoms and came to be treated for them—21 in number; and (2) those who did not show clinical symptoms, but came for examination for some other complaint, or for advice preparatory to marriage—14 in number.

As a result of these investigations, Wolbarst believes that a man may be "cured" of his gonorrhea, so far as symptoms are concerned, and his prostate and adnexa may contain gonococci; that gonococci may be found in clear urine; that gonococci may persist in the prostate for many years, and show no symptoms of any kind; they may not be infectious necessarily; that we can not tell whether or not any given prostate contains gonococci, except by making a large number of examinations of the massaged secretion after stimulation and irritation by silver nitrate, etc.; that though it is conceded that cultures are more certain, when successful, than microscopic examinations, practicing physicians must rely on the microscope for their results. Besides, a negative finding in a culture tube is no more enlightening as to the absence of gonococci in the prostate than is a negative finding on a microscopic slide. In either case the thing sought for has merely not been found, which is a different thing from saying that it is not there. The gonococcus should be sought for until every means is exhausted.

4. **Multiple Sclerosis.**—Fox reports a case in which at first examination the absence of nystagmus, intentional tremor, and impairment of speech caused the incorrect diagnosis of transverse myelitis. Hysteria made its appearance late. The diagnosis was based on transitory but almost total paralysis, the induction of hypnoidal states by lateral fixation of the eyes, and the appearance of an apparently causeless series of syncopal attacks. There were no other stigmata of hysteria except contraction of the visual fields.

7. **Flatfoot Plates.**—Meisenbach emphasizes the harm that may be done by the promiscuous use of flatfoot plates when applied by persons without skill and knowledge.

Boston Medical and Surgical Journal

August 19

8 *Intravenous Administration of Strophanthin in Other Than Cardiac Disease. A. K. Stone, Boston.
9 Psychopathology. B. Sidis, Brookline, Mass.
10 Stenosis of the Larynx. R. H. Johnston, Baltimore.
11 *Tubal Abscess of Unusual Position Accompanied by a Bacteriuria of Renal Origin. A. L. Chute, Boston.
12 Leprosy. C. E. Wells, Tewksbury, Mass.
13 *Two Unusual Cases of Sarcoma. W. A. Smith, Springfield.

8. **Intravenous Administration of Strophanthin.**—Stone agrees with Liebermeister that the intravenous injection of strophanthin enables one to carry along a certain number of severe cases of pneumonia until the patient is able to eliminate the toxin of the pneumococcus and to get on the sure road to recovery. He says that in certain cases of collapse, due to cardiac weakness, the physician has in strophanthin a drug which will act promptly and powerfully and enable the patient to rally, and the heart to resume its work. The large amounts of urine which have been passed by these patients make it seem that the strophanthin has also to do with the production of what Meltzer has called the "life-giving diuresis," by means of which the toxic products are more rapidly eliminated than would otherwise be the case. When a patient has grown weaker and weaker in the course of his disease, whether it be pneumonia or typhoid fever, the cardiac stimulant action of strophanthin will apparently have little effect on the gradually flagging heart action.

In a case of attempted suicide by means of carbolic-acid poisoning, combined with gas poisoning, the patient had a very rapid, almost tic-tac, heart, which was regular, but the sounds were very faint, the pulse of small volume and poor tension. The stomach was washed out; strophanthin was given in a half-milligram dose, and the pulse soon became markedly stronger, and the next morning was very good. There was suppression of urine, but after twelve hours 15 ounces of urine were drawn, and after this the amount of urine excreted rose to 40 ounces in the next twenty-four hours. In a sudden postoperative collapse, an almost imperceptible pulse of about 150, became fairly strong, and 120 in rate within five minutes after the administration of a milligram of strophanthin. From that time on the pulse grew stronger and the patient was no longer a source of anxiety.

11. **Tubal Abscess.**—Chute believes his case to be of interest not only because of the unusual position of the tubal abscess, but also from the fact that both kidneys, without giving evidence of any infection, were excreting great numbers of organisms. The patient, a woman aged 28, had been delivered of her first child toward the latter part of September. The labor was a long one, and the child was stillborn. According to the history, delivery was followed by a serious postpartum hemorrhage, and later by an attack of sepsis, lasting ten or twelve days. After delivery, it was noticed that there was a visible mass to the left and below the umbilicus. This was supposed to be a much-enlarged uterus. The woman was treated locally for subinvolution, but without effect on the mass. It occupied the place where this patient, when about seven months pregnant, had had an attack of very acute pain, lasting some hours and requiring morphin. The upper limit of this mass was just below the level of the umbilicus. Though there was moderate distention, the mass was perfectly evident on simple inspection. There was tympany over it. It was immovable and moderately tender. Vaginal examination showed a uterus that was unusually high, but not much enlarged or fixed. No connection could be made out between the uterus and the mass. Nothing could be felt in either broad ligament.

An incision over the most prominent part of the tumor showed a mass covered with thickened omentum that lay just to the inside of the descending colon and was adherent to it. The uterus was pulled up and tilted to the left by the left tube, which disappeared into the mass about three-fourths of an inch from its junction with the uterus. A portion of the left ovary projected from the mass above. The left broad ligament was stretched out in such a way as to cover the true pelvis on the left. The ureter could be easily seen coursing through the lower part of the ligament. In attempting to separate this mass from the colon, an abscess cavity was opened and some drams of offensive pus escaped. The cavity was drained by a tube and wicks. No attempt was made at its removal. After the operation, drainage from the cavity was profuse. Gas was passed by rectum and feces as a result of enemas. The distention, however, increased and there was marked peristalsis. On the second day there was pain in the right iliac region, with rigidity at this point. On the third day a fecal fistula appeared, evidently from a perforation of the colon at the point where the attempt was made to separate it from the mass. Though the fistula discharged profusely, it did not affect the distention to any considerable degree. On moving the gauze that had been used to wall off the pelvis, there was a gush of amber-colored fluid from the right side of the pelvis. This fluid was clear and not offensive. No cultures were taken of it. The patient died on the fourth day after operation, apparently as a result of the localized peritonitis in the right pelvis and the chronic sepsis from which she had been suffering. No autopsy was obtained.

13. **Sarcoma.**—The patient, a woman, 73 years of age, had a small lump in the right side of the neck 51 years ago. There is no pathologic report of the specimen removed. There was no return of the trouble until nine years ago, when a bunch began to grow at the site of the old scar. At the time of its removal the tumor was the size of an orange. There is no pathologic report of this specimen obtainable. Two years later, seven years ago, another bunch appeared in the same place and was removed. No pathologic report can be found. December, 1906, she was admitted to the hospital for a growth in the right side of the neck, extending from the median line in front to the median line in the back. Nearly the entire surface of the growth was sloughing, with an intensely fetid odor. The tumor was removed in one mass with a wide skin margin by Smith. The external jugular vein and the facial artery were ligatured and divided; the submaxillary gland and all palpable lymphatic glands were dissected out. It was impossible to close the wound, which, however, healed promptly by granulation without skin grafts. The tumor weighed one pound and was a round-cell sarcoma. In June, 1908, the patient was again admitted to the hospital, presenting in the old scar a tumor the size of an egg. The tumor mass and several glands were removed and the wound sutured. The incision healed by first intention and the patient was discharged in ten days.

The second patient, a woman 72 years of age, accidentally struck her knee against a projecting stick in a wood pile. Two weeks later she noticed a hard lump on the injured knee at the site of the abrasion, which had healed promptly. In six weeks it was the size of an egg, bluish-black in color, and proved to be a small round cell sarcoma.

New York Medical Journal

August 21

14 *Leprosy. C. A. Penrose, Baltimore.
15 *Epidemiology of Leprosy. A. S. Ashmead, New York.
16 *The Pharyngoscope: New Method of Examination of the Nasopharynx and Larynx. H. Hays, New York.
17 *Roentgen Rays in Diagnosis of Carcinoma of the Stomach. G. E. Pfahler, Philadelphia.
18 Hysteria in an Adult Male. R. E. Coughlin, Brooklyn.
19 *Geriatrics. I. L. Nascher, New York.
20 *Action of Glandular Extracts on Tetany after Parathyroidectomy. I. Ott and J. C. Scott, Philadelphia.
21 Acute Uremia Resulting from Turpentine. W. A. Gills, Richmond, Va.

14-15. **Leprosy.**—The papers by Penrose and Ashmead are an excellent exposition of present knowledge of leprosy, especially with reference to the disease as it appears in the United States and in the Bahama Islands.

16. **The Pharyngoscope.**—Hays describes an instrument which, he says, will be an aid to the expert in difficult cases in which either the patient's oropharynx is sensitive or narrow, or in which it is impossible to see clearly the various parts that one wishes to examine. The latest model of the pharyngoscope is composed of a horizontal and a vertical shaft which join each other at right angles, at the outer third, so that the instrument may be used as a tongue depressor. The inner portion of the horizontal shaft consists of a central circular tube with an electric light carrier on either side, the three components being incorporated in a flat piece of metal. From the inner end project the two electric lights which are water tight, give an intense illumination and become only warm enough to keep vapor off the lens. In the central tube is inserted the telescope, which is made on the principle of the Otis cystoscope. To the eye-piece is attached a little metal ball which indicates the position of the lens. This horizontal shaft, including the telescope, is about eight inches long. The widest portion of the instrument, which is at the extreme inner end, is less than five-eighths of an inch, and the flat metal shaft itself measures less than one-half an inch in diameter. The vertical portion is about six inches long and half an inch wide. It is attached to the horizontal portion by a screw joint, and contains the wires for connection with the rheostat or dry cells. Near its upper portion is an arrangement for cutting off the electric current so that the lamps need not be turned on until the instrument is in the mouth.

On account of the cement which holds the lens in place, the instrument can not be boiled, but like the cystoscope it is best disinfected by formalin. For that purpose a metal box is supplied with the instrument which is large enough to contain the horizontal shaft (except the eye-piece), which has a receptacle at one end for formalin tablets and cotton. The instrument is inserted into the mouth like a tongue depressor until the inner end of the telescope is about one-sixteenth of an inch from the pharyngeal wall. When once in place it is held firmly by the examiner, the patient is told to close his mouth and to breathe quietly through the nose. As soon as the mouth is closed, it is observed that the muscles are relaxed and that the nasopharyngeal space is much enlarged. An excellent view of the parts to be seen can be obtained by gazing through the eye-piece of the instrument. In order to keep the patient from breathing in the examiner's face a small mica plate is supplied which is placed between the telescope and the horizontal shaft.

17. Abstracted in THE JOURNAL, May 15, 1909, p. 1611.

19. **Geriatrics.**—Nascher suggests this term as an addition to our vocabulary to cover the same field in old age that is covered by the term pediatrics in childhood.

20. **Glandular Extract and Tetany.**—Ott and Scott made 133 observations on 60 cats and 2 dogs. The cats were first etherized; then the parathyroids were removed under antiseptic precautions. The thymus was always examined for parathyroids. The cat has usually four parathyroids, but more may exist. In young cats, the parathyroids have a looser anatomic relation to the thyroid than later in life. In the cats the parathyroids are about the size of a date seed and have the color of a miliary tubercle. In many cases some of the thyroid was removed in the desire to obtain all the parathyroids, but enough thyroid was left to maintain its functions. When removal in part of the parathyroids was ineffectual to produce a tetany, then the thyroid was also removed and they always found it contained a parathyroid larger than the normal. In cats when all the parathyroids were removed symptoms of tetany came on in about forty-eight hours, as a rule. The first symptoms were a slowness in movement and a state of apathy. The animals were disposed to remain in one place. First, as a rule, there developed a lifting of the posterior extremities and sometimes of the anterior, as though the animal had been stepping in water. The posterior extremities were stifflike in movement and spread apart in their gait. Then trembling ensued in the extremities, followed by convulsions of the whole body. In the convulsive state the animal usually made loud cries before and after the convulsion. Conjunctivitis was frequently noted in the tetania parathyreopriva. The sense of hearing, sight, smell and taste remained. They did not respond to petting. They also had the projecting abdomen noted by Hagenbach.

Lancet-Clinic, Cincinnati

August 14

22 Some Predisposing Factors of Malignant Disease of the Uterus. G. H. Baker, Cincinnati.
23 Hebosteotomy vs. Cesarean Section, When the Latter is Only Relatively Indicated in Cases of Narrow Pelvis. E. G. Zinke, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

August 13

24 The Epileptic. W. F. Drewry, Petersburg.
25 The Play Impulse and Public Health. W. A. Lambeth, University.
26 Treatment of Angina Pectoris with Report of Cases. A. G. Brown, Richmond.
27 Rheumatic Fever. A. J. Burkholder, Mount Sidney.
28 *Epidemic Pneumonia. S. Mann, Moyock, N. C.
29 The State's Duty in the Fight Against Infectious and Contagious Diseases. J. W. Halford, Chalybeate Springs, N. C.
30 External Accidental Hemorrhage in Case of Normally Situated Placenta. O. Marshall, Crewe, Va.

28. **Epidemic Pneumonia.**—In family P., of 10 exposed, 7 contracted the disease. In family C., of 8 exposed, 4 contracted the disease. In family R., of 6 exposed, 2 contracted the disease. In family R., of 5 exposed, 2 contracted the disease. Besides these 14 cases, 3 cases occurred independently; there was no case of reinfection that Mann knew of. All except 2 of the patients were under 12 years of age, and the physical signs in some of these cases for a time were frequently indefinite. There was considerable gastric and abdominal disturbance. Mann followed the usual expectant plan of treatment with the result that all his patients recovered.

American Journal of Public Hygiene, Boston

May

31 *Typhoid Fever in the Province of Manitoba, with Special Regard to Winnipeg. R. M. Simpson and A. J. Douglas, Winnipeg, Canada.
32 Characteristics of Typhoid in the Middle West. J. S. Pierce. Winnipeg.
33 *Differentiation of Outbreaks of Typhoid Due to Water, Milk, Flies and Contact. J. F. Anderson, Washington, D. C.
34 *Typhoid Bacilli-Carriers. H Albert, Iowa City, Ia.
35 Investigation of Typhoid Epidemic at Sheboygan, Wis. J. T. B. Bowles, Madison, Wis.
36 Morbidity and Mortality Statistics of Typhoid in the Middle West. C. A. Harper, Madison, Wis.
37 *Epidemiologic Diagnosis and Treatment of Typhoid Outbreaks. H. W. Hill, Minneapolis.
38 *Typhoid in the South. E. C. Levy and A. W. Freeman, Richmond, Va.
39 A Method for the Determination of Nitrates in Sewage and Waters of High Chlorin Content. H. C. McRae, Baltimore.
40 Dextrose vs. Lactose for Detecting the Colon Bacillus. W. R. Stokes and H. W. Stoner, Baltimore.
41 A Method for the Staining of Negri Bodies. D. L. Harris, St. Louis.
42 The Coordination of Laboratory Work and Inspection in Supervising the Milk Supply. W. R. Stokes and T. M. Wright, Baltimore.
43 Experiments on the Putrescibility Tests for Sewage and Sewage Effluents. D. D. Jackson and W. A. Horton.
44 *The Result of Re-incubation and Re-inoculation of Atypical Diphtheria Cultures. B. R. Rickards, F. H. Slack and B. L. Arms, Boston.
45 Report of the Committee on Standard Methods for the Examination of Air. C. E. A. Winslow, E. H. Rickards, J. Weinzirl, J. B. Thomas and G. A. Soper, Boston.
46 Plural Deaths in Families as an Index of the Fatality of Disease. C. V. Chapin, Providence, R. I.
47 Limitation of the Application of the Crude Death Rate in Determining the Healthfulness of Localities. S. J. Byrne, New York City.
48 Mortality Statistics in Canada During the Past Decade. C. A. Hodgetts, Toronto, Ont.
49 Problems of Quarantine in Contagious Disease Work. F. G. Curtis, Newton, Mass.
50 Management of Infectious Diseases in Rural Municipalities. I. Cleghorn, Baldur, Manitoba.
51 Disinfection of Rooms. B. R. Rickards, Columbus, O.
52 *The Pleasures and Hopes of the Health Officer. C. V. Chapin, Providence, R. I.

31, 33, 34, 37, 38, 44. Abstracted in THE JOURNAL, Sept. 12, 1908, pp. 940, 941.

52. Published in full in THE JOURNAL, Feb. 27, 1909, p. 686.

Journal Oklahoma State Medical Association, Muskogee

July

53 Class of Conditions Remarkable for Obscurity and Difficulty of Diagnosis, and Meagerness of our Clinical Knowledge. A. W. White, Oklahoma City.
54 Malingering. R. E. Runkle, Reno.
55 The Ovary: Its Conservative and Radical Attention. C. N. Ballard, Oklahoma City.
56 Drainage in Abdominal Surgery. C. Blickensderfer, Tecumseh.

West Virginia Medical Journal, Wheeling

July

57 Immunity—Its Application in the Therapy and Diagnosis of Tuberculosis. W. M. Babb, Keyser.
58 Tuberculosis—Opening the Eyes of the Layman. J. T. Carskadon, Keyser.
59 The Tuberculosis Exhibit in Wheeling. H. B. Jones, Wheeling.
60 The Tuberculosis Exhibit in Clarksburg. C. N. Slater, Clarksburg.

Archives of Ophthalmology, New York

July

61 Recurrent Hemorrhages in Retina and Vitreous Followed by Retinitis Proliferans in Both Eyes in a Man with Surgical Tuberculosis. C. J. Kipp, Newark, N. J.
62 A Fibrous Pseudolens Taking its Origin From the Tunica Vasculosa Lentis. W. Czermak, Prague, Austria.
63 The Occurrence of Opsonins in the Aqueous Humor. A. Knapp, New York.
64 Conjunctivitis and Purulent Inflammation of the Excretory Ducts of Meibomian Glands Caused by an Encapsulated Gram-negative Diplobacillus. O. Landman, Toledo, O.
65 Chorioretinitis Tumida. C. J. Kipp, Newark, N. J.
66 Transient Cycloplegia Due to Glycosuria. W. H. Roberts, Pasadena, Cal.
67 Re-Attachment in Iridodialysis: A Method Which Does Not Incarcerate the Iris. P. C. Jameson, Brooklyn, N. Y.
68 Visual Disturbance Due to the Use of Hair Dye Containing Anilin. E. Berger, Paris, France.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

August

69 *Mechanism of Occlusion of the Fallopian Tube. E. Ries, Chicago.
70 *Constipation in Women. A. D. Kohn, Chicago.
71 Puerperal Sepsis. H. M. Stowe, Chicago.
72 Gynecology in the Young. J. V. Young, New York.
73 Operative Treatment of Pelvic Infection. G. H. Mallett, New York.
74 Prevention of Perineal Lacerations. E. K. Macomber, Amsterdam, N. Y.
75 *Induction of Labor at Term as a Matter of Routine. A. H Wright, Toronto.
76 Inversion of Uterus of Two Years and Four Months Duration Cured by Posterior Colpotomy and Posterior Section of the Uterus. E. Sealy, Newark, N. J.
77 Six Successful Cesarean Sections. G. M. Boyd, Philadelphia.
78 *New Hydrostatic Dilator. C. B. Reynolds, Philadelphia.
79 Cesarean Section at Term for Tumor of Retrovaginal Septum. R. Cronson, New York.
80 Sixty Cases of Congenital Hypertrophic Stenosis of Pylorus. C. E. Broderick, Kansas City, Mo.

69. **Mechanism of Occlusion of Tube.**—Ries points out that the infectious contents of an inflamed tube escape through the abdominal end, and we find, therefore, here the oldest changes in the peritoneum, such as chronic thickening of the serosa. This makes a peritonitic ring around the ostium out of a

peritoneal ring. The ring need not be a complete one; part of the ring may be formed by any organ that the contraction of the peritonitic scars brings together. These peritonitic scars, like all peritonitic scars on hollow organs, have a tendency to contract. The escape of fluid from the tube is thereby impeded; the swollen folds of the tube have not sufficient room; the tube becomes dilated; the wall of the tube becomes stretched. The fibrous cicatricial ring gives less than any other part; therefore, the muscular coat and its serosa becomes stretched more than the ring around the ostium. With the inflammation subsiding, as tubal inflammations so frequently do, the contents are absorbed or discharged in one direction or another, the swelling of the folds subsides, the walls become too large and loose. The peritonitic ring thereby gains in mobility and can contract further over the fimbriæ.

The fimbriæ escape being pinched by the ring, or, rather, the fimbriæ being covered with epithelium can not adhere to the peritonitic ring, and escape inward without inversion. The ring can now close completely, and we have a closed tube. The union of the peritonitic ring is a seroserous one, and is therefore—when recent—not very firm, so that by squeezing it, we can force it open and see the fimbriæ inside. At this the septic contents of the tube extend into the channel between the mucous surfaces of the fimbriæ. The remnant of peritoneum on the inside of the funnel and on the serous surfaces of the fimbriæ being in a condition of peritonitis, the peritoneal surfaces can fuse with each other in many conceivably irregular ways, while the mucous surfaces of the tubal fimbriæ being covered with epithelium, do not fuse. The remnant of the cleft between the mucous surfaces of the fimbriæ is then sometimes seen as a small dimple on the inside, which leads to an obturating membrane—the original peritonitic ring.

The fimbriæ are now bunched on the inside of the tube, not really inverted. But if the fluid contents of the tube are again absorbed or discharged into the uterus and the tube collapses, the fimbriæ can not open again on account of the peritonitic adhesions outside, but the bundles of fimbriæ can become more prominent on the inside now, because the distention has stopped, and then such specimens as Orth mentions can be obtained. A new dilatation of the tube will then tend to flatten out all folds of the mucosa, and if the seroserous union between the fimbriæ is strong enough the unyielding lines of fusion will stand out like the radii of a rosette.

70. **Constipation in Women.**—The treatment of chronic constipation as outlined by Kohn is dietetic, mechanical and medicinal. There are, he says, a certain number of cases which can be improved by diet alone. Food rich in cellulose and other waste matter is useful in a large proportion of cases. Best of all is a pure vegetable diet, combined with cooked fruits and coarse cereals. To these may be added certain chemical stimulants, such as common table salt, fats, best taken in the form of butter or olive oil (if the latter is well borne), sugar of milk and malt marrow. If still unsuccessful, one may make a trial of the various bulky mechanical stimuli to the intestine, such as bran, vaselin, if it can be taken, and even sand. If all these dietetic schemes fail, the physician may resort to mechanical means before trying medicines; Kohn has found them valuable adjuvants to the diet in a number of cases. Of these, the best are rectal electricity, given three or four times a week with the abdominal pad localized over the affected area. Any kind of rectal electrode may be used and the treatment given for ten minutes. Faradization with an interrupter is the most effective in bringing up the tone of the bowel in atonic cases, whereas in spastic conditions galvanization carefully applied, with the anode in the rectum, is often beneficial. Other means, such as massage of the diseased portion of the bowel, cold sprays, either of ether or ethyl chlorid, may be of assistance. In stubborn cases oil injections or cool salt water, the last especially when the sphincter is weak, may be added. If, however, as often occurs, the patient drifts back to the old state as soon as the treatment is stopped, or often in spite of all treatment, one must call into requisition the various cathartics.

75. **Induction of Labor at Term.**—During the last three years Wright has induced labor within three days after the patient has reached term as a matter of routine in all cases. The following report will illustrate to some extent the methods employed and the results obtained: Mrs. B., aged 30: second pregnancy, expected confinement, June 10. On the evening of June 10, the nurse was summoned, and on her arrival prepared the patient for labor. On the following morning a vaginal tampon was introduced, after which the patient got up and went about the house as usual, suffering no inconvenience from the tampon. Next morning, June 12, the tampon was removed and another introduced. When this was removed on the following day, June 13, the cervix was softened, os softened and slightly dilated, pelvic floor and vulva softened and dilatable. A bougie was then introduced into the uterus and a tampon into the vagina. Uterine contractions commenced about midnight, fourteen hours after introduction, and the child was born four hours after. Labor was easy.

It was noticed in this and other similar cases that it was easy to induce labor at term. The patient is not, as a rule, excited or alarmed. After the tamponade the patient can generally go about and do her ordinary work, and sometimes does not even know that the vagina is plugged. As a rule, she does not know after the introduction of the bougie that anything of the sort is in the uterus. After such introduction, however, it is not considered advisable to allow the patient to walk about. The vaginal tampon appears to have a two-fold effect: First, it softens and dilates the cervix and tends to cause uterine contractions. Second, it softens and dilates the vagina, pelvic floor, and perineal body in a way that makes expulsion or extraction through these parts much more easy than under ordinary circumstances.

78. **New Hydrostatic Dilator.**—Reynold claims that his hydrostatic dilator has for its chief advantage the ease with which it can be introduced into the parturient cervix canal without resorting to an anesthetic. It consists of a reinforced rubber bag with a hollow rubber stem perforated with four holes and a solid rubber tip which extends to within one-half inch of the base of the bag. In its collapsed condition it resembles a right-angle triangle, the stem being a part of the perpendicular. To introduce the bag, a blunt-pointed metal stylet is inserted into the rubber stem until it impinges against the solid rubber tip; the bag is then rolled around the rubber stem as one would roll an umbrella. The rolled bag, which is about the size of one's middle finger, is held in the palmar surface of the hand, with the tip of the bag even with the tips of the index and middle fingers. The labia are separated, and the bag, anointed with glycerin, is inserted into the vagina until the finger-tips touch the posterior lip of the cervix. Force is exerted on the stylet by the external hand and the bag is gently pushed through the cervical canal. The fingers of the internal hand hold the bag in position while the stylet is being withdrawn. Sterile water is then forced through the rubber stem causing the bag to unroll and become distended. A Davidson or special syringe can be used for the purpose. When the bag is distended it is cone-shaped. A clamp can be placed on the rubber stem and traction made, if indicated.

Wisconsin Medical Journal, Milwaukee

July

81 *Medicine in Wisconsin. G. E. Seaman, Milwaukee.
82 Relationship Between Bovine and Human Tuberculosis. W. G. Clark, Marinette.

81. Abstracted in The Journal, July 24, 1909, p. 315.

California State Journal of Medicine, San Francisco

August

83 Psychotherapy. W. J. Barlow, Los Angeles.
84 Trichinosis. A. M. Tower, Lodi.
85 *Hypertrophic Pyloric Stenosis with Autopsy Findings. A. B. Spalding, San Francisco.
86 Chyluria with a Vesicle Sinus. S. Pope, Watsonville.
87 Therapeutics. J. L. Avey, Redlands.
88 Sanitary Supervision of Communicable Diseases by the Department of Public Health. R. G. Brodrick, San Francisco.
89 Obstruction of Common Duct in Chronic Cholecystitis Without Stone. A. S. Lobingier, Los Angeles.
90 *Galactoxismus. W. W. Roblee, Riverside.
91 Professional Work as it Connects with the Medical Society and the General Public. W. T. Barry, Santa Barbara.

92 The Toxemic Factor in Rheumatoid Arthritis. C. C. Warden, Los Angeles.
93 Relation of Rat Leprosy to Human Leprosy. W. B. Wherry, San Francisco.
94 Transient Cycloplegia Due to Glycosuria. W. H. Roberts. Pasadena.

85. **Hypertrophic Pyloric Stenosis.**—The stenosis in Spalding's case seems to have arisen from an hypertrophy of every muscular integer of the pyloric division of the bowel, and probably dated back to a very early period of the child's intrauterine life.

90. **Galactoxismus.**—Probably the most dangerous poisons occurring in milk are those resulting from bacterial growth. This should lead to renewed efforts looking toward an uncontaminated milk supply. The bacterial growth should be reduced to a minimum and especially is that true of the colon group. Mineral poison may occur in the milk from the use of metal containers, but this is not a common source of poisoning. Of the medicines excreted by way of the milk, senna and calomel should be especially borne in mind. Probably no other drugs, when given to the mother in ordinary medicinal doses, would appear in the milk in sufficient quantities to poison an infant. Fruit acids and alcohol are not thus excreted. In California, aside from the plants which affect the taste, odor and color of the milk, but are not otherwise of moment, probably the death camas is the only one that needs to be watched for and this only in the northern valleys. This question, however, should be more carefully studied, and it is quite possible that more plants will be found to poison the milk. Dairy cattle should be fed on well-cured alfalfa or wheat hay, and not be allowed to wander at random in a pasture. Even harmless weeds often change the odor and taste of the milk, and, doubtless, to some extent, tend to upset the infant's digestion.

Journal Tennessee State Medical Association, Nashville

July

95 *Appendicitis. J. H. Carter, Memphis.
96 *Intestinal Obstruction. J. W. Brandau, Clarksville.
97 Extraction of the Opaque and Partially Opaque Lens in its Capsule. L. B. Graddy, Nashville.
98 Intubation and Antitoxination in the Worst Forms of Laryngeal Diphtheria. J. M. Troutt, Jackson.
99 *Physiologic Laws Governing the Action of Purgatives. G. E. Pettey, Memphis.
100 The State Sanatorium in Prevention and Cure of Tuberclosis. D. L. Wilder, Knoxville.

95, 96, 99. Abstracted in The Journal, May 1, 1909, pp. 1450, 1451.

American Journal Medical Sciences, Philadelphia

August

101 Achylia Gastrica. C. G. Stockton, Buffalo, N. Y.
102 *Duodenal Ulcer and its Treatment. M. Einhorn. New York.
103 *Clinical Experiments with Homologous Vaccines in Septic Endocarditis and Pyemia. W. G. Thompson, New York.
104 Acute Gangrenous Pancreatitis: Report of Case. L. Jurist, Philadelphia.
105 *The Typhoid Cutaneous Reaction. C. Floyd and W. W. Barker, Boston.
106 Sarcoma of the Stomach: Two Cases. L. Clendening, Kansas City, Mo.
107 Endemic Amebic Dysentery in New York: Its Distribution in North America. H. S. Patterson, New York.
108 Blood Cultures in Human Glanders. B. B. Crohn, New York.
109 *Simple Method of Estimating the Common Variations and Deformities of the Foot. H. O. Feiss, Cleveland, O.
110 My Simple Method for the Quantitative Determination of Pepsin in a Given Gastric Juice. H. Illoway, New York.
111 Adenofibroma of the Male Breast. R. T. Woodyatt, Chicago.
112 Oculomotor Paralysis Accompanied by Facial Palsy, Neuroparalytic Keratitis and Hemiplegia. B. Chance, Philadelphia.
113 *Insanity, Responsibility and Punishment for Crime. J. J. Walsh, New York.

102. **Duodenal Ulcer.**—Einhorn says that the treatment should at first be medical. In the mild cases regulation of the diet (frequent meals, abstention from highly seasoned substances, acids and too fatty foods), improving the general condition by means of iron, arsenic, cold sponging, good air, avoidance of bodily exercise, and the use of alkalies, are sufficient to effect a considerable amelioration, if not a cure. In several cases, olive oil (two tablespoonfuls morning and evening) seemed to be of service. In graver cases of duodenal ulcer (hemorrhages, severe pain, etc.) a strict ulcer cure, with rest in bed and rectal elimination, and afterward fluid diet, must be instituted. In these cases large doses of magnesia and bismuth are of benefit; calcined magnesia, 0.5 gm. (8 grains) bismuth subnitrate, 2 gm. (30 grains), in powders—one powder three times a day, one-half hour before meals. If a strict rest cure has been unsuccessful, or if we have to deal with severe hemorrhages endangering life, and returning frequently, or if obstinate spasm of the pylorus occurs, associated with severe pains in the pyloric region and slight peristaltic restlessness of the stomach, an operation (usually gastroenterostomy) is indicated.

In duodenal ulcer the clinician must advise surgical treatment sooner than in gastric ulcer, as the former, through its complications (hemorrhages, perforations, stenosis of the pylorus), endangers life much more readily than the latter. Gastroenterostomy in these cases is fortunately attended with good results. The ulcer will then soon heal, as the gastric juice does no longer flow over the ulcerated surface in the duodenum or irritate it. At all events, the dangers of hemorrhage, perforation, and pyloric stenosis are thereby prevented.

103. Abstracted in The Journal, June 5, 1909, p. 1875.

105. **Typhoid Cutaneous Reaction.**—In a previous paper by Floyd and Barker it was shown that cellular sensitiveness, as shown by the ophthalmic test, lasted only as long as the active stage of the disease. They then sought to determine, if possible, if this sensitiveness affected the skin as well as the conjunctiva, and if so, whether it could be used diagnostically. Typhoid bacilli of high virulence were grown in pure culture on agar-agar for twenty-four hours, at 37 C. The growth was then washed off with normal saline solution and the emulsion incubated for four days. At the end of this period it was sterilized in a hot water bath at 60 C. for one-half hour, and then standardized after the method of Wright. The sterile emulsion was then centrifuged and the clear supernatant fluid used for inoculation. The solution used was considerably stronger than that used in the ophthalmic test, being the extract of one billion bacilli. In some instances centrifugalization was omitted and the whole emulsion used for inoculation, with the result of more marked reactions. A standard solution was used in all instances, and not an emulsion of the homologous bacillus in the individual case. In making the test, exactly the same technic was followed as in obtaining the cutaneous reaction in tuberculosis. In all, there were 48 inoculations on 47 patients, of whom 30 were ill with typhoid fever, 2 with *Bacillus paratyphosus* injection, 2 with unclassified fever (clinically not different from typhoid fever), 8 with tuberculosis, 1 with pneumonia, 1 with acute articular rheumatism, 1 with pernicious anemia, and 2 were apparently normal individuals.

Of the typhoid fever cases, the reaction was positive 19 times, negative 9 times, and rendered unsatisfactory by the patient twice. One of the cases of unclassified fever responded to the test, although giving no other evidence of typhoid infection. Neither of the cases of paratyphoid fever gave any reaction whatever. With the exception of a slight reaction in the patient having pneumonia, all the definite nontyphoid cases gave no reaction. All the positive reactions occurred during the active period of the disease, the single patient who was inoculated twice giving a much more striking result at the first inoculation than at the second. The failure of the cases of *B. paratyphosus* infection to respond to the test may be due to the different character of the organism causing the infection. No attempt has been made to discover how early this reaction appears in the course of the disease. The value of the reaction in diagnosis is problematic.

109. **Deformities of Foot.**—In examining the malformations of the body there is no process more valuable than that of studying the relationship of bony landmarks to one another. In the case of the foot, no such method has ever been advanced, and with this in mind, Feiss selected certain landmarks for study. The ones chosen are the lower posterior corner of the internal malleolus, the tubercle of the scaphoid, and the lower tubercle on the head of the first metatarsal. In order to make proper observations, a standard method of estimation had to be applied. A wooden box was constructed, consisting of three sides—a base, a posterior side, and a lateral side. Its dimensions were 12x12x5 inches. The box was placed on the seat of an ordinary chair. The right foot was

used. The subject stood on the floor with the left foot straight, and the right knee bent. Then the right foot was placed in the box, the calf just touching the edge of the box, and the heel resting in the corner. The weight of the body was therefore transmitted through the left leg. In this way the foot could be examined in a definite and uniform position without weight-bearing.

The points marked were the posterior inferior corner of the internal malleolus, the tubercle of the scaphoid, and the lower tubercle of the first metatarsal. The distance of the scaphoid tubercle from the line connecting the internal malleolus with the lower tubercle of the head of the first metatarsal was measured as follows: A thin transparent celluloid rule provided with a scale was applied to the foot so that its upper edge coincided with the dots on the head of the first metatarsal and on the corner of the internal malleolus. Then the distance of the tubercle of the scaphoid from the edge could be read through the transparent rule by means of the scale (the corners of this rule were cut off so that they would not interfere with the sides of the box. The average age of the 100 young men was found to be 21.6 years, the youngest being 17 and the oldest 34 years. The average distance of the tubercle of the scaphoid from the lines connecting the internal malleolus with the lower tubercle of the head of the first metatarsal was found to be 0.49 inch. In only 9 cases was the tubercle less than one-fourth inch below the line, and in only 4 cases was it more than three-fourths of an inch below the line. Therefore the great majority of cases show the tubercle depressed from one-fourth of an inch to three-fourths of an inch, which in itself is a large variation (one-half inch).

113. **Punishment for Crime.**—Walsh holds that the term insanity is so vague that its use as a plea to enable the criminal to escape punishment is not justifiable in the present state of our knowledge. Responsibility differs in different individuals, but it is never quite eliminated, except in the absolute idiot. For those of lowered mentality, even the animals, punishment has a good effect. Punishment is not revenge, but is meant to deter the individual criminal, and above all to deter others tempted to criminal acts. Punishment is more needed for those of lowered mentality, of whom the expert may well declare that they are insane, than it is for the normal. Subrational individuals with the cunning of the insane will take advantage of our leniency if present conditions are allowed to continue and we shall have a riot of crime by personal violence.

Journal Arkansas Medical Society, Little Rock

July

114 Tuberculosis as a House Infection. D. S. Warren, U. S. Public Health and Marine-Hospital Service.
115 *Research Work in Syphilology. L. R. Ellis, Hot Springs.
116 Pathology of Mitral Lesions. O. K. Judd, Little Rock.
117 *Duty to the Layman in Preventive Medicine. H. H. Niehuss, Wesson.
118 *Progress of Surgery. A. E. Sweatland, Little Rock.
119 *Responsibility of Surgeon in Gynecologic Conditions. C. S. Pettus, El Dorado.
120 Syphilis. G. M. D. Cantrell, Little Rock.
121 The Paucity of Attendance at Medical Societies. T. W. Hurley, Bentonville.

115, 117, 118, 119. Abstracted in The Journal, June 19, 1909, p. 2018.

Journal of the Medical Society of New Jersey, Orange

August

122 *Problems Confronting the Component Societies. D. Strock, Camden.
123 *Influence of Sleep on Arteriosclerosis. W. W. Beveridge, Asbury Park.
124 *Chloroform the Anesthetic in Throat Operations. F. F. C. Demarest, Passaic.
125 Historical Review of the Progress of the Practice of Medicine from 1865 to 1909. B. A. Waddington, Salem.
126 Cystic Carcinoma of a Supernumerary Ovary. F. H. Glazebrook, Morristown.
127 *Appendicitis. F. N. Donohue, New Brunswick.
128 Imperforate Anus. F. C. Henry, Perth Amboy.

122. Abstracted in The Journal, Aug. 7, 1909, p. 477.

123. Published in the *Virginia Medical Semi-Monthly*, July 23, 1909, and abstracted in The Journal, July 31, 1909, p. 401.

124. Abstracted in The Journal, July 31, 1909, p. 401.

127. **Appendicitis.**—Donohue's patient was taken ill with severe abdominal pain, not localized in any particular spot; temperature was 102 F., and there was some pulse disturbance. This pain continued for two or three days and disappeared. Two weeks afterward the man was taken ill with the same kind of pain in the same locality, attended with fever, lasting a little longer time and finally disappeared. About two weeks subsequently he was taken ill again with pains in the lower abdomen and had some bladder symptoms —frequency and difficulty in urination. He complained of pain in the lower abdomen; difficulty in urinating; no vomiting or constipation, temperature in morning was 102 F.; in evening, 103 F.; pulse was 110 in morning and 120 in evening. On examination a lump about the size of a cocoanut was found in the hypogastric region, extending over to the left side of the umbilicus; it was fluctuating and tender to the touch. A diagnosis of postperitoneal abscess was made and operation advised. An incision was made on the left side, the same that is made for ligation of the external iliac artery, and when the peritoneum was reached to push this aside and open the abscess extraperitoneally. A free incision was made and when the peritoneum was reached it was pushed aside and the lump was carefully examined. It fluctuated and was felt to pass over near the appendical region. By bimanual palpation it was pretty definitely made out that it was of appendiceal origin. The incision was closed, sealed with collodion and dressed. A second incision was made over the appendical site, but a little more internal and the peritoneal cavity opened. The appendix was found in an abscess cavity behind the bladder, perforated at the tip and diseased all the way up to its junction with the cecum. It was removed and the cavity was washed out and drained with a dressed tube. The patient made a smooth recovery.

Journal South Carolina Medical Association, Florence

July

129 Sources and Modes of Infection in Tuberculosis. M. P. Ravenel, Madison, Wis.
130 Sanitation in Small Towns. W. Egleston, Hartsville.
131 Treatment of Ophthalmia Neonatorum. J. W. Jervey, Greenville.
132 Mucous Colitis. A. G. Eaddy, Timmonsville.
133 Operations for Complete Removal of the Mammary Gland for Malignant Growths. R. S. Cathcart, Charleston.

Annals of Ophthalmology, St. Louis

July

134 Ocular Therapy of the Ancient Egyptians. O. Wilkinson, Washington, D. C.
135 William Charles Wells, American Pioneer in Ophthalmology. N. B. Jenkins, New York.
136 Chorioidal Hemorrhage Following Operations on the Globe. W. C. Posey, Philadelphia.
137 Optic Atrophy in Syringomyelia; Congenital Cataract with Unusual Atrophy of the Iris from Secondary Glaucoma. E. A. Shumway, Philadelphia.
138 Hole at the Macula. W. Zentmayer, Philadelphia.
139 Visual Acuity Under Definite Conditions is an Index of the Strength of the Necessary Spheric Lens (Plus or Minus) Which Will Give a Vision of 6/6 or More. J. Thorington, Philadelphia.
140 Chart for the Axis of Astigmatic Glasses. J. H. Claiborne, New York.
141 Case of Avulsio Bulbi. C. Williams, Philadelphia.
142 Hereditary Blindness and its Prevention. C. Loeb, St. Louis.

Alabama Medical Journal, Birmingham

July

143 Blood Transfusion. J. D. S. Davis, Birmingham.
144 The Psychic Department and Frequent Lines of Practice. J. T. Searcy, Tuscaloosa.
145 Perforating Wounds of the Intestine, from Gunshot and Stab. J. W. Watts, Birmingham.
146 Subclavian Aneurism: Report of Successful Ligation in First Surgical Division. E. M. Prince, Birmingham.
147 The Physician's Duty. W. W. Harper, Selma.
148 Wassermann Reaction for the Sero-Diagnosis of Syphilis: Report of Four Cases. J. P. Long, Birmingham.
149 Medicine and Sociology—Their Relation in the Past and Present. W. D. Partlow, Tuscaloosa.
150 Pathologic Action and Therapeutic Application of the Infundibular Portion of the Pituitary Gland. R. A. Bate, Louisville, Ky.

Chicago Medical Recorder

July

151 Development of Medical Science During the Last Few Decades. A. D. Kohn, Chicago.
152 Sociologic Aspect of Medical Charities. A. Hamilton, Chicago.

153 *Prolonged and Tedious Labors and Forceps Deliveries Compared as Causes of Epilepsy, Idiocy and Cerebral Diplegias. J. W. Putnam, Buffalo.
154 Asthmas and Their Treatments. G. F. Butler, Chicago.
155 Seborrheic Dermatitis. A. J. Croft, Chicago.

153. Published in *The Buffalo Medical Journal*, February, 1909, and abstracted in THE JOURNAL, March 13, 1909, p. 923.

Illinois Medical Journal, Springfield

July

156 *Gallstone Disease. J. B. Deaver, Philadelphia.
157 The Doctor in Civic Life. J. A. Witherspoon, Nashville, Tenn.
158 Some Surgical Diseases of the Stomach and Duodenum and Operative Treatment. J. A. Day, Jacksonville, Ill.
159 Rupture of the Uterus During Labor; Operation; Recovery. E. L. Moorehead, Chicago.
160 *Brain Surgery. C. Wagner, Chicago.
161 Foreign Bodies in the Intestines. H. Scott, Chicago.

156. Abstracted in THE JOURNAL, June 12, 1909, p. 1953.

160. Wagner.—Published in *Chicago Medical Recorder*, June, 1909.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 7

1 *Progress in Obstetrics. Sir J. W. Byers.
2 *Plea for a Rational Puerperium. F. W. N. Haultain.
3 Congenital Malformations of Palate, Face, and Neck. A. Keith.
4 *Head-Nodding in Infants. C. Gibson.
5 *Clonic Spasm of the Diaphragm, Associated with Cervical Rib. G. B. Hunt.
6 *Rare Variety of Femoral Hernia. E. C. Bevers.
7 *Method of Temporarily Removing Color Blindness. G. A. Stephens.

1. **Progress in Obstetrics.**—That the ideal to be aimed at in obstetric practice is not merely a living mother and a living child, but rather a living healthy mother and a living healthy child, is the keynote of Byers' paper. He cites statistics to show the present condition of obstetric medicine as practiced in two Irish maternities—the Rotunda Hospital in Dublin, the largest midwifery institution in the British Empire, and in the Maternity Hospital, Belfast. From Nov. 1, 1907, to Oct. 31, 1908, 2,060 patients were confined in the Rotunda Hospital with only 7 deaths, and in only 126 was the temperature over 100.4 F.—that is, a percentage morbidity of 6.12. Of the 7 deaths, only 3 were due to infection. One patient was admitted infected, another had been examined outside, and the third was a case of incomplete abortion with a fetid discharge on entering the hospital. In the Maternity Hospital, Belfast, there occurred during 1907 and 1908, 12 deaths out of 1,355 deliveries, and of these only 4 deaths were due to puerperal infection. (In one case the patient had been in labor for twenty-four hours attended by an unqualified midwife before admission; another woman, with a contracted pelvis, had been in labor several days before admission; and in a third case the child was born in an advanced state of decomposition.) Further, in 1908, the cases of morbidity from every cause estimated on the standard that the occurrence of one temperature of 100.4 F. indicated a pathologic condition, were 9.42 per cent., which is distinctly lower than at Hofmeier's well-known clinic. Again, owing to the aseptic and antiseptic management of the mother during her confinement, as well as by the adoption of special prophylaxis in the care of the child, cases of ophthalmia neonatorum in both maternities are now extremely rare. Such splendid results have been brought about by recognizing that, in at least 75 per cent. of the cases, labor is a natural process not needing interference, and that its tendency is to prevent infection, and that our duty is to follow and aid it, and to interfere only when the resources of Nature fail to protect the interests of mother or child. The uncalled for use of the forceps, early rupture of the membranes, douching—unless under very special circumstances—and the improper management of the third stage of labor are things of the past in properly conducted maternities. By the thorough application of the most minute surgical cleanliness as regards patient, nurse, and doctor during labor and the puerperium; by the adoption of Credé's teaching, that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits (it can be well replaced by external examination) and by the immediate suture of any laceration occurring during the process of labor, these excellent results are possible of attainment.

2. **Rational Puerperium.**—The mode of management adopted by Haultain is as follows: The puerpera, if willing, is encouraged to sit up in bed to meals on the second day. As early as she feels inclined thereafter she is allowed to leave her bed and sit up for an hour. On the following day this is repeated morning and evening. The next day two hours, morning and evening, are spent out of bed, the patient sitting and walking a little, if she so desires. The fifth day after rising is practically spent out of bed, with the exception of a few hours rest in the afternoon, and on the tenth day the patient leaves the hospital. The number of patients who followed this line of treatment was 100. All the patients sat up in bed on the second day; 40 rose on the third day; 35 rose on the fourth day; 25 rose on the fifth day. Of the 100 cases, 47 were primiparæ and 53 multiparæ. Each was carefully examined before leaving the hospital, and as many as possible six weeks later. The morbidity in these cases—that is, a temperature over 100 F. or pulse over 90 for twelve consecutive hours—was represented by three cases. Two patients developed infective temperature on the third day. One of these left the hospital well on the sixteenth, the other on the twenty-eighth day. Pelvic examination on the day of leaving hospital (tenth to twelfth day) showed the pelvic organs to be normal, except in two cases, where a slight retroversion of the uterus was present. In one case there was considerable varicosity of the veins of the legs, but the woman remarked that it was not nearly so bad as after previous confinements—this being her seventh. All the women examined six weeks and more after confinement showed involution to be thorough, and the position of the uterus normal, with the exception of two, being those previously noted as having retroversion. Many women voluntarily expressed the opinion that they had never felt so well previously, and from the others when asked, there was no dissentient voice.

4. **Head-Nodding in Infants.**—The two cases reported by Gibson had many things in common, confirming the theory advanced by Raudnitz and J. Thomson, who contended that it is due to the dim light in which these babies are living and try to use their eyes, and this theory fits these two subjects well; the seasonal incidence, in the darkest months of the year; the environment—both these babies living during the day in dark, ground-floor rooms, with one window, facing the east, but shut out from most of the sky by tall buildings within a few yards, and neither baby was often in the open air. So far as could be learned the two had never been in contact, but their homes were less than fifty yards apart. The babies recovered under hygienic and dietetic treatment. Both cases ran a course of between five or six weeks.

5. **Clonic Spasm of Diaphragm.**—There would appear to be two ways in which a cervical rib might cause diaphragmatic spasm: (1) by pressure on the vagus in the neck, causing a reflex contraction, much as derangement of the stomach may produce the ordinary hiccough by irritation of the terminations of the vagus in the gastric mucosa; or (2) by so exalting the normal impulse regularly passing down the phrenic nerve to produce the usual inspiratory contraction of the diaphragm by direct irritative pressure on that nerve trunk so as to produce a violent spasmodic contraction of the muscle. The latter appears to Hunt to be far the more probable explanation. In his case the vagus in the carotid sheath lay some distance internal to the cervical rib, whereas the phrenic nerve in its course along the anterior surface of the scalenus anticus muscle must be exposed to pressure of a large cervical rib near the articulation with the scalene tubercle of the first rib. The fact that removal of the rib, alone of the treatments tried, was directly followed by cessation of the spasm, is, he thinks, another argument that the spasm was probably caused by pressure of the rib.

6. **Femoral Hernia.**—Bevers' patient, a woman of 58, had undergone an operation for femoral hernia in the right side three years previously. For six days there had been abdominal pains and vomiting, the symptoms commencing suddenly

while she was at work in her garden; for two days there had been constipation which was not quite complete, as flatus had been passed, and repeated enemata had produced a slight result. When seen, the pulse was 112, temperature normal, the abdomen was distended, and there was some general tenderness. Just below and parallel with Poupart's ligament on the right side there was an old scar, and at the outer extremity of this scar external to the femoral vessel a little thickening could be felt; this small thickening was not tender and the patient declared it had been present ever since the previous operation; there was no swelling in the situation of the femoral canal. Owing to the fatness of the patient, the presence of the old scar and the unusual situation of the slight swelling present, Bevers found it difficult to decide whether the patient was suffering from a hernia strangulated in an abnormal situation, or from some other form of intestinal obstruction. He therefore opened the abdomen in the middle line below the umbilicus; distended small intestine at once presented, and a little examination proved that there was a Richter's hernia into a small hernial opening just external to the femoral artery.

7. **Temporary Removal of Color-Blindness.**—Going on the theory that anything that would improve the movements of the cells ought to have the effect of stimulating the retinal cells to more ready response to color sensations, and as the calcium salts have that stimulating effect on the body cells, Stephens came to the conclusion that a big dose of calcium lactate ought to remove color blindness, if only temporarily. The first patient to undergo the experiment was a medical man whose response to green sensations was *nil*, but who, after only 10 grains of calcium lactate was able to appreciate and differentiate green-colored articles. In the next case, Stephens gave 10 grains of the drug at 2 o'clock, and another 10 grs. at 3. At 4 o'clock he found that response to all the colors was distinctly better. The only objection to the experiment was that the patient had a headache for a few hours afterward. In the third case he gave only 20 grains, but the result was just as satisfactory and quite as conclusive.

Lancet, London

August 7

8 *Progress in Obstetrics. J. W. Byers.
9 *Malformations of the Heart. A. Keith.
10 *Method of Giving Ether by Means of Nasal Tubes. H. M. Page.
11 Pressor Bases in Normal Urine and their Diminished Excretion in Gouty Urine; the Excretion of Chlorids in Gout. W. Bain.
12 Relative Toxicity of Chloroform and of Carbon Tetrachlorid. A. D. Waller.
13 Medical Relief and Public Assistance. C. S. Loch.
14 Ameliorative Measures Indicated by School Medical Inspection. J. R. Kaye.

8. See Abstract No. 1.

9. **Malformations of the Heart.**—The malformations discussed by Keith are the following: (1) Subdivision of the right ventricle; (2) cases in which the developmental expansion of the infundibulum is arrested; (3) hearts in which there is almost complete arrest in the developmental expansion of the infundibulum; (4) cases in which the stenosis is merely due to fusion of the semilunar valves; (5) cases in which the infundibulum is present and the body of the right ventricle is small or absent; (6) cases of subaortic stenosis; (7) cases of congenital aortic stenosis.

10. **Ether by Means of Nasal Tube.**—Page employs the method which he says was devised by Crile.

Medical Press and Circular, London

July 21

15 Infantile Scurvy. T. D. Lister.
16 Symphysiotomy and Hebosteotomy. R. E. Runge.
17 Influence of Alcohol on Immunity. T. Laitinen.
18 Extraction of Cataract in the Lenticular Capsule. W. E. McKechnie.
19 *Treatment of Morphinism. W. O. Jennings.
20 Acromegaly. J. C. McWalter.

July 28

21 Acute Tuberculous Rheumatism. A. Poncet, and M. Leriche.
22 A British Medical Reminiscence. H. M. Jones.
23 Immunity. E. Metchnikoff.
24 Certain Aspects of Medical Journalism. D. Walsh.

August 4

25 Heredosyphilis. D'A. Power.
26 Immunity (concluded). E. Metchnikoff.
27 The Dietetic Dechloridation Cure in Bright's Disease. F. Widal.
28 Progressive Medicine and the Outlook on Tuberculosis. R. W. Philip.

19. **Treatment of Morphinism.**—For many years Jennings has been using heart tonics and bicarbonate of soda in morphinism, not as a "cure," but as a part of the treatment which remedies the physiologic disturbances, caused by suppression, and which, by alleviating two of the principal factors of craving, reduces the otherwise intolerable wretchedness of an ordinary weaning to a perfectly bearable minimum. In morphin addicts, morphin and spartein, as well as digitalis are tonics of the heart. Spartein acts in morphin suppression, like morphin, as a perfect and immediate heart tonic, and physiologists and patients affirm that spartein enables these patients to walk up hills or to take active exercise which would otherwise have been impossible. The use of Vichy water is in Jennings' opinion the most valuable symptomatic treatment of the gastric and general hyperacidity of suppression.

The morphin habit is a toxic neurasthenia, a disease of overstimulation, and outside the special indications for cardiac tonics, for a flagging heart deprived of its accustomed stimulation, nearly all of the other somatic symptoms may be looked on as nervo-katabolic. They react on one another as the *ensemble* of the somatic disturbances of function react on psychism. The result of overstimulation is to produce metabolic perversion and to cause fatigue, and the fatigue of the nervous centers in its turn causes katabolic insufficiency, the formation of acids, which keep up a condition of nervous exhaustion by chemical changes of the cells. In ordinary healthy tiredness the acids (phosphoric, lactic, carbonic) are soon eliminated, but when fatigue becomes more or less permanent, as in the toxic asthenia of morphinism, the nuclei of the neurones, which in their normal condition are alkaline, become acid, and this can be shown histologically.

There are many intermediary products of imperfect combustion which can be found in the urine, the more perfect oxidation of which, together with the relief of the discomfort caused by them, can be promoted by bicarbonate of soda. Although Vichy water is not *per se* a "cure" for morphinism, it is a factor in treatment conditioning the efficacy of the *ensemble* of the measures employed. Its administration will make all the difference in the addict's comfort during weaning, and its omission may turn the scale to failure instead of to success. In some exceptional cases, those patients who are determined to give up the use of morphin, if they can obtain sufficient relief, have sometimes found that Vichy water was all that was necessary to diminish the general discomfort to a degree compatible with renunciation.

Journal of Laryngology, Rhinology and Otology, London

August

29 Congenital Syphilitic Disease of the Ear. J. S. Fraser.
30 Employment of Hot Air in Otology. C. Ferran.
31 Functional Examination of the Labyrinth. E. J. Moure and P. Cauzard.

Indian Medical Gazette, Calcutta

June

32 The Serodiagnosis of Syphilis. W. D. Sutherland.
33 *Pneumonia: Its Treatment by Iron. F. S. C. Thompson.
34 *Suggestion for Treatment of Gonorrhea. C. Duer.
35 Report of the Medical College Hospital, Calcutta, for 1908. C. P. Lukis.

July

36 Studies Regarding Pathogenic Ameba. H. Werner.
37 Premutiny Jail Administration. C. Dykes.
38 Extraction of the Lens in its Capsule (Smith's Operation) by Division of the Suspensory Ligament. V. B. Nesfield.
39 Alypin with Special Reference to its Hitherto Undescribed Cycloplegic Action. W. E. S. Moncrieff.
40 A Burman Bored Well. W. G. King.
41 Report of the Medical Hospital, Calcutta, for 1908 (continued). C. P. Lukis.
42 Sarcoma of the Lower Lip. O. Langston.
43 Sarcoma of the Femur. O. St. Moses.
44 An Atypical Case of Rabies in a Dog. G. Browse.

33. **Pneumonia Treatment by Iron.**—The exact treatment carried out by Thompson consisted in giving the following prescription:

℞.	gm. or c.c.		
Liquoris ferri chloridi	1	**or**	m. xv
Liquoris ammonii acetatis	4		ʒj
Aquæ chloroformi, ad	30		℥j

Sig.: Every 4 hours.

No other drugs or stimulants are administered, with the exception of a purgative to open the bowels freely at the commencement of the disease. But a careful watch is kept on the heart, and if this shows signs of collapse, as indicated by a weak and quickened pulse, then cardiac stimulants are called in to aid the failing circulation: the pulse is not relied on alone, because it may be full and not much quickened just before death. When necessary, the following prescription is ordered:

Ŗ.	gm. or c.c.		
Liquoris strychninæ	33	or	m. v
Tincturæ digitalis	46		m. vii
Aquæ chloroformi, ad	30		℥i

This is given alternately with the iron mixture every six hours, i. e., four doses of each in 24 hours. The number of patients treated with iron alone was six; the remaining four needed the addition of the strychnin mixture; no patient received anything but iron before the fifth day. Besides these medicines, general principles were followed in the management of the cases.

34. **Treatment of Gonorrhea.**—Duer suggests to those in charge of military and large hospitals a trial of Bier's treatment, especially in recent cases in which the inflammation is confined to the anterior part of the urethra. An elastic band about 1 in. broad is applied to the penis 2 inches or so above the meatus, continuously, or intermittently, several hours on and several hours off. Rest in bed during the treatment might or might not be necessary. The tightness of the band would have to be carefully regulated so as, while hindering the venous return, not to stop the arterial supply. Frequent washing away of the discharge by some mild antiseptic would be desirable. In addition, irrigation of the urethra beyond the band might be advisable.

Annales de Médecine et Chirurgie Infantiles, Paris

July 15, XIII, No. 14, pp. 469-504

45 *Strangulated Hernia in Infant. (Hernie étranglée chez un nourrisson.) R. de Gaulejac.
46 *Pulmonary Tuberculosis with Cavities in Children. E. Gaujoux and Brunel (continued).

45. **Strangulated Hernia in Infant.**—The strangulation had occurred fifteen days before the child was brought to the clinic; the hernia had been noticed since birth. This long survival could have been possible only with much less toxicity on the part of the intestinal contents than is the case in adults and only with a hernia far along in the digestive tract. An artificial anus would probably have developed spontaneously in the strangulated loop in another day or so. The infant organism has evidently means of adapting itself to functional or mechanical disturbances beyond those possessed by adults. The case encourages, says de Gaulejac, surgical interference even in the most apparently desperate cases in young children.

46. **Pulmonary Tuberculosis with Cavities in Children.**—This article is based on fifty cases, including a number personally observed. Chronic tuberculosis of the lungs is rare in children, but when it does occur the same process of defense is observed as in adults.

Lyon Médical, Lyons

XLI, No. 19, pp. 961-996

47 Usefulness of Aluminum Filters in Radiotherapy. H. Bordier.

No. 20, pp. 997-1036

48 *Hemorrhagic Pancreatitis with Diffuse Peritoneal Fat Necrosis. X. Delore and H. Alamartine.

No. 21, pp. 1037-1092

49 Kidney Complications during Pneumonia. F. Mouisset and J. Chalier.

No. 22, pp. 1093-1148.

50 Orbital Puncture. New Mode of Entering the Subarachnoid Space. (Ponction orbitaire.) L. Bériel.

Revue de Chirurgie, Paris

July, XXIX, No. 7, pp. 1-251

51 *Experimental Transplantation of Joints. (La greffe des articulations.) H. Judet.
52 *Esophagoscopic and Clinical Study of Tuberculosis of the Esophagus. Gulsez and Abrand.
53 Gunshot Wound of the Cerebral Peduncle. (Lésion pédonculaire par balle de revolver.) G. Guillain and G. Houzel.
54 *Plastic Operation on Ulcerated Ileum to Prevent Impending Perforation. (L'entérocléisis épiploïque dans les processus ulceratifs aigus de la dernière anse de l'iléon.) S. Solieri.
55 Sprained Knee. (Entorse du genou par abduction et rotation externe.) M. Gangolphe and C. Théveuet.
56 Dislocations of the Metatarsus. (Luxations du métatarse du diastasis entre le 1er et le 2e métatarsien.) E. Quéuu and G. Küss. Commenced in No. 1.
57 Abscesses in the Liver and Expectoration of Bile. (Abcès du foie et expectoration biliaire.) A. Valence.

51. **Grafting of Joints.**—Judet describes experimental arthroplasty on dogs, rabbits and cats, the results showing that the joint, as a whole, with its synovial sheath, has a vital autonomy which permits its being grafted into another animal and retaining its vitality. The transplanted cartilage is the only one of the tissues that alters; it requires the action of synovial fluid. In man the transplantation of a joint would be a much simpler procedure on account of the size of the parts. The article is illustrated with the technic worked out on the cadaver. The great difficulty will be to obtain suitable grafting material.

52. **Tuberculosis of the Esophagus.**—Guisez and Abrand have encountered two cases and review one reported by Schrötter giving an illustrated description of the anatomic findings. If the stenosis is of a sclerocicatricial type, dilatation is possible, proceeding very cautiously. In case of ulceration, the indications are the same as for fissure in a sphincter—gentle dilatation to act on the spasm. Local treatment can be by lactic acid or silver nitrate, as for laryngeal tuberculosis, with general measures. The development of esophagoscopy has permitted the differentiation of this form of tuberculosis.

54. **Omentum Shield for Acute Ulceration in the Ileum.**—Solieri was convinced that perforation was imminent in a case of paratyphoid infection. Appendicitis had been diagnosed as the agglutination test for typhoid had been negative. The operation revealed the absence of an acute process in the appendix, but an ulceration was found in the small intestine. He drew up the omentum over the part of the intestine involved and fastened it like a thick muff all around the diseased loop, suturing the omentum to the mesentery in front, above and below and to the intestine on each side of the affected zone. The patient recovered without mishap except for three severe intestinal hemorrhages.

Revue de Gynécologie, Paris

XIII, No. 3, pp. 371-560. Last indexed July 24, p. 329

58 *Torsion of Subserous and Interstitial Uterine Fibromas. G. Piquand and J. Lemeland.
59 *Obliteration of Douglas Pouch in Treatment of Certain Cases of Uterine Prolapse. G. Marion.
60 *Gastrocutaneous Fistulas Due to Gastric Ulcer. H. M. Jeannel.

58. **Torsion of Uterine Fibromas.**—Torsion was observed by the writers in 23 of 9,000 cases of uterine fibroma. In 55 cases on record in which the puerperal past is mentioned, 12 cases were in virgins and only 36 in women who had borne children. Eight unpublished cases are reported in detail, with fifteen illustrations.

59. **Obliteration of Douglas Pouch in Treatment of Uterine Prolapse.**—The unusually large Douglas pouch in the case reported kept up the prolapse, which was corrected at once by obliterating the cul-de-sac. This was done by running a thread through its walls and drawing it up, repeating this at four points. With forceps a lengthwise fold in the peritoneum was taken up and the needle passed through the fold, and continuing, through six of these folds, to make each one of the four sutures.

60. **External Fistulas Into the Stomach.**—Jeannel presents a second article on this subject, giving the details of 50 cases found in the literature. About 35 operations were performed on 26 of the patients, with a complete cure in 76 per cent. and a fatal outcome in 16 per cent.

Revue de Médecine, Paris

July, XXIX, No. 7, pp. 505-584

61 Morphologic Varieties of Cirrhosis. E. Géraudel.
62 General Plan of the Sympathetic Nervous System. L. Lavastine. Commenced in No. 5.
63 Communication between the Auricles. (Communications interauriculaires au point de vue anatomopathologique, physiologique et clinique.) L. Lyon-Caen.
64 *Hemoglobinuric Bilious Fever. G. Reynaud

64. **Hemoglobinuric Fever.**—Reynaud has found infusion of 250 c.c. of 7 per thousand salt solution two or three times a day effectual in treatment of hemoglobinuric fever, and Gouzien has reported similar success in 53 cases with no mortality. Reynaud summarizes 7 cases from his experience as the pioneer in this line of treatment. The saline infusion must be supplemented by quinin and the patient must be closely supervised all the time.

Archiv für klinische Chirurgie, Berlin

LXXXIX, No. 4, pp. 855-1136. Last indexed Aug. 7, p. 491

65 Post-Traumatic Ossifications. A. Pfister.
66 Defects in Development of the Mesentery and Abnormal Positions of the Intestines, especially of the Large Intestine. (Entwickelungshemmung des Mesenteriums und abnorme Lageverhältnisse des Darms.) E. Sauerbeck.
67 *Transplantation of Thyroid. (Zur Frage der Schilddrüsentransplantation.) H. Salzer.
68 Separation of Epiphysis from Neck of Femur. (Epiphysenlösung des Schenkelhalses und ihre Folgen.) O. Fittig.
69 Surgical Treatment of Generalized Peritonitis. O. Nordmann.
70 *General Anethesia during 1908. (Ueber Inhalationsnarkose.) G. Nenber.
71 *Expulsion of Blood from Lower Part of Body. (Die künstliche Blutleere der unteren Körperhälfte.) Momburg.
72 Congenital Inguinal Hernia. Ueber angeborene Leistenbruchssäcke.) Hansen.
73 Nail Extension for Fractures. (Gegenwärtiger Stand der Nagelextension.) F. Steinmann.
74 Operative Treatment of Subcutaneous, Acute Traumatic, Complete Paralysis of the Lower Roots of the Cervical Plexus. Bardeuheuer.
75 Multiplicity of the Renal Arteries and its Surgical Importance. (Multiplicität der Nierenarterie.) J. B. Seldowitsch.
76 Posterior Arthrotomy for Irreducible Dislocation of the Shoulder. (Reposition der irreponiblen Schulterluxation mittelst Arthrotomie von hinten.) Madelung.

67. **Transplantation of the Thyroid.**—Salzer implanted the thyroid in the abdominal wall, making a pocket between the fascia and peritoneum or in the muscle, and in this pocket transplanting part of the animal's own thyroid. Of 60 rabbits thus operated on, 23 died, but the results in the remaining 37 show that the organ heals in place and functionates better in thyroidectomized than in normal animals, and that the transplanted gland is able to produce colloid substance and that its vascularization is fully as good as when in its normal place. As only a small portion can be thus transplanted at a time, it is wise to have the technic as simple as possible. It can not be expected that one small piece can supply the total thyroid needs of the organism.

70. **Anesthesia in Germany in 1908.**—Neuber received 112 responses to question blanks sent out to surgeons requesting particulars in regard to their anesthesias during 1908. Chloroform, it seems, was used in 20,613 cases with 1 death to 2,060; ether in 11,859, with 1 death to 5,930; chloroform plus ether in 10.232, with 1 death in 3,410; and the scopolamin-morphin mixed anesthesia in 23,809 cases, with 1 death in 4,762. Local anesthesia or the first whiffs of ether were utilized in fully a quarter of all cases that would have required general anesthesia twenty years ago and no fatality was reported with these methods. In Gurlt's statistics, 1890-1897, there was 1 death in 2,075 chloroform and 1 in 5,112 ether anesthesias, chloroform having been used five times as often as ether, while in Neuber's statistics the scopolamin-morphin mixed technic takes the lead in numbers, and also from the standpoint of prevention of postoperative pneumonia. Kümmell reports only 0.61 postoperative pneumonias in 1908 in contrast to 2.5 per cent. formerly, von Eiselsberg only 0.9 per cent. to 3.3 per cent. formerly, and Neuber himself has had no cases.

71. **Expulsion of the Blood from the Lower Part of the Body.**—Momburg here reviews the thirty-four cases on record in which operations have been performed after expelling the blood from the lower part of the body by a belt applied like a tourniquet to the waist. The belt was left in place for two hours and twenty minutes in one case, but no deleterious results were observed in any instance or discovered at autopsy in the six cases in which the patients succumbed to an intercurrent affection about three months later or to the progress of the primary trouble. He insists that his technic should be closely followed, using a rubber tube about the size of a finger and four or five feet long, stretched around the body just below the costal arch; the pulse in the femoral artery should be tested at each turn of the belt. Just as this pulse disappears the ends of the tube are tied together and the ends held with a clamp. A tourniquet is then applied to both thighs and below the knees, so that by loosening these various tourniquets in turn the circulation through the lower part of the body is restored by degrees. It is even better to commence by expelling the blood from the limb by winding it upward from the toes. Then, after the belt has been applied, the bandage on the leg is removed and the leg placed lower than the pelvis, thus allowing any blood still in the pelvis to flow down into this leg, leaving this side of the pelvis practically exsanguinated.

Berliner klinische Wochenschrift

July 19, XLVI, No. 29, pp. 1341-1388

77 Tumor in Frontal Lobe of Brain. (Zur Klinik der Stirnhirntumoren.) M. Bernhardt and M. Borchardt.
78 Puncture of the Brain. (Hirnpunktion.) Id.
79 Diagnosis of Syphiloma in the Brain. (Zur Diagnose der Hirnsyphilome.) Frotscher and Becker.
80 The Increased Blood Pressure in Nephritis. (Zur Theorie der nephritischen Blutdrucksteigerung.) G. Marcuse.
81 Comparison of Diastolic Blood Pressure as Determined by Various Methods. (Was lehrt uns der Vergleich der mit verschiedenen Methoden gewonnenen diastolischen Blutdruckwerte?) B. Zabel.
82 Seroreaction in Syphilis in Relation to Antitryptic Power. (Die Luesreaktion in ihren Beziehungen zur antitryptischen Kraft des menschlichen Blutes.) A. Fuerstenberg and J. Trebing.
83 *Constipation Resulting from Excessive Absorption of Fluids in Feces. (Eine neue Grundlage zur Beurteilung und Behandlung der chronischen Obstipation.) Lipowski.
84 Opsonic Vaccine Treatment. (Vaccinetherapie.) Reiter.

July 26, No. 30, pp. 1389-1436

85 *Treatment of Acute Infectious Processes with Retention of Function. C. Ritter.
86 Cobra Venom Hemolytic Test. (Wesen der sogenannten "Psychoreaktion" nach Much.) A. Zaloziecki.
87 Induced Insanity. (Zur Kasuistik des induzierten Irreseins.) R. Sartorius.
88 Action of Neutral Red Salve on Experimental Vaccine Infection. (Wirkung einer Neutralrotsalbe auf die experimentelle Vaccineinfektion beim Kaninchen.) E. Friedberger and J. Yamamoto.
89 *Staining Living Human Eye for Diagnostic Purposes. (Ueber das Färben lebender menschlicher Augen zu physiologischen und zu diagnostischen Zwecken.) C. Hamburger.
90 *Quantitative Tests for Pancreas Functioning. O. J. Wynhausen.
91 Bacteriology of the Stomach. (Zur Bakteriologie des Magens.) M. Hirschberg and H. Liefmann.

83. **Excessive Intestinal Absorption as Cause of Constipation.**—Lipowski found that normal persons absorbed and retained from 30 to 90 c.c. of 200 c.c. of tepid salt solution gently injected into the rectum and allowed to remain for fifteen minutes, while persons inclined to chronic constipation invariably retained from 150 to 180 c.c. He calls this proportion between the amount injected and the amount absorbed the "resorption coefficient." In Fleiner's method of treating constipation by injection of oil, the main factor in the result is that the oil interferes with absorption in the intestines, and thus the feces remain of softer consistency. On account of the various disadvantages of oil, which Lipowski enumerates, he uses paraffin for this purpose, injecting it into the rectum where it spreads out in a thin layer over the mucosa, effectually preventing absorption. He asserts that it is entirely non-irritating, does not decompose, and can remain in the intestine over night, thus dispensing with the reclining necessary after taking the "oil cure" during the day. The paraffin does not generate flatus, while the laxative effect is prompter than with the oil. He has applied this treatment of constipation in 53 patients; the paraffin was injected in the morning in 46 cases and at night in the others. In every case spontaneous defecation followed after a few days, and then the intervals between the injections were lengthened and the amount reduced. He uses paraffin with a melting point of 38 C. (101 F.). mixing some with a melting point at 78 C. (173 F.), with liquid paraffin in the proportion of 1/8. This mixture is warmed until the whole is fluid, and about 200 c.c. (nearly 7 ounces) are injected through a soft bowel tube, 20 cm. (8 inches) long, the syringe being also warmed. Instead of classifying constipation as merely spastic, atonic or fragmented, he insists that the absorbing capacity of the terminal bowel must always be taken into account.

85. **Treatment of Infectious Processes with Retention of Function.**—Ritter pays tribute to Bier as having revolutionized the treatment of acute infectious processes to prevent destruc-

tion of tissue and deformity. Bier's hyperemic treatment and the more recent ferment treatment ensure healing with retention of function, a result which has assumed greater importance since the introduction of industrial insurance. Ritter then announces that the same results may be obtained by much simpler means, and reports a number of cases to sustain this assertion. All that is necessary is to keep puncturing the process while maintaining arterial hyperemia in the simplest way, which is by plunging the part into water as hot as the patient can bear it, for half an hour or an hour at a time, three times a day. He punctures every day, each time at a separate place, to avoid fistulas. The cavity fills up with serous fluid with very few pus corpuscles; the organism thus supplies its own "ferment." After the third day he punctures only on alternate days. By this means Ritter has seen suppurative processes in the neck, axilla and groin subside without leaving a trace. Encouraged with this success in eleven cases, he treated felons, suppurating affections of the knee joint, cerebrospinal meningitis, etc., all confirming the efficacy of repeated puncture as an efficient mode of treating acute suppurative processes without impairment of function. He is convinced that previous efforts to prevent reabsorption of infectious matters have been based on false premises, that the results with lowering the part, immobilization, bed rest, etc., have given good results only because they were none of them absolutely effectual in preventing absorption. Even the constricting band does not accomplish this, as the wave that follows its removal flushes out the part. It is safer to have the absorption proceed more gradually, and he thinks that a safe, simple and effectual technic has been found in the daily puncture and hot-water treatment.

89. **Stain for the Living Human Eye for Diagnostic and Other Purposes.**—Hamburger announces that he has been experimenting for nearly a year with internal administration of fluorescein which discolors the tissues as in jaundice without harm, as the effect soon disappears. In the dose of 1 gm. (15 grs.) per 25 pounds of body weight, the stain does not discolor the healthy human eye or at most not until after two or three hours, while if the eye is inflamed or diseased it is discolored almost at once. The effect is most striking when only one eye is affected. He explains this as owing to the peculiarly slow and quiet intraocular metabolism of the human eye in physiologic conditions, while all this is totally changed with the onset of inflammation. The inflammation must be true intraocular irritation to attract the stain; mere conjunctivitis does not cause the discoloration, nor the mere presence of a foreign body. The results are interesting for physiologic study of the eye and also for diagnosis of ocular inflammation.

90. **Quantitative Tests of the Pancreas.**—Wynhausen has found that it is possible to estimate the functioning of the pancreas by quantitative determination of the diastasic and tryptic ferments in the stool. He used the Wohlgemuth and Fuld technics and reports the details of several cases demonstrating the precision and reliability of this method of testing pancreas functioning.

Correspondenz-Blatt für Schweizer Aerzte, Basle

July 1, XXXIX, No. 13, pp. 433-472

92 *Suprarenal Treatment of Osteomalacia. S. Stocker, Jr.
93 *Pulverized Clay in Treatment of Diarrhea and Dysentery. (Zur Ehrenrettung der Bolus alba.) Frei.
94 *Eye Glasses and Astigmatism. (Brillen und Astigmatismus.) A. Dutoit.

July 15, No. 14, pp. 473-504

95 Diagnosis and Treatment of Glaucoma. O. Haab.
96 Obstetrics and the General Practitioner. A. Gœnner.

92. **Suprarenal Treatment of Osteomalacia.**—Stocker reports what he thinks is the first case of non-puerperal osteomalacia treated with adrenalin. Slight improvement was evident about the sixth injection, but it proved transient, and recurrence of severe symptoms compelled castration, which proved promptly successful. One ovary was found in cystic degeneration, the other was enlarged and adherent. He tabulates the details of twenty-two other cases of osteomalacia treated with adrenalin that have been reported, the results demonstrating that in each of the 14 cases in which improvement was observed, a turn for the better was evident after the first or second injection.

93. **Bolus Alba in Tropical Dysentery.**—Frei quotes with approval Sahli's remark that the old text-books ought to be saved, as they contain many things which we throw aside in our eagerness for the new, but which time may bring into favor again, and he cites bolus alba as an instance of this foolish discarding of an extremely useful remedy. He has found it rapidly effectual in treatment of diarrhea in adults and children. In a case of tropical dysentery which had resisted all kinds of treatment and dieting for months, in the hands of a number of eminent clinicians, and had reduced the young woman to a skeleton, a prompt change for the better was observed under bolus alba treatment, and complete cure soon followed and has persisted for nearly a year to date. He gave the bolus alba according to Stumpf's directions, suspended in water, 50 gm. in 200 c.c. water, and nothing was eaten for eighteen hours afterward, but the patient was allowed to drink freely and at the end of the eighteen hours to eat a light but abundant meal. Four hours later another dose was given and the patient fasted again for eighteen hours. This was kept up with smaller doses of the bolus two or three times a day with regular meals. The diarrhea was arrested by the third day of treatment and improvement in the general condition proceeded at a rapid pace, but the patient was advised to take 10 gm. of the bolus daily for another month, and was soon in good health, weighing 140 pounds.

94. **Eyeglasses and Astigmatism.**—Dutoit warns that no one except an expert ophthalmologist should prescribe glasses when there is any suspicion of astigmatism, but he asserts that special skill is not required to prescribe glasses for simple myopia, hypermetropia and presbyopia if care is taken to avoid overcorrection.

Deutsches Archiv für klinische Medizin, Leipsic

XCVI, Nos. 5-6, pp. 419-594. Last indexed July 24, p. 330

97 Variations in Weight and Concentration of Blood in Diabetes. (Gewichtsschwankungen und Blutkonzentration bei Diabetes mellitus.) E. Reiss.
98 Concentration of Blood in Pneumonia. J. Sandelowsky. Id. in Scarlet Fever. S. Oppenheimer and E. Reiss.
99 Blood Pressure-raising Substance in the Kidney. (Blutdrucksteigernde Substanz der Niere.) A. Bingel and E. Strauss.
100 Etiology and Pathologic Anatomy of Rheumatic Myocarditis. E. Bracht and Wächter.
101 *Tympanites in Infectious Diseases, especially Pneumonia. (Auftreten eines toxischen Meteorismus bei Infektionskrankheiten, insbes. der Pneumonie.) G. Krönig and F. Klopstock.
102 Influence of Food and Fever on Elimination of Sugar and Acid in Diabetes. (Einfluss der Nahrung und des Fiebers auf die Zucker- und Säureausscheidung beim Diabetes mellitus.) A. Gigon and R. Massini.
103 Pure Congenital Dextrocardia. (Zur Kasuistik und Lehre von der angeborenen reinen Dexiokardie.) M. Nagel.
104 *Research on Experimental Lead Poisoning. (Untersuchungen bei experimenteller Bleivergiftung.) P. Schmidt.

101. **Tympanites in Infectious Diseases.**—The clinical and experimental evidence on hand seems to indicate, Krönig declares, that the tympanites observed in the course of an infectious disease is not the expression of a complicating intestinal disturbance, but merely the consequence of the general intoxication. The rapid subsidence of the meteorism after the crisis in pneumonia speaks in favor of a toxic influence on the central organ rather than of any special toxic action on the intestines or their innervation. Compare, for example, the slow and tedious subsidence of toxic affections of the myocardium or of a postdiphtheritic polyneuritis with the prompt recuperation of bowel functioning after the crisis in pneumonia. The rapid, superficial breathing in an infectious disease is favored by the upward displacement of the diaphragm; the reaction occurs differently in women, with their soft, yielding abdominal walls, than in men with powerfully developed abdominal muscles. In men even a slight development of gas has a tendency to push up the diaphragm to a dangerous extent. In any event, this toxic tympanites in infectious diseases is extremely important, requiring treatment as imperiously as beginning heart weakness. Treatment must aim to prevent development of intestinal gases and to expel those already formed. Besides dietetic measures to prevent formation of gases, and purgatives, enemas, and especially repeated introduction of a soft bowel tube, leaving it long in place, to promote the passage of flatus, the administration of strychnin is important as a means of re-enforcing the other measures to restore tone to the intestines. Physostigmin has not fulfilled

the anticipations roused by its action in tympanites of other origin. It has failed completely in a series of cases of this toxic meteorism, but its property of stimulating to spasmodic contraction when the bowel is relaxed under the influence of atropin encourages further trials of it. Experimental and clinical experience seem to conflict here.

104. **Experimental Lead Poisoning.**—Schmidt concludes from his research that the lead keeps up a constant wandering through the body until its final elimination, and that the leucocytes play the most important part in the defensive processes against it. Consequently, the organism is better protected against lead poisoning when there are large numbers of leucocytes. The conditions and indications in metal poisoning, therefore, approximate those in infectious diseases.

Deutsche medizinische Wochenschrift, Berlin

July 22, XXXV, No. 29, pp. 1257-1296

105 Etiology of Sleeping Sickness. (Weitere Untersuchungen über die Aetiologie der Schlafkrankheit.) Kleine.
106 Cultivation of the *Spirochæta pallida.* J. Schereschewsky. Id. Mühlens.
107 Intestinal Myomas. (Zur Kasuistik der Myome des Darmes.) R. Frotscher.
108 *Sudden Death, with Special Regard to Indications for Operative Treatment of Embolism of the Lung. (Ueber plötzliche Todesfälle mit besonderer Berücksichtigung der Indikationsstellung für die Trendelenburgsche Operation bei Lungenembolie.) M. Busch.
109 Subcutaneous Perforation of the Digestive Tract. (Zur Kenntnis der subkutanen Perforationen des Magendarmkanals.) Dege.
110 Plastic Operations on the Quadriceps. (Quadrizepsplastik.) F. Selberg.
111 Cause and Treatment of Pain in the Breast. (Ueber Mastodynie.) M. Samuel.
112 *Gastrosuccorrhea and Pyloric Stenosis in Infants. (Der "Magensaftfluss" in der Pathogenese und im Verlauf der Pylorusstenose der Säuglinge.) Engel.

July 29, No. 30, pp. 1297-1336

113 Staining Technic for Typhoid Bacilli. (Ein neues Verfahren zum Nachweise und zur Differentialdiagnose der Typhusbakterien mittels Malachitgrün-Safranin-Reinblau-Nährböden.) F. Loeffler, E. Walter. E. Dibbelt and J. Wehrlin.
114 Rachitic Coxa Valga. A. Stieda.
115 Operability of Gastric Cancer. (Operabilität der Magenkrebse.) H. Braun.
116 *Treatment of Cardiospasm. M. Makkas.
117 Vaccine Treatment of Multiple Abscesses in Infants. (Behandlung der multiplen Abszesse der Säuglinge mit spezifischem Vakzin.) Wechselmann and G. Michaelis.
118 Slab of Meat and Bone for Testing Roentgen Tubes. (Ein neuer Härtemesser.) P. Harrass.
119 Semimillennial of the Leipsic Medical Faculty. K. Sudhoff.

108. **Sudden Death and Indications for Operative Treatment of Pulmonary Embolism.**—Busch states that of the 878 fatalities among the 9,727 patients in Körte's surgical service at Berlin during the last four years, 22 of the deaths occurred suddenly and the symptoms indicated pulmonary embolism. He has been investigating the records of this group of 22 sudden deaths to determine whether the embolus could have been successfully removed. In 12 cases, death occurred instantaneously, and yet autopsy in 7 of the 12 revealed embolism in 4, the findings very similar to those in the more protracted cases of embolism. In one case a thrombus about 7 cm. long, about the size of a pencil, was found at the bifurcation of the pulmonary artery and it could have been readily removed. The Trendelenburg operation is indicated, therefore, in such cases when conditions are favorable for immediate operation. In 10 other cases the syndrome of the embolism persisted from ten minutes to three hours before the fatal termination. Autopsy revealed embolism in 6 and conditions would have been favorable for operative intervention in 5 cases. In 4 others the assumed embolism did not exist; these 4 patients were about 50 and 70, and were being treated for a broken arm or femur or ovarian cyst, with no threatening symptoms of heart trouble. A syndrome characteristic of pulmonary embolism suddenly developed in the midst of apparently complete well-being, and death followed in from ten to thirty minutes and autopsy disclosed merely brown atrophy or fatty degeneration of the heart. In the 6 cases of positive findings the embolus extended to the remotest ramifications of the artery in 1, but in others the embolus was short and straddled the bifurcation or was loose in the left branch of the artery. In 3 other cases the typical syndrome of embolism developed suddenly in patients between 47 and 58 after an operation for gallstone or pyloric stenosis or inflamed varices on the legs. An operation was debated, but under intravenous digitalis and subcutaneous camphor and caffein the heart action grew stronger and the embolism tempest blew over, but in the oldest patient, with the pyloric stenosis, signs of gangrene of the lungs developed in a few days to which the patient succumbed; the embolism gangrene involved nearly the whole of the left lower lobe. Körte advocates in case of the onset of the embolism syndrome, morphin to tranquilize the respiration, then a preparation of digitalis injected into a vein while all is made ready for an operation which then follows if these measures fail to improve, unless contraindicated by the general condition.

112. **Importance of Hypersecretion in Origin of Pyloric Stenosis in Infants.**—Engel reports from Schlossmann's pediatric clinic at Düsseldorf two cases of typical stenosis of the pylorus in infants in whom the stenosis syndrome had probably been preceded by a phase of excessive secretion of gastric juice—actual gastrosuccorrhea. As he believes that "psychic gastric secretion" is out of the question in infants less than a month old, the discovery of large amounts of gastric juice in the empty stomach is, he asserts, necessarily pathologic. He accepts it as proved that hypersecretion alone without hyperacidity is able to induce spasmodic contraction of the pylorus. The stenosis is purely spastic at first, as evidenced by the previous unrestricted passage of fluid. Under the influence of the spasmodic contraction the pylorus becomes more or less hypertrophied, so that after the subsidence of the hypersecretion and of the spasmodic contraction the lumen of the pylorus is left a little smaller and several weeks may elapse before entirely normal conditions are restored. This assumption of the primary importance of the gastrosuccorrhea explains all the features of pyloric stenosis in infants. In both of the cases and in others in the literature small intercurrent hemorrhages occurred in the stomach, the presence of the blood inducing such profuse secretion of gastric juice that violent paroxysms followed. In one case the child vomited forty times in twenty-four hours and in the other, in which the hemorrhage was very small, the child vomited ten times in a few minutes and 50 c.c. of the stomach content were aspirated almost at once. His cases are instructive, as in both feeding was exclusively by way of the intestines, the stomach being entirely excluded. He is inclined to accept a nervous disturbance as the basis of the whole trouble—an isolated secretory anomaly.

116. **Non-Operative Treatment of Cardiospasm.**—Makkas reports two cases of severe cardiospasm in young men, with extreme dilatation of the esophagus, the symptoms having been in evidence for nearly three and five years, respectively. Both patients were cured by gradual dilatation of the cardia with Gottstein's sound, which consists of an inner and outer rubber bag with an inelastic thick silk interlining between the two. The bag is introduced and then filled with water, the soft even pressure of the spindle-shaped distended bag effectually combating the spasm. Gottstein has reported five cures in seven patients thus treated.

Medizinische Klinik, Berlin

July 25, V, No. 30, pp. 1105-1144

120 Blood Pressure and Courses of Mineral Waters. (Blutdruck und Trinkkur.) H. Strauss.
121 *Infiltration Treatment of Sciatica. (Infiltrationstherapie der Ischias.) A. Bum.
122 Bacteriologic Study of Streptococci. (Streptokokkenversuche.) B. Zoeppritz.
123 Colloidal Chemistry and Balneology. H. Schade.
124 Treatment of Typical Fracture of the Radius. P. Glaessner.
125 Keratinized Pills. (Die Keratinierung der Dünndarmpillen im Lichte der neueren Keratinforschung.) L. Golodetz.
126 Medical Certificates. (Ueber ärztliche Zeugnisse und Gutachten.) T. Rumpf.

121. **Infiltration Treatment of Sciatica.**—Bum reports that more than half the patients were cured by the infiltration technic in 308 cases in his practice during the last four years and a half. The proportion was 52.2 per cent. cured and 23.9 per cent. improved in the 46 subacute cases, and 63.5 per cent. cured and 19 per cent. improved in the 228 chronic cases, the duration of the sciatica ranging from four weeks to seventeen years. The duration of the affection did not seem to influence the effect of the infiltration treatment, and the cure was permanent, the patients being absolutely free from pain for months and years without any efforts to spare the limb. He

never applies this treatment in the acute cases, as recent neuritis yields to bed rest and medicinal or physical diaphoresis. The infiltration technic aims to detach, without the knife, the perineuritic adhesions that have formed around the formerly inflamed nerve. If the result is not realized in one sitting, the injection should be repeated two or three times. He uses plain physiologic salt solution, injecting from 100 to 120 c.c. at once under strong pressure, the patient in the supported knee-elbow position, the cannula, 1.8 mm. in diameter and about 10 cm. long, introduced at the point on the thigh where the long head of the biceps is crossed by the lower edge of the gluteus maximus. The needle is introduced for about half its length and then the proximal end is lowered, while the needle is pushed slowly in for about 3 cm. farther. This brings the point to the sciatic nerve and the injected fluid pours into the nerve sheath, breaking up adhesions and setting the nerve free. He never made more than four injections in any case. Recurrence was observed in 4.7 per cent. only.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

July, XXX, No. 1, pp. 1-136

127 *Treatment of Elongated Cervix by Supravaginal Resection of the Cervix with Retention of Connection with the Vagina. (Ein neues Verfahren der supravaginalen Cervixresektion mit Erhaltung der Portio vaginalis bei Elongatio colli.) R. Werth.
128 Statistics of Operations for Uterine Cancer at Prague. O. von Franqué.
129 Morphologic Behavior of Minute Glands Encircling the Nipple. (Morphologisches Verhalten der Montgomeryschen Drüsen.) K. Natanson and W. Goldschmidt.

127. **Supravaginal Resection of Cervix.**—Werth compares the technic and ultimate outcome in six cases of elongated cervix requiring operative interference treated by the old technic and six treated by a new method, of which he gives an illustrated description. The unduly long cervix is resected above its implantation in the vagina, working through a median incision in the anterior roof of the vagina. The stumps are sutured together with catgut through the entire thickness of the cervix wall.

Münchener medizinische Wochenschrift

July 20, LVI, No. 29, pp. 1457-1520

130 Outlook for Treatment in Progressive Paralysis. K. Alt.
131 Behavior of Organic Preparations of Arsenic in the Human Body. (Verhalten organischer Arsenpräparate im menschlichen Körper.) P. Fischer and J. Hoppe.
132 The Cobra Venom Hemolytic Reaction. (Eine Reaktion im Blute von Geisteskranken.) C. Fraenkel, Kathe and Bierotte. Id. (Hemmung der Kobrahämolyse durch das Serum von Geisteskranken und körperlich Kranken.) W. Beyer and W. Wittneben.
133 Roentgen Examination of Movements of Bladder. (Biozystographie.) A. v. Lichtenberg, H. Dietlen and W. Runge.
134 Pathology of the Metabolism in Epilepsy. (Zur Stoffwechselpathologie der Epilepsie.) W. Tintemann.
135 Active Substance in the Hypophysis. (Zur Kenntnis der wirksamen Substanz in der Hypophysis.) R. Allers.
136 General Anesthesia and Lecithin. (Narkose und Lezithin.) J. Nerking.
137 Importance of Oxydase Reaction in Diagnosis of Leukemia. (Zur Leukämiefrage.) J. Peters.
138 Cosmetic Middle Ear Operations. (Was kann und muss man in kosmetischer Hinsicht von der Radikaloperation der chronischen Mittelohreiterung verlangen.) Heermann.
139 *Ischemia Induced in Congested Nasal Mucosa by Application of Cold to the Back of the Neck. (Ein prophylaktisch-therapeutischer Vorschlag für nasale Reflexneurosen.) O. Muck.
140 *Abdominal Operations in Country Practice. (Bauchoperationen in der Landpraxis.) Paysen.
141 Carbon Monoxid Poisoning. (Zwei Fälle von Kohlendunstvergiftung in hygienischer und gerichtlich-medizinischer Beleuchtung.) Federschmidt.
142 Suction Apparatus in Treatment of Acute Coryza in Infants. (Zur Behandlung des akuten Schnupfens der Säuglinge.) W. Schultz.

139. **Application of Cold to Back of Neck to Relieve Congestion in Nose.**—Muck has been making practical application of Winternitz' suggestion to influence the lumen of the vessels by reflex action from cold or heat applied locally to the skin. He has found that cold water poured over the back of the neck or a cold douche applied for a few seconds has a decided influence in relieving congested conditions in the nose and also bronchial asthma if it is due to a nasal reflex. He ascribes the result to the direct action on the vasomotor and respiration centers; the same effect is not realized by application of cold elsewhere to the body nor by mere application of cloths wrung out of cold water. The mechanical stimulus of the pouring water seems to be an important element in the relief experienced. Before dressing in the morning the simple application of the cold douche to the back of the neck gives great relief in chronic simple rhinitis and is liable to relieve the suffocation in asthma.

140. **Abdominal Operations in Country Practice.**—Paysen relates a number of incidents from his experience to show the necessity for immediate operation on the spot in many cases of incarcerated hernia, etc., the patients owing their lives to his prompt intervention, and he urges the country practitioner not to hesitate to undertake such at need without temporizing.

Wiener klinische Wochenschrift, Vienna

July 22, XXII, No. 29, pp. 1023-1058

143 Pathology of Rabies. (Wutkrankheit beim Menschen.) R. Paltauf.
144 The Hemolytic Cobra Venom Test. (Verhalten menschlicher und tierischer Blutkörperchen gegenüber Kobragift unter normalen und pathologischen Verhältnissen.) R. Kraus, O. Pötzl, E. Ranzi and H. Ehrlich.
145 Mixed Leukemia. (Zur Frage der gemischten Leukämie.) A. Herz.
146 *Operation for Femoral Hernia by Inguinal Route. (Operation der kruralen Hernie auf inguinalem Wege.) R. Frank.
147 *Radical Operation for Inguinal Hernia by Roux Technic. F. v. Gschmeidler.
148 *Preserved Human Milk for Feeding Weakly New-Born Infants. (Die Milch-beschaffung für die Ernährung lebensschwacher Neugeborener mit konservierter Frauenmilch nach Meyerhofer und Pribram.) W. Rosenfeld.
149 Early Roentgen-Ray Diagnosis of Intestinal Stenosis. (Zur Frühdiagnose der Darmstenosen mittels Röntgenstrahlen.) R. Bacher.

July 29, No. 30, pp. 1059-1090

150 Interaction of Glands with an Internal Secretion. (Weitere Mitteilungen über die Wechselwirkung der Drüsen mit innerer Sekretion.) W. Falta.
151 Dependence on the Normal Functioning of the Liver of the Pairing of Camphor-Glycuronic Acid. (Abhängigkeit der Kampfer-Glukuronsäurepaarung von der normalen Funktion der Leber.) K. von Stejskal and H. Friedrich.
152 Research on Agglutination of Blood Corpuscles. (Zur Kenntnis der Hämagglutination.) H. Raubitschek.
153 Successful Outcome of Suture of Median Nerve a Year after Traumatic Section. R. C. Porges.

146. **Operation for Femoral Hernia Through the Inguinal Canal.**—Frank's technic is instructively shown in ten illustrations. The sac is drawn out through the inguinal ring, ligated and resected, the ends of the ligature drawn out through the muscles some distance above, where they are tied. The tendency to hernia is then corrected by suturing the posterior margin of Poupart's ligament to the pectineal fascia and the periosteum of the horizontal branch of the pubis, followed by passing four threads through the triangular ligament drawing it up to the muscles above.

147. **Roux' Nail Operation for Femoral Hernia.**—Roux fastens with a double-pointed nail the edge of Poupart's ligament to the horizontal ramus of the pubis as a radical means of curing femoral hernia, and Hochenegg has applied this technic in 38 cases of femoral hernia since 1904, all but 8 in women, general anesthesia being used in 33. The ultimate outcome in 28 cases is known, the interval ranging from six months to four years. The results have been satisfactory in every respect, even in one case in which the nail was felt to be loose. The outcome compares favorably, he considers, with other methods, while the simplicity of the operation commends it for certain cases.

148. **Preserved Human Milk for Infant Feeding.**—Rosenfeld regards Mayerhofer and Pribram's suggestion that human milk can be preserved and used for artificial feeding of feeble new-born infants as a great advance, provided that the production is restricted to hospitals and asylums and kept under strict medical supervision. The milk is drawn with a valve breast pump, described in these columns May 29, 1909, page 1803; this simulates the intermittent sucking of the child and the breast responds by yielding all its milk. Nearly 3 ounces can thus be drawn in a few minutes. The breasts seem to secrete more milk as more demands are made on them, so that the women's own children do not suffer from loss of the extra amount drawn. He calculates that the three or four maternities at Vienna, with an average of 120 parturients, could easily supply about 20 quarts of fresh breast milk a day for this purpose, ample to supply 50 feeble new-born with the life-giving fluid. In order to keep a sufficient supply on hand, the mixed milk is sterilized by the Budde process, that is, addition of a small proportion of hydrogen dioxid as the milk is heated to a moderate temperature, not over 55 C. in

the water bath. This sterilizes it completely while not impairing its vital properties, taste or aspect, according to experiences reported by Escherich and others. Infants fed on breast milk thus prepared and kept until needed seemed to thrive excellently, in every respect as if fed directly from the breast. The main point, Rosenfeld emphasizes, is to keep this milk supply out of commercial hands, as it should be a strictly medical affair.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 22, XXX, No. 87, pp. 913-920

154 Cerebral Hemorrhage in Children. (Emorragia cerebrale nell'infanzia.) G. Ghetti.

Policlinico, Rome

July 11, XVI, No. 28, pp. 869-900

155 *Stricture of Female Urethra. (Restringimenti uretrali nelle donna.) F. Cuturi. Commenced in No. 27.
156 *Chloroform and Ascarides. V. Barnabo.

July 18, No. 29, pp. 901-932

157 The Paravertebral Triangle of Dulness in Pleurisy. (A proposito del triangolo paravertebrale opposto di Grocco.) T. Silvestri.
158 Antitoxin in Prophylaxis of Diphtheria. (Della sieroprofilassi antitossica in un'epidemia di difterite.) A. Politi.

July, Medical Section, No. 7, pp. 289-328

159 Improved Technic for Opsonic Method. (Di un nuovo metodo opsonico. Teoria opsonica. Di un metodo fagocitario.) M. Copelli.
160 Nature and Pathogenesis of Unilateral Pleural Effusion in Heart and Kidney Disease and in Arteriosclerosis. (Versamenti pleurici unilaterali nei cardiaci, nei cardiorenali e negli arteriosclerotici.) F. Feliziani.
161 *Gastric Cancer and Salomon's Test. (Carcinoma gastrica e prova di Salomon.) G. Alessandri.

155. **Stricture of the Female Urethra.**—Cuturi concludes his study of the treatment of stricture by emphasizing that the dilatation must act dynamically, not mechanically. Extreme gentleness is necessary. In a hemophilic patient he found it possible to prevent recurrence of hemorrhage from introduction of the sound by previous instillation of 2 per cent. silver nitrate. Traumatic and obstetric stricture requires internal urethrotomy, as dilatation is ineffectual in callous tissue.

156. **Chloroform and Helminthiasis.**—Barnabo was performing a laparotomy in a young women when severe retching was observed with acute suffocation and threatening syncope. Opening the patient's mouth to make traction on the tongue, the tip of an ascaris was seen in the throat and prompt recovery followed its removal. Two others were vomited about six hours later, after which recovery was uneventful. He was present in another case in which fatal suffocation from worms occurred during chloroform anesthesia, and thinks it possible that some of the "chloroform deaths" on record may have been due to unsuspected worms. He now makes a practice of inquiring before operating whether the patients have known of the presence of helminths. His patient told him afterward that she had passed some helminths shortly before. If he had been aware of this he would have postponed the operation until after a course of worm medicine. He thinks that the chloroform is responsible for the migration of the helminths.

161. **Gastric Cancer and the Salomon Test.**—Alessandri reports the findings of the Salomon test applied in twelve cases of stomach trouble suggesting cancer, the results being controlled by other tests. In every case of carcinoma of the stomach confirmed by the course of the affection the Salomon test gave positive findings, while they were negative when the cancer was in a neighboring organ or if the trouble was of other origin. The reaction may be positive when the ulceration is so small that its presence is not revealed by the ordinary clinical methods. It seems to be established that cancer of the stomach displays a tendency to ulcerate exceptionally early, which enhances the value of this test. The technic was described in The Journal, Sept. 12, 1903, page 694.

Riforma Medica, Naples

July 12, XXV, No. 28, pp. 757-784

162 *Inguinal Hernia in Children. (Contributo statistico all cura radicale dell'ernia inguinale nei bambini, con speciale riguardo a quelle del cieco e dell'appendice.) G. Andrei.
163 Two Cases of Inguinal Hernia of the Ovary. C. Laccetti.

July 19, No. 29, pp. 785-812

164 Atrophy of the Hand. (Atrofia della mano, del tipo Aran-Duchenne, segmentaria, congenita, eredofamiliare, non progressiva.) R. Ciauri.
165 *Experiences with 206 Cases of Mammary Cancer. L. Fiori.

162. **Inguinal Hernia in Children.**—Andrei reports the operations for inguinal hernia at the Florence surgical pediatric clinic, a total of 430 inguinal hernias in 395 children, all but 38 being boys. The Bassini technic was used except in one case. The mortality was 1.77 per cent. One of the 7 children who died was a child a month old with strangulation of the hernia ten days before the operation. Inguinal hernia is congenital less frequently than is generally assumed, and strangulation is comparatively rare, while the effects are less serious than in adults at first. The experiences with 6 children operated on under the age of six months and 59 under twelve months, 97 between one and two years and 47 between three and four, confirm the advisability of operating early, as herniotomy is borne well even by very young children, and the single operation is preferable to the wearing of a truss if conditions do not permit of scrupulous care. Strangulation was observed in 14, that is, 3.25 per cent. of the total 430 hernias, and in all but 4 cases were in boys less than a year old. The tendency to strangulation and to recurrence is much less in children than in adults, owing to the elasticity of the tissues. In 16 cases the appendix was found in the hernia, but Andrei advises against removing it, if sound, at the herniotomy.

165. **Mammary Cancer.**—Fiori reviews the experiences with 206 cases of mammary carcinoma at Ceci's surgical clinic at Pisa, 1888-1908. One patient was between 20 and 25 and one between 25 and 30; 13 between 30 and 35 and 22 between 36 and 40, while only 3 were over 70. He has been able to follow the ultimate outcome in a large proportion of the cases. Among these, of the 7 patients with small tumor, non-adherent to the skin, with only a few glands in the axilla slightly enlarged, 4 are still in good health from seven to eleven years after the operation, one succumbed to an intercurrent disease, one was healthy when last heard from and one returned in a few months with an inoperable recurrence. Of the 40 with more advanced cancer, 20 are still in good health after three or more years, and of the 23 with involvement of the entire breast, the tumor adherent to the skin and pectoral muscles with ulceration or multiple nodules and metastasis, one is still alive after three years; 65 per cent. succumbed to generalization of the malignant disease and 30 per cent. to local recurrence, while 2 others were in good health after seven and seventeen months. The permanent cures in these three groups of cases are thus: 80 per cent.; 50 per cent. and 5 per cent., for intervals ranging from three to thirteen years to date. The interval between the first signs of the tumor and the operation was from fifteen days to three months in 29, and between one and five years in 52; in 5 cases there had been an indolent nodule since early life.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

The Medical Directory of India, Burma and Ceylon, 1909. Second Edition. Cloth. Pp. 167. Compiled and Published by the Editor of *Practical Medicine*, Delhi.

The Sexual Disabilities of Man. By Arthur Cooper, Consulting Surgeon to the Westminster General Dispensary. Cloth. Pp. 184. Price, $1 net. New York: Paul B. Hoeber, 1909.

Manual of Therapeutics. Referring Especially to the Products of the Pharmaceutical and Biologic Laboratories of Parke, Davis & Co., Detroit, 1909. Flexible Leather. Pp. 643. Given free to physicians on request, by Parke, Davis & Co.

Semmelweis, His Life and His Doctrine. By Sir William J. Sinclair, M.A., M.D., Professor of Obstetrics and Gynecology in the University of Manchester. Cloth. Pp. 369. Price, 7 shillings 6 pence. Manchester: At the University Press, 1909.

Transactions of The Southern Surgical and Gynecological Association. Vol. XXI. Twenty-First Session held at St. Louis, Dec. 15 to 17, 1908. Edited by W. D. Haggard, M.D, Cloth. Pp. 488, with illustrations. Published by the Association, 1909.

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Original Articles

DIAGNOSIS OF OTOGENIC MENINGITIS

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Until recent years, the early diagnosis of otogenic meningitis was of little practical significance, except inasmuch as it enabled the physician to prepare the friends of the patient for the fatal termination of a disease, which in its suddenness often comes as a lightning from a clear sky. But since surgical treatment has been employed in this disease, and not without success, the importance of an early diagnosis has increased appreciably inasmuch as it may indicate an operation to prevent this fatal result.

Before entering on the diagnosis of otogenic meningitis, a few facts as to the etiology may be mentioned.

Meningitis, which is according to all statistics the most frequent intracranial complication in suppurative otitis media, appears very rarely in infants under a year. It is not rare after the fortieth year, but older children and young people are those most frequently attacked.

It is generally assumed that otogenic meningitis is, in most cases, caused by a retention of pus in the middle ear. My experience does not support this supposition. I have not, as a rule, found otoscopic signs of retention in cases of otogenic meningitis, and in about half of the cases observed by me the mastoid region did not exhibit the slightest trace of infiltration or tenderness. I am, therefore, inclined to believe that the nature of the suppuration, combined with the anatomic relations of the petrous portion of the temporal bone and the mastoid process, play the most important part in the pathogenesis of otogenic meningitis.

As to the nature of the suppurative process, various observers and I myself have most frequently found pneumococci, staphylococci and streptococci as the cause of the inflammation of the soft membranes of the brain in cases of otogenic meningitis. Another fact elicited by my researches is that in most cases of otitis media causing meningitis there is a very marked *acute* osteitis of the mastoid process, even when the suppuration of the tympanum and the osteitis of the mastoid process are chronic. This easily explains why otogenic meningitis is frequently preceded by pains in the diseased ear.

Meningitis of otogenic origin is often produced through a suppuration of the labyrinth, a fact to be borne well in mind during operation. That phlebitis of the sigmoid sinus is not unfrequently the medium is also of practical importance in eventual surgical interference. Otogenic meningitis is, in other words, often combined with suppurative otitis intima and with sinus phlebitis, the two latter being often primary in relation to the meningitis. It is, however, my impression that the suppuration of the middle ear now and then spreads explosively to all parts of the cranial cavity simultaneously, thus causing two or more intracranial complications.

As to the nature of the meningitis caused by otitis media, it must be observed that the term "meningitis" is here always used as an expression for "diffuse purulent leptomeningitis." Of this disease there is, in my opinion, but one trustworthy objective sign, viz., turbidity of the cerebrospinal fluid, emptied by lumbar puncture, caused by overproduction of round cells. I lay much stress on this objective sign, because an otitis media can cause all the subjective symptoms of a meningitis and also the objective signs, especially rigidity of the neck and the sign of Kernig, without producing a diffuse purulent meningitis—cases which are often classified under the term of "meningitis serosa." On the other hand, a few cases are reported in literature of abscess of the brain and of phlebitis of the sigmoid sinus with turbidity of the cerebrospinal fluid, in which the postmortem examination did not reveal any macroscopic signs of purulent leptomeningitis. I consider these few cases, however, as cases of diffuse purulent meningitis, in which the meningitis has been cured prior to the death of the patient.

Symptomatically otogenic diffuse leptomeningitis may be described as an acute febrile disease with "diffuse" brain symptoms, restlessness, insomnia, irritability, alternating with drowsiness, delirium, etc. "Focal" brain symptoms are, however, very frequent, viz.:

Ocular: nystagmus—often, though of labyrinthal origin—spasms and pareses of the muscles of the eyeball (double vision, squinting, conjugated deviation).

Facial: Paralysis of the facial nerve.

Relating to the extremities: Jackson's epilepsy, hemiplegia, etc.

The appearance of "focal" brain-symptoms, caused either by disturbances of the circulation in the surface of the brain or by diffuse encephalitis, often gives rise to a false supposition of the existence of an abscess, rendering diagnosis extremely difficult.

The objective signs are: Vasomotor disturbances of the skin (pallor alternating with redness of the face, "taches cérébrales," the sign of Trousseau, hyperesthesia, etc.), irregularity of pupil action, and rigidity and contraction of groups of muscles causing rigidity of the neck and the sign of Kernig. I have, however, observed three cases of otogenic meningitis in which neither of the two latter symptoms were present, although the patients were under observation up to the time of their death.

Changes of the fundus of the eye are not frequent in patients with otogenic meningitis. In twenty-four consecutive cases observed by me only four presented choken disc or optic neuritis.

The fever is seldom low (about 100 F.); in exceptional cases there may, however, be no rise of the temperature in the beginning of the disease. More frequently, and especially during the onset of the meningitis, it is very high (about 104) and the affection then often assumes the appearance of an acute infectious disease (pneumonia, typhoid fever, influenza), from which it may be difficult to distinguish it. The temperature is, however, generally only moderately raised, varying from 101 to 103. Even in cases complicated with sinus phlebitis the fever hardly ever assumes a pyemic type. The pulse is generally quick, and not infrequently irregular.

Albuminuria appears now and then.

The diagnosis of otogenic meningitis is often difficult. First, it may be difficult to decide whether the meningitis is due to the otitis media present or whether the latter be an accidental complication. In such, by no means rare, cases, the circumstance that the affection of the brain has developed some time after the ear disease is all that speaks for a connection between the two: for, in my experience, acute suppuration of the middle ear rarely produces meningitis before it has lasted a week or more, the time in the cases I have observed varying from three days to five months. In other words, otogenic meningitis does not generally appear until after the infectious agent has acted for some time on the soft membranes of the brain. There is, furthermore, reason to believe that there is a stage of the otogenic meningitis in which the subjective and objective symptoms of the meningitis may be fully present, but in which the pathologic changes produced by the diffuse purulent leptomeningitis may be as yet undeveloped. This stage Körner, the eminent German otologist, to whom we are so much indebted for his contributions to the pathology of the otogenic intracranial complications, calls a preliminary stage (*Vorstufe*) of meningitis. I would rather suggest the term "initiatory stage of meningitis," as I include under this head only cases in which the cerebrospinal fluid has already become opalescent. This is of practical importance, inasmuch as it gives us a right to hope for a successful operative treatment even in cases where all subjective and objective signs of meningitis are developed, if only the operation is performed early.

Second, the diagnosis of meningitis in cases of chronic or acute suppuration of the middle ear is often very difficult, for otogenic meningitis may simulate or may be simulated by "meningeal irritation" or "meningismus" without any organic disease of the brain, by pneumonia and other acute infectious diseases (typhoid fever, septicemia, influenza and malaria), tuberculous meningitis and by other otogenic intracranial diseases.

True meningitis differs from the series of symptoms called "meningeal irritation" or "meningismus," i. e., the well-known meningeal symptoms often appearing in children and young persons during the course of an acute otitis media, inasmuch as meningitis generally (1) appears some time after the onset of the ear disease, (2) starts with great suddenness and intensity, (3) may exist without symptoms of retention or of mastoiditis, (4) runs its course with increasing rapidity and intensity of the symptoms (a circumstance on which I lay much stress, and which has not been sufficiently recognized), and (5) does not occur in infants, in whom "meningeal irritation" often appears.

Tuberculous meningitis differs from meningitis due to otitis, inasmuch as tuberculous meningitis generally (1) is secondary to other tuberculous manifestations, (2) begins with a preliminary stage, (3) runs with less violent symptoms, and especially with a lower temperature, (4) exhibits "focal" brain symptoms more frequently than otogenic meningitis, and (5) is very rare in persons over the age of forty.

Typical otogenic cerebral abscess differs from meningitis due to otitis in the following points: Cerebral abscess has (1) a distinct prodromal stage, (2) slower development of the symptoms; further (3), often exhibits "focal" symptoms, (4) produces slow cerebration and slow pulse.

All subjective and objective signs may, however, lead to a wrong diagnosis, excepting only turbidity of the cerebrospinal fluid emptied by lumbar puncture. I lay great stress on this procedure as a diagnostic agent, having used it in my hospital over a hundred times without ill effects, and in several cases it has been the only way in which a correct diagnosis could be obtained. A further proof of the importance of this diagnostic agent is that, in some of these cases in which lumbar puncture was dry or the fluid mixed with blood, no correct diagnosis could be arrived at until postmortem.

In cases of meningitis of aural origin the cerebrospinal fluid is more or less opalescent in the first stage of the disease, becoming more and more milky in appearance, and at last puriform. Under the microscope numerous round cells are always found and nearly always an abundance of polynuclear leucocytes. Bacteria are generally present, but I have seen a few cases in which no bacteria appeared even immediately before the fatal end of the disease.

Clear cerebrospinal fluid does not, however, with certainty exclude meningitis, as it always takes some time for the fluid to become opalescent. In three cases of postoperative meningitis observed by me more closely I found in one case that the cerebrospinal fluid was still normal twenty-four hours after operation, in another it was turbid twenty-six hours, and in the third thirty-six hours after.

If, then, in the first stage of meningitis the puncture yields a clear fluid, it is necessary to repeat it once or twice to be certain.

In cases of tuberculous meningitis the cerebrospinal fluid is generally only slightly opaque, often containing small flocculi of fibrin. The cells are nearly all mononuclear, and bacteria are seldom found. In a few cases I found bacteria which in the earlier stages of my experience led me to the false belief that I had to do with otogenic meningitis. Tubercle bacilli are sometimes present.

The therapeutic value of lumbar puncture is in my opinion almost nil.

Besides lumbar puncture there are two diagnostic agents of value, viz., examination of the hearing and of the static part of the labyrinth. The first examination consists in proving whether there is any hearing in the affected ear or not, total deafness speaking in favor of a labyrinthine suppuration with secondary meningitis. The best method is to apply the noise-apparatus of Barany in the healthy ear and then to examine whether the patient hears the speaking voice with the diseased ear. This method is, however, often difficult of application when the patient is a child, or when there are more pronounced brain disorders. This objection does not apply to the examination of the static function of the labyrinth. It is performed by syringing the diseased ear with cold water (50° F.); if the static part of the labyrinth is destroyed, no nystagmus is produced, while in cases in which this part is intact the eyeball makes small jerks toward the opposite side, especially when the patient's eyes are turned in that direction. The destruction of the static part of the labyrinth points to meningitis produced by suppuration of the inner ear. A functional examination of the labyrinth can also be useful in cases where both ears are diseased, the ear in which the labyrinth is destroyed being the probable cause of the meningitis.

Havnegade 31.

DISPOSAL OF SPUTUM

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For some time past I have given considerable attention to the disposal of sputum, and the idea has very strongly impressed itself on me that we are altogether too careless in disposing of this dangerous factor as regards health, especially in workshops where large numbers of persons are employed and in conjunction with hotels, saloons, barber shops, railway stations, public buildings, etc.

Signs will be found displayed in almost every town and city of the United States which caution persons not to spit on the floor, but in cuspidors, even invoking legal penalties for failure to observe the injunction. Yet the methods for the disposal of the contents of these receptacles are very faulty in a good many instances.

Persons with incipient and ill-defined cases of tuberculosis, as well as those suffering from this disease in its later stages, during their daily ambulations and at work at their respective vocations, use the same cuspidors to receive their expectorations as those used by uninfected persons, making the handling and disposition of the sputum a constant and ever-present source of danger to the cleaner (see high mortality from tuberculosis among servants in census reports), as well as to the community in which the factory, hotel, or public building is situated. The observing person will find that these vessels are cleaned near drinking-water places, or roughly dumped on the streets or yards adjacent to such buildings, or in the respective basements or cellars connected therewith.

The type of cuspidors in use at the present time in the great majority of cases appear to be faulty, very little attention evidently having been paid to ease and thoroughness of cleaning. The principal fault in the majority of this type and class of vessels on the market is the undercut found just below the constriction or neck. It is at this point that expectorations are received on the inner flare or side of lip; they run under this shoulder or undercut and remain lodged or fixed there. The repulsiveness of the cleaning operation almost prohibits the cleaner from placing his hand or even a sponge under this point for the proper removal of expectorations.

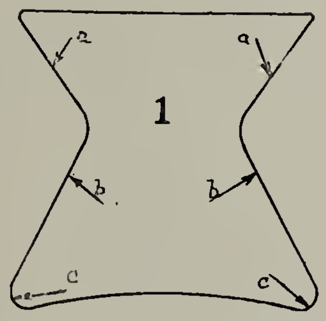
While, of course, the moist tubercle bacillus can not be readily transported by currents of air, yet it is viable and sooner or later dries in one manner or another, and is easily transported.

While breaking into several parts a number of cuspidors constructed along the lines of pattern shown in Figure 2, which were picked up in various quarters of cities, I found incrustations in some instances one-half inch in thickness, and from a dry to a semi-solid consistency, but, without exception, all in a putrid condition, and furnishing a most fertile culture media.

In designing the type of cuspidor shown in Figure 1 and now adopted by this branch of the government I have tried to avoid all the objectionable features found in the older styles, of all shapes, some of which are very ornate, but all showing, more or less, that very little thought had been given to the proper and thorough cleansing of such receptacles.

The sharp flare or lip shown in Figure 1 is intended for quick drainage into solution placed within vessel and hereinafter described. Sufficient constriction has been left at the neck partially to hide the contents in the cuspidor for esthetic reasons; yet the opening permits all parts of the vessel to be placed under observation as to thoroughness in cleaning.

The undercut or deep shoulder has been avoided in the type shown in Figure 1, which permits easy, rapid cleaning with a cotton dish-mop and boiling water in the absence of special facilities for such specific cleaning. The bottom of the cuspidor shown in same figure is slightly convex and in continuity with the round sanitary corners or coves, all with the special object in view of self-drainage and easy, effective cleaning.



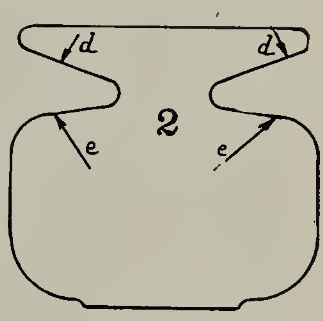


Fig. 1.—Self-draining sanitary cuspidor. Note sharp flare (a) to drain quickly, absence of undercut (b), and rounded corner (c) continuous with convex bottom.

Fig. 2.—Insanitary cuspidor. Note flat flare (d), which is slow in draining, and sharp undercut or shoulder (e).

In the general system that has been adopted, illustrated, and presented herewith the cleaner picks up the soiled and infected cuspidors from the floors of the work-rooms in a nested fashion five at one time, after a manner shown in Figure 3, by a specially designed sanitary lifter or clutch, made of two pivoted members surrounded by a guard and surmounted by a handle and a simple locking device to relieve the constant pressure of the hand when the loaded lifter is to be carried any distance. The idea of this device was first conveyed to me by the obstetrical forceps, from which it is an evolution, so to speak.

The cuspidors are then carried by the same lifter to a box truck, shown in Figure 3, which is lined with galvanized sheet iron, and are deposited, still nested, between gas-pipe standards that are threaded and screwed through the bottom of truck to ensure rigidness, such uprights preventing the tipping of vessels, and also permitting the easy entrance of the lifter to pick up five sterilized cuspidors contained in same truck, at the same time that the five infected or soiled vessels are deposited. This permits their being laid down or distributed by the same instrument in the place of those picked up, serving, additionally, as a time-saving procedure.

After the trucks are filled in this manner, on each floor, they are wheeled to a freight elevator and dropped to the basement, where is situated the sterilizing chamber, shown in Figure 4.

The truck is wheeled directly into the chamber and up near the edge of trough; the side of the box truck is then removed, and the operator, as shown in Figure 4, seizes the lip or flange of the soiled and infected cuspidor with a short pair of hand forceps, lifts the vessel clear of the gas-pipe standards fastened to the bottom of the truck, and plunges the cuspidor into the boiling water in the trough, and, at the same time, with a pronation of the forearm, overturns the vessel *under* the water.

By this method the entire contents escape into boiling water, which cooks or coagulates the albumin in the micro-organisms, if such be present, and at the same time renders sterile other material before passing through the outlet, which is simply a pipe, surmounted by a wire tripod, between the wires of which boiling water flows constantly, and which thus permits the easy escape of all material under 1½ inches in diameter, but stops banana-skins, apple-cores, etc., that would otherwise clog the pipe leading to sewer, which is 3 inches in diameter.

Still grasping the flange or lip of cuspidor after it has been overturned in water with the short forceps before described, the operator swings the now upright and roughly cleaned cuspidor forward under a jet of live streaming steam, which is released by pressure on a foot tread, the posterior part of which is connected with a chain to a lever in the side of an inverted steam whistle valve which it controls, and which promptly closes the instant the pressure of the foot is removed from the tread, thus shutting off the jet of steam in an automatic manner. Figure 4 shows the first cleaner and this mechanism in action; and at the rear end of the trough the other cleaner is shown, who has completed the procedure just described and is about to thrust the now sterile cuspidor into rack clutch, still grasping the short forceps containing cuspidor. When sticky or tenacious material persists in clinging to vessel and the jet of steam fails to dislodge the débris, it is instantly removed by a hand dish-mop suspended by chain to rack and which is allowed to fall back in the boiling water after it has been applied by the other hand of the cleaner to remove substance on surface of cuspidor. The mop is therefore always sterile, within easy reach, and readily picked up by the chain attached to the handle (R) by the disengaged hand of the cleaner.

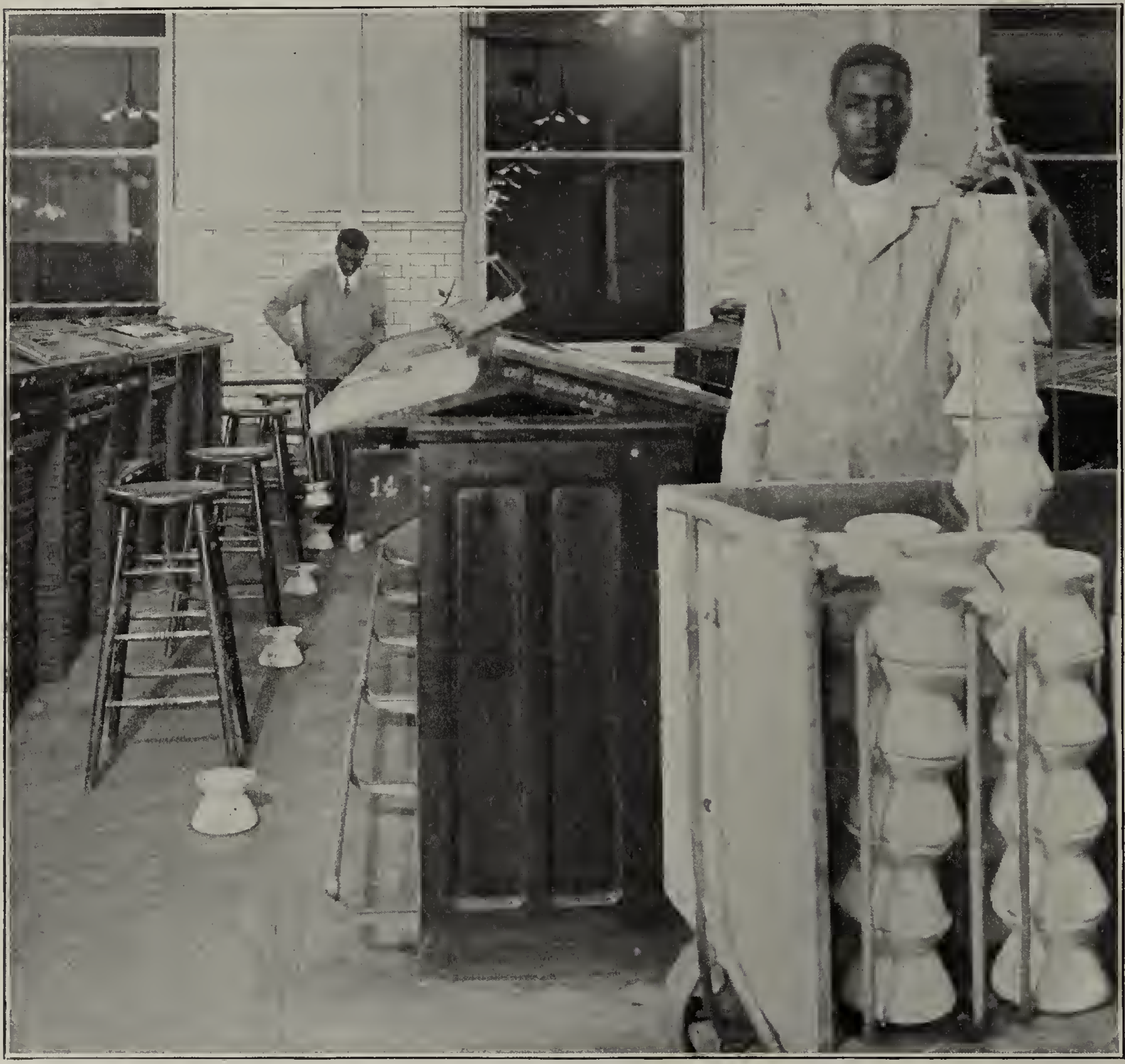


Fig. 3.—Method of collecting cuspidors from floors of work rooms.

In Figure 5 the truck is being refilled by one cleaner, who is plucking the thoroughly washed and sterilized vessels from the spring clutch on the rack for this purpose. As each layer is placed in the truck previous to its transmission back to the work-room the other cleaner is pouring, from an ordinary hot-water can, a solution of potassium permanganate of a strength approximately 1 to 2,000 into each cuspidor, to the amount of four ounces, where the solution remains until the vessels are next cleaned at the termination of each eight-hour shift, and thus receives and disinfects the sputum between stated cleaning periods.

At first I used a solution made up for this purpose of corrosive mercuric chlorid 7.3 gr., citric acid 7.7 gr., eosin coloring q. s., to each gallon of water, giving a strength of approximately 1 to 8,000. The mercuric chlorid was used, of course, for its germicidal properties, the citric acid[1] to retard the coagulation of the albuminoid substances found in expectorations and to prevent the formation of insoluble albuminates, thus permitting the bichlorid to permeate the mass more thoroughly. The eosin was used simply for purposes of differentiation from harmless liquids for safety in handling.

Fear of persons drinking the solution with suicidal intent and of cases of accidental poisoning among the cleaners, however, caused me to substitute potassium permanganate 1 to 2,000 as a cheap, practical, nontoxic, easily prepared, odorless disinfectant, as well as a germicide, in lieu of the former solution. I still use the bichlorid, however, in the strength of 1 to 1,000 to scour water-closet seats at the end of the day's work, and in the form of a spray of the same strength on the floors after the latter are scrubbed, allowing the solution to dry out with the damp floors. This method is better than to use the bichlorid in the wash-water, where it is precipitated as chlorids, owing to the dirt, etc., in the water.

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[1] Egbert in his text-book on hygiene was the first to draw attention to the use of this agent in preventing rapid coagulation of albumin.

The Government pays but 14 cents per pound for the potassium permanganate salts, and ten pounds only are used for an entire year's supply for the purpose mentioned in the building, where upward of 4,500 persons are employed under one roof. It is made up in a fresh state each night in the cans shown in illustration.

The expense and the possible objection to its pungency renders the use of formalin in a large way impracticable. Saturated solutions made up of chlorid of lime, while cheap and efficient, are objectionable on account of the odor. Solutions of carbolic acid, strength 1 to 40, are objectionable on account of odor and toxic properties in any buildings aside from institutions and hospitals. Yet, as is well known, all are efficient and practical if suitable and indicated by each particular instance.

While a great many patented antiseptics are on the market together with proprietary preparations with high-sounding, euphonious titles, the majority of them are expensive and mask the indications of putrefaction by their own particular odors, and do not always remove the cause. Their effectiveness, for this reason, in a good many instances is questionable.

Experience in dealing with the different temperaments and idiosyncrasies of a large number of persons gathered together for stated periods of time each day has taught me that it is a very difficult matter to please all, especially as concerns odors, although there may be no real basis for complaints.

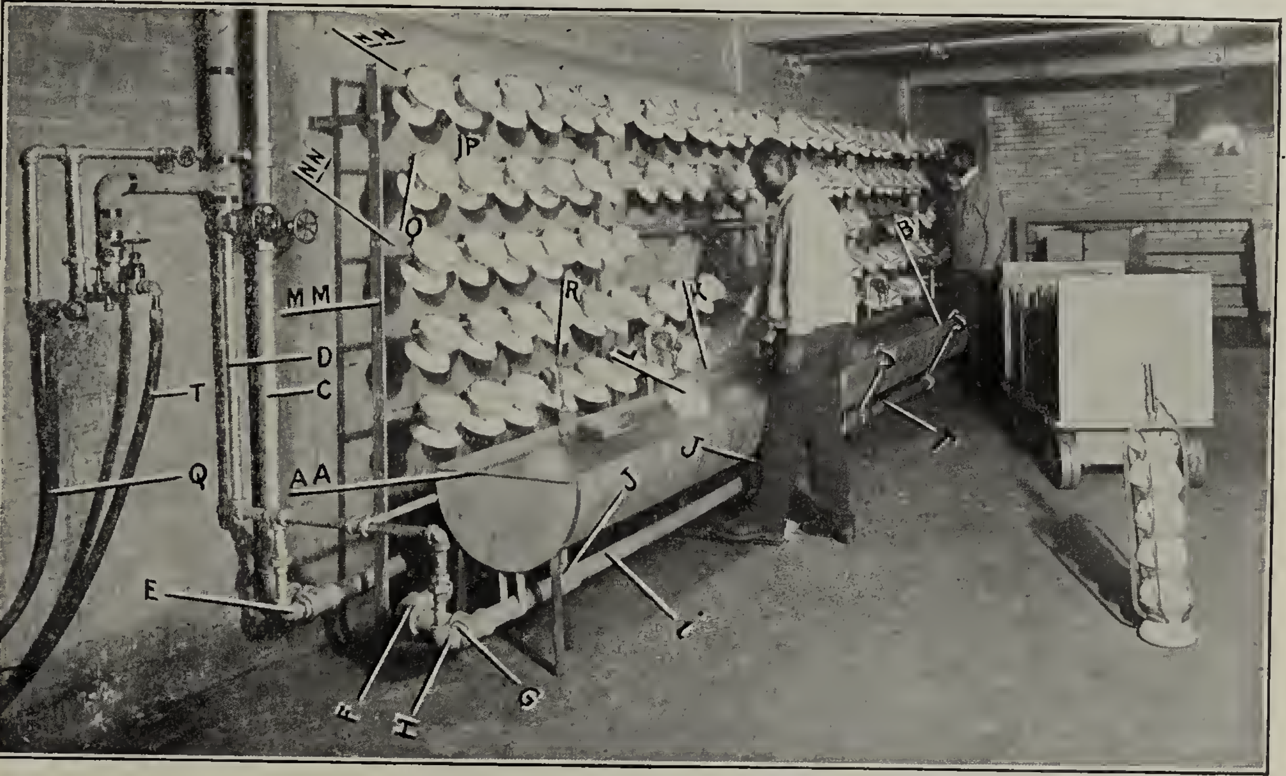

Fig. 4.—Sterilizing chamber in basement and method of unloading trucks together with procedure in washing and sterilizing the soiled and infected cuspidors. (See text for explanation of the apparatus.)

The general view of the sterilizing chamber shown in Figure 4 will be here dwelt on to some extent regarding details. The galvanized iron trough (AA) is made up of 22-gauge galvanized sheet iron, the sections being riveted together and all joints soldered. It is smaller at the fore end to permit of easy drainage toward the opening for the pipe (B) leading from the trough to the sewer. The trough rests on band iron strips, cradle fashion, terminating, on each side, by an extension bent at right angles, forming a web foot that is embedded in the cement floor after being secured by expansion bolts that ensure rigidness. The cold-water pipe (C) leading from the street main is placed at the end of the trough leading down from the wall of the room. Running parallel with it is one-inch steam-pipe (D). At the point marked E, by means of a ⅜-inch nozzle, the stream of cold water is mixed with steam, which raises the temperature to about 110 F. The then heated water continues on its way, and, by means of a short turn or bend (F), some three feet in extent, makes its return to point G, whence the partially heated water is again mixed with the jet of steam from the ⅜-inch nozzle (H), at once raising the temperature to 212 F., or the boiling point of water. This method avoids the noise and "knock" of a direct jet of steam thrown into a body of water. It produces boiling water in from six to eight seconds, and maintains it always at the boiling point. Nozzles are within the pipes mentioned.

The boiling water continues along the pipe (*i*) and emerges through the pipes marked JJ up into the trough by a fountain effect (K). As the water, by street pressure only, is thus forced up, the "wash" penetrates through a wire-mesh soap-pocket placed against the inner side of the trough (which does not show in the illustration), wherein is placed a bar of common washing soap, which procedure results in soap-suds with boiling water.

At the rear of the trough is placed a rack (MM) constructed of angle-iron or made of sectional gas-pipe, as the case may be, supported by vertical braces, in addition to parallel cross-pieces (NN) placed 14 inches apart, and perforated by holes every 10 inches, through which pass ⅛-inch flat-headed carriage bolts, running through the eye of the rack clutch (O) and secured by nuts on top of the cross-pieces (P). The rack clutches are made of ⅛-inch steel spring wire and are held rigid by a bolt through the eye formed by twist in loop of spring or clutch. Figure 4 shows one operator about to thrust a vessel into the clutch, which expands to receive it and then contracts around the constriction or neck holding cuspidor firmly, mouth down, for drainage. The vessel dries very quickly by evaporation owing to heat imparted to cuspidor by the boiling water.

The rubber hose at the point marked Q is utilized for flushing the trough after the cuspidors have been cleansed and for freeing the bottom of the trough from tobacco quids, débris, etc., and such sediment as remains after water has been allowed to drain through the waste outlet to the sewer controlled by a valve; the short pipe (B) with wire tripod being removed to allow the trough to drain flush to belly of bottom. The hose (T) is used to "blow" or conduct live, streaming steam in sterilizing inside of empty trucks before reloading, previous to transmission back to floors.

The trough in the sterilizing chamber and the hose (T) are also utilized in washing and sterilizing garbage-cans, some forty-five in number, placed at various points on floors of building to receive litter, food débris, fruit-skins, etc., of the employés. The cans are specially made of heavy galvanized steel, 20 gauge, with tightly fitting covers and convex bottoms to permit easy cleaning, and otherwise so constructed that the base of each can is smaller than the top or mouth, which permits their nesting within each other to aid rapid collection and to save space upon flat truck that can be made to hold twenty in the manner described but only four if the cans did not permit nesting.

Each day, just after lunch, a cleaner starts at the top floor of the building with truck and drops from floor to floor by means of a freight elevator and collects the cans at the various points by wheeling the truck near their respective positions to expedite and permit easy handling.

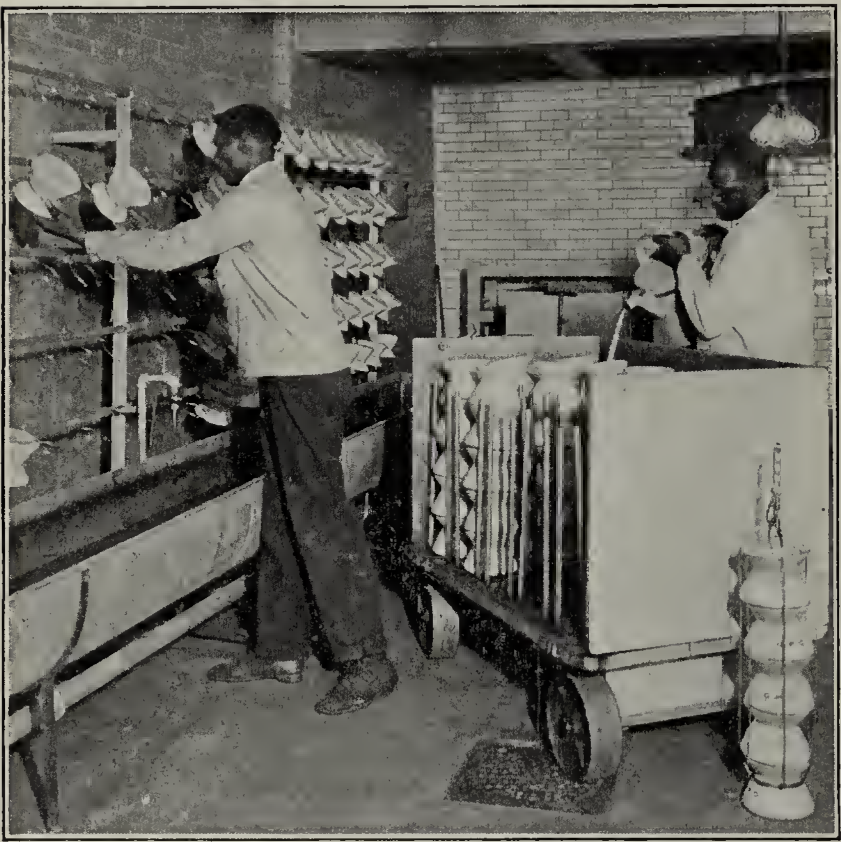

Fig. 5.—Method of placing solution in cuspidors and reloading trucks.

The cans are then roughly cleaned by being wheeled to and the contents being emptied into the crematory, again "nested," and taken to the trough in the sterilizing chamber, where they are immersed and washed in boiling water by means of a sawed-off mop-handle and floor mop, which I have found to be very practical for this purpose. Each can is then removed in turn from the trough and placed under the hose (T), which conducts live, streaming steam into each can by means of the manipulation of the hose by the cleaner. The cans are then nested again and removed back to floors. This method leaves a can cleanly and without disagreeable odor.

The cans are numbered consecutively and lettered for respective floors in red lead paint that withstands obliteration from the action of boiling water and repeated washings.

The floor of the room is composed of cement, graded toward the center, at which point is placed a cesspool trap, which permits rapid self-drainage and drying after the floor is flushed with hose (Q), and which is connected with sewer, thus insuring neatness and cleanly conditions.

Fourteen hundred cuspidors of the pattern shown in Figure 1 are washed and sterilized in the manner hereinbefore described at the termination of each working shift of eight hours.

Many of the employés use tobacco, which excites salivation, and their duties are of a sedentary nature and within a comparatively small one of floor space, which explains the great number of receptacles required.

Previous to the introduction of this method, about one year ago, sawdust spit-boxes were used, but they were insanitary and very dirty from the fact of the sputum collecting or "caking" on the sides, and the cleaning was very difficult, dangerous, and inefficient. Some idea of the magnitude of this work may be gained when the fact is stated that under the old system 400 barrels of sawdust were used each month, at a total cost of $100, to receive the sputum in the boxes.

The system appears to have its educational features along hygienic lines also, and, aside from promoting the health of employés, teaches, by practical illustration, a lesson in hygiene as to the care taken and of the danger of contact that must of necessity leave its impress on those observing its work, for it will be noticed that with the exception of the period during which the cleaner plucks the sterile vessel from the rack for purposes of reloading, as already described (Figure 5), the whole procedure from beginning to end is accomplished without digital contact. The educational feature mentioned was always before me while evolving the system, and served, in a measure, as a stimulus.

While, of course, the conditions shown by pictures of the sterilizing chamber are almost ideal, as befits a great government institution, yet without a special room a splendid substitute can be obtained in the corner of any basement in factory buildings, hotels and public buildings elsewhere in the United States at the cost of a few dollars, for it will be noted that the fittings and equipment are very simple.

It will give me great pleasure to answer any question pertaining to further details in reply to those persons who might be interested, after reading this article, in fitting up similar systems in their own factories, workshops, and public buildings by their own plumbers and steam-fitters, and I have given considerable space to complete details with that object in view.

While at the onset there were many prejudices and opposition to things new and which had to be overcome when I first broached and explained the method, yet by the special gold medal awarded this bureau for the exhibit of sanitary cuspidors, devices, and methods at the International Congress on Tuberculosis I have been amply and fully repaid for any thought, work, or experiment given on my part as concerns the system.

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Abuse of Heart Tonics in Valvular Lesions.—J. V. Montenegro of Madrid publishes an article in the *Siglo Medico*, May 8, 1909, laying down the principle that iron should be given in valvular lesions of endocarditic origin and iodid when they are due to arteriosclerosis. Many treat them all alike, however, giving digitalis at once, without stopping to analyze the cause of the disturbances. He urges the general practitioner to beware of such abuse of heart tonics, advising him to use iron or potassium iodid according to the above indications while studying the case further, and to give the digitalis intelligently if at all.

THE SURGICAL TREATMENT OF CERTAIN DEFORMITIES OF THE JAW ASSOCIATED WITH MALOCCLUSION OF THE TEETH*

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With the development in orthodontic practice it is surprising that so little advance has been made in the surgical treatment of prognathism, receding maxilla and other marked deformities of the jaw producing malocclusion. In the main the text-books on oral surgery contain no reference to the subject and little is to be found in modern treatises of surgery. In Von Bergmann's elaborate "System of Surgery," however, four lines relate that in a successful attempt to improve the deformity of a receding chin, Von Bergmann made an extensive resection of all of the processes, including the coronoid process, and subsequently displaced the entire jaw by the aid of an artificial dental apparatus.

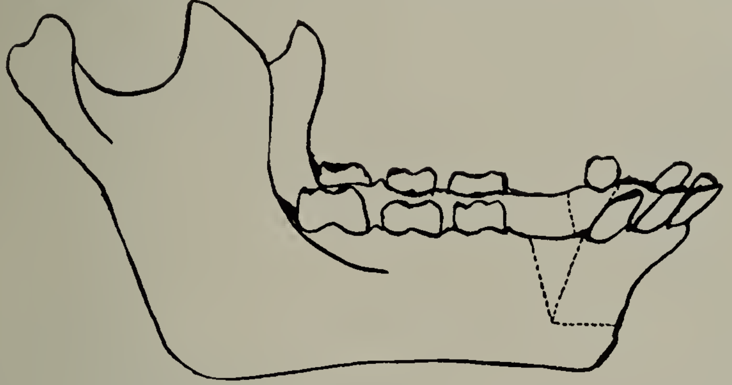

Fig. 1.—Diagram showing the osteoplastic resection of the lower jaw performed by Hullihen, July 12, 1848. The dotted lines indicate the lines of bone division with the saw. The triangular sections were removed from each side and the mobilized anterior segment of the jaw tilted back into occlusion.

HISTORY OF THE SUBJECT

Over sixty years have lapsed since Dr. S. P. Hullihen,[1] of Wheeling, Ga., successfully devised and performed an osteoplastic resection of the jaw, yet the modern works on dental practice and orthodontia mention but a single operation, and that similar in principle to this one of antebellum days. Dr. Hullihen's patient, a girl of 20, had an eversion of the lower lip with elongation of the lower jaw and protrusion of the process and lower incisors from the constant traction of a scar from a burn of the neck received fifteen years previous. Although an unsuccessful attempt to improve the condition had been made by two surgeons in New York City, Hullihen, without anesthetics, at a time when hemostatic forceps and antiseptics were unknown, boldly resected V-shaped sections from each side of the jaw, the section on the left side including the bicuspid. The V-shaped sections extended two-thirds of the way, through the bone, the apices being below. From the apices of the incisions the saw was turned horizontally forward, completing the section and leaving the upper two-thirds of the anterior portion of the mandible attached to the soft tissues only (Fig. 1). The removal of the V-shaped sections of bone permitted this loosened portion of the jaw to be pushed back, securing occlusion with the upper teeth (Fig. 2). From an impression taken in soft wax a silver plate was struck up which when applied held the section of the jaw in proper position. After this operation the tissues rapidly healed and Hullihen later transplanted a large flap of skin from the shoulder and upper arm to the neck to enable the head to be raised, and finally, by two further operations, corrected the eversion and deformity of the lower lip. Although these extensive operations were successful, nearly fifty years elapsed before a second bilateral resection to improve a

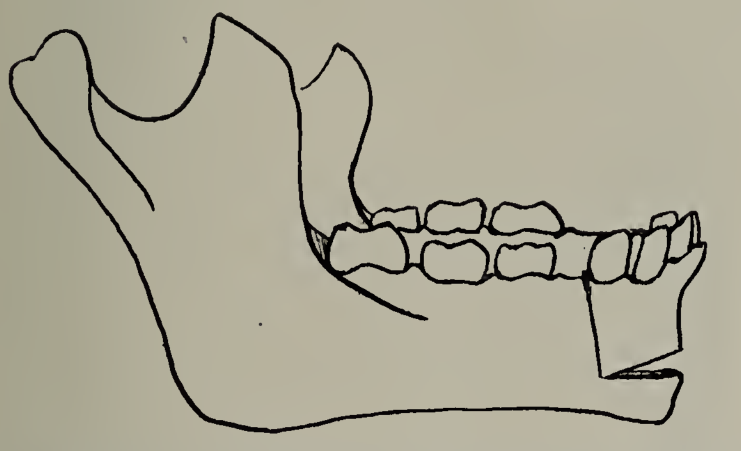

Fig. 2.—Diagram illustrating how the mobilized anterior segment was tilted back into occlusion in Hullihen's operation. This segment was held in position by a silver interdental splint. The nutrition of the separated portion of the jaw was maintained through its attachment to the lip. Similar types of operation are applicable to the upper jaw.

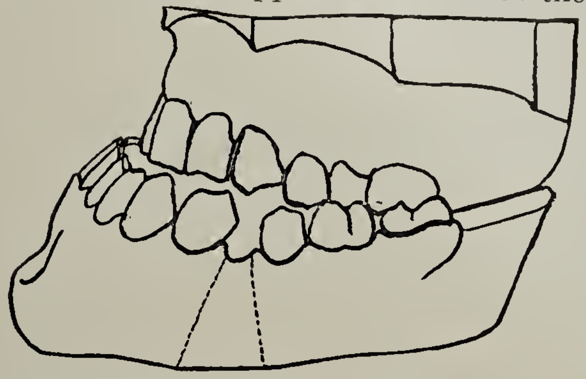

Fig. 3.—Diagram showing bilateral resection of the lower jaw advocated by Angle. A segment equal to that between the dotted lines is to be removed from each side of the jaw permitting the anterior part of the jaw to be brought into occlusion. The shape of the segments removed is to be modified by the conditions present in the particular case. Blair removed quadrilateral segments.

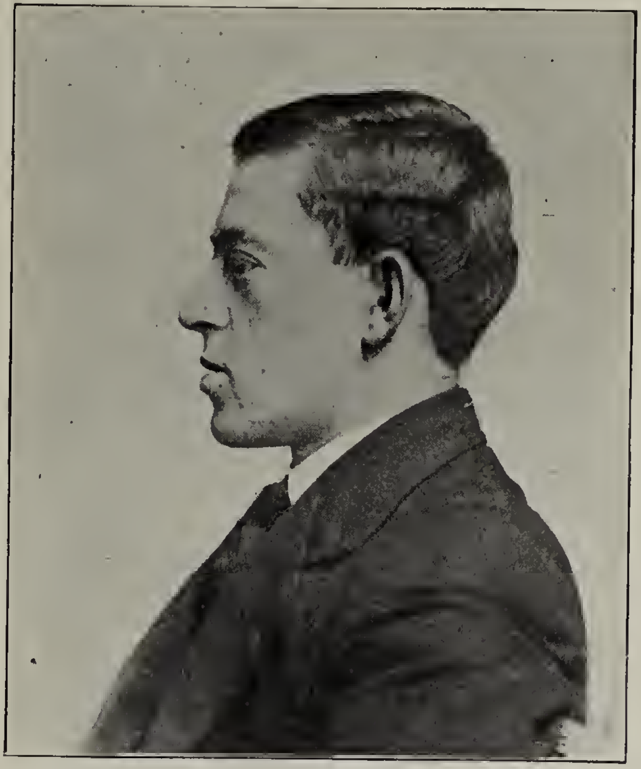

Fig. 4.—S. K., previous to operation, showing profile the result of inferior prognathism and malocclusion.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] Hullihen, S. P.: Case of Elongation of the Jaw and Distortion of the Face and Neck Caused by a Burn Successfully Treated, Am. Jour. Dent. Sc., 1849, p. 157.

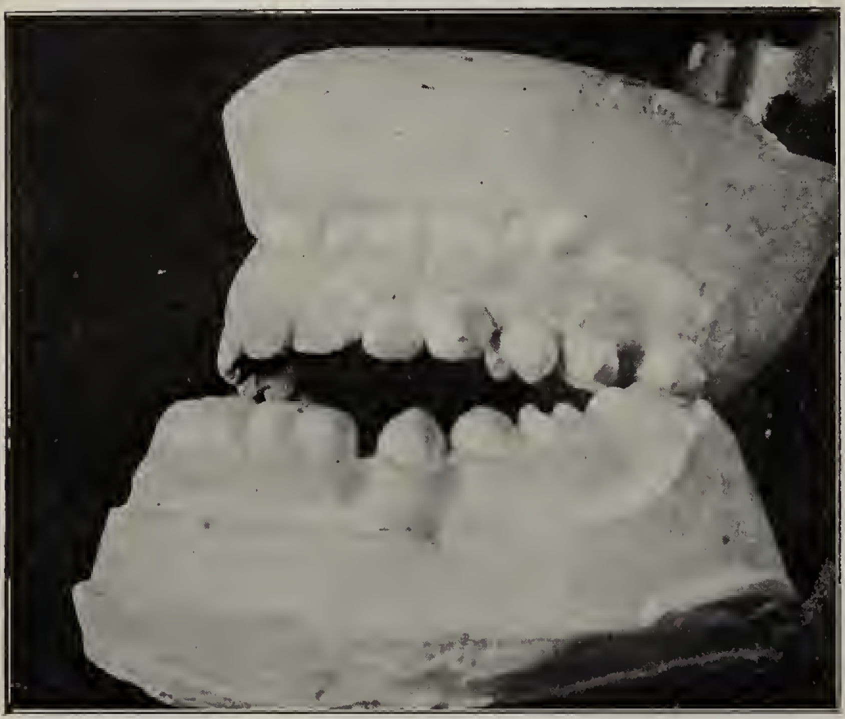

Fig 5.—Model showing malocclusion in the case of S. K., left side.

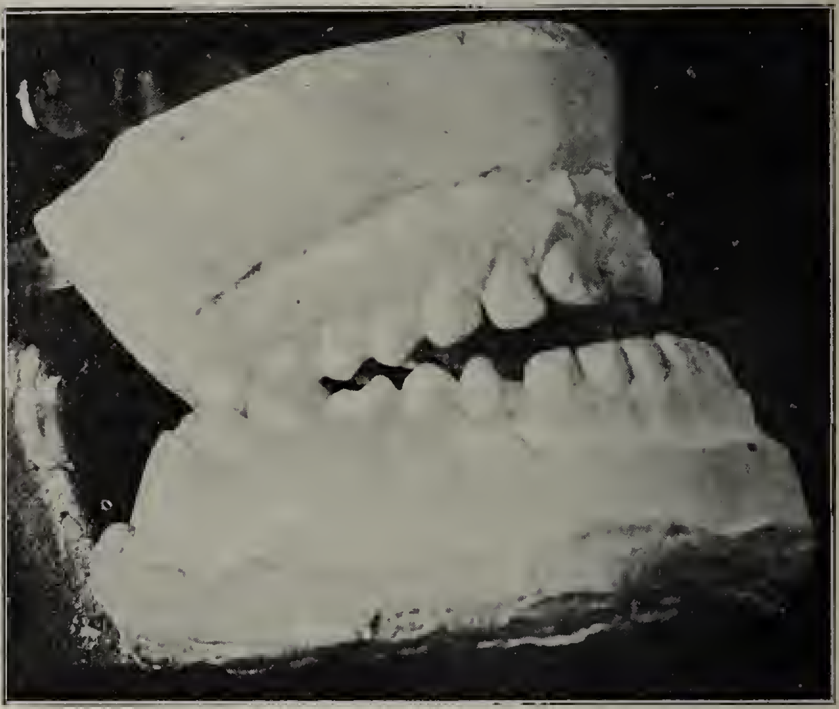

Fig. 6.—Model showing malocclusion in the case of S. K., right side.

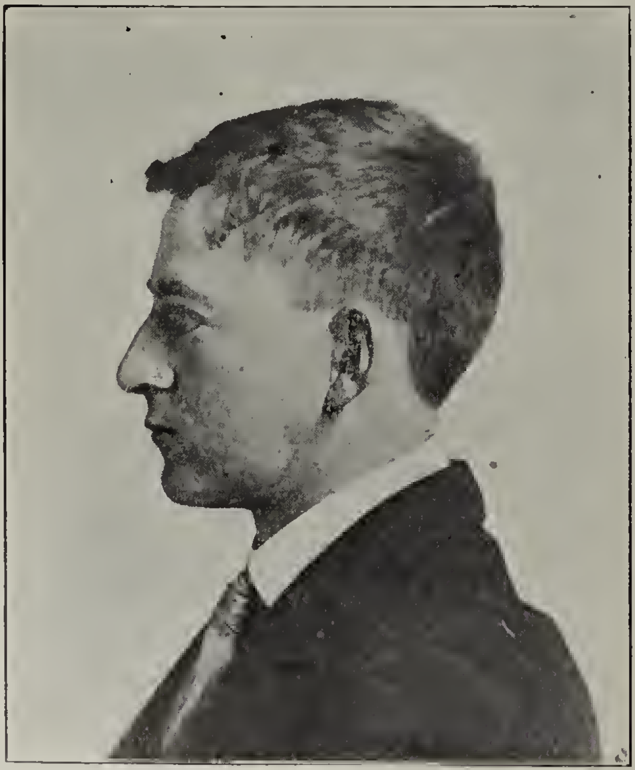

Fig. 7.—S. K., four months after section of both rami, showing change in profile. The scar from the incision is shown.

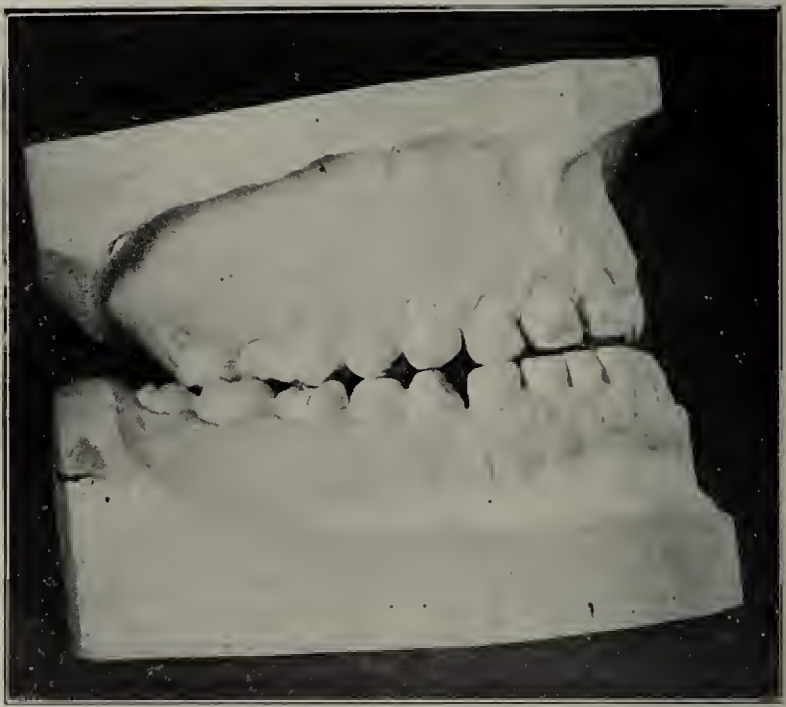

Fig. 8.—Model showing occlusion in the case of S. K., four months after operation.

deformed jaw was undertaken. The patient, a young man with a progresssive type of prognathism, under the care of Dr. James W. Whipple, of St. Louis,[2] was referred to Dr. Edward H. Angle, who suggested a bilateral resection of the elongated portions of jaw between the first molar and second bicuspid on the right side and the first and second bicuspid on the left. A year later, in 1897, Dr. V. P. Blair performed this operation through angular incisions below the jaw. Despite imperfect retentive appliances, making it difficult to hold the fragments in proper position and the infection of the wounds, the patient, after nine very troublesome weeks, finally obtained bony union and marked improvement. Dr. Angle[3] in 1898 reviewed this operation and emphasized the importance of removing V-shaped or wedge-shaped sections of bone (Fig. 3) and of previously preparing from models accurate vulcanite or metal splints to hold the fragments in proper position. In these cases, Dr. Angle writes, "any orthodontic procedure is powerless to render improvement and the double resection becomes the only resort." The same operation was independently advocated in 1896 by Dr. R. Ottolengui,[4] to whom the idea was suggested, by observing a resection of the lower jaw for cancer. Since the time of Blair's operation double resection of the jaw has been performed but few times, and this apparently important subject has not been further developed by the orthodontist, while the surgeon, although interested in resections of the jaw for necrosis, tumor or ankylosis, apparently has not realized the field for surgical measures for deformities beyond the range of the usual orthodontic practice.

REPORT OF CASE

My attention was attracted to this subject by observing a patient whose history is as follows:

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[2] Double Resection of the Inferior Maxilla for Protruding Lower Jaw, Dental Cosmos, 1898, p. 552.

[3] Double Resection of the Lower Maxilla, Dental Cosmos, 1898, p. 635; see also, Bellin: Items of Interest, June, 1908, p. 422; Blair: Items of Interest, November, 1908, p. 829.

[4] Discussion, Union Convention, Rochester, New York, Dental Cosmos, 1897, p. 143; Fowler: Items of Interest, January, 1897.

Patient.—Samuel K., aged 18, family history negative. No serious disease of childhood was recalled. During the past two winters he had had recurrent attacks of tonsillitis, but apart from this and a slight cold, he has had no illness for ten years.

Examination.—The tonsils were large; there was a moderate increase of adenoid tissue in the nasal pharynx; the nasal septum was inclined slightly to the right, and there was a chronic rhinitis of the hypertrophic type. The patient breathed almost exclusively through the mouth; the palate was highly arched, the dental arches were symmetrical and the teeth fairly regular, although small, short and poorly developed. Only the third molars on the left and the second and third on the right side could be occluded, the minimal separation between the upper and lower central incisors being 7 mm., and the lower centrals being in a plane at least 5 mm. in front of the upper centrals. The chin was rather pointed and prominent, and the patient said that, although the teeth were probably never in good occlusion, the condition had progressively increased during the past four years. The lips were long and the teeth did not show in ordinary conversation, so that the patient had been repeatedly asked if the teeth had been lost. In smiling and in talking the lips tended to curl in over the teeth, producing an unpleasant expression. In talking the tip of the tongue rested against the lower lip instead of the teeth so that enunciation had a mumbling character resembling that of an edentulous person. The patient could not bite hard or thin masses of food except by introducing them far into the mouth. Mastication was very imperfect, the food being bolted after a slight attempt at mastication. The lips were kept almost constantly open except during speech (Fig. 4). The patient was moderately well developed, but the chest was long and narrow. He was constipated but did not complain of indigestion.

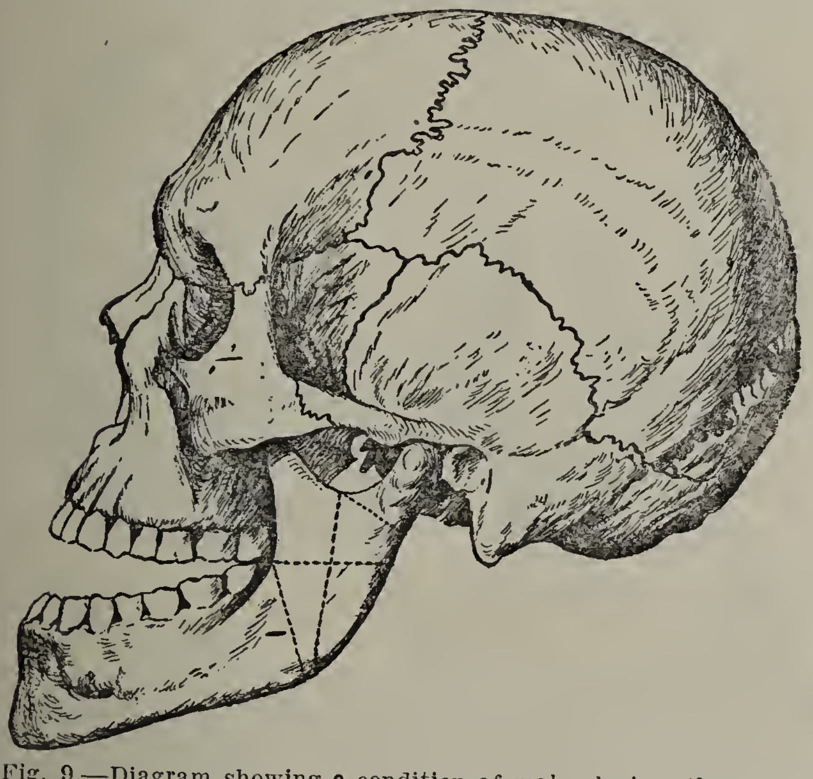

Fig. 9.—Diagram showing a condition of malocclusion, the dotted lines indicating various directions in which the ramus may be divided in order to overcome the deformity.

Choice of Measures of Relief.—The young man had presented himself for acne vulgaris, but the ugliness of the facial profile led me to examine the jaw and then to consider the possibility of surgical relief. At once it occurred to me that a section of both rami would be the operation of choice, but on investigation, to my surprise, I found no evidence that such an operation had ever been done previously. The patient was referred to Dr. S. H. Guilford to make sure that relief could not be obtained by any form of dental appliance. Dr. Guilford agreed as to the necessity for surgical intervention and suggested the operation of Angle. This operation seemed to me objectionable for the following reasons:

1. It would necessitate two compound fractures of the lower jaw.

2. At least one tooth with the adjacent process would have to be removed on each side, and in the removal of these two teeth the exposure of the roots of two adjacent teeth on each side of the mandible would be almost inevitable. Thus two teeth would be sacrificed, and four additional teeth placed in jeopardy.

3. The inferior dental canal with its vessels and nerves would be divided on each side.

4. The arch of the lower jaw would be broken into three portions, would be contracted and would require a special retentive appliance.

5. As the surface of bone would be exposed to the action of saliva and to infection in the mouth a greater or lesser degree of necrosis would be almost inevitable.

In one instance this operation was followed by loss of the mandible from necrosis.

The division of the inferior dental nerve seemed the least of these objections, as this nerve often reunites after division and even were the local anesthesia resulting from the division permanent the condition is not a very troublesome one. As contrasted with this operation a section through the ramus (1) would be free from dangers of a compound fracture within the mouth; (2) would not reduce the size of the dental arch or jeopardize any of the teeth; (3) if carried out above the level of the spine of Spix need not involve the inferior dental nerves or vessels; and (4), as the bone could be reached from without the mouth under aseptic precautions, the danger from aspiration would be slight even should suppuration or necrosis ensue. The septic fluids would be discharged externally and not pass into the mouth to be swallowed or be aspirated in the lungs; (5) the proper occlusion could be produced if necessary by external pressure through a chin-cup, if need were, without the use of any interdental appliance.

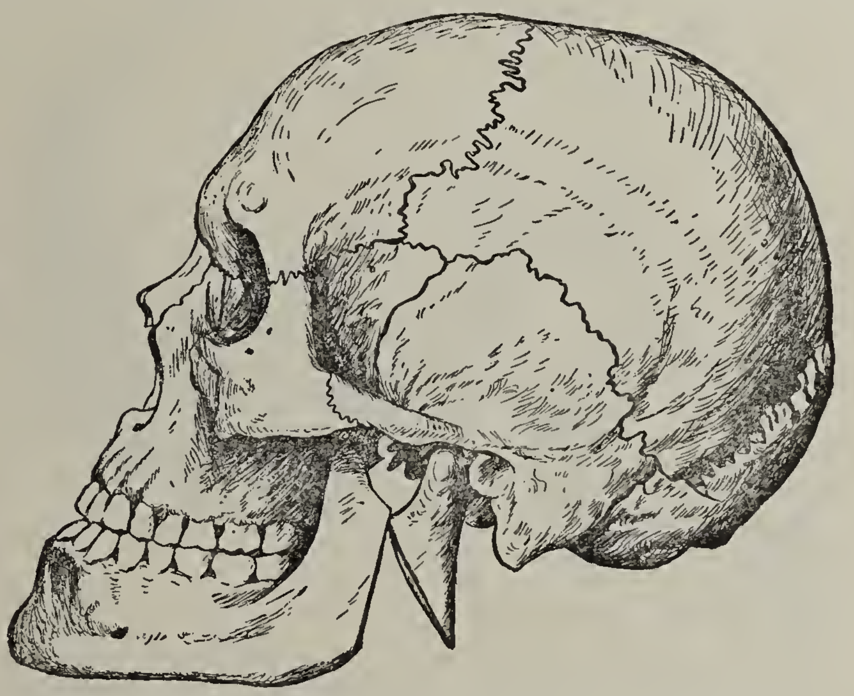

Fig. 10.—Result of a vertical division of the ramus. This line of section interferes with the leverage of the temporal muscle by approximating the coronoid and condyloid processes and tends to cause a marked posterior displacement of the lower part of the smaller fragment.

As an objection to a section of both rami, my attention was called to the narrow antero-posterior diameter of the pharynx, and the danger of producing suffocation by carrying the lower jaw and the attached tongue backward. As the support of the hyoid bone would not be changed by the operation, and as it seemed to be quite feasible to reproduce the deformity should signs of suffocation follow from the procedure, the following operation was undertaken:

Operation.—The patient was narcotized by scopolamin-morphin reinforced by a small amount of ether, Dec. 5, 1908, and an incision carried through the skin and subcutaneous tissue over the posterior border of the ramus of the jaw from the zygoma to a point under and anterior to the angle of the jaw. This incision was not carried through the deeper tissues for fear of injuring branches of the facial nerve and parotid duct. The outer fibers of the masseter muscle were separated and the external surface of the middle of the ramus exposed. With a small chisel a transverse section was then made through the ramus. The operation was repeated on the other side, and the body of the jaw then forced back, and the teeth placed in the best possible occlusion. To facilitate this a triangular segment of the ramus was removed on one side, a procedure probably unnecessary, and especially undesirable if the wedges, to be later described, had been used. The opening in the muscle, fascia and external wound was then carefully closed by buried sutures of catgut, certain of the lower teeth wired to the upper and an external plaster bandage applied. No symptoms of suffocation were produced, but on awaking the patient complained that there was insufficient room in his mouth for his tongue and that he had difficulty in breathing through his nose. The occlusion of the jaws closed the lips, and made them appear redundant.

Postoperative History.—In the after course of the case it was found that the contraction of the masseter muscles and the depressors of the jaw, by closing the triangular gap in the ramus, tended to separate the jaws anteriorly and the wiring of the teeth was found to be insufficient and was discarded. Through Dr. Guilford an interdental splint was constructed, but this likewise was not found of much advantage, so that recourse was had to pressure of an ordinary aluminum chin-cup connected by elastic bands to a head-piece. By regulating the tension of the bands it was found possible to bring the teeth into occlusion. This appliance was worn about nine weeks to give sufficient time for the new bony tissue to fill the gaps in the rami, but two weeks or more before the appliance was removed the patient began voluntarily to separate and to use the jaws. There was no tendency to ankylosis and the lateral and vertical movements of the jaw were well retained. As a result of the operation the patient's appearance has been greatly improved (Fig. 7), the lips have become shorter, the chin less prominent, the mouth is kept constantly closed, the enunciation of words is better, nasal respiration has been spontaneously established, food is properly masticated, the tongue is no longer kept between the teeth, the chronic constipation has disappeared, and, possibly as a result of the operation, or the cessation of mouth-breathing, there has been no attack of tonsillitis this winter, although the tonsils remain enlarged and the nasal catarrh continues.

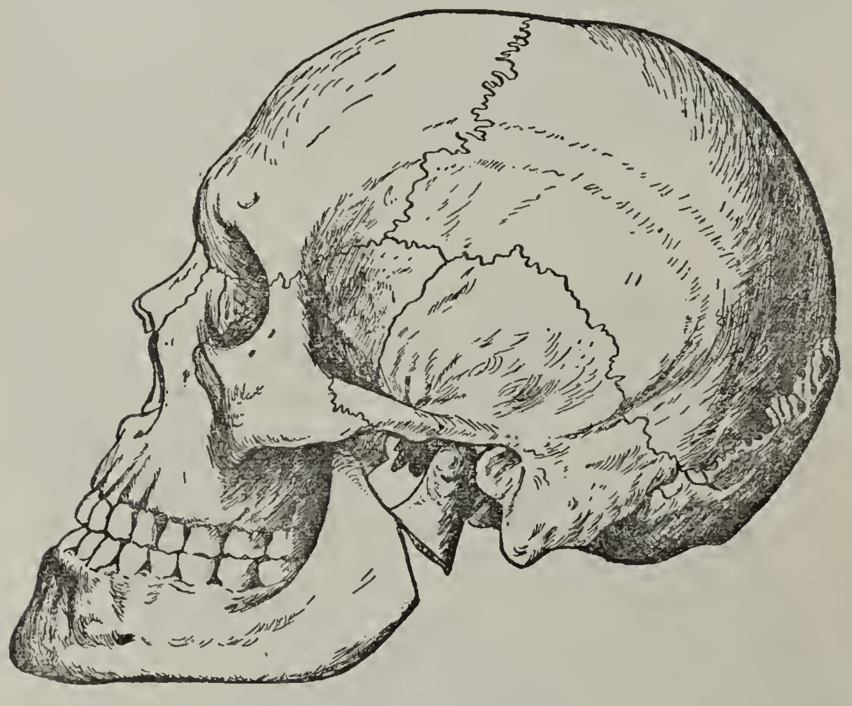

Fig. 11.—Result of correcting the deformity by a section through the base of the condyloid process. This line of section reduces the leverage of the temporal muscle, and from lack of fixation of the smaller fragment would seem to involve a greater tendency to pseudarthrosis than certain other lines of section.

For those who consider enlarged tonsils, adenoids and nasal obstruction a cause of mouth-breathing and of faulty development of the jaws, we have here some suggestive evidence that the correction of deformities of the jaw may conversely at times be followed by the spontaneous disappearance of the nasal obstruction and by failure of the large tonsils to produce symptoms. By this I would not controvert accepted theories, but would suggest the thought that mouth-breathing and oral deformities may at times be the primary and enlarged tonsils, adenoids and nasal obstructions secondary conditions.

METHOD OF DIVIDING THE RAMUS

In determining the best direction for the line of section to be made through the ramus in the above case a series of interesting observations shown in the accompanying diagrams were made (Fig. 9). By a vertical section through the ramus (Fig. 10) the lower portion of the posterior fragment is pushed far back, leaving a large V-shaped gap with the apex above. The angle of the jaw is, therefore, carried much farther back than normal, while the distance between the coronoid and condyloid process is much decreased, reducing the leverage of the temporal muscle. In those conditions in which the mandible is not undershot but in which it is merely desirable to approximate the anterior teeth such a line of section might be worthy of consideration.

A section through the base of the condyloid process, as shown in Figure 11, produces less deformity but also reduces the distance between the condyloid and coronoid processes. The small size of the posterior fragment and the lack of extensive muscular attachment might favor the production of a false joint after such an operation.

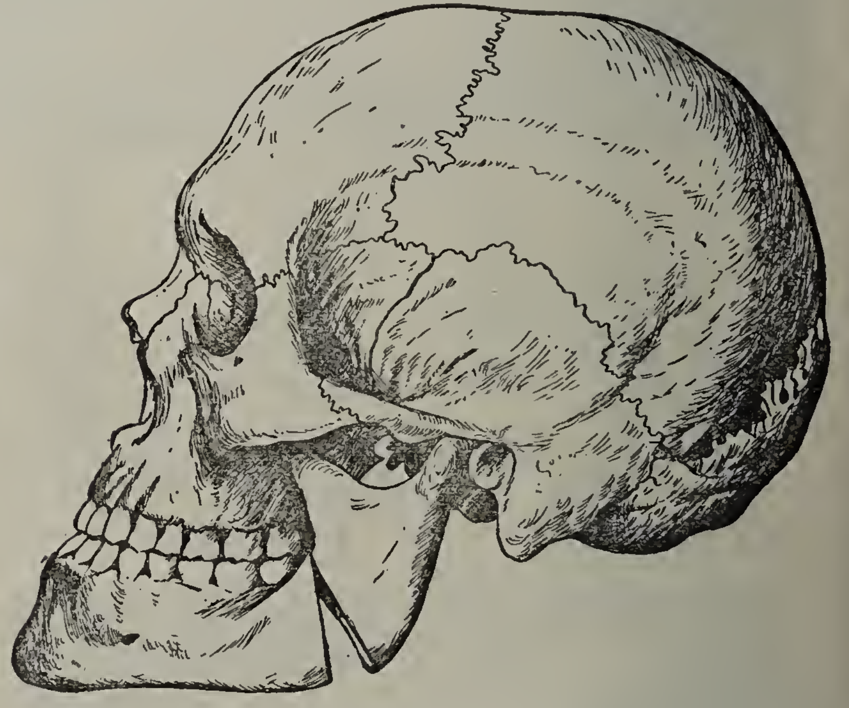

Fig. 12.—Results of a section between the ramus and the body of the jaw. The inferior dental canal is divided, the angle of the jaw increased, and the section is not so well adapted for the correction for prognathism. For lateral displacements of the jaw, this line of division, made on the side of the displacement may be useful.

An oblique section running from above, downward and backward through the lower part of the ramus, as shown in Figure 12, leaves the bulk of the ramus intact and produces a moderate grade of deformity. A section of this type, or one more nearly vertical, could be employed for lateral deviations of the mandible, the line of section, of course, to be made on the side toward which the jaw deviated, as the separation of the fragments by a wedge would cause the jaw to be carried to the opposite direction correcting the deformity.

In Figure 13 is shown the result of correcting the deformity by a transverse section of the ramus on a line approximating the masticating surfaces of the teeth. As this line of section gave the least secondary deformity and as both fragments are well fixed by muscular attachments, this line was the line of section decided on in the present case. The strong masseter muscle splints the two sections and binds them firmly together. Indeed, the pull of the masseter muscle by tending to close the gap in the ramus so strongly tends to tilt the chin downward that a firm counter-support is necessary.

To obviate this we have now devised wedges of ivory or magnesium to be slipped between the separated portions of the ramus (Fig. 14), so as to put the posterior fibers of the masseter muscle on the stretch and to tilt the chin upward. In this way the chief difficulty in the after-treatment, the tendency of the chin to drop, is overcome. The wedges are very much the shape of an ordinary collar-button, the extended flange at each side tending to prevent displacement. To provide for the varying thickness of different rami I have had the wedge constructed like a small bolt, the thin flat head of the bolt being approximated to the inner surface of the ramus of the jaw, and an outer flat nut being screwed down, holding the parts firmly in apposition. Ivory and magnesium are the substances selected for the appliances, as each is susceptible to sterilization, and to absorption when buried in the tissues.

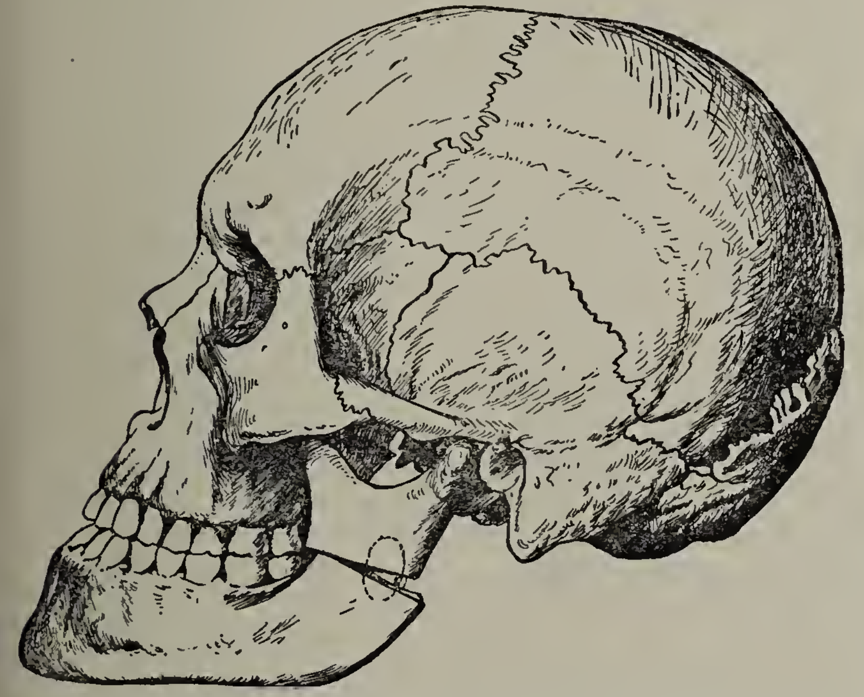

Fig. 13.—Transverse line of ramus division selected in the case of S. K. This line of section produces the least deformity, and if placed above the level of the spine of Spix enables one to avoid injury to the contents of the inferior dental canal and, moreover, does not interfere with the normal leverage of the temporal muscle. Both fragments have extensive muscular attachments serving to splint the parts after operation. The dotted line indicates the outer plate of the wedge of ivory or magnesium suggested by the author to maintain the elongation of the ramus, and to overcome the traction of the masseter muscle.

The section may be carried out by means of a small chisel, a burr actuated by a surgical engine, or the spiral osteotome of Cryer. The chisel has the advantage of the fact that it may be manipulated through a very small incision and with very little exposure of the bone. A vertical incision one inch long placed in front of the ear will enable one experienced in the use of the chisel to make the required section. Indeed, a narrow chisel may even be carried through the skin through a mere puncture and the bone division accomplished by the sense of touch alone. The section may likewise be carried out from the inside of the mouth with no external incision. The mouth is widely opened, a vertical incision made over the anterior border of the ramus through the mouth, as in Paravicini's operation, the tissues separated from the inner surface of the ramus, care being taken to avoid the internal lateral ligament, and, guided by the finger introduced through the incision, the bone divided by means of an appropriate burr or chisel.

There is some danger of necrosis of the ramus from infection from the mouth after such an operation. In a number of instances, however, in which I have exposed the inner surface of the ramus in this manner and have injected solutions of osmic acid into the inferior dental nerve, no troublesome necrosis has resulted despite the contact of the bone with saliva and an irritating chemical solution.

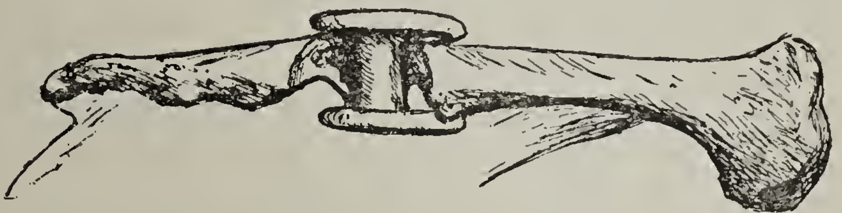

Fig. 14.—Wedge introduced into the line of section, viewed from behind. The introduction of this wedge overcomes the tendency of the anterior part of the jaw to tilt downward.

Besides necrosis a disadvantage in this method, however, is that an accurate approximation and support of the fragments by wedges can not be obtained and recourse must be had to interdental splints or the use of the chin-cup until the bone be united and the gap filled. Of course, in most instances, interdental splints firmly applied previous to the operation, to be later wired or bolted together, afford the best method of retention.

In considering the operative treatment of a deformity of the jaws one should not limit himself to the consideration of a single operation but should, until further advances have been made, consider the following possibilities:

1. By surgical measures it is possible (a) to change the relation between the body of the lower jaw and the rami so as to produce protrusion, recession, tilting or lateral displacement of the body of the jaw upon the ramus; (b) to change the shape of the arch of the jaw, either increasing or decreasing the size of the arch or altering its form; (c) to change the relative position of an anterior section of the jaw as related with a posterior section of the body and ramus; (d) to transplant and change the position of segments of the alveolus with contained teeth, the arch of the jaw not being completely divided, nutrition being maintained by the preservation of attachments to the soft tissues.

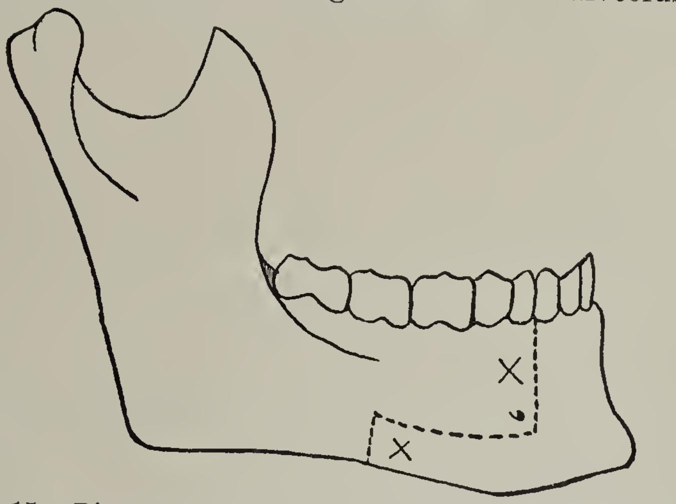

Fig. 15.—Diagram showing line of section suggested to enlarge the arch of the jaw. After the mandible has been divided as indicated by the dotted lines the segments are separated sufficiently to secure the proper occlusion and are maintained in position during the process of healing by an appropriate interdental splint or other appliance. By resecting the segments of bone indicated by XX the same line of section may be used to diminish the size of the arch of the jaw. By placing the incision anteriorly, the arch may be widened; by placing the line of section laterally one or both sides may be lengthened as desired.

2. When it is found by a study of models in the particular case that a correction of the deformity and a fair occlusion may be obtained without dividing the dental arch, the preferred operation is the section of one or

both rami along the lines found to be best adapted to the particular case. This operation is useful for many cases of prognathism, receding chin, and certain lateral deviations of the jaw. In certain instances, as in hypoplasia, it may be necessary to combine it with other operations designed to increase the size of the arch.

3. Where it is desired to enlarge the dental arch I would suggest the operation indicated in Figure 15. In this operation a vertical section of the alveolus is carried two-thirds of the way through the jaw, the line section is then carried at right angles for a variable distance and the remaining third of the jaw then divided parallel to but in a different plane from the first vertical section. The arch is then to be opened by sliding the segments of the jaw on each other and fixation in the proper position secured by adjusting an appropriate interdental splint or other appliance which previously has been prepared. By doing this operation on the anterior part of the jaw the arch may be widened, and if placed laterally one or both sides of the arch may be lengthened. With a resection of the divided bone ends, this operation may likewise be used to reduce the arch at any point, or the arch may be reduced by a simple resection of a V-shaped or wedge-shaped section of bone as may be found desirable.

4. To change the plane of occlusion of only a segment of the jaw, a bilateral V-shaped or wedge-shaped resection after the method of Angle may be used or an osteoplastic section after the plan of Hullihen.

5. Somewhat similar operations are to a lesser degree available for the deformities of the upper jaw. Kocher has shown that a transverse supra-alveolar resection on the superior maxilla is feasible, and as this operation may be used to mobilize one-half or the entire dental arch, it is obvious that it will enable decided changes in position for the correction of deformity. The separation of the superior maxilla in the mid-line or a plastic displacement of a portion of the alveolus with the contained teeth is likewise feasible. Unfortunately most of these operations are more difficult and attended with more serious hemorrhage and other complications than the operations on the lower jaw. The fixation of the mobilized portions of jaw after these operations, however, involves less difficulties than in the case of the mandible.

The above operations are briefly mentioned to indicate the surgical procedures which may be employed for the correction of deformities when the less serious orthodontic measures are unavailing and to stimulate the development of this field. A consideration of forms of malocclusion resulting from the diseases of the temporomaxillary articulation and malformation of the bone which interfere with the normal movements of the jaw is considered beyond the scope of the present paper.

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ABSTRACT OF DISCUSSION

Dr. J. E. Nyman, Chicago: I think that the successful operation reported presents a solution of the distressing conditions which are so frequently brought to our attention, and for which orthodontia can do little or nothing, and that is unilateral hypertrophy of the jaw between the shaft and the ramus. I have had three cases of unilateral hypertrophy in a practice of about fifteen years. Unfortunately I could suggest no operation which bade fair to produce favorable results. It seems to me that this operation will be of especial service in unilateral hypertrophy.

I think that frequently the fact that there is delayed union along the lines of section where a saw or burr has been used, is not so much because heat has been developed, but because of the fact that innumerable spicules of bone have been left which act as foreign bodies which must be absorbed or thrown off before regeneration and formation of new tissue can take place.

Dr. George V. I. Brown, Milwaukee: Dr. Babcock's paper is a beautiful exposition of his subject and of the method of his operation. The result is phenomenal. I did not believe such a result could be secured and have hitherto felt it safer to cut off the entire anterior portion of the jaw and have some dentist put in bridge work to complete the case, as was done in one of my cases in which the jaw extended so far forward as to make this possible. In another case the jaw was too short and we gave prominence to the chin, yet both resulted from burns.

I have looked with a good deal of skepticism on operations that have been described and recommended from time to time for patients requiring removal of sections of the jaw as described by Dr. Babcock, but his description is so complete and the result so perfect, that I see the promise of great good results in the future.

Dr. S. L. McCurdy, Pittsburg, Pa.: In a case similar to this which came to me a few months ago there was much separation of the incisors. The molars came together and there appeared to be a projection. I decided as the easiest and best operation to extract the lower molars and then chisel away the alveolar process as far as necessary, so that when the mouth was closed the incisors came in contact; the upper molars did not come in contact with the place where the lower molars had been extracted, and after that I removed two teeth, one on each side. Later the dentist made an appliance which increased the number of teeth which could be used for mastication, and the result was satisfactory; not, however, so satisfactory as that obtained by Dr. Babcock, and I think this will be the operation selected in the future.

Dr. A. R. Dray, Philadelphia: I feel indebted to Dr. Babcock for demonstrating his operation for the cure of a condition which hitherto has baffled the best efforts of the orthodontist and the dental surgeon. I did not exactly catch how Dr. Babcock immobilized the lower jaw while union was taking place. He referred briefly to an interdental splint, a poor thing at best. In case of ordinary fracture I think he would be tempted to discard appliances placed beneath the chin in order to prevent mobility. Wiring together the teeth of opposing jaws I have found is a splendid way to maintain a fixed position for fractures, and the operation described by Dr. Babcock is of course for a fracture of the inferior maxilla.

Dr. S. L. McCurdy, Pittsburg, Pa.: I should like to place myself on record at this time in connection with the question of repair of bones. I have been practicing the wiring of long bones by allowing them to remain *in situ,* recognizing the fact that when a bone was disturbed at the point of fracture or when we had an ununited fracture which required wiring, if during the process of freshening the ends of the bones or sawing them off they were torn and dragged about, and the soft tissues attached to the ends of these bones torn loose and the peritoneum stripped, we could not expect to have repair of the bone. I make this statement because I have seen a number of these operations performed, and the general surgeon usually does a through and through wiring which requires a great deal of destruction of soft tissues. The soft tissues must be preserved about the field of operation or nutrition will be destroyed and exfoliation will result in addition to the fact that there will be no union.

In a paper I read in Boston recently I described an operation of wiring which did not include a complete through and through drill, but a wiring of just half the bone. With the notched drill one can pull the wires through from the central canal.

Dr. W. Babcock, Philadelphia: The advantage of the chisel is that it enables one to work through a very small opening, does very little injury to the adjacent bone, and at the same time forms a very linear incision. The operation may be done in a very simple way, similar to an osteotomy of a long bone, by puncturing the soft tissues and carrying the chisel to the bone, the division of which occurs under the sense of touch. It is possible, therefore, to make this line of section with practically no external disfigurement, and with little injury to the adjacent tissues. The objection which is raised to the chisel when used on the skull, the concussion of the brain, hardly holds when one deals with the mandible, since this bone is fairly insulated from the skull proper.

Regarding the great field of purely orthodontic methods, I would again emphasize the fact that the oral surgeon in this field of work should be the associate and assistant of the orthodontist, and he must depend on those skilled in orthodontia to tell him when operation is necessary. In this case, I felt it was not proper for me to operate without putting this patient in the hands of my dental colleague to see if something could be done without operation. Moreover, after the operation has been done, as in this case, there often will remain some residual deformity to be corrected by appliances. The surgeon hews out the rough structure and leaves the finishing touches to be worked out later by the dentist.

In answer to the other questions, I would say that I first wired the teeth and depended on a plaster bandage, but the tension pulled the wires from the teeth. The degree of the pull during the first days is amazing. The condition is one in which the surgeon is really lengthening the ramus, and the attached muscles contract to prevent this lengthening. The result is that one has at the long end of the lever a traction which requires firm retention, preferably a full interdental splint. In this case, after wasting two or three weeks with plaster bandages and other appliances, I depended entirely on a chin cup with strong traction by rubber bands. In the interval the jaw had slipped slightly forward and the bone had partly filled in and something of the original correction was lost. This was left on in all about nine weeks. During the last three the patient began to chew food and use his jaws. It has been said that there is a danger theoretically of death with this type of operation. I think the mortality will be extremely small, as there is no danger from the inhalation of septic material, as when the mucosa is incised.

The oral surgeon is very fortunate in that he deals with bones especially well supplied with nourishment. He can do more than can the general surgeon—he can produce more mutilation and get better final results than perhaps can be obtained in any other part of the body. Those of you who have seen the crushes of the bones of the face, and have seen how the fragments unite after being placed in position will realize this. The perfect immobilization of bone fragments in the treatment of fractures seems to reduce the amount of callus formation. Too much callus, on the other hand, might give deformity. Although there was some play in this case, not enough callus was thrown out to be disfiguring. The bones of the head as a rule produce very little callus.

It makes little difference what else one uses so long as the teeth are kept properly together there is very little tendency for the fragments to slide one way or the other, as they are immobilized by the muscles.

INFANTILE ECZEMA *

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Infantile eczema occupies an important place in the clinic of children's diseases, and frequently presents great difficulties in its management. The etiology and pathology of this affection are as yet but little understood, and knowledge concerning them is needed. Even the most distinguished pathologists are not agreed as to the entire clinical history of this morbid process, whether by infantile eczema we mean a definite disease or merely a symptom of some unknown process. It is the purpose of this paper to discuss briefly some of the more recent views expressed on this matter, and to present the clinical history of the affection.

ETIOLOGY

At the outset attention must be directed to the confusion which might arise through considering this form of eczema with other skin eruptions produced by irritation, such as that caused by dirt, perspiration, etc. The most rational view, based on clinical observation, would be to consider eczema an external manifestation of some internal disorder. Careful observation of these cases confirms a first impression that the lesion on the skin may be compared with a barometric index which fluctuates with the prevalence of internal storms. The skin lesion may have exhibited a tendency to disappear or at least to abate somewhat, though concomitantly with an attack, moderate or severe, of indigestion, or because of some error or indiscretion in diet, the disease reappears and spreads with great activity. In a word, it may be stated that true eczemas in children are dependent on constitutional disturbances. The presence of bacteria in the secretions or on the denuded surface may be the result of a secondary infection and should not be considered as positive evidence that there exists between these germs and the disease a causal relationship. Some of the older authors may be quoted in corroboration of this belief.

Henke[1] thought that eczema was due to overfeeding, both in quantity and quality. Jorg[2] noted that these eczemas occurred more frequently in well-fed, fat babies, and thought that overfeeding played an important part. Similarly, Bohn[3] thought that the disease was due to overfeeding and constipation. The French authors lay great stress on hereditary influences as causes of the disease. Thus, Comby[4] thinks that arthritis, eczema, gout, obesity, asthma and various neuropathic states in the parent tend to cause eczema in the offspring. That this view is based on facts is corroborated by every observer's clinical experience. In very many of these cases it is found that the family history shows distinctly evidences of gouty and arthritic states and allied conditions.

L. F. Meyer thought that overfeeding, especially of such organic foodstuffs as casein and fat, gave rise to an excessive elimination of salts in children. Leighton,[5] on the other hand, is convinced that eczema is frequently of neurotic origin, even in those cases in which some external irritant is active. He recognizes two forms of eczema, (1) the idiopathic or ganglionic form, originating along the tract of the sympathetic nerves, and (2) the peripheral or traumatic form.

Variot[6] asserts that well-developed children, especially, and breast-fed, as well as artificially nourished children, are attacked by the disease.

Gaucher found an inhibition of metabolism in every case of eczema, with an increase in the nitrogen extractives and the chlorids and a diminution in uric-acid excretion. He regards eczema as an autointoxication, the poisons being eliminated through the skin, and these poisons being the result of incomplete oxidation of the nitrogenous products.

Marfan[7] classifies these cases in two forms: The first form is characterized by the localization of the eczema on the scalp, the eruption being moist and crusty. Associated with the scalp eruption is a wet or crusty eruption on the cheeks and ears, the rest of the

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Henke: Handbuch für Kinderkrankheiten, 1809.
2. Jorg: Handbuch für Kinderkrankheiten, 1826.
3. Bohn: Jahrb. f. Kinderh., 1868.
4. Rev. mens. d. mal. de l'enfance, v, 521.
5. Leighton: Brit. Med. Jour., June 27, 1908.
6. Variot: Gaz. d. Hôp., Paris, 1906, p. 951.
7. Marfan: Semaine méd., 1894, p. 138.

face usually remaining free. This has been called milk-scab. Later in the course of the disease the eruption may spread to the hands and forearms, although, as a rule, the trunk and extremities are not affected. If the condition remains untreated or does not yield to treatment, the body, neck, arms and legs may be covered with a weeping, crusty eczema, while an intertriginous eruption covers the genitocrural folds. Dry fatty scales are usually found on the surface. Itching, as a rule, does not occur. This variety usually occurs in babies who have been fed artificially with large quantities of milk, eggs and meat broths. This form of the disease is most often of the seborrheic type, and, while the treatment is difficult, spontaneous recovery may occur at the end of the first year, when the quantity of milk is reduced.

The second form is described by Marfan under the name of disseminated, dry eczema. It occurs most frequently in artificially fed babies, and the history obtained is usually that of an overfed infant, who is thin and delicate, and who is suffering from chronic intestinal and nutritive disturbances, manifested by diarrhea, alternating with constipation, abdominal distention and loss of weight. The appearance of the skin is even worse than in the first form. There are dry, scaly, infiltrated islands of crusts with papular and pustular lesions, and sometimes moist areas. The face is usually most involved, the scalp only slightly. The eruption progresses slowly. The itching is very refractory to treatment. It has been suggested that this is the gouty form.

In some cases the first and second types merge into each other so much that no fixed or definite line can be drawn between the two varieties.

Among the complications of infantile eczema may be mentioned albuminuria, with or without kidney disease and heart involvement. Re[8] found albuminuria in twelve out of twenty-one cases, but these patients were also suffering from enteritis. The albuminuria and the heart complications are undoubtedly due to absorption of poisonous products, and many writers have urged the necessity of paying more attention to the heart and kidneys of children suffering from eczema. These children may also show symptoms of heart weakness or even collapse without fatal issue. In one case in which a postmortem examination was made, a very large thymus was present with a distinctly degenerated myocardium.

The clinical course of the disease rarely shows any sign of impending death, and a postmortem examination often fails to reveal the cause of death. There are those who believe that the status lymphaticus may explain this condition, though others oppose this view. The opinion has been expressed that sudden death may be due to a myocardial degeneration.

Castenholz attributed death to interference with cutaneous respiration. Others hold that death is caused by infection. Strauss maintains that eczema has nothing to do with the death, and that the infant dies from some other cause than the skin eruption. Heubner and Feer found in their autopsies on babies having eczema all the signs described by Paltauf as characteristic of the status lymphaticus.

As regards the etiologic relationship existing between eczema and asthma, several striking instances in confirmation of such a view have been noted.

TREATMENT

The treatment of this condition resolves itself into local and constitutional measures, mainly the latter. The dermatologists who direct local treatment advise, in addition to the dietetic treatment, that the crusts be removed by softening with liquid petrolatum. In the eczemas of the scalp the removal must be gradual to prevent fever and other serious results. The aluminium acetate used as a poultice in most eczemas acts well in the removal of the crust. After the crusts have been removed the use of the following paste is advised, this being covered with a well-fitting mask:

℞	gm. or c.c.		
Zinci oxidi	27		ʒvii
Adipis lanæ hydrosi	4	or	ʒi
Liquoris calcis	30		fl.℥i
Olei amygdalæ expressi	4		fl.ʒi

M. et Sig.: Apply as directed.

In the milder cases a powder of zinc oxid, 30 per cent., and talcum, 70 per cent., acts well. Scratching is prevented by putting the arms in light splints. In the obstinate cases in which these measures do not seem sufficient, ointments of naphthalene (5 to 10 per cent.) for the itching, or sulphur (2 to 5 per cent.) in the seborrheic form, or salicylic acid (0.5 to 2 per cent.) in the dry disseminated type, may be employed.

When the moisture is no longer present, zinc oxid and olive-oil, equal parts of each, is often indicated. In the stubborn dry cases some tar ointment is often of service, as 0.1 to 1 per cent. oleum rusci or oleum cadini or a weakened tar oil, as unguentum picis of the National Formulary.

I have frequently found that the dry form yields to the application of simple cerate, which is dusted over with talcum or rice powder. Sulphur baths are sometimes useful and a short course of treatment with Fowler's solution in the refractory cases and wine of colchicum in the gouty cases yields good results. Where constipation is a marked feature of the case I have frequently found laxative waters of value; in other cases, especially those of older children, the compound infusion of senna has relieved the constitutional symptoms and diminished the local irritation.

The constitutional treatment consists in the main in the regulation of the diet, although measures looking toward relieving any intestinal disturbances must not be overlooked nor underestimated. Dietetic treatment is usually sufficient to cure a beginning eczema and to prevent the occurrence of complications. Some clinicians restrict the amount of nourishment given, besides modifying its composition. The fact that the disease occurs in infants who are breast-fed as well as in those who are fed artificially, emphasizes the necessity of specific treatment of individual cases. Good results have been reported from the employment of what has come to be known as Finklestein's soup. Finklestein thought that this form of eczema was due to milk salts, regardless of fat or protein. Therefore, he coagulated the milk with pegnin, added one-fifth of the whey to the coagulum, and oatmeal water to make the original quantity. Cane sugar was added in varying quantites. A number of clinicians have employed the method, some with good success, while others met only failure. My personal experience has not been such as to warrant me to recommend this treatment.

Good results have also been obtained from the use of skimmed milk, buttermilk, gruel and predigested milk. Whey has yielded remarkably good results in some cases.

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[8] Re: Pediatria, September, 1909.

On the whole, it may be said that a milk-poor, restricted diet with addition of cereal, the exclusion of eggs and meat broths, as a rule, yields good results in a short period of time. Older infants should also be given fruits and vegetables.

Langstein reports a case in which the Finklestein treatment failed absolutely. The patient finally recovered after the internal administration of large quantities of salt. Czerny emphasizes the necessity of treating any underlying hereditary factor which may have been operative in the production of the disease. The administration of thyroid extract has done well in some cases.

100 State Street.

ABSTRACT OF DISCUSSION

Dr. D. E. English, Summit, N. J.: In making ointments I use unhydrated lanolin and soften it with lard oil, and in that way use only the animal fats.

THE SERUM TREATMENT OF EPIDEMIC MENINGITIS *

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The bacteriology of meningitis is most varied and the cases may be divided into two groups, the tuberculous and the non-tuberculous. The tuberculous cases are due to invasion of the meninges by the bacillus of tuberculosis, the non-tuberculous to invasion by a great variety of organisms. The great majority of the latter group consist of those cases due to the *Diplococcus intracellularis* of Weichselbaum, 80 per cent. of non-tuberculous cases being due to this organism. It is familiarly known as epidemic meningitis. For the treatment of this particular form of meningitis we have now had for about two years a specific serum evolved by Simon Flexner. It is with this type of meningitis, and this alone, that this paper deals. It is with this type of meningitis, and this alone, that the Flexner serum is effective. It is useless in all other forms. This statement seems necessary in view of the requests which have been made of me to use the serum in tuberculous meningitis, in non-tuberculous meningitis due to the pneumococcus, to the streptococcus, in head injuries, and in meningitis occurring in the course of the various infectious diseases and secondary to intestinal infections. The specific nature of the serum must be borne disinctly in mind. It will do no more good in a pneumococcic or streptococcic meningitis than will diphtheria antitoxin in a pneumococcic or streptococcic tonsillitis.

The development of the serum is interesting. Flexner, studying the New York epidemic of meningitis in 1894, sought to influence favorably the course of the disease produced experimentally in animals by antiserums prepared in several kinds of animals from *Diplococcus intracellularis.* His first reports showed that the course of the disease in guinea-pigs and monkeys could be modified favorably and animals saved from the fatal effects of the diplococcus.

Subsequently Flexner and Jobling developed a diplococcus antiserum, prepared from the horse, which has now been used for about two years in the treatment of epidemic meningitis in man. They have collected up to date reports of about 600 cases, and the results in these cases justify the opinion expressed by them in an earlier publication: "It is our belief that the analyses of histories of cases of epidemic meningitis which have been presented furnish convincing proof that the antimeningitic serum, when used by the subdural method of injection in suitable doses and at proper intervals, is capable of reducing the period of illness; of preventing, in a large measure, the chronic lesions and types of the infection; of bringing about complete restoration to health in all but a small number of cases, the recovered, thus lessening the serious, deforming and permanent consequences of meningitis, and of greatly diminishing the fatalities of the disease." Their cases, taken as a whole, show a mortality of 25 per cent; in a few serious cases, in which treatment was begun within the first three or four days, the mortality was 11 per cent. Furthermore, among the 75 per cent. of recoveries, there were few of the serious sequelæ generally noticed after this infection. Hitherto the mortality in epidemic meningitis has ranged from 75 per cent. to 80 per cent., and among the patients who survived the persistence of serious sequelæ has been so great that their survival has been considered unfortunate. In other words, treatment of this infection by the Flexner serum has reversed the proportion of deaths and recoveries.

I have had the opportunity of watching the effect of the serum in 41 cases of meningitis, 29 of which have been proved to be of the meningococcic type. In these 29 proved cases, 16 patients have recovered and 13 have died, a mortality of 44 per cent. Closer analysis of the series shows that of 16 patients receiving the serum within the first week, 6, or 37 per cent., died. Of these 6 cases, 3 were fulminating and the patients died within the first two days; the fourth was a bartender aged 43 and the other 2 were not closely followed up, but each received only one dose of the serum.

This series of cases represents only one of many series, reports from all of which are sent to Flexner, for analysis by him, from time to time. His figures therefore are a better average test of the serum than are my smaller ones. It will be noted that the average mortality in my series is much higher than in the grand total of all series. I attribute this higher mortality in my series to the fact that many of the patients were treated in their own homes, at widely separated points in three different states; hence the difficulty of following them closely and giving repeated doses of the serum. On the other hand, those patients treated directly under the eye, in hospital, as a rule have done better than those treated at home. It is the latter group which have raised the mortality rate. I have therefore come to the conclusion that it is extremely desirable to send meningitis patients to the hospital; they can be watched more closely, the serum can be given more persistently and thoroughly; furthermore, more exhaustive and extensive laboratory investigations, as to blood, spinal fluid, etc., can be carried out in hospitals; the advisability of these investigations is especially great in these early days of the serum, when more accurate knowledge as to its exact action is desired.

Cases studied in detail show several interesting phenomena which have to do with the mortality rate, the method of termination, the general course of the disease and the effect of the serum on the spinal fluid.

The most striking thing, of course, is the high percentage of perfect recoveries, i. e., recoveries without serious sequelæ, and an especially low rate of mortality among those patients treated early in the disease, this mortality rate being as low as 10 per cent. in some series of patients treated within the first three or four days. Then the abrupt termination of the disease by crisis, in certain cases, has been most striking. Thus in 273 cases of recovery, Flexner and Jobling report 25 per cent. as terminating in this way.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June. 1909.

EFFECT ON THE COURSE OF THE DISEASE

The course of the disease is materially shortened by the serum and a turn for the better is often noticed soon after the first injection; the mentality is clearer, there is less headache and general pain, the temperature is lower and the general condition of the patient seems improved. The rigidities, however, are apt to persist, e. g., the stiffness of the neck, Kernig's sign, etc. It is a remarkable sight to see in the children's ward, for instance, a patient twelve to eighteen hours after an injection, lying with head thrown back, perfectly comfortable and rational, or perhaps even playing with his toys—the same patient who previous to his injection was tossing about in delirium, with headache, high temperature and all the signs of a severe infection.

EFFECT ON THE SPINAL FLUID

The effect of the serum on the spinal fluid is most interesting and is perhaps more demonstrable in this direction than in any other. The first puncture usually shows a fluid turbid in varying degree; smears from this fluid stained by the Gram method show a variable number of leucocytes, chiefly of the polymorphonuclear variety, and numerous Gram-negative diplococci, some intracellular, but more extracellular. Cultures on different media show an active growth, examination of which confirms the observation of the smears, i. e., a Gram-negative diplococcus. The first injection of serum is now given. Eighteen or twenty-four hours later the second puncture shows a fluid still turbid, more or less so than the first according to the progress of the case and *pari passu* an increased or diminished number of leucocytes, still of the polymorphonuclear variety. But bacteriologically we already see a change: there are more of the diplococci within the cells and fewer without than there were at the first puncture, i. e., phagocytosis has been going on to a considerable extent; at this time the number of cocci extracellular may exceed those intracellular, but with the progress of the case, whether favorable or unfavorable, the extracellular organisms gradually disappear entirely, the number within the cells at first increasing and later diminishing until they too disappear. The more rapid the progress of the case toward recovery, the more rapid the phagocytosis and the total disappearance of the organisms from the spinal fluid. The more protracted the case, the more persistent are the organisms; especially is this so in cases coming late under treatment.

The cultural character of the organisms changes with the progress of the disease; at first profuse, abundant growths are noticed on the media; gradually, however, they grow more slowly, less abundantly, less characteristically, and finally cease to grow. After they cease to grow on cultures, however, they may still be detected in smears; they are present, but apparently dying and too weak to take root and grow; in a short time they disappear from the smears also, of course.

THE CELLULAR ELEMENTS

The behavior of the cellular elements of the spinal fluid is also interesting. At the first puncture the leucocytes are numerous, remarkably so in some cases, and invariably of the polymorphonuclear type, 90 to 95 per cent. usually.. If the case progress favorably the total number diminishes; they lose their characteristic morphology and staining qualities; the proportion of mononuclears is very apt to increase; indeed, in a few long-drawn-out cases the mononuclears have formed a large percentage of the cells.

TECHNIC

The method of giving the serum is important and I now describe it in detail.

All the active workers with the Flexner serum are of the opinion that, in order to get the best results, the serum must be brought closely in contact with the pathologic seat of the disease and that this can be done only by a lumbar puncture. It is useless to give it subcutaneously. After study of my own cases and those of other observers I have come to the following conclusions as to the method of using the serum:

In all cases which clinically resemble meningitis we must do a lumbar puncture; for this purpose we may use the needle of either a large antitoxin syringe or of a large aspirator, holding at least 30 c.c., the minimum dose to be given. Both patient and apparatus, of course, are to be surgically clean. The serum should be ready for injection. The puncture is to be made according to the usual rules laid down in text-books, i. e., in the third or fourth lumbar space, close to the spine, this point being determined by the imaginary line running from crest to crest of the ilia. The needle once in the spinal canal, the fluid begins to flow out; rarely is there any obstruction from clogging of the needle; if so it should be cleared with the obturator. The pressure of the fluid should be noted if possible with the sphygmomanometer or roughly by counting the number of drops per minute; its turbidity and color should also be noted

Collect a few drops of the fluid on clean glass slides for immediate staining and microscopic examination. Also inoculate several test-tubes of culture media by allowing the fluid to trickle directly over the media; finally collect the remaining fluid in a sterile test-tube for counting the contained leucocytes and centrifuging for further examination. Evacuate in all 30 to 45 c.c., if possible. If it be the least bit cloudy or turbid inject the serum at once, without waiting to learn the result of even the smears, injecting as follows: To the needle still in the spinal canal attach the syringe previously filled with the serum (warmed to about the body temperature). Inject slowly, using only gentle pressure in forcing down the piston, give 30 to 45 c.c., except in small babies in whom a smaller amount may be used. Thirty c.c. may be given even if the amount of spinal fluid removed is less than this. It is desirable, though not necessary, to remove spinal fluid equal in amount to the serum to be given.

EXAMINATION OF THE SPINAL FLUID

The spinal fluid should be examined immediately. The glass smears are stained by the Gram method and examined for both cellular elements and organisms; care should be taken to note the relative number of diplococci within and without the leucocytes. Fortunately the smears are fully as reliable as the cultures; hence we do not have to wait long for an exact diagnosis. The cultures should, of course, be incubated and examined later. The total number of leucocytes in the spinal fluid should be counted by the Thoma-Zeiss apparatus as soon after evacuation as possible.

REPETITION OF THE SERUM

If the bacteriologic examination show the presence of the diplococcus subsequent injections of the serum should be given. In the earlier days of the serum it was customary to wait, if improvement followed the first injection, until unfavorable symptoms developed, e. g., increased temperature, great restlessness, pain, headache, etc., and then give the second dose. Subsequent observations, however, especially by Dunn, have shown that better results are attained by giving the serum daily for three or four successive days, regardless of the clinical and bacteriologic progress of the case. The serum can do no harm, and this concentrated method of giving it is undoubtedly better than waiting for symptoms to arise and then hitting them. In severe and fulminating cases the second dose should be given in from twelve to eighteen hours after the first, and 45 c.c. should be given. In several instances I have used this amount of serum without bad results, even though less than this amount of fluid had been removed.

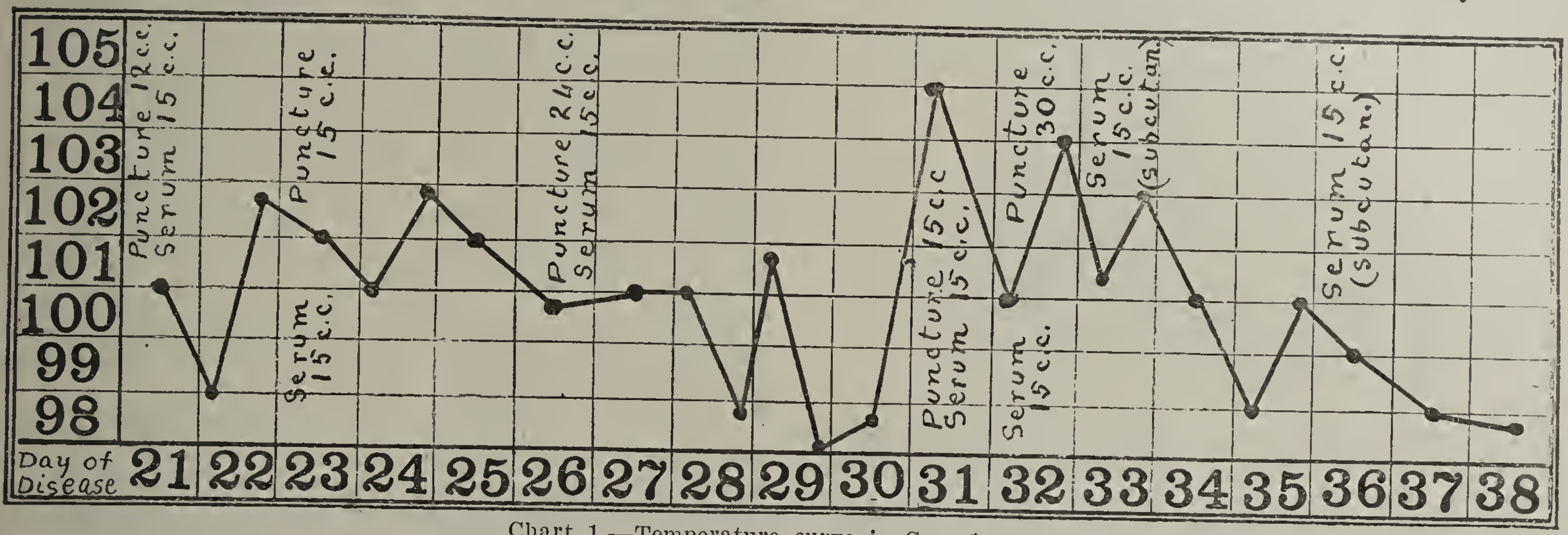

Chart 1.—Temperature curve in Case 1.

Having thus given our first series of three or four doses on successive days, we may pause and note results; as a rule, improvement will be seen both clinically and bacteriologically, and no further injections will be necessary, at least in patients coming early under treatment. But if after an interval of a day or two untoward symptoms still persist another series of doses should be given daily, perhaps for two days, perhaps for four days, then another pause be observed. This process of alternate giving and withholding of injections may be continued until meningeal symptoms have ceased or bacteria have entirely disappeared from the spinal fluid, or the chronic stage has been established. As a rule, it will be found that the diplococci disappear comparatively early, and that we may then cease our injections. If the serum is to be effective it will be so early in the disease after a few doses. If, however, the organisms persist in the spinal fluid for a long time occasional doses should be given. In all cases, whether those of complete recovery or those running on into the chronic stage, lumbar puncture should be done from time to time until no organisms are found either in smears or cultures. We must leave our patient with a sterile spinal fluid.

Relapses should be treated as fresh cases. Certain complications, if due directly to the meningococcus, may be an indication for the local use of the serum. Thus in one of my series a severe arthritis of the knee, proved by bacteriologic examination of the aspirated fluid to be due to the meningococcus, received three doses of 15 c.c. each, given directly into the joint, with immediate relief to the pain and apparent permanent improvement. Cushing has reported a similar case.

The following brief histories illustrate some of the points mentioned in this paper.

Case 1.—This illustrates the disadvantage of coming late under treatment and the futility of giving small doses, scattered and in part subcutaneously. The patient, a nine-year-old boy, left the hospital apparently well, on the thirty-eighth day, but returned in three weeks with meningeal symptoms, from which he finally died five weeks later, the spinal fluid during this second stay in the hospital being sterile.

Chart 1 shows the temperature curve and method of dosage. It is a good illustration of how *not* to give the serum.

Case 2.—George D., aged 3, entered my service at Cook County Hospital, April 13, 1909, on the fifth day of illness. He was given 30 c.c. of serum on each of the two following days, then through a mistake, none on the next two days, with consequent increase of symptoms, was then given 30 c.c. on each of the following four days, the last on the thirteenth day of the disease, with satisfactory results. The spinal fluid was sterile at the last puncture. The case illustrates the danger of ceasing injections too early and the value of sufficiently prolonged daily doses.

Case 3.—A seven-year-old girl received her first injection on the second day. The case terminated by crisis after only two doses of the serum. Chart 3 tells the story graphically.

Case 4.—In the case of Nately C., aged 15, the serum was not used persistently enough, and consequently we see a long-drawn-out case, though the patient finally recovered after individual, isolated doses at long intervals. The serum was given on the ninth, tenth, fourteenth, seventeenth, twenty-fourth, twenty-sixth and thirty-sixth days, respectively, the spinal fluid on the last date being sterile. The case also illustrates the value of perseverance in the use of the serum, even late into the disease. The patient was discharged from the hospital on the forty-third day.

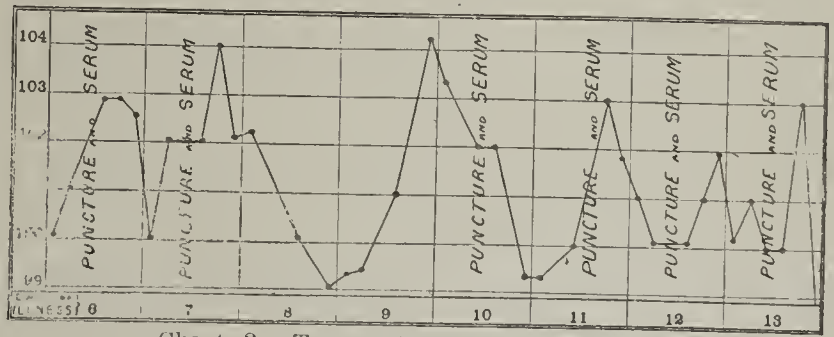

Chart 2.—Temperature curve in Case 2.

Case 5.—This case, from the service of Drs. Poorman and Ellis Kerr, at the Oak Park Hospital, was a severe fulminating case. The patient, Amelia D., was given her first injection twenty-three hours after the onset, with marked improvement in the general condition, temperature and spinal fluid. The injection was repeated on the second day, omitted on the third with increase in symptoms, given on the fourth and fifth days, with diminution of the meningeal symptoms, but continued high temperature due to arthritis of the right knee joint. Fluid aspirated from this joint showed the meningococcus; serum, 15 c.c., was therefore injected directly into the joint on the ninth, tenth and eleventh days respectively, with much relief to the pain. Serum, 30 c.c., was also injected into the spinal canal on the seventh and ninth days, respectively, the fluid from the last puncture being sterile. A further complication, apparently an osteomyelitis of the right femur, prolonged the convalescence, but this also eventually disappeared and the patient has now, June 9, had a normal temperature for two weeks and is steadily improving.

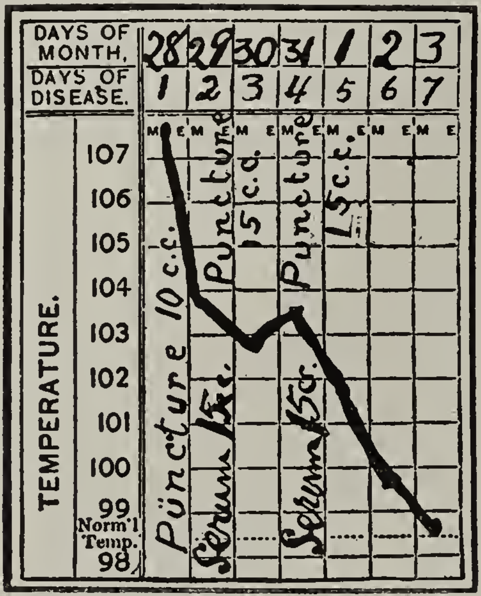

Chart 3.—Temperature curve in Case 3.

The actual disease itself, the meningitis, in this case, was evidently checked by the first two doses of the serum, as was demonstrated, not only by the diminution in the meningeal symptoms, but also by improvement in the character of the spinal fluid. The termination of the disease itself was by crisis; indeed, it might almost be said that it aborted, so sudden and remarkable was the drop in the temperature. The prolonged character of the case was due to the complications, over which the serum had no apparent control, aside from the relief of joint pain when locally applied.

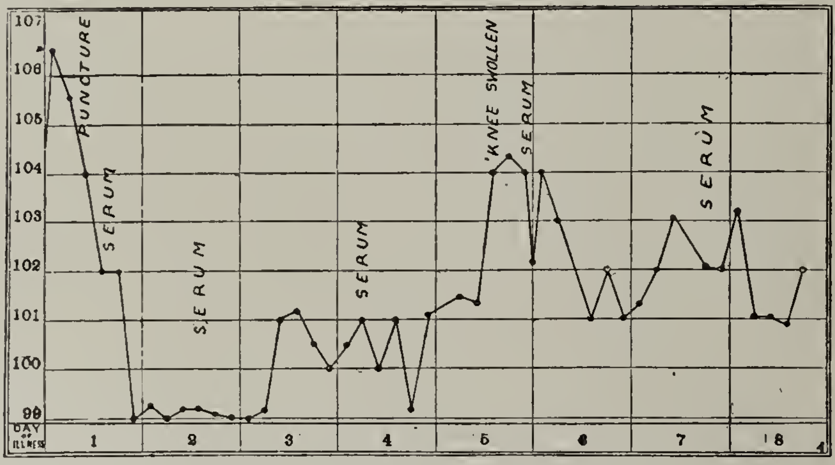

Chart 4.—Temperature curve in Case 5.

SUMMARY

The main points in this paper may be briefly summarized as follows:

1. In all cases clinically suggesting meningitis, do a lumbar puncture as early as possible.
2. If the fluid thus obtained be turbid, immediately inject at least 30 c.c. of Flexner serum directly into the spinal canal without waiting to hear the bacteriologic report of the fluid.
3. Examine the spinal fluid bacteriologically. Smears are more important than cultures. If the *Diplococcus intracellularis* be found, repeat the injections daily for the three or four following days; in severe cases give the second dose twelve hours after the first.
4. After the first series of doses, wait two or three days, and if necessary, repeat the series.
5. The serum is a specific and of value in meningococcic meningitis only.
6. It is useless to give the serum subcutaneously.

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ABSTRACT OF DISCUSSION

Dr. Charles Hunter Dunn, Boston: The mortality of this disease at the Children's Hospital in Boston for the past ten years may be interesting. The average number treated was twenty, *i. e.*, cases in which lumbar puncture confirmed the diagnosis of infection with the diplococcus intracellularis. Up to 1902 there was no particular treatment. In 1903-04-05 the condition was treated by repeated lumbar puncture. In 1906 we gave the diphtheria serum a trial, and in 1907 used a vaccine prepared from the diplococcus intracellularis. It was from November, 1907, to November, 1908, that the Flexner serum was first used. During the preceding nine years the mortality had varied from 60 to 80 per cent.—in fact, the mortality was not affected by the treatment. During the last year the mortality dropped to 19 per cent. Dr. Churchill was right in saying that I gave 45 c.c. of serum without getting any spinal fluid. Twice I have seen serious symptoms of collapse in babies from a large dose of the serum without withdrawal of a sufficient amount of fluid.

There are three classes of these fatal cases; first, the fulminating cases, in which the babies die before the serum has time to get in its work; second, the late cases in which so much damage had been done before the serum was given that the patient dies from the injury already inflicted on the nervous system. The third are the resistant cases. There is a type of case in which the organism disappears entirely yet there is no abatement of the symptoms. It has been thought by Flexner that this is due to a complete closure of the canal, as in some of these cases at autopsy there was found within the ventricles an enormous number of organisms. But there are cases in which the serum has practically no effect on the fluid or the symptoms. Recently we had two cases in which no effect at all appeared. I think possibly one explanation of that type of case is that it may be due to a variety of the *Diplococcus intracellularis* that is particularly resistant. Dr. Flexner wants any one who comes across such a case to send him a strain of the organism that he may inject his horses with it and get an effective serum for treatment.

Dr. Alfred Hand, Philadelphia: In the Children's Hospital in Philadelphia we have had but one case of the epidemic form treated with the serum, and this case worked very well. The first day we obtained 45 c.c. of fluid and got the *Diplococcus intracellularis.* On the second day I withdrew 45 c.c. of fluid and injected 30 c.c. of the serum. On the third day I did the same. On the fourth day I could get but 15 c.c. of the fluid and the child was greatly improved. I thought that I was justified in putting in 30 c.c. again and I did so with very little pressure. A couple of hours afterward the child was seized with a violent headache and was screaming with pain, but morphin relieved it, and in five days the child was perfectly well. I have seen cases run on for eleven, twelve, or thirteen months and then the child would die, one occasionally getting well. This case just mentioned was the first case in which we felt that the treatment had had some effect in curing the patient. I felt that there was no harm done by injecting a larger amount of serum.

Dr. Frank Allen, Chicago: I have had several cases of cerebrospinal meningitis treated with Flexner's serum. My experience has been much like that of Dr. Churchill. Often lumbar puncture alone would cause the temperature to drop, but without the injection of the serum it would rise again. With the injection of three or four doses of serum the temperature would drop and remain down. In one case in which I could not find the organism the patient died before I could make an injection. Another patient had all the symptoms of pneumonia. On the third day this patient developed cerebral symptoms, puncture showed the diplococcus; the serum was used with almost immediate improvement. In this case we had difficulty in getting out enough fluid. We used 15 c.c., and at one time 30 c.c., without any trouble. The spinal fluid cleared up and no diplococci could be found, but the pneumonia continued and the patient was in the hospital for three weeks with pneumonia, without recurrence of spinal symptoms. In most of the cases the temperature rapidly dropped after treatment.

Dr. William M. Welch, Philadelphia: I have seen Flexner's serum used in a large number of cases of cerebrospinal meningitis in our Municipal Hospital and I regret very much that I have no exact data at hand to show the results. The members of the hospital staff feel sure that the death rate has been considerably reduced by the serum treatment. We have found that it is more useful in the true form of the disease, in which the *Diplococcus intracellularis* is present. But I rise more particularly to speak of an unfortunate result in one instance. The patient was a negro, who was admitted to the hospital with well-marked symptoms of cerebrospinal meningitis. Lumbar puncture was done, but no fluid flowed out. The direction of the needle was changed once or twice, but still no fluid was obtained. It was determined, however, to inject the serum. The patient was sitting in the upright position with his arms and chest resting on the foot of the bed; 15 c.c. were injected without any symptoms, but before the entire contents of the second bottle of 15 c.c. had been used the man complained of severe pain in his head; his head dropped forward and he became unconscious. The respirations were very slow, not more than eight or ten a minute. The breathing was stertorous. The patient never regained consciousness, and died within fifteen or twenty minutes. I should conclude from this experience that it is dangerous to introduce into the spinal canal any considerable amount of the serum without first withdrawing a similar amount of the spinal fluid.

Dr. George D. Scott, New York: It is important to lay particular stress on the fact that the *Diplococcus intracellularis* should be found before the employment of the serum. In the epidemic in New York City some time ago I saw a number of cases in the hospital and in private practice and it was a question often of an absolute diagnosis from lumbar puncture alone. In many cases a wrong diagnosis had been made, sometimes due to the fact that the bacteriologist was not so well informed as he might have been. I find that it is better to inject a small amount of serum more often and not to allow too much of the spinal fluid to escape at each injection. Bearing those points in mind, we can get more benefit from the serum as Dr. Flexner has stated.

Dr. F. S. Churchill: I have had the same experience of injecting more serum than we have removed fluid. I would emphasize what Dr. Scott says that it is of the utmost importance to remember that the serum is a specific. I think I must have been misunderstood by one of the gentlemen. I did not say that the serum was of *more* value in the epidemic form. It is of no value whatever in any other form of the disease. It is a specific for epidemic cerebrospinal meningitis and that fact must be borne in mind. In regard to the unfortunate termination of the case reported from Philadelphia I do not know whether the fact that the patient was sitting up had anything to do with it, but I never have given it to a patient sitting up. In one case of a baby, two years old, where I had employed two successive doses, I used an anesthetic at the third injection. It was a mild case and the baby was pretty thoroughly conscious. I removed the fluid, injected the serum, withdrew my needle and the child seemed all right. But suddenly the breathing stopped and, though we worked with her nearly an hour, she died. In that case the fluid was almost sterile at the last examination. I think I should use gas another time instead of any other anesthetic. We must remember that the serum must be given as early as possible, it must be given in the spinal canal and it must be repeated until the organisms are not found in the spinal fluid.

Practice of Medicine.—The everyday internist can and must be able to practice medicine scientifically. The most important aid to this end is a clinical laboratory properly equipped.—O. I. Halbert, in *Texas State Journal of Medicine.*

HEMOLYSIS OF HUMAN AND RABBIT ERYTHROCYTES BY CROTALUS VENOM *

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The first studies of the hemolytic action of serpents' venoms seem to have been made by Stevens and Myers,[1] who found that when cobra venom was added to shed blood, *in vitro,* destruction of the corpuscles (hemolysis) and retardation of coagulation took place. They also found the hemolytic power of the venom inhibited by antivenomous serum.

Myers[2] later studied the hemolytic substance—"cobralysine"—of the venom and found it destroyed by heat. During these studies he found that the susceptibility of the erythrocytes to cobralysine *in vitro* bore no relation to the susceptibilty of the animal to subcutaneous intoxication by venom.

Stephens[3] found that the hemolytic constituents of different venoms were not identical.

Myers[4] made further studies of venom hemolysins and serum antihemolysins.

Mitchell and Flexner[5] and Flexner and Noguchi[6] have further studied the phenomena of agglutination, hemolysis, leucolysis, and the germicidal activity of the blood serum. They found that the phenomena of agglutination appeared rapidly in favorable solutions, while in weak solutions a delay of some minutes up to an hour might be noted. Active agglutination took place in 0.2 per cent. solutions, while weaker ones either produce no change at all or show imperfect fusion. They studied corpuscles of the dog, rabbit, guinea-pig, sheep, ox, pig, necturus and frog. The phenomena of hemolysis were found to be complicated. Solutions of 0.2 per cent. were found most favorable for bringing out the hemolytic property, though the different venoms differed considerably, cobra venom being most active, water moccasin, copperhead and rattlesnake venoms less so in the order named. They also found that the corpuscles of different animals differed in their susceptibility to the action of the venom, those of the dog's blood being most easily affected, those of ox blood least so. The intermediate animals in order of susceptibility were sheep, guinea-pig, pig and rabbit. Solutions of 5 per cent. were needed to hemolyze the corpuscles of the ox. Heating to from 75 to 80 degrees C. for 30 minutes does not diminish the hemolytic action of any venom; heating to from 90 to 96 degrees diminishes the activity of rattlesnake venom; heating to 100 degrees C. for fifteen minutes diminishes the hemolytic activity of cobra, moccasin and copperhead venom a little. They believe that venoms contain various intermediate bodies, not all of these being absorbed by any one kind of corpuscles. Venom leucolysis was carefully studied and it was found that venoms contain principles that are agglutinating and dissolving for the white corpuscles of which the agglutinating principle may be identical with those for the erythrocytes. The leucolytic principle is distinct from the hemolytic principle. The several varieties of white cells show different susceptibilities to the action of the venom.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Brit. Med. Jour., Mar. 5, 1898, p. 621.
2. Jour. of Path. and Bact., 1899-1900, p. 415.
3. Jour. of Path. and Bact., 1899-1900, p. 273.
4. Trans. of the Path. Soc., London, Feb. 6, 1900.
5. National Academy of Sciences, 1901.
6. Jour. Exper. Med., March, 1902, vi, 3, p. 277.

Flexner and Noguchi[7] found that venoms have a cytolytic action on many kinds of cells, probably because of a pleurality of the amboceptors they contain.

Kyes[8] finds that the hemolysis by venom bears a definite relation to the lecithin content of the blood, by which the venom amboceptor is activated.

Noguchi[6] found that the hemolytic principle of venom extended over a wider group of animals than the agglutinative principle, its activity on the bloods of different animals diminishing the more widely the vertebrata were departed from. Cobra venom contains the largest, crotalus venom the smallest number of hemolytic units, while moccasin venom contains the greatest number of agglutinative units for such bloods. The mechanism of hemolysis is identical with that for the bloods of warm-blooded animals; complements are, therefore, present in all vertebrates and in many, at least, of the invertebrates. The heat liability of the venom agglutinins and hemolysins for cold-blooded animals agrees closely with that for warm-blooded animals.

The hemolytic activity of the venoms of the Indian and Australian snakes, and the effects of the antivenomous serums, have been made the subjects of several papers by Lamb.[9]

Throughout the writings to which reference has been made either no mention, or very brief mention is made of the effect of the venoms, and particularly of the rattlesnake venom on human corpuscles. As the rattlesnake is the most common venomous snake of this country, it seemed to us that the effects of its venom on the blood of its most important, though fortunately infrequent victim, man, ought to be investigated, and we set to work accordingly. As in the course of our studies certain facts were brought out confirming or refuting the work of those that preceded us, we feel justified in publishing what we found.

In a previous paper[10] we reported studies made about the same time on the agglutinating effect of crotalus venom on human and rabbit erythrocytes.

The venom used in both series of experiments was obtained for us from the *Crotalus adamanteus* through a special collector in Texas. According to the directions given him, the freshly collected venom was spread out in a thin layer on the surface of clean dinner-plates and dried in the sun. In this way a considerable quantity of excellent dry venom was secured. When the venom was to be employed for making the hemolytic tests, the dry product was finely pulverized, dissolved in the least possible quantity of 0.85 per cent. sodium chlorid solution, filtered through fine filter paper and the filtrate evaporated. The resulting scales were again pulverized, placed in a sterile test tube, covered with chloroform and stood in the thermostat until the chloroform had evaporated through the cotton plug with which the tube was stoppered. Experiments showed that the venom so treated was unmodified as regards hemolytic or agglutinative activity. It was from the powder so prepared that the solutions for hemolysis were made.

The blood was secured from the tip of a thoroughly cleansed finger, the same blood (W.'s) being used in all the tests. By making a deep puncture with a somewhat broad lancet, from one to three cubic centimeters could be secured. The blood was caught in a sterile test tube, immediately defibrinated, then centrifugalized. The serum was removed with a pipette to be used subsequently as serum complement, the corpuscles washed three times in sterile salt solution and finally made into a 5 per cent. suspension in 0.85 per cent. sodium chlorid solution.

In making the hemolytic tests, 1 c.c. of the corpuscular suspension was placed in each of a series of tubes suitable for use in the centrifuge, 0.5 c.c. of a mixture of one part of normal human serum (that removed with the pipette from the centrifuge tube as mentioned above) and two parts sterile saline solution and varying quantities of venom added. The mixture was shaken gently and enough saline solution added to bring up the volume to 2 c.c. The tubes were then stood in the thermostat at 37 degrees C. for one hour, when the first observation was made. They were then again gently shaken and placed in the icebox over night, after which the final observations were made by whirling the tubes for 5 minutes in the centrifuge and then examining the clear fluid for variations in the color tint.

In the tabulations we express the occurrence of hemolysis by the letter H, doubling or trebling the letters to express the degree. "H?" means doubtful hemolysis or a very faint trace. "HC" means complete hemolysis. We also exhibit the associated agglutination by the use of the letter A. The amount and character of the sediment is, in general, perhaps, a better index to the amount of hemolysis. In these experiments the sediments in tubes marked H were all the same, those in tubes marked HH were the same but different than those in tubes H or HHH, so that, whether the tints or sediments were used as indices, the results would be the same.

The quantity of venom has been expressed by some of those who experimented with the hemolytic reactions in the form of percentages, but, as these vary according to the final dilution of the mixture, and as after some experiments we were obliged to increase from a 2 c.c. to a 10 c.c. mixture, we believe it to be more accurate to express the quantity of venom in the form of grams of the dry venom in the final mixture.

TABLE 1.—TWO CUBIC CENTIMETER DILUTIONS

Grams dry venom of *Crotalus adamanteus* in total quantity of final mixture.	%		Normal human erythrocytes from defibrinated blood susp. in 0.85 % NaCl sol., (5% susp.)		Normal human serum diluted with 2 vols. normal NaCl solution.		Results.
0.001	(.05)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.005	(.25)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.01	(.5)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.0125	(.625)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.03	(1.5)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.05	(2.5)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHH
0.06	(3)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHH
0.2	(10)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H

TABLE 2.—TWO CUBIC CENTIMETER DILUTIONS

0.01	(5)	plus	1 c.c.	plus	1.0 c.c.	equals	A plus O
0.04	(2)	plus	1 c.c.	plus	1.0 c.c.	equals	A plus H

Table 1 shows that increasing additions of venom result in increasing hemolysis until a certain point is reached. Beyond this point added venom diminishes the hemolytic activity, presumably because of excess of amboceptor units in the venom. Table 2 shows that the same disturbance results from excess of complementary units; when 1 c.c. of the serum dilution, instead of the 0.5 c.c. employed in Table 1, is used, hemolysis is greatly diminished. Thus in Table 1, 0.01, 0.03 and 0.05 grams of venom produce marked hemolysis, but in Table 2, 0.01 causes no hemolysis and 0.04 very slight hemolysis.

Whether these results depend on the Neisser-Wechsberg phenomenon seems to us to be problematical.

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[7] Univ. Penn. Bull., July-August, 1903.

[8] Berl. klin. Wchnschr., 1903, xli, 21, 57, 82.

[9] Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government in India, No. 16, 1904, and No. 17, 1905.

[10] Read at the meeting of the American Association of Pathologists and Bacteriologists, Boston, April 9-10, 1909.

We soon found it impracticable to continue to work with 2 c.c. mixtures, because of the difficulty of dissolving the necessary quantity of venom in the small quantity of fluid used. We were, therefore, obliged to change to a 10 c.c. mixture. In this mixture we deal with the same number of corpuscles, the same quantity of serum and the same quantity of venom, though, of course, the percentage of venom is changed by the dilution. This made us abandon the percentage expression and make use of figures indicative of the actual weight of dry venom added to the mixture.

Table 3 shows the details of experiments made with the 10 c.c. mixture for comparison with those in Table 1 in which 2 c.c. mixtures were employed. It will be seen that the results are the same. This was to be expected, as the proportions were the same. The percentages of venom are, however, entirely different.

TABLE 3.—TEN CUBIC CENTIMETER DILUTIONS

Grams of dry venom of *Crotalus adamanteus* in total quantity of final mixture.			5% susp. of normal human erythrocytes from defibrinated blood, in 0.85% NaCl solution.		Normal human serum diluted with 2 vols. normal NaCl solution.		Results.
	%						
0.01	(0.1)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.03	(0.3)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.05	(0.5)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHHH
0.07	(0.7)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHHHH

TABLE 4.—TEN CUBIC CENTIMETER DILUTIONS

		Corpuscles from citrated blood.		Citrated plasma.		
0.01	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.03	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.05	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.07	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHH

In our paper on the agglutination of the corpuscles, we have shown that it makes considerable difference in the rapidity with which the reaction takes place whether defibrinated or citrated blood is used to furnish the corpuscles.

In investigating this problem with reference to hemolysis we used the following technic:

The blood from the finger tip was permitted to flow into a sterile tube containing sterile sodium citrate solution (2 per cent. in 0.85 per cent. sodium chlorid solution). The fluids were well mixed, then centrifuged, the supernatant fluid removed with a pipette to be used in lieu of the serum ordinarily employed and the corpuscles washed three times as usual, then made into a 5 per cent. suspension.

One c.c. of the suspension was placed in each of a series of tubes, varying quantities of venom were added, and to each was added a quantity of the citrated plasma shown by calculation to be the equivalent of the 0.5 c.c. of the serum mixture ordinarily employed. Thus the conditions, after dilution to 10 c.c., were identical with the other experiments except that the corpuscles had been acted on by the sodium citrate and a small quantity of sodium citrate remained mixed with the plasma. The experiment in Table 4 shows that the hemolysis is slightly less when the citrated corpuscles are employed for the test. Thus the effect of the citrate is to diminish hemolysis and to retard agglutination, using defibrinated blood as a standard.

In order to compare our results with some known quantity, we next made a series of tests in which rabbits' corpuscles instead of human corpuscles were employed.

Table 5 shows the hemolytic effect of the crotalus venom on rabbit erythrocytes from defibrinated and citrated blood. As in the human blood, there is a diminution in the amount of hemolysis when the citrate is employed. It will also be observed that the defibrinated rabbit corpuscles are about ten times as sensitive to the hemolytic action of the venom as are the citrated corpuscles.

TABLE 5.—TEN CUBIC CENTIMETER DILUTIONS: RABBIT

Grams of dry venom of *Crotalus adamanteus* in total quantity of mixture.		5% susp. of norm. erythrocytes from defibrinated blood in 0.85% NaCl solution.		Normal rabbit serum diluted with 2 vols. of NaCl solution.		Results.
0.0000125	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H
0.000125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.00125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.0125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHHH
		RABBIT: 5% susp. of normal erythrocytes from citrated blood in 0.85% NaCl sol.				
0.0000125	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.000125	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.00125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.0125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH

Flexner and Noguchi found that when venom was heated to from 75 to 80 degrees C. the hemolytic properties were not affected. As no mention was made of the state in which the venom was heated, we decided to try whether the fact was true both of pulverized dry venom and of venom in solution.

To test the effect of heating it in the dry state, a small quantity was spread on the bottom of a small Erlenmeyer flask and floated on a water bath which was kept for 30 minutes between 75 and 80 degrees C. The powder was then dissolved and hemolytic tests made on both human and rabbit corpuscles. The results of the experiments are shown in Tables 6 and 7. When Table 6 is compared with Table 5, it becomes evident that heating the venom, even in the dry state, produces a marked diminution of the hemolytic activity, for in Table 5 hemolysis is distinct in 10 c.c. mixtures when only 0.0000125 grams of venom are added, though in Table 6 hemolysis begins only after 0.002 grams of the heated venom have been added. The same result was obtained with both defibrinated and citrated serums.

TABLE 6.—VENOM POWDER HEATED DRY FOR 30 MINUTES AT 75° TO 80° C.

Grams of dry venom of *Crotalus adamanteus* in total quantity of final mixture.		5% susp. of rabbits' erythrocytes, from defibrinated blood in 0.85% NaCl solution.		Normal rabbit serum diluted with 2 vols. 0.85% NaCl solution.		Results.
0.002	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H(?)
0.01	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.03	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH

TABLE 7.—VENOM POWDER HEATED DRY FOR 30 MINUTES AT 75° TO 80° C.

		5% susp. of normal human erythrocytes from defibrinated blood in 0.85% NaCl solution.				
0.002	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H(?)
0.01	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H (slight)
0.03	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H (slight)

When human corpuscles were employed the effect of heating the venom was much less marked. Thus when Table 3 is compared with Table 7 it will be seen that the unheated venom produces hemolysis when quantities of 0.01 gram and upward are added, and becomes marked when 0.03 grams are reached, though when the heated venom is added the hemolysis effected by 0.01 is very slight and with 0.03 is still very slight. Experiments made with citrated blood showed the same result.

It thus becomes apparent that there is a difference in the hemolytic activity of the heated and unheated venoms for rabbit and human corpuscles.

This led us to conjecture that the hemolytic factors for these different corpuscles might be different, but this we were unable to prove.

When the venom was first dissolved and then heated, the heating being accomplished in the same manner, by placing the solution in a small Erlenmeyer flask and floating it on a water bath kept for 30 minutes at between 75 and 80 degrees C., a much more pronounced destruction of the hemolytic power was brought about.

The results are shown in Table 8. When human corpuscles are exposed to unheated venom solutions, as shown in Table 1, hemolysis begins when 0.001 grams are added: when the venom solution is heated, when 0.002 grams are added. If, however, rabbit corpuscles are used, the results are entirely different, for when the unheated solution is employed, hemolysis begins (Table 5) at 0.0000125 grams, but when the solution is heated at 0.002 grams. Practically the same diminution of hemolysis takes place whether defibrinated or citrated blood is used.

TABLE 8.—Venom Solutions Heated for One-Half Hour at 75° to 80° C.

Grams of dry venom of *Crotalus adamanteus* in total quantity of final mixture.		5% susp. of normal human erythrocytes in 0.85% NaCl solution.		Normal human serum diluted with 2 vols. of saline solution.		Results.
0.00001	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.0005	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.001	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.002	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H(?)
		5% susp. of normal rabbits' corpuscles from defibrinated blood in 0.85% NaCl solution.				
0.0002	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H?
0.0005	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H?
0.001	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H?
0.0015	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H

We observed an interesting change in the hemoglobin of the corpuscles not hemolyzed.

If the corpuscles from a tube containing venom and serum in quantities too small to effect hemolysis be collected by centrifugalization and suspended in fresh 0.85 per cent. sodium chlorid solution, the corpuscles remain unchanged. If again collected and again suspended in fresh saline solution, a change may or may not be seen; but if the operation be repeated a third time the corpuscles undergo immediate hemolysis in the salt solution.

In the course of some immunization experiments that turned out badly, we prepared a venom solution by dissolving the dry venom in 100 parts of 0.85 per cent. sodium chlorid solution and then saturating it with chloretone. This prevented bacterial contamination and the toxic properties of the venom were preserved for considerable time. On using this solution for a hemolytic test, we found complete hemolysis in 30 minutes when it was not expected. We then tried a saturated solution of chloretone in the normal salt solution, and found that the antiseptic itself caused rapid and complete hemolysis when in saturated solution. We were thus led to abandon the use of chloretone for preserving the venom solutions.

As human blood in quantities sufficient to furnish enough corpuscles for making hemolytic tests is not easily obtained, we were interested to determine how long the corpuscles, once suspended in the saline solution, might be available for use. Suspensions (5 per cent.) of both human and rabbit corpuscles were, therefore, prepared and kept in the icebox, being subjected to hemolytic tests from time to time. We found that during 24 hours there was very little change, but that after 36 hours hemolysis took place much more rapidly than before.

From this we came to the conclusion that the corpuscular suspensions should be prepared every day and not kept over, and the experiments we report were always made on freshly secured blood.

In order to study the effects of crotalus venom on the leucocytes, we made use of the sediments collected by centrifugating the tubes in which hemolysis had taken place. This was spread on slides and stained by the Romanowsky method. All these observations were, therefore, made on corpuscles that had been in contact with the venom in the icebox for 24 hours, and do not form very satisfactory data.

We found that the small lymphocytes stained well and appeared quite normal even in tubes to which as much as 0.07 grams of venom had been added.

Large lymphocytes were apparently unaffected by quantities of venom less than 0.03 grams per 10 c.c. of fluid. They were not found in tubes containing 0.03 grams and upward.

The polymorphonuclear neutrophiles showed the most marked changes, and are, therefore, probably the most susceptible to the cytolytic action of the venom. Even small quantities of the venom produced marked karyolysis with a hyaline change of the cytoplasm. This is an interesting observation which may have some bearing on the invasion of the tissues by bacteria which so quickly takes place after venom injection.

The eosinophiles seemed to resist the venom very well. In no case, even up to the addition of 0.07 grams to the 10 c.c. mixture, were they completely destroyed, though the nuclei refused to stain. The granules were never destroyed. No basophilic cells were found in any of the sediments.

CONCLUSIONS

1. Crotalus venom is capable of hemolyzing red corpuscles of both man and the rabbit in the presence of serum or of citrated plasma.

2. When an excess of the venom, or an excess of the serum is present, hemolysis diminishes.

3. In the properly proportioned mixtures, hemolysis takes place regardless of the extent to which the mixtures may be diluted by the addition of salt solution.

4. Defibrinated blood furnishes corpuscles more sensitive to the venom than citrated blood.

5. Heating dry venom diminishes its hemolytic activity for human corpuscles a little, for rabbit corpuscles a great deal.

6. Heating solutions of venom diminishes its activity for human corpuscles a little, for rabbit corpuscles a great deal.

7. Rabbit corpuscles are much more susceptible to the hemolytic effect of the venom than human corpuscles.

8. Corpuscles in suspension should not be kept from day to day for venom experiments.

9. The small lymphocytes and eosinophiles resist the venom better than the large lymphocytes and polymorphonuclear neutrophiles.

ABSTRACT OF DISCUSSION

DR. D. H. BERGEY, Philadelphia: Presumably, from the manner in which the experiments have been conducted, the hemolysis brought about by the venom is due to the presence in it of an amboceptor; and the addition of serum to the mixture of venom and blood supplies the complement. How do the authors of the paper explain the disappearance of hemolytic power, since we know that amboceptors are supposed to be thermostabile?

DR. E. C. L. MILLER, Detroit: Is there any especial explanation for the fact that venom acts in proportion to the absolute quantity present and not in proportion to the dilution, as it forms, in this respect, an exception to the ordinary rule?

DR. JOSEPH MCFARLAND, Philadelphia: When we found that it was necessary to change from a mixture containing only 2 c.c. to one containing 10 c.c., the question of the relation of proportion to quantity arose, and we discovered that, as shown by a comparison of tables, the increase in quantity had no effect at all on the action of the venom. Then I suggested that it would be interesting to try still higher dilutions, which we did; and we found no change in the behavior of mixtures of 250 c.c., the largest amount used, hemolysis taking place in this the same as in smaller quantities. I cannot answer Dr. Bergey's question quite so positively. Just what the loss of hemolytic power in the heated venom indicates, I do not know. It might indicate that the amboceptors were in a different class from the ordinary bacteriolytic or hemolytic amboceptors. I scarcely think, however, that this would be the case. I believe that it is true that heating disturbs all amboceptors somewhat and that the virulence is diminished in proportion to the amount of heat and the length of time in which the heating takes place.

DR. D. H. BERGEY: I believe that this is true, but do not think that it is true to the extent that it has been found in your experiments.

DR. MCFARLAND: The disturbance affected about half its virulence in this case.

SOME POINTS OF CONTACT BETWEEN NEUROLOGY AND ORTHOPEDIC SURGERY *

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It is the purpose of this paper to call attention to a few of the more recently understood conditions which produce symptoms for which either the neurologist or the orthopedic surgeon may be consulted and where frequently the methods peculiar to both specialties are of advantage in bringing about relief. It is not proposed to discuss the many problems in which the two specialties have been for long correlated, such as the treatment of the infantile or spastic paralyses, as there is little new to add to such subjects, even if the time were sufficient, and in those which are considered the time is so short that only a brief mention of them is possible. It is the hope, however, that the statements here made may serve as suggestions which will lead to a more thorough investigation of the conditions so that an even better understanding of their various phases may be obtained. The honor of being permitted to speak before such a body as this is fully appreciated, and it is my earnest hope that that which is presented may be of sufficient value to justify the amount of time allotted.

SPINAL LESIONS

In a considerable number of lesions of the spine, other than tuberculous, the inflammatory swelling or the osseous thickening which is a part of such diseases frequently causes pressure on or irritation of the nerve roots and results in symptoms referred to the portion of the body that the irritated nerve supplies. These symptoms may consist of pain, at other times areas of hyperesthesia or anesthesia, or even at other times true paralysis, the exact symptoms depending on the special nerve involved and the amount of pressure or irritation present.

Such a condition may result from the involvement of any region of the spine, but naturally in the regions of the greatest mobility, the cervical and lumbar, they will be most often met. The symptoms present in the given case must, therefore, depend very largely on the region of the spine involved. In the cervical region the symptoms will naturally be referred to the neck or arms or to the areas supplied by the cervical or brachial plexuses. In the dorsal region, aside from the symptoms present at the seat of the disease, the pain referred along the course of the intercostal nerves is the most common. In the lumbar region the referred pain may show in any part supplied by the lumbar and sacral plexuses, the low back or abdomen, the pelvis or perineum, or any part of the legs.

Whenever such spinal conditions exist the referred symptoms, those which most often lead to the consultation of the neurologist, are almost invariably either entirely on one side or at least much more marked on one side than on the other. With the dorsal or lumbar spinal lesions the unilateral manifestation is almost always the case, but in the cervical region, while one side is always worse, nevertheless both sides are usually somewhat involved.

The symptoms are always, if the disease is at all acute, aggravated by sudden movement of the affected part, such as in coughing or sneezing, slipping or any unguarded motion. With lesions in the lumbar or in the cervical spine the pain is commonly worse at night because of the opportunities offered for sag of these portions of the spine with the relaxation of the muscles, such as takes place during sleep.

Of the special diseases which may cause symptoms of this sort it is not possible in so short a time to do more than briefly to mention them, and the reader must refer to the various articles published elsewhere for further details. The most common, however, are the chronic infectious arthritis and the hypertrophic arthritis, but it should be remembered that any disease in which there is inflammatory swelling or thickening about the vertebral articulations may result not only in symptoms referred directly to the seat of the disease, but also to symptoms referred to other parts, owing to the pressure on or irritation of the nerve roots. With the two most common conditions, the infectious arthritis is the more acute, and the local symptoms are the most pronounced. There is more local swelling, which in the cervical spine can often be felt, and the muscular spasm causing the limitation of the motion is much more marked than with the hypertrophic arthritis. The referred pains are more sudden in their development and more acute, both in regard to the intensity of the pain as well as the duration. The recovery in such a type of disease should be correspondingly rapid and is usually complete.

With the hypertrophic arthritis the process is slow in its onset and there may be an entire absence of subjective symptoms at the seat of the disease. The referred symptoms have so little else to show for them that the real nature of the trouble is apt to be overlooked unless the examination be most thorough. In this type not only is the onset slow, but the recovery is correspond-

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inly slow, and it is in this type at times that the thickening which causes the pressure on the nerves is so marked and so dense that complete restoration of the function may never occur.

The following cases are reported as illustrative of these forms of disease:

Case 1.—Hypertrophic arthritis of the cervical spine resulting in sufficient pressure on the cervical and brachial plexuses to cause paralysis of the arms.

Patient.—Mrs. McC., aged 58, by occupation a nurse, had always been well and actively engaged in her work until the present sickness. In July, 1893, she was caught in a thundershower and her clothing was wet through. The next morning she complained of pain in the neck, with some tenderness in the upper part of the chest. There was no cough or expectoration. The pain in the neck increased in severity very rapidly, until the slightest motion caused the most intense suffering, and because of this she was admitted to the Good Samaritan Hospital.

Examination.—At the time of the first examination she was evidently suffering a good deal. The head was held a little to one side, the chin to the left, the shoulders drawn up, and all motions were most carefully guarded by muscular contraction. Any attempt at motion caused great pain. None of the other joints were in the last involved, and aside from this local condition the patient seemed well.

Treatment and Course of Disease.—For the first week or two the patient was kept quiet in bed, and the various rheumatic remedies freely given with very little if any effect. After this a Thomas collar was applied for more complete fixation, and following this light-weight extension was used. These gave some relief, but neither could be used continuously because of the nervousness of the patient, so that the two applications were used alternately, each being worn for a few hours. In three or four weeks after the beginning of the attack a swelling appeared in the right side of the neck. This was about the size of a small lemon, and was apparently connected with the spine. At the same time numbness of the left arm was noticed, with some impairment of motion, and this condition continued and increased until the arm was almost entirely helpless. The right arm and both legs also became involved, never in as marked a degree as the left arm, but enough to make motion in bed, unassisted, impossible. At one time there was difficulty in swallowing, and for a short period breathing was almost entirely diaphragmatic. The patient's condition remained about the same for two months, after which there was a slow but steady improvement, so that at the end of the third month she was able to sit up for a short time each day, and in December, five months from the onset of the trouble, she was able to move about with but little assistance, and was taken home. The paralytic symptoms referred to in the right arm and legs had by this time practically disappeared, but the left arm was still very helpless. The swelling in the neck was practically the same as when first noticed.

Later History.—The patient was not again seen until thirteen months later, during which time, aside from the use of the Thomas collar, no special treatment had been carried out. At the time of this examination the improvement in the patient's general condition was most marked. She moved about with perfect ease, and, aside from the stiffness of the neck and some impairment in the use of the left arm, she seemed well. Extension of the neck was entirely restricted, so that in order to raise the chin the whole body was bent backward. Rotation was also entirely restricted, while flexion was more free, it being possible to lower the chin to the chest. On each side of the neck, over the tranverse processes, was distinct thickening. In the left arm all motions were limited, especially those in which the shoulder muscles were used. The fingers were flexed, apparently owing to the contraction of the palmar fascia and the flexor tendons. The sensation of the hand and arm was normal. At the present time the patient's condition is practically the same as at the time of this last note. She is able to be about at her work, but there has been no change in the condition of the neck or arm.

Case 2.—Infectious arthritis of the cervical spine with paralysis of the arms due to nerve root pressure.

Patient.—Mr. E., aged 38, was seen in January, 1900, having had rheumatism for many years, but no one part being especially involved and the disease never being severe enough to confine him at home for more than short periods. For the year previous to the first examination the patient had had trouble with the shoulder, which had gradually extended to the neck. At the time of the examination the entire cervical spine was actually inflamed, all motions being extremely painful. At that time the left arm was much limited in its function; not only was it painful but there was a partial paralysis of the muscles. Under observation the paralysis of the arm increased until it was practically entirely helpless, it being necessary to raise the hand and place it in whatever position was desired. The right arm became considerably involved, but less markedly so than the left.

Diagnosis.—The condition represented an infectious arthritis (the so-called "rheumatism"), which had involved the cervical spine, and with the periarticular swelling the nerve roots had been constricted until a partial paralysis of the arms resulted.

Treatment and Course of Disease.—Under good hygiene, having the patient live out of doors, much as would be insisted on in a tuberculous case, with a Thomas collar to steady the head and neck, and with rational drug treatment, the patient gradually recovered, and in six months had regained the full function of the arm, with only slight remaining limitation of motion in the neck. With the general instruction as to hygiene the patient has remained well with no further trouble.

Case 3.—Hypertrophic arthritis of the cervical spine with temporary paralysis of the shoulder and arm muscles.

Patient.—G. H., a man, aged 32, consulted me in September, 1898. He was a professor in one of our large universities. His family history was excellent; he had been well previous to January, 1897, when he broke down nervously. He went abroad, and soon after this stiffness of the neck and shoulders developed, not enough, however, to prevent his going about. Soon after this, numbness developed in the left arm, with marked loss of power, and later the right arm was similarly involved, only not so severely. The condition improved slightly, and then remained about as it was at the time of the examination. At that time there was a moderate rounded curve involving the upper dorsal cervical regions of the spine. This portion of the spine was rigid. The shoulders were drooped forward and there was atrophy of the muscles of the chest, shoulders, and upper back. On attempted motion there was spasm of the muscles about the shoulders and upper spine. The legs were normal and there was no change in the reflexes. There was marked loss of power in the left arm, with some numbness, and there was a tendency to the same condition on the right side.

Treatment.—This consisted almost wholly of support of the cervical spine, which was used for a few months and was followed by entire recovery, except for slight permanent limitation of motion of the neck.

Case 4.—Hypertrophic arthritis of the cervical spine with arm symptoms.

Patient.—Mary S., aged 35, came to the Carney Hospital about three years ago because of trouble with the back and neck. The history as given was that a few months previously she made a change in the underclothing and took cold. This was followed by pain in the neck which prevented her from being about. At that time the slightest motion of the head was extremely painful. No other joints were involved. The arms for some time could not be used freely, the left one being worse. Under general treatment, with fixation of the neck, the patient gradually improved, so that at the present time, except for the rigidity of the upper dorsal and lower half of the cervical spine, she is well.

Case 5.—Hypertrophic arthritis with irritation of the intercostal nerves causing the so-called intercostal neuralgia.

Patient.—Mr. R., was first seen in August, 1900, because of a persistent pain in the left side, a condition which had been present for nearly a year, which had not yielded to drugs or other forms of treatment, and which had been so persistent and interfered so much with the ordinary activities that the patient, who was an active business man, had practically decided to retire from all active life. The back was rounded forward, there was limitation of motion in the lower dorsal and lumbar regions, the motions of the spine increased the pain along the line of the intercostal nerves, and sudden movements, such as coughing or sneezing, increased it markedly. The case was one of hypertrophic arthritis of the dorsal spine with pressure on and irritation of the intercostal nerves.

Treatment.—A jacket was applied holding the body erect and relieving the irritation of the dorsal spine consequent on motion, with immediate relief and with entire recovery in a few months. The patient remained well after that time.

SACROILIAC LESIONS

Undoubtedly the most common joints to show lesions of any sort are those between the ilia and the sacrum, since these joints are supported entirely by muscles and ligaments, and consequently anything which interferes with the tone of those may lead to strain of the joints or sag or displacement of the bones; and since the sacral plexus of nerves passes directly over these joints, it is not to be wondered at that in many of such cases pain is present, due to the irritation of some portion of this plexus. Undoubtedly more of the cases of sciatica are due to this than to any other one thing, and in such cases not only may pain be present, but the continued irritation of the nerve may lead to an exaggeration of the reflexes, or, if the pressure is severe enough, actual paralysis may exist.

The location of such pain naturally varies and depends on the amount of or the portion of the plexus that is irritated. It may be quite general and extend the length of the leg, or it may be confined to definite areas, there being areas of hyperesthesia or anesthesia. The symptoms will be increased by motion in the affected joint, and are almost invariably worse at night or when the body is for long in the recumbent position, during which time the supporting muscles relax. With this relaxation the lumbar spine is allowed to sag and thus drags the upper part of the sacrum backward, producing strain of the joint with resulting pain, either local or referred.

The increase in the pain in sciatica when the patient is in bed and the common custom in such cases of sleeping in a chair in the semierect position is to be explained in this way.

CASE 6.—Weakness of the sacroiliac joints following injury and acute illness, with ultimate displacement of the sacrum, this causing obstinate sciatica.

Patient.—Miss S., had been an invalid for fifteen years, suffering much from sciatica, with backache and neuritis of the right arm. The history is that seventeen years previous to her being seen she fell over some stairs, striking the lower part of the back, being quite lame for a short time, with considerable pain referred to the lower back. Two years later she had an acute illness, with a high temperature which lasted for a few days. After this a severe backache developed, with pain in the right leg, and ever since then the patient had pain in the leg, called sciatica, with continued backache, and in practically all of that time was an invalid. The menstrual period was attended with marked increase of pain.

Examination.—The patient was in extremely poor general condition, with extreme tenderness over the region of the sacrum and especially the sacroiliac articulations. She was able to walk only with the use of a cane, and any motion of the lumbar spine or of the thighs which produced motion or strain of the pelvic joints caused an increase of the pain. The straight leg raising, in which the hamstring muscles are made tight, was exceedingly painful and allowed to only a few degrees. There was much pain referred to the arms and hands, increased or relieved by posture. The history suggested weakening of the sacroiliac joints at the time of the injury, with a relaxation of the joints at the time of the acute illness, and the displacement of the sacrum backward at that time, the sciatica representing the irritation of the sacral plexus consequent on the displacement of the bone. The pain of the arm, neuritis, was due to the extreme forward position of the shoulder, a part of the weakened condition, and the crowding of the brachial plexus against the ribs by the head of the humerus.

Treatment and Course of Disease.—The sacroiliac joints were manipulated under an anesthetic, the sacrum was forced into place with a marked temporary increase of the sciatic pain, but with a marked relief almost at once in the general nervous tension. With the aid of supports, consisting first of the adhesive plaster strapping, later on of the pelvic belt and a flexible back brace, the patient was able to get about, and has gradually regained her health, with nearly the normal return of the functions of the body. With the change in the posture and the holding of the shoulder back the pain in the arms has disappeared.

CASE 7.—Obstinate sciatica due to displacement of the sacrum.

Patient.—Mr. A., aged 19, midshipman at Annapolis, had been under active treatment and away from his duties for the past ten months because of severe sciatica in the right leg. The trouble came on suddenly and persisted and caused much suffering ever since. In that time the patient had all sorts of treatment, including injections along the nerve sheath, massage, long periods of rest, drugs, etc., with no improvement.

Examination.—The patient stood with the muscles of the spine and thighs all in marked spasm, with the body listed to the left, with forward bending and side bending markedly limited, with the spinal motions much more free when sitting, in which position the hamstring muscles are relaxed, with the hip motions free except the straight leg raising, this being almost entirely limited on the left side, and considerably limited on the right, with marked tenderness over the sacroiliac articulations. The case was one of backward displacement of the sacrum on the left side, with the sciatica resulting from the irritation of the sacral plexus.

Treatment and Course of Disease.—The patient was admitted to the hospital and the joints manipulated, but the replacement of the bone could not be accomplished at that time. Plaster-of-Paris jackets were applied and other forms of spinal support without relief, and three weeks later another manipulation was attempted, this time with a distinct slip of the bone into place, with immediate relief of the sciatica. A few days later the patient left the hospital, and on the way across the city the bone slipped slightly out of place, with an instant return of the sciatic pain, which was at once corrected by the application of a brace which forced the bone back into place. Since then, with the use of a pelvic belt, there has been no further difficulty. There has been no return of the pain.

CASE 8.—Severe sciatica due to displacement of the sacrum and with severe brachial neuralgia due to the forward position of the shoulder.

Patient.—Miss W., aged 28, was seen four years ago because of severe sciatica which had been present off and on for four years. In that time the patient had had much backache and the sciatica had been so constant, making sleep difficult, that the patient had become very nervous and was in a marked neurasthenic state.

Treatment and Course of Disease.—From the attitude assumed in standing and the motion allowed, together with the tenderness over the sacroiliac joints, a lesion of these joints was diagnosed and fixation apparatus applied, but entirely without relief. Manipulation was then attempted and resulted in a marked slip of the sacrum into place, with instant relief to the pain, with an immediate ability to go about, with a rapid disappearance of the neurasthenic symptoms, and an entire relief of symptoms ever since. A belt was worn for a few months following the manipulation. The patient also complained much of pain in the arms, chiefly the right, which interfered much with all function and which caused much suffering at night. This persisted after the sciatica was relieved by the manipulation and in an attempt to control it she was at one time confined to bed for three months under the care of most competent physicians, but without relief. Recognizing later that the pain in the arm was due to the crowding of the brachial plexus by the head of the humerus in the forward position and that this forward position was held by adhesions in the coracoid bursa, I manipulated the shoulder so that the adhesions were freed and the erect shoulder position could be maintained. This was followed by distinct relief at once, with a gradual disappearance of the "nerve" pain, until the patient was entirely well. A light shoulder-brace was worn to hold the shoulders back for several months.

THE SHOULDER MALPOSITIONS AND THEIR EFFECT ON THE BRACHIAL PLEXUS

With the drooping of the shoulder forward the scapula rotates so that its axis is directed forward and outward at the top, and with this the glenoid cavity is lowered so that the shoulder is finally supported by the humerus resting against the ribs. In this position, naturally, the axillary structures are compressed between the humerus and the ribs. If the patient is stout, all of the structures are compressed, resulting frequently in disturbances of circulation in the hands and arms as well as pain along the distribution of the branches of the brachial plexus. If the patient is thin the ulnar nerve, which is most posterior, is commonly pressed on and the frequent ulnar neuritis seen in such cases is in this way explained. If, in addition, the costume is so arranged that the fat tissue under the axilla and below the bust is crowded up under the arm, the compression of the axillary structures by the arm is increased.

Occupation or attitude which increases this forward position naturally increases the pain and at times leads to an entire inability to use the hand, seen most strikingly in the so-called "writer's cramp."

Such being the case, naturally the correction of the position of the shoulder so that the axillary structures are no longer compressed and the training of the individual to use the body erect rather than drooping are of the utmost importance for the cure of such conditions. If in such cases the forward flexion of the upper part of the scapula makes it impossible to extend the shoulder fully, as is often the case, an operation for the correction of this should be performed, as until this is corrected real cure can not take place.

Case 9.—Marked stoop shoulder with an extreme degree of brachial neuritis and writer's cramp.

Patient.—A man, aged 30, tall, of slender build, always having stooped considerably, had, for a year previous to the time of the first consultation in July, 1908, suffered much from pain in the right shoulder and arm, always made worse by writing, and being a journalist by profession, this seriously interfered with his occupation. The condition had become so bad that all use of the hand had to be avoided, and the patient had become much broken in health as the result of the constant pain.

Examination.—At the time of the examination the forward position of the shoulder was most evident, and the fact that the brachial neuralgia could be increased by increasing the forward position was demonstrated. As the result of the long-standing forward position of the shoulder, which had undoubtedly occurred during childhood, the scapulæ were flexed forward, so that the erect position of the shoulder was impossible.

Treatment.—Accordingly, after some entirely unsuccessful experimentation with braces, an operation was performed consisting of the removal of the upper part of the scapula, so that the shoulders could then be carried erect; and with this, with the temporary use of braces, the neuralgia and pain in the arm gradually ceased, until at the present time the patient is practically well.

Case 10.—*Patient.*—A young woman, aged 30, a professional violinist, sought relief from pain in the right hand, always brought on in connection with her violin-playing, which had become so marked that the question of giving up her profession had been forced on her. The pain was all referred to the hand, with nothing locally to show for it, and in the examination it was found that the patient within the past year had changed the style of bowing, using the arm more horizontally than previously, and that the pain was developed only when the bow was drawn to its extreme length, in which position the shoulder was carried markedly forward. When the shoulder reached a certain point the pain developed so markedly that it was difficult for the patient to hold the bow.

Treatment.—After some consideration of the problem, a light shoulder brace was applied which prevented this extreme forward position of the shoulder, and with this, and with the training of the patient to use the shoulder rightly, the pain and disability have been entirely controlled. (See also Cases 6 and 8.)

THE EFFECT OF WEAKNESS OF THE PELVIC JOINTS ON THE GAIT IN PARALYTIC CONDITIONS

In nearly all of the paralytic conditions the body is inclined forward in walking, and frequently the knees are used flexed. Not only do both of these positions favor strain of the sacroiliac joints, but neither position can be for long maintained by any one, irrespective of the paralysis, without strain of these joints resulting. If these joints are strained and become relaxed, since the pelvis represents the structural base of the body to which all of the trunk and thigh muscles are attached, obviously locomotion becomes difficult, because these trunk and thigh muscles naturally work at a disadvantage and the gait is peculiar simply because of the joint strain, entirely apart from the paralysis. Recognition of this fact and provision of proper support for the pelvic joints frequently results in marked improvement in the gait and the disability so commonly present in these paralytic conditions can frequently be strikingly modified. The joint protection does not, of course, change or cure the paralysis, but frequently lessens the disability to a marked degree, and should be definitely recognized in the treatment of these conditions.

Case 11.—*Patient.*—Mr. J., aged 41, sought treatment because of trouble with the feet, giving the history that for some months he had been growing increasingly more helpless, having difficulty in keeping his balance, difficulty in walking in the dark, and much unsteadiness on turning quickly, with some drag of the toes. The case was one of locomotor ataxia, with entire absence of the reflexes, disturbed reaction of the pupil, and in connection with this a distinct flat foot, with a well-marked strain of both sacroiliac joints.

Treatment and Course of Disease.—A pair of foot plates were given to relieve the foot strain, the adhesive plaster strapping was applied to the lower back and a pelvic belt ordered to increase the pelvic stability. At the time of the second visit the patient reported himself as being markedly improved and as being able to walk much more freely. The belt was applied and this continued in connection with the foot plates, with continued improvement over the condition which was present at the time of the first visit. The apparatus does not, of course, change in any sense the cord lesion, but by relieving the mechanical strain caused by the weakness of the pelvic joints and the feet, the disability, which is the natural result of his cord lesion, is much less marked and the patient correspondingly elated.

Case 12.—Lateral sclerosis of the spinal cord.

Patient.—Mrs. W., aged 57, had been growing progressively more helpless. The progress has been the natural progress of such a case, with gradually increasing disability. For the past few years there had been an increasing difficulty in the control of the urine. At the time of the examination it was perfectly obvious that in connection with the spinal cord lesion the pelvic joints were markedly strained and as the result of the chronic strain the sacrum was slightly displaced.

Treatment and Course of Disease.—At that time, as several patients with similar joint lesions had been markedly relieved of troublesome frequent micturition in connection with the treatment of the joints, manipulation of the sacroiliac joint was advised in the hope that the difficulty with the micturition would be controlled in her case, and hoping at the same time that the gait could be improved. Following the manipulation there was distinct improvement in the gait, so that the patient, who had previously been unable to walk across the room without assistance and unable to go over the stairs, was able to walk across the room with comparatively little unsteadiness and was able, with the assistance of the bannisters, to go up and down stairs. The character of the gait was curiously changed following the manipulation, and from the usual dragging of the toe seen in such cases the gait at first was more like the gait of the high-stepping horse, the knees being drawn up markedly as the step was taken forward. The patient during the past year has worn a belt about the pelvis and has had various forms of supports to relieve the strain on the sacroiliac joints and in that time has been more active than it was possible for her to be in the few years previous. The case, of course, represents a spinal cord lesion in which the prognosis is presumably hopeless, but with distinct improvement resulting from the relief of the joint strain which is a necessary result of the use of the body with such a paralytic condition.

CIRCULATORY DISTURBANCES IN THE NEURASTHENIC OR IRRITABLE SPINE

In any condition in which the spinal muscles are weakened the body must droop or be inclined forward during use. Not only this, but if the body is used in the forward position for long the muscles become fatigued, and if the use is continued they necessarily are weakened, so that a still further tendency for the spine to droop exists. The posture with the weakened muscles must result in strain of the various spinal ligaments, especially the interspinous, a condition which shows by the painful points along the spine so commonly found in such cases.

The spinal muscles receive their blood supply in the lumbar region from the lumbar arteries and in the dorsal region from the intercostal arteries. Branches are given off from these vessels which go directly into the spinal canal on a level with each vertebra. If for any reason the muscles of the spine are weak so that there is not the usual amount of blood supply to the muscles, it is probable that the flow of blood through these spinal branches is also not normal, and if this is the case it must mean that the spinal cord is less well supplied with blood than normal. It is possible also that the interference with the normal motions of the spine which must result if the muscles are weakened results also in venous and lymphatic stasis, so that a congestion exists which also interferes with the nutrition of the spinal cord.

These are conditions which naturally can not be proved anatomically, and which must be matters of speculation, but as a proposition it seems reasonable, and the marked change in the neurasthenic elements in many of these cases as soon as the spinal strain is relieved so that the free action of the trunk is possible would seem to bear out such a supposition. If such a condition does exist it should emphasize the importance of training our patients in proper poise, not simply because of esthetic considerations, but because by so doing the function of all the organs will be carried on more easily, and especially because the circulation in the spinal cord will be more free and the nerve centers which control the various structures may be better nourished and consequently possess greater vigor.

THE REAL SIGNIFICANCE OF THE KERNIG SIGN

The limitation of the straight leg raising when the patient is lying on the back or when sitting has been used, since it was originally described, as a common test for sciatica and other conditions in which the nerves have been more or less involved. The limitation in this movement is brought about by spasm of the hamstring muscles, and as these muscles, together with the lumbar muscles, are the ones which are concerned in the protection of the sacroiliac joints, it seems probable to me that the "sign," as it is commonly designated, is almost always, if not always, simply an indication of strain or disease in these joints. I have never seen the "sign" present unless other tests were present confirmatory of the joint lesion, and since a large proportion of the cases of sciatica are due to the irritation of the sacral plexus in connection with the lesion of the sacroiliac joint, and since in many of the paralytic conditions the sacroliac joints must be strained, the presence of the sign in these cases is easily explained. It seems probable to me that the "sign" is chiefly of value as indicating joint weakness and possesses little other significance.

Such are a few of the subjects which I feel should be fully understood by both the neurologist and the orthopedic surgeon. Our function is to prevent as well as to control disease, and both of these elements are involved in the problems which, because of the small amount of time available, have been so briefly presented.

If we can train our patients to use their bodies rightly not only will there be less waste of both nervous and physical force, but the suffering which at times comes because of the faulty use will not occur. If the conditions here decribed are recognized, the relief of the suffering as well as the control of the disease become matters of much greater certainty than they have been in the past.

In approaching our patients not only should we consider the pathology concerned in their troubles, but also we should endeavor to understand fully the anatomic relations of the parts and the possible effect of imperfect mechanical adjustment.

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ABSTRACT OF DISCUSSION

Dr. T. Diller, Pittsburg, Pa.: I was entirely ignorant of the disease of the sacroiliac joints until my attention was directed to them by Dr. David Silver, an orthopedic surgeon, two years ago. Since then I have been able to recognize three of these cases, and I am sure they would have been obscure to me without the assistance he gave me. In one case, a woman presented many neurasthenic signs, such as pain along the spine, and there was a certain pain which was different from anything I had noted. She stated that the pain came in the neighborhood of the sacrum about the buttocks very suddenly at night when she would turn in bed. It was not the sort of pain that one encounters in the neurasthenic. Dr. Silver demonstrated distinct looseness in the sacroiliac joint, applied a proper bandage, and the patient was relieved. A medicolegal case I saw recently was another of this sort. The patient was a young woman of about 25 who was riding in a railway train on a so-called reclining chair, riding at night with her feet up on the chair in front of her. The train came into a collision, and she was so seated that she was doubled up like a jack knife, her feet being brought in contact with her head, so that there was a very forced doubling of the joint at the hips. Now, this patient complained of a number of neurasthenic symptoms: great pain about the region of the sacrum and running down the back of the thigh, as Dr. Goldthwait has mentioned. There was not the ordinary spinal tenderness that we so frequently meet in these cases, and a careful examination of this patient was made with the assistance of Dr. Silver; he demonstrated looseness of this joint by having the patient raise her thigh and put it down while she was in a standing position, and we could distinctly feel crepitus. My experience is limited in this field, yet this is a very important matter, and I am now on the lookout for these cases of sacroiliac disease. I have seen a number of cases of stiffness of the spine, and they are quite obvious if one is on the lookout for them, and I think the only chance of missing them is by not thinking of this condition.

Dr. Robert L. Pitfield, Germantown, Philadelphia: I recall two cases of sacroiliac disease following labor, one of which yielded to strapping of the back, but I was compelled in another case to apply a belt and bind the woman, and she suffers even now from pain, particularly on rising from bed in the morning.

Dr. William A. Jones, Minneapolis: In many of these cases that Dr. Goldthwait has described, in which there is actual nerve irritation, is it due to changes in position of the vertebra, and is it probable or likely that aside from the sacroiliac joint that the position of the other vertebræ can be changed at all? This, I think, is a difficult question for neurologists to appreciate fully.

Dr. J. E. Goldthwait, Boston: I do not believe that the vertebræ change their position very much. The cervical vertebræ, I am sure, can be slipped a little bit out of place, and I am inclined to think that is more common than we generally suppose. I do not believe that the dorsal and lumbar vertebræ change their places much unless there is severe trauma. I think that the last lumbar vertebra can be slipped forward on the sacrum much more commonly than is generally supposed. Pregnancy is the most common source of the relaxation of the joint, but that is rarely productive of pain such as a neurologist would note, because the relaxation is so soft and the tissues are all so much relaxed that the nerves and all the tissues are stretched, and there is comparatively little pressure. If the pain continues and the stability does not return with the use of a belt or proper support, I should suspect that the bones were not in quite the original position, because usually when they are in the normal position Nature is ready with the muscles and ligaments to hold them in that position.

In so-called cases of railroad spine, examine the sacroiliac joint. I never saw a railroad spine which was not really a sacroiliac joint sprain. If you will read the books on this condition you will find that the profession is not in accord as to what it is, and if you will study the mechanics of the spine and the nature of the accidents commonly productive of railroad spine, the wonder is not that people have the sacroiliac joint strains which lead to the weak backs and nervous backs, etc., but that they all do not get it. It is the sudden stopping and the jerking of the body forward or backward, with the muscles off their guard, that causes the trouble.

THE SURGICAL ASPECTS OF CEREBRAL DECOMPRESSION

WITH REMARKS ON THE ETIOLOGY AND CERTAIN MANIFESTATIONS OF PAPILLEDEMA *

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Though having had the privilege of presenting a paper on a kindred subject to this Section but a year ago, your Secretary has been kind enough to invite me to participate in your transactions again and has assigned to me the topic of the "Surgical Aspects of Cerebral Decompression." Rather than to any contribution of my own, I attribute this opportunity chiefly to the fact that one of your members, Dr. de Schweinitz, has been so closely identified with all the neurologic cases in my clinic, and in this connection I should like to emphasize the importance not only from the standpoint of the patient's welfare, but as a means of accurate and reliable observation of the closest coöperation, between the ophthalmic and neurologic staff on the one hand and the surgical on the other. An exhaustive study of the case before operation at the hands of the experienced neurologist and ophthalmologist, their observations of the lesion at the time of the operation, and their continued studies of the after-effects serve as a safeguard against surgical blunders and guarantee accuracy and reliability in the published records.

Of all the phases of papilledema, none has aroused more interest and discussion than the etiology. The conditions in which it has been associated are well known, notably tumor, hydrocephalus, and more recently traumatic lesions. It has been assumed by some that the most important factor in its pathogenesis is increased intracranial tension. Plausible as this theory is, it is not borne out by experimental evidence, at least with one or possibly two exceptions experimenters have thus far failed to produce a papilledema solely by increasing intracranial tension. Because of the existing obscurity as to its etiology, I have with the collaboration of Drs. de Schweinitz, Sweet, Prime and Holloway, made a series of observations in the Laboratory of Experimental Surgery of the University of Pennsylvania, for the purpose of determining for ourselves whether increased tension did or did not play any part. The experiments will be published in detail together with others bearing on the subject of decompression so that I shall allude here only to the essential features.

Two methods of increasing intracranial tension were employed, the wet and the dry. By the dry method, a small rubber bag was introduced beneath the skull after splitting the dura and retained in place by a special appliance. By elevating the reservoir, the bag was distended with water to the point of maximum tolerance. By the wet method, normal saline solution was introduced through a small canula screwed into the skull; the dura was opened and the rate of flow was regulated by elevating or lowering the reservoir. In some cases, the fluid was introduced into the pretentorial space, in some into the subtentorial space. The degree of intracranial tension was determined by kymographic tracings of the blood pressure, the respiration and in some instances of the brain pressure. Examination of the eyegrounds were made by Dr. de Schweinitz or by Dr. Holloway, before the experiment was begun and afterward at intervals of every few minutes. The degree of intracranial tension was recognized by the increase in blood pressure and by the partial or complete arrest of the respiratory function. In every experiment, tension was increased up to a point where the respiratory function was arrested and it became necessary to resort to artificial respiration to resuscitate the animal.

The following is the summary of the observations:

Case 1.—Summary: Dry method. Extreme degree intracranial tension; no evidence of choked disc; slight dilation and pulsation of nasal branch of retinal veins. The changes in the vessels were quite as marked on the opposite side as on that on which pressure was inserted.

Case 2.—Summary: Dry method. Under a degree of intracranial tension, sufficient to cause arrest of respiratory function and elevation of the blood pressure, signs of intracranial tension continued from one to two hours. There were no changes in the eyeground other than filling and subsequently pulsation of the retinal veins.

Case 3.—Summary: Dry method. Increase of intracranial pressure attended with most profound disturbance of the respiratory and circulatory centers caused practically no changes whatsoever in the eyeground, not even the filling and pulsating of veins as observed in previous experiments.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Case 4.—Summary: Wet method. Intracranial pressure increased by introduction of 185 c.c. of normal saline solution in subtentorial region. Much smaller quantity required to cause changes in retinal vessels and the death of the animal than in pretentorial region. No signs of papilledema.

Case 5.—Summary: Wet method. The enormous amount of saline solution (2,520 c.c.) which was absorbed in so short a time (two hours) in itself was remarkable. The eye symptoms, except exophthalmus, were not particularly marked; no edema or pulsation having occurred. At the autopsy all the organs, with the exception of the lungs, were filled with fluid.

Case 6.—Summary: Dry method. Increase of intracranial pressure (by distention of a bag inserted within the cranium) up to and beyond the physiologic limit, as indicated by the arrest of the respiratory and circulatory function, failed to provoke papilledema. At times the discs were bleached; at times the veins were distended, and at times there was pulsation of the vessels, but nothing more.

Case 7.—Summary: Wet and dry method combined. The intracranial pressure was increased with the distended bag until there were signs of intracranial tension; the latter was increased up to and beyond the maximum degree of toleration by the introduction of 100 c.c. of normal saline salt solution. No changes in the eyegrounds were observed.

From the experiments these conclusions are drawn:

1. Increase of intracranial tension by artificial means up to a point attended with profound disturbance of the circulatory and respiratory functions was in no instance attended with development of a papilledema, except in two instances not here recorded, and in these there was no marked swelling of the disc, but only a slight edema and filling in of the center of the discs.

2. The duration of the observation varied from two to ten hours; in one instance increased intracranial tension was maintained and observations made from six o'clock in the evening to four o'clock the next morning. So that the element of time did not affect the results.

3. In some instances the eyegrounds were bleached (the stage of anemia) and in many there was more or less fulness and occasionally pulsation of the retinal veins, but nothing else.

4. The degree of intracranial tension artificially produced in these experiments exceeded by far that which obtains in the vast majority of these lesions of which papilledema is a clinical manifestation.

5. Therefore, in the etiology of papilledema some factor or factors other than increased intracranial tension play an important part.

6. What these may be is still a matter of conjecture.

Papilledema and its relation to intracranial trauma is a subject which has commanded our attention for a number of years. The statement has been made that papilledema is a more or less constant accompaniment of those cases of intracranial trauma in which there is obstruction to the venous circulation, the stage of *Stauungs hyperemie* which, according to Kocher's scheme, is the first stage of cerebral compression. These include cases of cerebral contusion, in which edema is a conspicuous feature, although it might include also cases of large intracranial hemorrhages. For the past two years Dr. de Schweinitz has examined almost all the cases of this description in my service at the University Hospital, and in all he has discovered but two cases of papilledema. This is an insignificant number on which to base any conclusion, but a small number of carefully studied and observed cases is often of greater value than a mass of imperfectly digested material.

Because of their direct bearing not only on the etiology of papilledema but on the question of operative interference for relief, I refer to the cases in some detail.

Case 1.—A young man, aged 25, sustained an injury to his head in falling from a trolley car.[1] There was no positive evidence of fracture of the skull and the case was regarded as one of cerebral contusion. The principal symptoms were vomiting, delirium and frontal headache. The latter was intense and persisted in this intense form for at least ten days after the accident. The pupils were equally dilated and there were no focal symptoms. The superficial veins of the scalp were conspicuously dilated.

January 10 (seventh day): Dr. de Schweinitz examined the eyes with the following result: The right disc edematous; + 3.5 D.; veins enormously distended; retinal hemorrhage below disc; left disc + 5 D.; veins distended and hemorrhages above and below disc.

January 13 (tenth day): Swelling of discs not so marked between 3 and 4 D. Veins not so full. Vision O. D. 4/5 O. S. 4/6.

January 19 (sixteenth day): R. O. highest surface of disc + 4 D.; some hemorrhage L. O. disc + 4 O.; hemorrhage above; veins very full.

The patient was discharged from the hospital but returned to the out-patient clinic for further observation. Within a few weeks the vision was entirely normal and the papilledema had entirely disappeared.

In this case we see a type of intracranial trauma which would be regarded as a concussion or, more properly, a contusion without evidence of fracture but with symptoms persisting for almost two weeks, at no time attended with unconsciousness, stupor or convulsions, but with a moderately high grade papilledema which subsided spontaneously, that is, without operative intervention. The question of a decompressive operation was considered, but because of the absence of conditions that could be said to be alarming, was not resorted to.

Case 2.—A woman, aged 35 years[2] fell from a trolley car and sustained a serious injury to her head. On admission she was completely unconscious and did not respond to any external stimuli. There was a large hematoma on the left occipitotemporal region, but no fracture could be felt. There was no bleeding from the nose, mouth or ears; the pulse was slow and intermittent and the blood pressure 128 millimeters of mercury. Examination of the urine discovered 3.5 per cent. of sugar. There were no sensory and no motor phenomena except in the muscles supplied by some of the cranial nerves. There was some weakness of the muscles supplied by the left facial nerve. In examining the eye, Dr. de Schweinitz reported as follows: R. O. oculomotor palsy; superior, inferior and internal rectus involved; ptosis not quite complete; pupils dilated about five millimeters; no reaction to light; well marked edema of the disc + 3 D.; enormous dilation of the retinal veins and moderate tortuosity; arteries unchanged; L. O. no involvement of the external ocular muscles; condition of the disc and retinal veins same as on the other side. The symptoms were attributed to a serious cerebral contusion and the involvement of the cranial nerves to small nasal hemorrhages, possibly to a fracture of the petrous bone.

January 10 (seventh day): All the edges of the discs were clear except the nasal; the veins were distinctly smaller; right eye still diverges.

January 20 (seventeenth day): The edges of both discs were perfectly clear and the veins not far from normal in size.

The patient gradually recovered consciousness and from the subsequent mental confusion, and as her life was at no time threatened operative interference was not contemplated.

Whatever other indications there may be for decompression in cases of intracranial trauma, it would appear from these at least that papilledema alone can not be regarded as one. In both instances the papilledema measuring + 7 and + 3.5 diopters respectively subsided spontaneously within a comparatively short time after the accident, *i. e.*, between two or three weeks.

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[1] Index File No. 4259. For the report of this case I am indebted to Dr. Edward Martin.

[2] M. B. Index File 4362.

Furthermore, I wish to call attention to the relative infrequency of papilledema as a manifestation of serious types of intracranial trauma. That it may exist in certain instances there is no doubt, but its comparative infrequency, minimizes its significance as a diagnostic sign and as a means of determining the degree of intracranial tension and the necessity of relieving it by surgical measures.

The question of the relation of the papilledema to the size, situation, duration and nature of the tumor is not a new one. That the size of the tumor has little to do with the degree of elevation of the disc is the consensus of opinion; that a cortical or a basal tumor is more apt to cause papilledema than a subcortical, in the white substance of the brain, is also well known, and finally that tumors in the subtentorial region lead to papilledema earlier in the course of the case than pretentorial cases, will not be questioned. In tabulating a series of 19 cases, selected only from patients examined by de Schweinitz and subsequently operated on by myself, I found that with two exceptions (in which the discs measured + 7 and + 9 diopters respectively) whenever a papilledema was present the measurements were rather uniform; that is to say, the majority measured from + 3.5 to + 4 or + 4.5 D. Irrespective of duration, of the nature of the tumor, whether infiltrating or more or less encapsulated, with the size varying from that of a chestnut to a hen's egg, there was a comparatively uniform elevation of + 3 to + 4 diopters. In other words, a trivial and insignificant variation.

TABLE 1

No.	Name.	File No.	Diagnosis.	Operation.	Eye Examination Before Operation.	Eye Examination After Operation.	Result.
1	L. E. P.	560	Sarcoma cerebellum.	12, 17, '03. Craniectomy; removal of small tumor.	12, 8, '03. O. D. + 7 D. O. S. + 7 D.	1, 25, '04 O. D. + 4 D. O. S. + 3 D.	Died 10, 27, '04.
2	M. G. J.	1782	Tumor cerebello pontile angle.	10, 15, '06. Unilateral decompression; suboccipital craniectomy.	10, 10, '06. O. D. + 4 D. O. S. + 3 D.	12, 9, '06. O. D. + 3 D. O. S. + 1.5 D.	Still living.
3	F. M...	578	Sarcoma of cerebellum.	3, 13, '04. Suboccipital craniectomy and removal of portion of cerebellum.	3, 7, '04 O. D. + 4 D. O. S. + 3 D.	3, 26, '04. No change.	Recovered; died subsequently.
4	G. E...	697	Tumor of cerebellum.	12, 14, '03. Unilateral suboccipital craniectomy; portion of cerebellar (⅓) hemisphere removed.	12, 12, '03. O. D. + 4 D. O. S. less.	11, 6, '07. Entirely subsided.	Recovered; still living.
5	P. K...	1054	Cerebellar tumor.	5, 17, '05. Unilateral suboccipital craniectomy; portion of hemisphere removed.	5, 12, '05. O. D. + 6 D. O. S. + 4 D.	7, 21, '05. Discs show practically no swelling.	Recovered; died 12, 24, '05.
6	S. L...	1157	Cerebellar tumor.	10, 26, '05. Unilateral suboccipital craniectomy; dura not opened.	10, 23, '05. O. D. + 5 D. O. S. optic atrophy.	2, 1, '06. O. D. + 1 D. O. S. + 1 D.	Recovered; still living.
7	S. L...	1157	Cerebellar tumor.	Second operation 6, 14, '06. Dura split......	6, 11, '06. O. D. + 1 D. O. S. + 1 D.	6, 21, '06. O. D. + 1 D. O. S. + 1 D. Practically flat.	Recovered; still living.
8	T. H. A.	3107	Sarcoma cerebello pontile angle.	12, 8, '07. Unilateral suboccipital craniectomy.	12, 6, '07. O. D. + ⅔ D. O. S. + 1.5 D.	1, 8, '08. O. D. + 2 D. O. S. Swelling subsided.	Died subsequently, after radical operation.
9	E. F...	1267	Tumor of cerebellum.	3, 10, '06. Unilateral suboccipital craniectomy.	Well-marked atrophy.	Well-marked atrophy.	Recovered; still living.
10	H. M..	3686	Tumor of cerebellum.	6, 29, '08. Bilateral suboccipital craniectomy; dura split.	6, 26, '08. O. D. + 5 D. O. S. + 5 D.	7, 30, '08. O. D. + 1 D. O. S. Atrophy; practically no swelling.	Recovered; still living.
11	M. S...	3697	Tumor of cerebellum.	6, 30, '08. Unilateral (left) craniectomy.....	6, 28, '08. O. D. + 8 D. O. S. + 8 D.	7, 31, '08. O. D. + 1 D. O. S. No swelling.	Recovered; still living.
12	E. D...	1231	Tumor of cerebellum.	2, 26, '06. Unilateral suboccipital craniectomy; dura not split.	2, 15, '06. O. D. + 6 D. O. S. + 7 D.	3, 25, '06. O. D. + 4 D. O. S. + 3 D.	Death.

If I may be permitted to refer to another threadworn subject, namely, the equality or inequality of the discs in the affected as compared with the unaffected side, I would like to place in evidence a series of cases in which the discs were examined by Dr. de Schweinitz before the operation and we were able at the operation to expose the tumor. In these there was not enough difference between the disc of the affected and that of the unaffected side to enable us to draw any conclusions as to the seat of the tumor. This testimony is in absolute disaccord with the very positive statements of Horsley, whose operative experience has been so exceptionally large, but it agrees with the more recent observations of Mr. Paton. I present this series, small as it is, for what it may be worth, and I may add, I think, without contradiction of Drs. de Schweinitz, Mills, or Spiller, who have examined practically every patient operated on in my clinic, that in cases in which there was any doubt as to whether the lesion was on one side or the other, it was the exception rather than the rule to be able by examining the swelling of the discs alone to draw any definite conclusions. Much help, however, can be obtained by studying the age of the nerve-head changes, that is, which disc has been longest affected, by finding the signs of beginning atrophy, etc., points which Horsley also considers most important.

In dwelling on these various aspects of papilledema I have wandered somewhat afield from the subject assigned me, namely, "The Surgical Aspects of Cerebral Decompression." Reference has already been made to the propriety of decompressing in cases of intracranial trauma with papilledema. Apart from trauma, decompression is practiced as a means of relief in certain cases of hydrocephalus, tumors and internal hydrocephalus, but as there are no ocular manifestations of importance in epilepsy I shall confine my remarks chiefly to tumors with or without hydrocephalus.

It is a well-known fact that the large majority of tumors, whether pretentorial or subtentorial, are inoperable. That is to say, the majority are either inaccessible or impossible of localization, or of such a nature as to make their removal inconsistent with the maintenance of life. To express the percentage of operable tumors in figures is not an easy matter; to estimate it from the results of postmortem observations is obviously misleading; to say that from 75 to 80 per cent. are inoperable is by no means a conservative estimate.

In the surgery of brain tumors there are but two propositions to consider: the radical operation, implying the removal of the tumor, and the palliative operation, cerebral decompression. From what has been said of the operability of brain tumors it will be seen at a glance that in the majority of instances the most we can offer is palliation. But in the case of brain tumor palliation implies much more than it does when applied to other incurable lesions. That is to say, given a patient with an inoperable brain tumor palliation means restoration or preservation of vision, relief from headache and from persistent vomiting, three symptoms which together combine to make the patient's life utterly wretched and unbearable. Without them she or he may continue to live for years in comparative comfort.

Decompression is a very much less formidable procedure , it can be performed in a much shorter time and with but trifling risk to life. It implies the removal of an area of bone with a diameter of from 3 to 5 cm. from the temporal region or occipital region on one or both sides and a free opening in the dura or the removal of a portion of it. Whether or not to decompress in the temporal region will depend to a great extent on the situation of the lesion. In all pretentorial tumors temporal decompression is the operation of choice and in all subtentorial lesions a suboccipital decompression is indicated. Usually, sufficient relief from intracranial tension will be afforded by a unilateral operation; should the tumor grow rapidly and the symptoms recur the operation may be repeated on the opposite side.

For the purpose of studying the effects of decompression on a papilledema when performed in the temporal and suboccipital regions I have tabulated two series of cases (See Tables 2 and 3) from Dr. de Schweinitz's records. Although the disc examination was not made at the same interval after operation in all cases, it would seem that the results of temporal decompression were about as good as these of suboccipital decompression or *vice versa.* While I have never decompressed in the temporal region for lesions of the cerebellum, it is reasonable to assume that by this method we might not obtain the necessary relief of tension for lesions beneath or behind the tentorium. In the case of tumors the cerebellar hemispheres are usually under much greater tension than the cerebral hemispheres, often so great that nothing but the removal of bone from directly over the seat of the hemisphere would afford adequate relief.

Cerebral decompression is called for, as a rule, in inoperable tumors; it may be resorted to, however, as a matter of temporary expediency, when the conditions do not admit of delay and the tumor can not be localized. Delay is inadmissible when the papilledema has persisted from six weeks to two months, whether or not there has been temporary improvement under the influence of mercury or the iodides, when procrastination will lead inevitably to optic atrophy and to blindness.

There should be no question about the advisability of operating in these comparatively early cases if only to save vision. The propriety of operating in the advanced cases, when the patient is already in deep stupor, may be questioned. Bruns, for example, opposes such a course. It should be borne in mind that with the patient unconscious the operation can be performed, as I have had occasion to do, without an anesthetic. The operation can be completed in twenty minutes and, while adding but little to the gravity of the situation, may save the patient's life. A striking example of this was brought to my attention in a patient referred to me by

Table 2

No.	Name.	File No.	Diagnosis.	Operation.	Eye Examination Before Operation.	Eye Examination After Operation.	Result.
1	W. D..	557	Tumor of brain.	11, 7, '03. Decompression.	11, 5, '03. O. D. nerve head swollen; O. S. nerve head swollen.	1, 2, '04. O. D. + 3 D. O. S. + 4 D.	Recovery; still living.
2	J. K...	3116	Tumor of brain.	1, 10, '08. Decompression.	Marked papilledema.......	Papilledema entirely disappeared.	Recovered; still living.
3	P. S...	1268	Tumor of brain.	3, 20, '06. Decompression.	1, 29, '06. O. D. + 5 D. O. S. + 4 D.	11, 6, '07. Papilledema practically disappeared; discs show beginning atrophy.	Recovered; still living.
4	M. B...	2084	Tumor of brain.	1, 13, '07. Decompression.	1, 5, '07. O. D. + 3-4 D. O. S. + 3-5 D.	11, 6, '07. Both eyes advanced optic atrophy; all swelling gone.	Recovered; living 11, 6, '07.
5	I. K...	1937	Tumor of brain.	11, 28, '06. Decompression.	11, 19, '06. O. D. + 5.5 D. O. S. + 5.5 D.	1, 5, '07. O. D. + 2 D. O. S. + 2 D.	Recovered.
6	E. U...	1862	Tumor of brain.	11, 1, '06. Decompression.	10, 26, '06. O. D. + 5 D. O. S. + 5-6 D.	12, 9, '06. O. D. + 4 D. O. S + 4 D.	Recovered; died subsequently.
7	M. B...	802	Hydrocephalus unilateral of brain.	10, 10, '04. Occipital decompression.	10, 3, '04. O. D. + 4 D. O. S. + 4 D.	10, 24, '04. O. D. + 2 D. O. S. + 2 D. 10 weeks after operation choked disc entirely subsided.	Recovered; still living.
8	I. D....	978	Tumor of brain.	6, 12, '05. Suboccipital decompression.	6, 9, '05. O. D. + 8 D. O. S. atrophy.	6, 16, '05. O. D. + 6 D. O. S. atrophy.	Death 2 weeks after operation.

Table 3

No.	Name.	File No.	Papilledema.	Duration.	Situation.	Nature.	Approximate Size.
1	L. E. P..	560	O. D. + 7 D. O. S. + 7 D...	10 months...	Left cerebellar hemisphere..............	Sarcoma, sharply defined.	Hazelnut.
2	M. G. J..	1782	O. D. + 4 D. O. S. + 3 D...	2 years......	Left cerebello-pontile angle.............	Fibrosarcoma...	Horse chestnut.
3	T. H. A..	3107	O. D. + 2-. D. O. S. + 1.5 D.	7 years......	Right cerebello-pontile angle...........	Sarcoma	Hickorynut.
4	M. S.....	3697	O. D. + 8 D. O. S. + 8 D...	6 months....	Left cerebello-pontile angle.............	Unknown.	Hickorynut.
5	E. D.....	1231	O. D + 6 D. O. S. + 7 D...	2 years......	Right cerebello-pontile angle...........	?	Hen's egg.
6	Mrs. S...	542	O. D. + 4 D. O. S. + 5-5.5 D.	1 year.......	Left cerebello-pontile angle............	Neurofibroma. .	Chestnut.
7	I. D.....	978	O. D. + 8 D. O. S. atrophy.	1½ years.....	Left temporal lobe at base..............	Sarcoma	5×8 cm.
8	A. G.....	836	O. D. + 3 D. O. S. + 5 D..	2 years......	Right parietal region (cortical).........	Sarcoma	3.5×3 cm.
9	W. D....	3340	Subsiding neuritis; swelling greatest on left side.	18 months...	Left parietal region (cortical)..........	? Glioma........	3.75×2 cm.
10	J. S.....	624	O. D. + 5 D. O. S. + 4 D..	4 years......	Right frontal (cortical).................	Sarcoma	6.25×6.25 cm.
11	G. A. H..	2146	No papilledema............	6 months . .	Left parietal (cortical).................	Sarcoma	Hen's egg.
12	A. C. E..	3690	No papilledema............	....	Left parietal (cortical).................	Glioma..........	7×6×3.5 cm.
13	G. K.....	464	O. D. no papilledema. O. S. beginning neuritis.	Several years.	Left parietal (cortical).................	Sarcoma	Small.
14	H. S. G..	1214	No examination............	5 months....	Right occipital and temporal at base...	Sarcoma	Child's fist.
15	A. K.....	2223	Extensive papilledema. O. D. + 7 D. O. S. + 7 D.	1 year.......	Left temporal lobe at base.........	?	Large size.
16	E. U.....	1862	O. D. + 5 D. O. S. + 5-6 D.	6 months....	Right parietal (cortical)................	Sarcoma	Large.
17	M. B.....	802	O. D. + 4 D. O. S. + 4 D...	10 months...	Right occipital (subcortical)...........	Cyst.	Capacity 1½ oz.
18	Mrs. J. L.	3205	O. D. + 5 D. O. S. + 3.5 D.	4 months....	Right occipital lobe (cortical)..........	Cyst.	

Dr. Mills. The case seemed hopeless—the patient was unconscious when brought to the hospital and her life was despaired of. A rapidly executed decompression was followed by subsidence of some of the symptoms with recovery of consciousness. On the other hand, in a similar patient recently operated on for Dr. William G. Spiller, the operation seemed to have no effect on the fatal tendencies.

Finally, a few words as to the immediate and ultimate effects of decompression. At the site of the operation there developes a hernia protruding more or less according to the degree of intracranial tension. This is usually well covered with hair and therefore particularly in women, is not very conspicuous.

The mortality following operations on patients with cerebral or cerebellar tumors will depend on the condition of the patient and the seat of the lesions. The longer the duration of the lesion and the nearer the growth to the pons and medulla the greater the danger. All told, in the past seven years I have had only two fatalities following temporal decompression for cerebral tumors. In one of these the patient was stuperous when operated on, and at the autopsy a large tumor was found extending from the temporal lobe back to and including the pons. In the other the tumor also involved the pons. Of the suboccipital decompressions for tumors or suspected tumors of the posterior fossa in the same period there have been five fatalities, one in each of the years from 1904 to 1908. But three of these cases were operative deaths in the strict sense; that is, the patient never fully recovered from the shock of the operation. The two remaining lingered several weeks.

Vomiting and headache, one or the other or both, are relieved in about two out of every three cases by decompression.

In a word, the effects of decompression are in the main beneficial; in fact, so beneficial that we should not question the propriety of operating even though the case may at first seem hopeless. The only grave and fortunately a very rare consequence is sudden blindness. This has never occurred in our service, and apart from this I have never seen any aggravation of the condition of more than a transitory character.

The expectancy of life is a matter of no little interest; even though the patient survives the ordeal but a year, it is not a little in this period to have saved sight, allayed vomiting and relieved headache. In exceptional instances a longer lease on life may be anticipated. Among my patients is one operated on in 1902, one in 1903 and two in 1904. The larger the tumor and the nearer its approach to the vital centers the shorter will be the period of survival.

ABSTRACT OF DISCUSSION *

Dr. James Bordley, Jr., Baltimore: I believe that I can best emphasize the importance of this subject by relating some statistics gathered from the records of 91 out of nearly 300 of the patients operated on by Dr. Cushing at the Johns Hopkins Hospital.

In determining which eye was the more affected—the one contralateral or homolateral to the tumor—we considered not only the swelling but the actual condition of the nerve head, outside of the swelling, the visual fields and the acuity of vision. This was necessary because while the swelling of one disc is increasing the other may have undergone atrophy and the swelling have entirely disappeared. The eye homolateral to the tumor exhibited the greatest change in 68 per cent. of the patients in whom the location of the tumor was a matter of certainty; the eye contralateral to the tumor in 26 per cent.; and in 6 per cent. swelling was equal on two sides.

There was no relationship between the histology of the tumor and the height of the choked discs, that is, none that could be of assistance in determining from the disc whether we were dealing with a malignant or benign growth. Patients with benign tumors and choked discs or from 1 to 7 D.; those with malignant tumors from 1 to 9 D. The disc in cerebellar cases had an average height of 5½ D.; with tumors situated further forward, 3½ D. There was, however, such a radical difference in the height of swelling of the discs in patients with tumors in identically the same situation that we look upon the degree of swelling as only suggestive but not conclusive as a localizing sign. The height of the swelling in the 182 discs of these 91 patients, before operation, was from 1 to 2 D. in 28; from 2 to 4 in 68; from 4 to 6 D. in 51; from 6 to 9 D. in 25, and in 18 there was complete secondary atrophy; 7 had normal discs.

The average length of time for an appreciable change in the swelling to make its appearance after the operation was two days. The average length of time for the swelling to disappear entirely was six weeks. These periods bore no fixed relation to the height of the swelling, but as a rule, the higher the swelling the slower its recession. In one case with the swelling 6 D. a slight edema was to be found eight months after operation. In two cases with swelling of less than 2 D. there was not a trace to be found forty-eight hours after operation. As a rule the edema of nerves in which atrophy was marked disappeared more rapidly than in those without. The swelling in four eyes of two patients was only lessened but not cleared up by operation. These two patients had large malignant growths and high tension was soon re-established.

The ultimate damage to vision was much greater in those cases in which large exudative masses and definite proliferative changes in the cup, on the surface of the disc and in perivascular lymph spaces, could be detected before operation.

Fifty-nine eyes showed increased vision subsequent to operation; in 65 the vision remained the same and in 16 vision continued to fail. Of the 65 in whom the vision remained the same, 29 had normal vision, 24 were blind, and 12 had vision varying from 20/30 to light perception. Fourteen eyes with normal vision subsequent to operation were not tested before; 2 eyes blind subsequent to were not tested before; 18 eyes tested before but not after operation.

Of those operated on and benefited, 2 without light perception regained it; 2 able to count fingers at six inches recovered vision of 20/40 and 20/20, respectively; 14 with vision of 20/200 or slightly less, the improvement varied from only a nominal gain to perfect sight. Of those showing a loss in vision subsequent to operation, 6 became blind; of this number only 2 had useful vision prior to operation. The cause of the change in these cases was, we think, quite clear, pressure on the tracts and shrinkage of the new connective tissue formation of the disc. In these cases, we feel confident, the ultimate result would have been the same whether they were operated on or not. Eight eyes in patients refusing operation subsequently became blind. Partial or total atrophy of the optic nerve was noted on admission in 52 out of the total of 182 eyes. To review briefly: Of 130 eyes in which the record before and after operation could be compared, 59 had increased vision, 16 decreased and 65 remained the same.

Dr. T. B. Holloway, Philadelphia: Unfortunately in many cases of papilledema resulting from brain tumor, the intraocular examination has been summed up in a statement that there existed papilledema without any reference to its characteristics. If the question of the greater amount of swelling of the disc being homolateral or contralateral to the lesion is ever to be accurately determined, it seems to me that we must make and record certain definite ophthalmoscopic measurements, that have been elsewhere referred to.

As is well known, most statistics in the past have shown that the disc showing the greatest swelling is homolateral to

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* A long article on this subject by Drs. G. E. De Schweinitz and T. B. Holloway, Philadelphia, appears in the Transactions of the Section on Ophthalmology, 1909, but will not appear in The Journal.

the lesion. A rather hurried search of the available cases recorded by Dr. De Schweinitz and myself, excluding those observed in the university and orthopedic hospitals, shows that the greatest swelling was homolateral in 50 per cent., contralateral in 20 per cent., and of equal extent in 30 per cent. of the cases.

In the few cases in which it was definitely stated which eye was first affected, it was found that the homolateral eye was, in the majority of cases, the first to show evidence of a papilledema. Likewise, in the majority of the cases, when the case histories revealed a record of the vision, it was found that the eye having the greatest impairment of vision was homolateral to the growth.

In reference to the rarity of papilledema in myopic eyes, I can recall but two cases that I have seen, and both of these were under observation at the Orthopedic Hospital in the service of Dr. Wharton Sinkler. In neither case was the myopia over 5 D. Paton refers to the macular fan which is seen in many cases of brain tumor as being due to a passive edema, in contradistinction to the macular fan seen in cases of nephritis which he refers to as being due to what he terms an active edema.

Recently I have had under observation a case associated with marked macular edema in which a typical macular fan developed, which was indistinguishable from that seen in the two conditions above referred to. Three weeks after the receipt of the injury, the first spots appeared in the temporal side of the fovea, in the direction of the greatest edema, and from three to four weeks later the figure was complete. The lesion responsible for its development was a penetrating wound of the eye from a piece of steel, the wound of exit being at the outer edge of the macular region. In reference to the subsidence of papilledema after the relief of intracranial tension in cases of brain tumor, but very few of the cases observed at the university and orthopedic hospitals have shown any distinct reduction in swelling prior to the third day. In this connection, it is interesting to refer to the unusual case observed by Thomas and Cushing. Prior to the operation the discs were reported as atrophic. The morning following the operation the patient developed symptoms of compression and an ocular examination revealed a papilledema of 4 D. A large clot was removed from the site of operation, after which the retinal edema began to subside in a few hours and by the second day the atrophic discs were as clear as before.

This case is analogous to the cases reported by Harlings Jackson, de Schweinitz and A. G. Thompson and E. R. Williams, although in these last named cases, the papilledema affected nerves that were completely atrophic.

Dr. Edward Stieren, Pittsburg: Since my report last year (*Ophthalmic Record*, March, 1908) of three cases of choked disc relieved by exploratory operation I have observed one case, in a woman, in which the general symptoms—headache, vomiting and staggering gait—were relieved by a decompressive operation but in which the vision is progressively becoming worse. The case is one of undoubted cerebellar tumor, under observation for about a month before a right temporal decompressive operation was performed by Dr. J. J Buchanan. Before operation R. V. = 6/80, L. V. = 6/16 — with 8 and 7 D. elevation of the discs, respectively. No perceptible decrease in the papilledema could be observed for two weeks following the operation, when the discs gradually receded, although well-marked signs of optic neuritis persisted, optic atrophy intervening and steadily progressing. At present R. V. = 2/200, L. V. = 6/60 eccentrically. I am inclined to attribute the disappointing result in this case to either a cancer toxemia of the optic nerves, the patient's general appearance suggesting a cancerous cachexia, her damaged third nerves being unable to combat the onslaught of toxic irritants. Or, as Dr. Cushing suggests in this class of cases, it may be due to direct involvement of the optic tracts. In the case reported by me and quoted by the essayists as the patient having lived a little less than five months after operation, I desire to say that instead the man lived more than three years after operation, which, in view of the enormous size of the growth attained, as shown by the illustration, is remarkable.

Dr. R. L. Randolph, Baltimore: I was struck with the fact that the results of the experiments of Drs. Frazier and de Schweinitz were entirely at variance with those of Drs. Bordley and Cushing. I should like to ask Dr. Frazier what animals were employed, and whether these animals and the technic were similar to those used by Bordley and Cushing. Furthermore, I should like to know whether he has ever seen in animals anything approaching the picture which we see in human beings and which is called choked disc, and, if so, whether it resulted from high tension alone within the brain or whether it resulted from high tension plus something else. Personally, I have always held that high tension within the brain was a potent factor—probably the most potent factor—in the production of the so-called choked disc, but I believe that there are other essential factors, in the absence of which, no matter how high the tension, choked disc will not be seen.

Dr. William H. Wilder, Chicago: I should like to mention some points in a case I have under observation, which illustrated the correctness of the statements of Dr. Spiller relative to the effect of the hernia of the brain that occurs after decompression operations. The case is that of a young Scandinavian about 20 years of age who came into my service at the Illinois Eye and Ear Infirmary last winter. He gave a rather indefinite history of headaches, no vomiting, and no marked symptoms of brain tumor. There was an apparent mental dulness. There was a marked papillitis, about 7 D. of swelling, with edema and slight hemorrhages in the surrounding retina. Dr. Hugh T. Patrick, who examined him, agreed that there was probably an intracranial growth, but could discover no localizing signs, although he suspected that the tension was on the left side and advised a decompression operation.

Dr. A. E. Halstead operated, removing a large piece of bone from the parietal and temporal region. The bone was extremely thin from pressure, and after section of the dura the brain protruded to such an extent that the flap was replaced with difficulty. The shock of the operation was great. Soon after recovery, the patient began to show a weakness of the right hand, and then paresis, and finally paralysis of the right hand, arm and lower muscles of the face. There was also ataxic aphasia. This condition lasted fully three months and was probably caused by the pressure of the motor area of the brain against the margin of the opening in the skull. Gradually the man recovered in part his speech, and also the power of his right hand and arm. The swelling of the nerve head receded, reaching about 4 D., which it was when I saw him about five weeks ago, with the vision about 20/50, as good as when I first saw him.

It seems to me that there is something more than intracranial pressure in the etiology of these cases of papillitis or papilledema. The theory as stated by Leber that the products of metabolism in the tumor, circulating in the lymph channels, and so coming in contact with the nerve and exciting a true neuritis, associated, it is true, with edema, is a very plausible one. A patient presented at the Chicago session by Dr. Peter Bassoe on whom Dr. Bevan had operated was possibly one of this kind. The man had a pronounced papillitis with 7 D. of swelling, which was not reduced by the decompression operation. At a second operation the tumor was located and removed, with disappearance of the papillitis and restoration of vision.

Dr. William G. Spiller, Philadelphia: I fully believe that decompression is a very valuable means of saving sight and of affording relief from certain symptoms, but I think it an operation which should not be performed hastily, and without careful study of the patient. It seems so simple to bore a hole under the temporal muscle that we may be inclined to advise it without due consideration. I had a patient who had grave symptoms of brain tumor, and I advised decompression. The man sank into a marked stupor, and has remained in that state ever since. The effect of decompression in this case is uncertain. Following decompression we may have graver symptoms from hemorrhage from a bleeding vessel which has escaped the surgeon's attention, or which has occurred after the wound has been closed; and hemiplegia may develop.

The hemiplegia which occurs in these cases develops soon after the operation and should lead to an exposure of the wound and a search for the clot and attempt at its removal. But, aside from that, there is a hemiplegia that develops in certain cases later in the course of the disease, perhaps a week or two after the operation. That form of hemiplegia is not always caused by hemorrhage either on or in the brain. In the past few weeks I have had opportunity to examine a brain from such a case, and I found that the hemiplegia was caused by an occlusion of the blood vessels by a hernia that occurred; the brain protruding through the opening in the bone and causing pressure directly on the vessels. We are inclined to think that the hernia produced after decompression is indicative of the growth of the tumor, and to say that the hernia shows exactly how much we have benefited the patient by relief of pressure, as otherwise the tumor would have grown and possibly have caused death. This conclusion is not invariably correct, but is correct in certain cases. The hernia may occur from causes we do not understand. While, therefore, I believe fully in decompression in suitable cases, and feel that it may be of great use, I also feel that we must study every case carefully before advising it.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind.: During the last eighteen months I have had four patients on whom the decompression operation was done. In two of the cases I was much gratified with the results of the operation so far as its effect on the vision was concerned. In all the cases a competent neurologist was consulted with the idea of making a diagnosis of the probable location of the tumor, but in two of the cases it was impossible for him to arrive at any definite conclusions, though he agreed as to the necessity for a decompression operation to save the vision, which was very rapidly failing. In one of the cases there was, within a few days following the decompression operation, an increase in the vision which was retained for several months. In this case, as well as in one other case, it was found later on autopsy that the tumor would in all probability have been located during the patient's life had the development of localizing pressure symptoms caused by the growth of the tumor not been disturbed by the decompression operation. It is therefore presumed that a little delay in the performance of the decompression operation might have resulted in prolonging the life of the patient through the localization and removal of the tumor. The decompression operation should be performed with a view of removing the tumor if possible, though with rapidly failing vision due to intracranial pressure and no localizing symptoms, the decompression operation in the silent zone is indicated and should be performed with a view of saving vision. We should always take into consideration the fact that the patient's life is in danger and the saving of vision is not as important as the saving of life. Some tumors can be removed and the life, as well as the vision, saved for many years.

Dr. B. A. Randall, Philadelphia: Out of a limited experience in this matter I would cite a recent case referred by Dr. S. Z. Shope of Harrisburg, Pa., which is interesting because the edema was extreme—8 or 9 D. There had been the question, also, if the rapidly increasing swelling could be due to lesion of the nasal accessory cavities. The eyesight was rapidly declining and there was no marked involvement of the nasal cavities. The patient, a girl of 20, had a clear history of specific inheritance, but no stigmata; and there had been a bad fall with a possibility of cystic growth. The neurologist regarded it as a case of neoplasm of the right motor region and urged not only decompression but exploration as to the presence and operability of the growth. Making a good-sized osteoplastic flap, I found great tension of the dura and on incising it, there was marked protrusion of the brain substance. I relieved this greatly by lumbar puncture, having had much question whether lumbar puncture would not have been safe and adequate. I then exposed and examined the motor convolutions more freely, and seeing and feeling no growth, sutured the dura and replaced the flap. The case had been admirable in its outcome thus far, but done on April 29 it is too soon to know the issue. Vision is restored in the left eye, the edema is almost gone in both, but the field is somewhat narrowed on the right and the lesions near the macula, simulating those of albuminuric retinitis, interfere greatly with its recovery. Whereas she had seemed stuffed up by small doses of iodid, she is now taking 33 grains three times daily and all symptoms are ameliorating. This seems merely a case of relieving destructive pressure until we could get the influence of our medication, unless we are wholly in error as to the specific nature of the lesion.

Dr. Nelson M. Black, Milwaukee, Wis.: As to not finding choked disc following head injuries, I would like to state that through the kindness of Dr. Charles Lemon, surgeon of the Milwaukee Electric Street Railway, I have had the opportunity of making ophthalmoscopic examination of cases of head injuries following street-car accidents. In one case there was a distinct choked disc of about 1½ D on the side opposite to the injury and a complete blurring and loss of contour of the disc margin on the side of the injury. This entirely disappeared within four or five days after decompression. In a second case, there was decided blurring of the disc margins equal in both eyes, which gradually cleared up in about two weeks; the temporal side of the disc clearing first; no decompression was done. In a third case, a man fell from a scaffold about fifty feet, landing on his head and shoulders; he was brought into hospital unconscious and when placed on the operating table stopped breathing. Artificial respiration was instituted and a decompression operation immediately done. As soon as the dura was opened a considerable amount of pinkish cerebrospinal fluid gushed out and the patient began to breathe. The ophthalmoscope showed nothing abnormal beyond decidedly hyperemic discs; but the decompression was done within an hour following the injury, so there was hardly time for the discs to become choked.

Dr. G. E. de Schweinitz, Philadelphia: The existence of choked disc does not always indicate operative interference. Naturally, prolonged and careful study must always be given to each patient before he is submitted to operation, and all means at our disposal which will help to establish a diagnosis should be brought into requisition. This is particularly true in such cases as may be due to syphilis, and the serum reaction for the detection of this infection, not only that of Wassermann, but its substitutes, so well discussed in the Section on Nervous and Mental Diseases, will doubtless prove of great service under such conditions. Moreover, each one of us should study most carefully the visual field phenomena to which Bordley has made reference. You have heard from him the interesting observations which he and Dr. Cushing have made, now, to be sure, only in their earliest stages, and it behooves all of us, whenever opportunity presents, to undertake similar examinations.

It has been known for many years that such alterations of the visual field occur in cases of brain tumor, and other organic diseases, but so far as I am aware, no such study has been given the subject as that which has been accorded to it by Dr. Bordley and Dr. Cushing, nor have the results which they have reached ever before been published.

While I am satisfied that one of the factors in the production of papilledema is increased intracranial tension, and am inclined to believe that it is the most important factor, I feel sure that it can not be the only one. In our experiments to which Dr. Frazier has made reference we never succeeded in the living eye in producing anything like the ophthalmoscopic picture of papilledema when a pure physiologic salt solution was used in subdural injections. On the other hand, if we added irritating substances to the fluid, formaldehyd, iodin, etc., we did succeed in producing, not a very pronounced but none the less a definite swelling of the optic nerve. Different results have been reached in the Johns Hopkins Hospital by Drs. Cushing and Bordley. Sometime or other we propose to exchange laboratory visits in order to see wherein either our technic or our results have differed.

Dr. Charles H. Frazier, Philadelphia: I have been asked whether we followed in the experimental work in papilledema the technic used in the Cushing-Bordley experiments. I am not familiar with the technic referred to; we purposely did not follow the method of previous investigators because we wanted to conduct our experiments with an open mind and entirely uninfluenced by the results of previous observers. As Dr. de Schweinitz has said, intracranial tension must be an etiologic factor; while admitting this, we are sure that it is not the only nor even the essential factor. Since the report was published, we have added to the physiologic salt solution certain irritating substances such as iodin and formaldehyd, and we are led to believe that these substances have some effect on the etiology of papilledema independent of intracranial tension. We have never yet seen papilledema in the dog similar to that observed in the human subject under analogous conditions.

Dr. Spiller cautions us against too frequent and too hasty resort to decompression. On the other hand, the operation should not be put off too long. I feel I have altogether too many patients absolutely blind, whose vision might have been preserved. Selecting at random for student demonstration five patients already operated on, I found in three out of the five that vision had been practically lost. From six weeks to two months is long enough to wait for improvement under the iodids and mercury, for the localization of the tumor, or for the confirmation of the diagnosis. If at the expiration of this time the papilledema is stationary, or increasing, side decompression should be practiced without further delay.

I have been asked whether, rather than resort too soon to decompression, we should not wait for the development of such symptoms as would suggest the situation of the tumor. I should say emphatically no. At any time after the decompression the radical operation may be performed and just as soon as focal symptoms make their appearance. The preliminary palliative procedure which relieves headache and vomiting and preserves vision, does not preclude the possibility of subsequently operating for the removal of the tumor. In some cases it delays development of the symptoms, but we are justified in operating early to relieve the subjective symptoms, especially when we know that in not more than one case in ten will the tumor prove to be operable.

A word as to the undesirable results of decompression: Dr. Wilder has referred to a case in which, after decompression on the left side, hemiplegia and aphasia developed. I have had a similar experience, but the hemiplegia and aphasia entirely disappeared in the course of a few weeks. These disturbances are often associated with a sudden increase in the size and tension of the hernia which forms at the site of the opening—a phenomenon which I have attributed to the disturbance of the circulation in the herniated portion. The pressure of the margins of the bony opening interferes with the return venous circulation and this in turn is followed by edema. It might be said in this connection that we always decompress on the right side unless there are some contraindications for so doing. The right side, as pointed out by Sänger, is the site of election because it uncovers the silent area of the brain in all cases.

Some reference was made to observations which we have made in the relation of papilledema to intracranial trauma. I do not mean to say papilledema of traumatic origin does not occur, for I know it does in a few instances, but much more infrequently than we have been led to believe by certain published statements. But papilledema of traumatic origin is only transitory and will subside without surgical intervention. The routine resort to operation, within twenty-four or forty-eight hours of the accident, is neither necessary nor justifiable. This point was strikingly illustrated by a case under my observation this year. The man had evidently a basal fracture with occurrence of papilledema, but as the man's life was not threatened, we dismissed at once the question of operation, and within a week of the injury the patient developed paralysis of face and arm on one side. We then explored and found in the cortex a small blood clot, the removal of which relieved the focal symptoms. In this case had we resorted to immediate decompression, the man would have had to have two operations.

Pasteurization.—This does not mean simply the heating of milk; the subsequent rapid cooling is a very important part of the process.—M. J. Rosenau, in *Annals of Medical Practice.*

Clinical Notes

A NEW METHOD OF TENDON-SHORTENING

WITHOUT SEVERING THE TENDON AND WITHOUT THE USE OF NEEDLE AND SUTURE *

H. H. BRIGGS, M.A., M.D.
ASHEVILLE, N. C.

The method is applicable to any case in which shortening of an ocular muscle is indicated. The principle involved is the looping of the tendon and maintaining the shortening thus attained by means of a silver link (Fig. 1) clamped over the loop and retained there until inflammatory adhesion takes place between the advanced portion of tendon and the sclera. The link, elliptical in shape, is made of silver wire (No. 20, Brown and Sharpe Standard). It is long enough to extend across the tendon, and wide enough to allow a small tendon hook with the looped tendon and overlying conjunctiva to pass through its lumen. The major axis of the link should be about 5 mm., the minor about 2 mm. Pure silver wire gives the proper amount of resiliency, retains its compressed shape, is easily removed and seems to serve better than an alloy. To insure against the tendon retracting through the link, burrs may be punched on the inner surface of the link to act as barbs against the pulling action of the tendon.

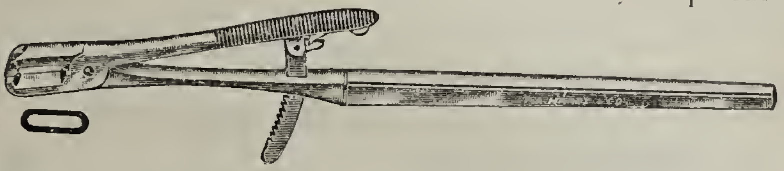

Fig. 1. Silver link and clamp forceps for use in tendon-shortening operation (forceps three-fifths size; link full size).

A clamp forceps (Fig. 1) is used to grasp the silver link in its jaws and hold it in position over the tendon until the loop of tendon and conjunctiva is drawn up through the link, when by compressing the forceps the link is compressed sufficiently firm over the loop to maintain the loop the required time after the forceps has released the link and left it *in situ*. Passing entirely across the approximating surface of the jaws near the tips are transverse grooves deep enough to hold the long parallel sides of the silver link. The length of jaw to the angle is sufficient to accommodate the longest loop of tendon that may be desired. A ratchet maintains the jaws in any compressed position over the link.

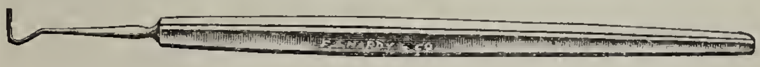

Fig. 2. Special tendon hook (three-fifths size).

A special tendon hook (Fig. 2) is used, differing from the ordinary small tenotomy hook in that its shank, 6 mm. above its angle, is bent backward in the plane of the hook at an angle of about 15 degrees. This bend allows the handle of the tendon hook to be held out of the operator's line of vision, and at the same time the hook may remain parallel to the tangent plane of the eye at the site of operation. The hook should be short enough to pass through the major axis of the link, and yet sufficiently long and strong to pull the tendon through the link, overcoming the pull of the opponent muscle, which may or may not have been previously tenotomized.

For removal of the link a scissors forceps with wedge-shaped blade above and flat blade below (Fig. 3) is used to divide each end, when the severed halves of the link may be removed with small tissue forceps.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

After the usual preparation of sterilization and anesthetization, the operator, standing on the side of the eye nearest the muscle to be shortened, makes a small opening in the conjunctiva on one side (the operator's right side) of the tendon near its insertion into the sclera, the distance from the insertion varying with the degree of advancement intended. An ordinary tenotomy hook passed beneath the tendon is held by an assistant, the clamp forceps holding the silver link is held over the tendon with one hand, and the special tendon hook passed down through the silver link is substituted for the hook held by the assistant. The tendon with its overlying conjunctiva is drawn up through the link to the desired degree, and the jaws of the clamp forceps forcibly approximated. If the degree of deviation is great, and the tendon loop to be made long, the conjunctiva, after being drawn up through the link a short distance, may be incised, allowing the tendon only to be advanced to any desired degree. It may be necessary in excessive advancements to excise the greater part of tendon and tissues protruding through the link, leaving only enough to insure non-retraction of the tendon ends through the link.

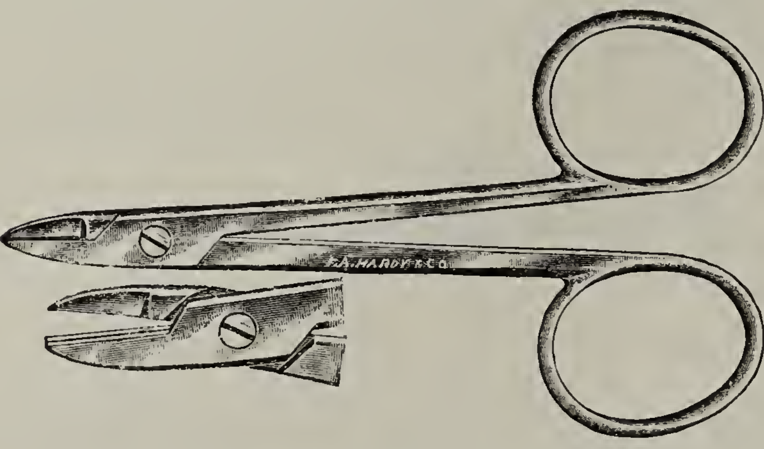

Fig. 3. Scissors forceps with wedge-shaped blade above and flat blade below, for severing link (full size).

The moderate edema of the tissues about the link immediately covers it so that no irritation is felt from the presence of the foreign body. Within twenty-four hours the strangulated tissues become white and begin to atrophy, and on removal of the loop in ten to fourteen days they should be excised.

The advantages of this operation over the usual methods of advancement are:

1. Simplicity.
2. Elimination of sutures.
3. Avoidance of tenotomy of the advanced muscle.
4. Absolute security from slipping or retraction of tendon.
5. Short duration of time of operation.
6. Less pain.
7. Less amount of plastic inflammation during convalescence.
8. Short period of convalescence.
9. Less scar and deformity.
10. Better results.

29 Haywood Street.

Eclampsia with Vesicular Mole.—E. Gross reports a case of eclampsia in a ii-para of 22 at the fifth month of pregnancy. The fetus and a large placenta partially transformed into a vesicular mole were expelled twelve hours after the first symptoms, and the patient died 31 hours later. He has found six cases on record of eclampsia with mole, and in the *Prager med. Wchnschr.*, July 1, discusses the frequency of moles and also of eclampsia at the fifth month of pregnancy.

EXCISION OF A TUBERCULOUS HIP-JOINT IN A WOMAN OF FIFTY

HARRY GREENBERG, M.D.
MILWAUKEE

In view of the prevailing opinion among surgeons, that radical excision of the hip-joint for tuberculosis should not be attempted after the fourteenth or fifteenth year, the following case will be of interest:

History.—Mrs. J. E. H., aged 50, had had tuberculosis of the right hip since she was 18 months old. In spite of the most diligent application of conservative treatment, she would continue to have relapses at intervals varying from five to ten years. At no time could a positive prognosis as to complete cure be assured. Abscesses were opened and drained at various intervals. For the past ten years she had been apparently well excepting for periodic attacks of pain in the affected hip. At no time was she able to walk without assistance of some kind. Twenty-six months ago a new abscess formed and pointed in the groin; it was opened by her family physician. Two weeks later she came under my observation.

Examination.—She was suffering from acute infection; temperature, 105.4 F.; pulse, 140; complained of severe pain in the right leg. Examination showed the right hip-joint completely ankylosed. The right leg was seven and one-half inches shorter than the left, and five inches less in circumference at its middle. It was markedly adducted, overlapping the left leg. Abscess and sinuses were discharging freely.

Treatment.—Local palliative measures were immediately instituted and continued for ten days. Her temperature varied from 104 to 106 F. Morphin was used continuously to relieve the pain. She was then removed to the hospital for more radical treatment.

Operation.—The joint was freely opened and the following conditions found: The head and neck of the femur and most of the acetabulum were completely destroyed by the tuberculous process. What remained of the upper end of the femoral shaft was a thin shell still retaining the shape of the bone. A ragged hole marked the place from which the base of the neck of the femur formerly sprung. Strong bands of fibrous adhesions bound this thin shell of bone on the ilium to a point about 3¼ inches above and behind the acetabulum. Free pus was present. The adhesions were severed and 3½ inches of the upper end of the femur removed. The sawed-off end of the femur was then placed in contact with the lower border of the actabulum and the wound sutured and drained. A sterile dressing was applied and the patient put to bed. No fixation of any kind was applied.

Subsequent History.—She began to improve immediately. Two months after the operation she walked about on crutches; twelve months later she was able to get about the house without the aid of crutches, and now, twenty-six months after the operation, she is able to walk long distances without any assistance whatever. She can flex, rotate, adduct and abduct the limb freely; in fact, she now has nearly 90 per cent. of motion, which before the operation was zero. The limb is 3½ inches longer than at the time of operation. Skiagrams taken twenty months after resection show a fairly well-formed new head and neck, growing in the direction of the original head and neck, and these lie in normal position with the acetabulum. Her general health is splendid and she has gained twenty-five pounds.

CONCLUSIONS

The good results obtained in this case as well as in twelve other cases[1] I attribute to the technic of the operation and of the after-treatment as I carry them out. This, in the main, consists in the complete removal of the diseased bone and the elimination of fixed dressings of any kind in the after-treatment. It is my opinion that plaster-of-Paris casts, splints and other fixation appliances commonly used in these cases after operation are responsible for the many bad results following this operation. Not only are they an unnecessary burden to the already overweakened and exhausted patient, but they are also a potent cause of deformity; insomuch that they prevent normal muscular action, thus giving the upper sawed end of the femur full scope to wander away from its moorings. Left to themselves, the various groups of muscles attached to the femur, by their opposing functions, tend to keep the bone in its normal plane. And as normal muscular action is essential in the production of a normal blood supply to the parts, healing is greatly facilitated.

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[1] In a paper read before the Wisconsin State Medical Society, July 2, 1909, to be published in the Wisconsin Medical Journal.

All this is exactly counteracted by the use of fixed dressings. In non-operative cases plaster-of-Paris casts applied prevent undue irritation by keeping the diseased bone at rest and apart. But since the diseased bone is removed in operative cases the application of a cast becomes superfluous. This case is of interest because:

1. Radical operation late in life seems feasible, or even practicable.
2. It proves how impossible it is for one to pronounce complete cure in cases treated conservatively.

Caswell Building.

OBSERVATIONS ON ALIMENTARY ALBUMINURIA BY MEANS OF THE ANAPHYLAXIS REACTION *

H. GIDEON WELLS, M.D.
CHICAGO

Alimentary albuminuria has commonly been assumed to be a simple filtration from the blood of a foreign protein, present in the blood only because it has been taken into the digestive tract in such large amounts that some of the protein has passed directly through the mucous membrane into the blood, without having been first decomposed into amino-acids and other cleavage products. The protein found in the urine was supposed to be the same as that which had been eaten in excess, both on theoretical grounds and because of the results of chemical investigations. The chemical methods available for the distinguishing of proteins so similar as serum albumin and egg albumin, however, are anything but satisfactory, and therefore the identity of the proteins found in the urine after eating large amounts of raw eggs was not positively established. With the discovery of the biologic test for proteins our resources were greatly increased, and we were for the first time provided with a delicate means of distinguishing between very similar proteins, provided they came from different species of animals. Naturally, it was not long before the biologic reaction was applied to the proteins of albuminous urine, the first question considered being whether the identity of the urinary proteins with the blood proteins could be established by this method. Leclainch and Vallee,[1] Mertens,[2] and Zuelzer[3] almost simultaneously experimented with the immunization of rabbits with the albuminous urine of nephritis. The French experimenters reported that the serum of such immunized rabbits reacted with albuminous urine and pleuritic exudates of man, but not with human serum, or with albuminous urine of cows or horses; therefore they concluded that the reaction was specific for the proteins of human exudates, but not of ordinary blood proteins. This rather remarkable result was not confirmed by either Mertens or Zuelzer, both of whom found that the serum of rabbits immunized with nephritic urine reacts with either nephritic urine or with human serum, and conversely, antihuman serum reacts with nephritic urine as well as with human serum. They therefore consider that at least one of the proteins of nephritic urine must be identical with a serum protein, thus proving the origin of urinary protein from the blood.

Ascoli[4] studied the occurrence of egg albumin in the urine after eating raw eggs, it having already been shown by Uhlenhuth[5] that by prolonged feeding of egg albumin to rabbits specific precipitins are developed in their blood, thus indicating the passage of egg albumin directly into the blood. As early as one to two hours after injection of egg albumin into rabbits, Ascoli found that the urine reacted with the appropriate antiserum for both egg albumin and rabbit serum albumin, the same result being obtained somewhat more slowly when the albumin was fed by mouth. In healthy men the presence of egg albumin in the blood could be demonstrated by the precipitin test as early as one and three-quarters hours after eating raw eggs, while in the urine both egg albumin and serum albumin can be demonstrated by the same method. Nephritics also excrete both egg albumin and serum albumin in the urine after eating raw eggs, according to the precipitin test. On account of the demonstration of the presence of both kinds of proteins in the urine, Ascoli concludes that the egg albumin when present in the blood so injures the renal cells that not only the foreign egg albumin, but also the normal serum proteins, escape into the urine. At times egg albumin may be demonstrable in the blood without the presence of any protein in the urine, a fact in harmony with the common observation that some healthy persons will show no albuminuria after eating even large quantities of raw eggs. In subsequent papers, Ascoli[6] reported observations to the effect that not only egg albumin, but also the proteins of beef and chicken, can be demonstrated in the blood and lymph shortly after these substances have been taken in the food; and when these proteins cause albuminuria the precipitin reaction will demonstrate in the urine not only the foreign protein but also the native serum proteins. Therefore, it would seem that foreign proteins are eliminated in the urine only through the injury which they produce in the kidney, and this injury makes it also temporarily permeable to the normal serum proteins. The finding of egg albumin by the precipitin test in human urine after eating raw eggs has been confirmed by others,[7] but so far as can be learned the presence of blood proteins in the urine in alimentary albuminuria has not been investigated except by Ascoli.

Cramer[8] states that the albuminous urine which is passed by rabbits after intraperitoneal injection of egg white does not give the precipitin reaction with antisera for either egg white or rabbit serum. Further, such urine, or the protein obtained from it, when injected repeatedly into rabbits, does not cause the rabbits' serum to react with either egg white or the isolated urinary protein. He believes that a negative precipitin test does not necessarily indicate the absence of the protein for which the serum used in the test is specific.

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* From the Pathological Laboratory of the University of Chicago.

[1] Compt. Rend. Soc. Biol., Paris, 1901, liii, 51.

[2] Deutsch. med. Wehnschr., 1901, xxvii, 161.

[3] Deutsch. med. Wehnschr., 1901, xxvii, 219.

[4] Münch. med., Wehnschr., 1902, xxvi, 734.

[5] Deutsch. med. Wehnschr., 1900, xxvi, 734.

[6] Münch. med. Wehnschr., 1903, l, 201 and 1761; Ascoli and Vigano: Zeit. physiol. Chem., 1903, xxix, 283.

[7] Inouye: Deutsch. Arch. klin. Med., 1903, lxxv, 378; Croftan: Arch. of Diag., New York, October, 1908.

[8] Jour. Physiol., 1909, xxxvii, 155.

More recently Wilson[9] has applied the fixation of complement test to the detection of the nature of the albumin in human urine. This reaction is as specific as the precipitin reaction, and much more delicate, a reaction being obtained with as little as 0.00001 c.c. of human serum. Applied to urine it was found to be from 10 to 100 times more delicate than the nitric acid test, so that it was possible by this means to detect albumin in urine when there was no sign of albumin by chemical tests. He finds that the main protein element of albuminous urine has a human antigen, and therefore is presumably human protein, but he seems not to have sought for the presence of other proteins in either nephritis or alimentary albuminuria.

There exists not only a scientific interest in this question of alimentary albuminuria, but there is also some practical bearing, for it might at times be desirable to ascertain whether the albumin in a given sample of urine represents food protein or blood protein. While the precipitin test is of distinct value, yet its application is not readily made without more or less experience in immunologic work, and requires a good deal of time and labor in immunizing animals and preparing the specific serums. It therefore seemed possible that the anaphylaxis reaction might be found serviceable in this connection, in view of its simplicity and its delicacy, since a guinea-pig may be successfully sensitized with a dose of one-millionth of a gram of egg albumin, or even less. One has only to inject the urine, either fresh or preserved by chloroform, into the peritoneal cavity of a medium sized guinea-pig, best weighing 300 and 500 grams, and two weeks or more later inject intraperitoneally the sort of protein suspected of being in the urine. For the first or sensitizing dose of urine, from 1 to 5 c.c. according to the amount of albumin present, is a suitable dose; for the intoxicating dose, from 2 to 5 c.c. of ascites fluid or human serum, or a corresponding amount of egg white, is a proper amount.

The first experiment performed was as follows:

Experiment 1.—A healthy young man, whose urine contained no albumin by either the heat or the nitric acid tests, took three raw eggs for breakfast (8 a. m.), after having abstained from food containing eggs for three days. Urine passed at 10:30 a. m. contained no albumin by either heat or nitric acid tests. At 1:15 p. m. six more raw eggs were eaten. Urine passed at 1:30 p. m. contained no albumin. Urine passed at 3 p. m. gave a barely perceptible reaction for albumin; that passed at 6 p. m. gave a distinct reaction, and 8 p. m. again only a trace could be detected. Guinea-pigs were injected with doses of from 10 c.c. to 1 c.c. of each of these samples, and 16 days later they were again injected with either egg white or human ascites fluid.

The results were as follows: Injection of egg albumin into these pigs sensitized with urine caused no symptoms whatever, no matter what sample of urine or what dose had been used in sensitizing; in all, this was done to fifteen guinea-pigs with negative results. Neither did the specimen of urine containing the largest amount of albumin (6 p. m. sample) cause anaphylaxis symptoms when injected in 10 c.c. doses into guinea-pigs that had been sensitized with egg albumin two weeks previously, although the same pigs were killed by egg albumin injected 24 hours after the urine injection. However, when other pigs that had been sensitized with this urine were injected with 3 c.c. doses of human ascites fluid, the results were striking. The pigs sensitized with the urine passed before eating the eggs showed no symptoms whatever, but those receiving urine passed later, even the 10:30 a. m. sample which showed no albumin by the heat or nitric acid tests, all reacted violently to the human proteins of the ascites fluid. Most of the animals died, and the remainder were severely ill with the characteristic symptoms of the anaphylaxis reaction. The pigs that had been tested with egg albumin, which caused no reaction, reacted to a subsequent dose of ascites fluid quite as violently as the pigs which had received no egg albumin, which shows the specific character of the sensitization for human serum proteins.

These experiments indicate that the proteins present in the urine of this particular individual, after eating a large amount of egg albumin, are serum albumin, and that no unaltered egg albumin has escaped in the urine.

This result was not in harmony with the finding of Ascoli, who, as stated above, finds that the urine in alimentary albuminuria reacts with antiserums for both human protein and for egg albumin. It has, therefore, been repeated with three other healthy individuals with exactly the same results, as shown by the following abstracts of the experiments:

Experiment 2.—A healthy young man went without eggs for a day, then took six raw eggs for breakfast (8 a. m.) and again four more eggs at 12:30 p. m. Urine passed before eating the eggs, and also that passed at 12 o'clock, gave no reaction for albumin with either the nitric acid or the heat tests. At 4 p. m., however, it gave a very faint reaction for albumin. Guinea-pigs were sensitized with urine from each of these specimens, in doses from 1 to 10 c.c., and 16 days later were injected with either egg albumin (crystallized) in 0.1 gm. doses or human ascites fluid in 3 c.c. doses. None of the pigs receiving the egg albumin showed any symptoms whatever, while all the pigs receiving ascites fluid reacted typically, and in most instances severely, although none died. The pigs that had failed to react with albumin, when injected 24 hours later with ascites fluid reacted typically, showing conclusively that the sensitizing substance in this urine was not egg albumin, but human protein.

It is to be noted that the guinea-pigs which received the urine passed before eating the eggs also reacted to ascites fluid, although this urine gave no sign of reaction for albumin by either heat or nitric acid.

Experiment 3.—A healthy man, aged 33, who had been taking arsenic in small doses (1/40 grain t.i.d.) for several weeks without showing any trace of albumin in the urine, took the whites of 6 raw eggs for breakfast at 8 a. m. Specimens of urine were collected at 10:30 a. m. and 12:30 and 2:30 p. m.; only the last gave a possible reaction for albumin and this was questionable. As before, guinea-pigs in pairs were injected with samples of each specimen of urine, in doses from 2 to 10 c.c., and 20 days later they were injected with either egg albumin (0.1 gm. doses) or ascites fluid (3 c.c. doses). As before, none of the pigs injected with egg albumin reacted at all, while all the pigs injected with ascites fluid, including those that failed to react to egg albumin, reacted severely and typically, although not fatally. A specimen of morning urine passed two days after eating the raw eggs, and which showed no trace of albumin, in 5 c.c. doses sensitized guinea-pigs to ascites fluid so that they reacted typically but not severely.

Experiment 4.—A healthy young man, aged 29, whose urine showed no traces of albumin, ate the whites of six eggs at 7:30 a. m. Urine passed at 12:30 p. m. and at 5 p. m. showed no traces of albumin by the nitric acid or heat tests. Six guinea-pigs were injected with the urine passed at 12:30 and at 5 p. m. Twenty days later three were injected with 0.1 gm. egg albumin each and showed no symptoms; three were injected with human ascites fluid, and all reacted typically, those having received the 12:30 p. m. specimen more severely than the one sensitized with the 5 p. m. urine. The pigs that had failed to react to egg albumin were injected the next day with ascites fluid, and reacted exactly the same as the pigs that had not been given egg albumin. Of two pigs sensitized with the urine passed before eating the eggs, one did not react distinctly to ascites fluid, the other reacted slightly.

Experiment 5.—Two specimens of albuminous urine were obtained from nephritics, one containing but a trace of albumin, while the other gave a dense coagulum on heating.

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[9] Jour. Path. and Bact., 1909, xiii, 484.

Guinea-pigs were injected with doses of these urines in quantities ranging from 10 to 0.1 c.c., and 19 days later they were injected with egg albumin or with ascites fluid. As before, the egg albumin had no effect, while the ascites fluid caused severe, frequently fatal intoxication, showing that the ordinary albuminous urine of nephritis contains human protein.

One fact noticeable in all the foregoing experiments was that animals which received 10 c.c. sensitizing doses of urine reacted less violently to the intoxicating dose of ascites fluid than the animals that received smaller doses of urine. This can not be explained as due to excessive quantity of protein in the sensitizing dose, for it was noticeable when the injected urine contained too little albumin to react with nitric acid. It is possible that urine, as well as other body fluids, contains substances that have an inhibiting effect on the anaphylaxis reaction, for in experiments performed with crystallized egg albumin and natural egg white it was found that unpurified egg white produced the reaction only when used in much larger doses than would be expected from its content of albumin;[10] contrasted with crystallized egg albumin the unpurified mixed proteins of egg white are about one-fifth as toxic for sensitized guinea-pigs, and but about one-hundredth as active in sensitizing.

A number of experiments were performed to determine the presence of protein in normal human urine by means of the anaphylaxis reaction. Morning urine from five healthy young men was injected into guinea-pigs in 1, 5 and 10 c.c. doses, and after an interval of three weeks human ascites fluid was injected in doses of 3 c.c. In nearly all cases the animals showed typical anaphylaxis symptoms of greater or less severity, but in only a few instances was the reaction fatal. From this it would seem that minute quantities of protein are present in the urine of normal individuals, and that this protein, which is too small in amount to be detected by the heat or nitric acid tests, possesses the specific properties of human proteins, like the proteins present in albuminuria.

SUMMARY

Although a few observers report having found evidence of the presence of specific food proteins in the urine in alimentary albuminuria by means of the precipitin reaction, yet by the anaphylaxis reaction the results are found to be quite different. Guinea-pigs sensitized with urine from four healthy persons with experimental alimentary albuminuria, produced by eating raw eggs, and with urine from two cases of nephritis, reacted typically and severely to subsequent injections of human ascites fluid, and not at all to egg white or to egg albumin. In view of the extremely minute quantity of protein necessary to sensitize guinea-pigs to the homologous protein, these results speak against the prevalent view that the albumin present in the urine in alimentary albuminuria is the same protein that has been taken in the food. Either the ingested and absorbed protein is altered to the extent of acquiring specific human properties before being eliminated in the urine, or else it is not excreted at all, but injures the kidneys slightly and transitorily by overloading the blood with nitrogenous waste products, so that they become permeable to the normal proteins of the serum. If the results of the anaphylaxis reaction alone were considered, the latter explanation would seem to be the most probable, but several observers report that the urine in alimentary albuminuria reacts with specific precipitins for the food proteins. This discrepancy between the results of experiments with the precipitin and the anaphylaxis reactions may be interpreted as meaning that the two methods are not of equal value in solving the problem, or it may be suggested that the precipitin reaction is given by food proteins that have been slightly altered during the processes of absorption and excretion so that they will not sensitize guinea-pigs to the original protein. However, experiments to be reported elsewhere show that digestion of proteins very quickly destroys their property of reacting with precipitins, while the anaphylactic properties of protein resist destruction by either peptic or tryptic digestion for a remarkably long time.

In any case, there can be no question that even in alimentary albuminuria, as well as in nephritis, the urinary proteins are chiefly, perhaps exclusively, human proteins, and, therefore, presumably derived from the blood rather than from the food. Whether any of the unaltered food protein reaches the urine is doubtful, because of the disagreement on this point of the anaphylaxis reaction and the precipitin reaction. Further comparative studies are needed to clear up this point, both because of the desirability of knowing just what relation the precipitin and anaphylaxis reactions have to each other, and because of the importance to the physiologist of definite information as to whether unaltered food proteins can pass through the intestinal wall.

On account of the delicacy of the anaphylaxis reaction it shows the presence of human proteins in urine from normal persons, which gives no reaction for albumin by the heat or nitric acid tests.

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[10] Jour. Infect. Diseases, 1908, v, 456.

A FEW POINTS ON PROPHYLAXIS OF TUBERCULOSIS

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LITITZ, PA.

It is important to prevent future generations from contracting tuberculosis by a thorough course of preventive medicine and hygiene taught in our public schools. Germs are everywhere, and it is essential not to disseminate the pathogenic varieties. Expectoration in the open air should not be tolerated.

We must treat properly the cases already under our observation. Individuals suffering with tuberculosis should be cautioned against marrying. If the married state hastens the progress of the disease, it is natural to believe that the offspring from a union of tuberculous individuals would also have a tuberculous tendency, very much as the children of inebriates have a tendency toward inebriety. The consensus of professional opinion, however, says that tuberculosis is not hereditary.

It seems reasonable that the system may be fortified to resist disease by conservative measures, such as the following:

1. Regular, temperate and cleanly habits.
2. Abundant sunshine and fresh air.
3. Good nourishing food.
4. Sufficient rest.

1. *Regular Habits.*—It is essential to observe regular and temperate habits and modes of living. A shiftless vagabond, exposed to the elements, depending on the kindness of charity, or a society rake living in the excesses of overabundance, will be more likely to contract tuberculosis than will active, industrious and sober individuals. Persons afflicted with what are supposed to be incurable diseases sometimes give themselves up to reck-

less riotous revelry in order to drown their troubles. This is a great mistake. The reason is self-evident.

2. *Sunshine and Fresh Air.*—The average individual in our cities gets far too little systematic exercise in the open air during favorable weather. Clerks and shopkeepers are housed from morning until night, year in and year out, in poorly ventilated and stuffy apartments, where the atmosphere is stale and charged with noxious and depressing exhalations from crowds. The majority of the working class shut up in shops, factories, stores and offices are constantly inhaling clouds of germ-laden dust. These individuals furnish a large portion of cases of tuberculosis. Indians have long been known to be susceptible victims of tuberculosis, not because they live in the open, but because of their lives in the dampness of rivers, canoeing, fishing and hunting. This prolonged exposure lowers lung resistance and favors irritation of the bronchial mucous membrane, paving the way for invasion of tubercle bacilli. This should put us on our guard in treating these sufferers. These patients can not very well be treated advantageously who persist in staying at home if the surroundings are damp. A moderately elevated location among the hills where the air is bracing and dry should be chosen for tuberculous patients. The tonic effect of dry ozone to be had among the pine hills and forests aids materially in arresting tubercular lesions. It assists Nature in the reconstructive process; in forming a barrier of fibroconnective tissue around the lesions, in limiting the extension of the destructive process and eventually obliterating it, while a new defensive army of phagocytes encounter the enemy face to face. We can not all live where it is best and most healthful for us, but those especially predisposed to disease should consider the matter of location seriously.

3. *Nourishing Food.*—This is of paramount importance in maintaining bodily strength. Food should be selected which contains the greatest possible amount of nourishment and reconstructive power, and which at the same time agrees with the digestive function of the individual in question. A reasonable amount of food of desirable quality should be selected rather than the greatest quantity for the money. Time should be taken to masticate it thoroughly, thereby avoiding distressing gastrointestinal disturbances. It can not be otherwise than harmful to impose the work of the teeth on the stomach. Gormandizing and gluttony, which often give rise to acute indigestion, should be avoided.

4. *Rest.*—This, too, is an important factor, yet is too often overlooked. The tired and overworked body needs re-energizing by refreshing sleep. Some individuals can get along on much less sleep than others. If one gets, on an average, eight hours' quiet and undisturbed rest each night, and observes the rules of hygiene already mentioned, one's vital powers should be amply reinforced to ward off almost any disease, even tuberculosis.

FOOD-POISONING BY CHICKEN SANDWICHES

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A few weeks ago eighty-three people gathered at a new barn seven miles north of North Platte at a dance. At 1 o'clock in the morning they were served with a lunch consisting of chicken sandwiches, cake and coffee. The chicken had been prepared the day before by being cooked, cooled and run through a sausage chopper. The weather was very hot and humid. The chopped chicken was kept over twenty-four hours before the sandwiches were made and eaten. The next day, about twenty hours after the supper, fifty-two people who had eaten the lunch were reported sick. Later several more reported, making the whole number about sixty. All who had eaten the chicken were sick, but those who ate cake and coffee and did not eat chicken were not affected. All these patients suffered practically the same symptoms, differing only in degree. They were taken with severe cramps in the bowels, followed by diarrhea and vomiting. Rise of temperature was present in every case that I examined, varying from 101 to 103½. Some were taken sick seven hours after eating the chicken; others were taken sick as late as twenty-four hours after. One man told me that he had taken two big drinks of whisky after the lunch and thought he had escaped any bad effects, but on placing a thermometer under his tongue I found his temperature to be 100.

None of the chicken could be obtained for bacteriologic examination but it is evident that bacterial infection, probably proteus or paratyphoid, was the cause of the poisoning in this case. Proteus as a rule, however, causes little or no fever but does cause severe gastrointestinal symptoms. Clinically this outbreak resembled infection with the *Bacillus enteritidis* of Gartner. Bollinger states that four-fifths of meat-poisonings are caused by this bacillus but in this case the chickens were stated to have been in good health before being killed. Most cases of poisoning from the Gartner bacillus come from "emergency slaughtering," or where the animal has been killed because of disease.

Professor Dieudonné in his book on food-poisoning states: "Meat poisoning may be occasionally produced by the hay bacillus (*Bacillus subtilis*). An instance of this is reported by Lubenau, who observed an outbreak among the inmates of the Beelitz sanatorium, in 1906. About three-fourths of the 400 inmates and a large part of the help were affected shortly after eating meat croquettes. They had been served at the noon meal; at about 11 in the evening a large number of persons were seized with a profuse diarrhea, persistent vomiting, severe headache and great prostration. In two or three individuals fever was also present. Bacteriologic examination revealed the presence of a bacillus belonging to the hay bacillus group."

I believe it of considerable importance that these cases be reported and that bacteriologic examination be made in every case possible.

GOUTY AFFECTIONS OF THE NERVOUS SYSTEM

REPORT OF AN INTERESTING CASE

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Formerly the term lithemia was used to cover up our ignorance in regard to a number of affections of uncertain origin. We now know that there is no such disease, but we recognize some of the terms formerly included, of one of which I will report an interesting case.

History.—The patient was a white man, aged 32, married; occupation, telegraph operator. His father and mother were living and well; no history of rheumatism or gout. The patient had had the usual diseases of childhood and typhoid fever ten years before coming under observation. He has had periodic attacks of arthritis of the left knee for the past three years, accompanied by some swelling and tenderness; facial neuralgia for past three years, only slight.

Present Illness.—This began one year before the present attack, with slight headache, constipation, scanty urine and great nervousness. The patient suddenly awoke one night with agonizing pain in the lower right quadrant of the abdomen, nausea and vomiting. The next morning he walked to a physician's office, where two surgeons pronounced his case as one of appendicitis and advised immediate operation. This he refused. He stated that he had no fever, slow pulse, slight tenderness, no rigidity. Recovery was slow. A few months after this he had a second attack similar in every way to the first except that the pain was at the margin of ribs in mid-axillary line. The physicians called pronounced this hepatic abscess. The patient again refused operation and recovery ensued.

Examination.—On June 5, 1909, I found the patient suffering from agonizing pain, confined to the right nephritic region, headache, nausea, vomiting and great nervousness. There was some slight discoloration of the conjunctivæ; pulse was 68; temperature, 98.3; some slight tenderness over point of pain but no radiation. There was no rigidity. The kidney was not palpable; the liver was normal in size. Hot applications failed to relieve pain, and morphin was given. Urine was scanty, highly colored, depositing a heavy sediment on standing; sp. gr. 1028, acid, no albumin or sugar. Microscope gave quantities of mixed urates and uric acid crystals; no pus or blood cells. Blood count was normal. The Garrod string test was not applied.

Treatment.—This consisted in relieving the constipation by means of alkaline diuretics, careful dieting and copious draughts of water. Recovery was rapid and the patient states that he feels better than for the past year.

It will be noted that in no attack did he have fever, rapid pulse, pronounced tenderness or any rigidity; that headache, nausea, vomiting and extreme nervousness accompanied all and that each attack was preceded by constipation, headache and scanty, highly colored urine.

Such cases are interesting, not from their rarity, but from a diagnostic standpoint. We are too prone to consider every abdominal pain as indicative of appendicitis, cholelithiasis or ureteral calculus.

The periodic attacks of arthritis are entirely relieved by the salicylates, alkaline diuretics and hot applications. These attacks are not necessarily coincident with the other affection, but has given him some trouble during the last attack. The facial neuralgia has given the patient no trouble since the first attack of the present trouble.

TUBERCLE BACILLI IN THE BLOOD

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AND
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Drs. M. P. Ravenel and Karl W. Smith of Madison report[1] eighteen cases of tuberculous patients whose blood they examined by the Rosenberger method; they failed to demonstrate tubercle bacillus in the blood of a single case, and conclude: "This investigation has been confirmed by reports from all over the world, and the only conclusion that can be reached is that the Rosenberger method is of no value."

We wish to report ten such examinations, a number quite too small to warrant us in criticizing such an authoritative and conservative worker as Rosenberger, yet sufficient, we think, to permit us to question the above results and conclusions.

CASE 1.—Clinical diagnosis, pulmonary tuberculosis; bacillary sputum.

Blood examination: Some microscopic fields, no tubercle bacilli; others had various numbers, the highest being nineteen in one field.

CASE 2.—Patient had hip-joint disease three years before coming under observation, abscess formation; operation, recovery with fixation; *x*-ray shows partial destruction of head of femur and acetabulum. Physical examination and clinical symptoms negative.

Blood examination: Tubercle bacilli as high as nine in field.

CASE 3.—Clinical and physical signs of pulmonary tuberculosis; sputum non-bacillary.

Blood examination: As many as 6 bacilli in one field.

CASE 4.—A child with hip trouble; *x*-ray negative for osseous destruction. Physical examination negative.

Blood examination: Tubercle bacilli in blood.

CASE 5.—A young man, now apparently healthy, although two years before coming under observation he was very much "run down." Afternoon and evening temperature as high as 101 F.; cough and loss of weight. Physical examination at that time and present, negative. Dozens of sputum examinations, also examinations of urine and feces, negative for tubercle bacilli.

Blood examination: As high as 10 tubercle bacilli in a field.

CASE 6.—A patient with axillary adenitis. Pathologic report on removed glands, sarcoma.

Blood examination: Negative for tubercle bacilli.

CASES 7 and 8.—Positive findings. A diagnosis of typhoid fever has been made since. One of these cases at least is clinically typhoid. In each of these cases several hours' search revealed only a few bacilli.

CASE 9.—This case had a provisional diagnosis of tabes dorsalis with an unexplainable temperature.

Blood examination: Positive for tubercle bacilli.

CASE 10.—Pulmonary tuberculosis; bacillary sputum.

Blood examination: Positive.

Our technic is Rosenberger's improvement on what he originally used. The venous blood is smeared rather thickly on cleaned slides, dried, laked in distilled water, fixed, then stained with gently heated carbol fuchsin for five minutes, washed with water, decolorized with 25 per cent. nitric or sulphuric acid, then stained with methylene blue, or with Gabbet's solution used immediately after the carbol fuchsin. There is no doubt but that morphologically and tinctorially these were tubercle bacilli. If this technic does not demonstrate that these were not tubercle bacilli, then one cannot make a positive diagnosis of bacillary sputum without inoculation tests.

We do not wish to go on record as to the practical value of the Rosenberger method, but report our findings to encourage others to continue their labors, for the subject certainly can not be considered a closed one.

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1. Proceedings of the State Medical Society of Wisconsin, reported in THE JOURNAL A. M. A., Aug. 21, 1909, liii, 649.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

TRANSFER OF AGENCY

Triferrin and Triferrol (see New and Nonofficial Remedies, 1909, p. 134 and 135), formerly sold by C. Bischoff & Co., New York, are now sold by Knoll & Co., New York.

MASSOLIN—Cultura Bacilli Bulgarici-Lederle.—Massolin is a pure culture of the *Bacillus bulgaricus* of Massol, grown on one of the following media: Calcium carbonate lactose broth, calcium carbonate dextrose broth, calcium carbonate Cohendy broth, or Cohendy broth.

The material for one of the above broths is sterilized for thirty minutes on three successive days and then placed in the incubator for at least forty-eight hours to determine its sterility before using. The material is then put into large flasks, inoculated from test tube cultures of the bacillus and incubated at 37 C. (98.5 F.) for from twenty-four to ninety-six hours. It is then tested to see that it is free from contaminating organisms.

The preparation is of an amber color and has the odor and taste of the particular medium employed as its base.

The material should be inoculated into milk and into the above media in test tubes and smeared on Cohendy agar. The cultures should be examined microscopically for the detection of contaminating organisms.

Actions and Uses.—The culture tends to prevent the growth of putrefactive and pathogenic organisms. It is said to be useful in the treatment of suppurative conditions and is said to have been found especially beneficial in atrophic rhinitis, chronic nasal catarrh, inflammations of the frontal sinus, antrum, ethmoidal cells, middle ear, etc.

Dosage.—The culture should be liberally applied directly to the diseased area and in ordinary nose and throat affections the contents of one bottle 7.5 Gm. (¼ ounce) may be employed at each treatment.

Manufactured by Lederle Antitoxin Laboratories, New York (Schieffelin & Co., New York).

No patent or trademark. U. S. Government License No. 17.

CALCIUM LACTATE—Calcii Lactas.—Calcium lactate, $Ca(C_3H_5O_3)_2.5H_2O$, is the calcium salt of lactic acid.

It is prepared in the manufacture of lactic acid by the lactic acid fermentation of sugar or by the neutralization of lactic acid by calcium carbonate.

It occurs in white crystalline masses or powder, odorless and tasteless. It is soluble in 9.5 parts of water, easily soluble in hot water. At 100 C. (212 F.) it loses water of crystallization.

If calcium lactate is heated gently with a mixture of sulphuric acid and potassium permanganate the odor of aldehyde will be given off. An aqueous solution of calcium lactate will throw down a white precipitate, insoluble in water and acetic acid, on the addition of a solution of ammonium oxalate.

Actions and Uses.—Calcium lactate has the pharmacologic action of other calcium salts. Being less irritating than the chloride, it may be given subcutaneously. It is used to increase the coagulability of the blood.

Dosage.—0.5 to 4 Gm. (7 to 60 grains).

TANNISMUTH—Bismuthi Bitannas.—Bitannate of Bismuth. Tannismuth is the bismuth salt of tannic acid in which approximately one atom of bismuth is combined with two molecules of tannic acid having approximately the formula $Bi(OH)(C_{14}H_9O_9)_2$ and containing between 17 and 21 per cent. bismuth.

It is a light yellow powder with slightly astringent taste, insoluble in water, soluble in cold caustic alkalies, and in diluted hydrochloric acid.

Actions and Uses.—It is claimed that one molecule of the tannic acid becomes operative immediately after ingestion, while the other is slowly separated and prolongs the astringent action throughout the entire length of the alimentary canal.

It is said to be useful in chronic intestinal catarrh, involving different portions of the intestinal tract.

Dosage.—0.3 to 0.6 Gm. (5 to 10 grains) three to five times daily.

Manufactured by Chemische Fabrik von Heyden, Radebeul near Dresden, Germany (The Heyden Chemical Works, New York). German patent No. 172,933. U. S. trademark No. 36,916.

PEROXIDE ZINC SOAP—Sapo cum zinci peroxido.—Peroxide Zinc Soap is a soap containing 10 per cent. zinc peroxide, which see.

Actions and Uses.—It is said to be useful as a vehicle for employing zinc peroxide in the treatment of skin diseases.

Prepared by J. Eavenson & Sons, Camden, N. J., for the Roessler & Hasslacher Chemical Co., New York. U. S. patent No. 787,776. No trademark.

HOMATROPINE HYDROCHLORIDE—Homatropinæ Hydrochloridum.—Homatropine Hydrochloride, $C_{16}H_{21}NO_3HCl$, is the hydrochloride of the alkaloid homatropine, obtained by the condensation of tropine and mandelic acid.

Homatropine hydrochloride occurs as small white crystals, soluble in water and alcohol and melting at 216 to 217 C. (420.8 to 422.6 F.).

If sulphuric acid containing a trace of potassium dichromate be added to a crystal of the salt an evanescent pink color will be produced which rapidly changes to green. If 0.01 Gm. of the salt be added to 5 drops of nitric acid and evaporated to dryness in a porcelain dish the residue should not acquire a violet red color upon the addition of a few drops of alcoholic potassium hydroxide test solution (absence of atropine, hyoscyamine or hyoscine). If 1 c.c. of an aqueous solution of the salt (1 to 100) be made alkaline with ammonia water, shaken out with chloroform and the chloroformic solution evaporated to dryness, the residue should turn yellow and finally brick red when warmed with about 1.5 c.c. of a solution of 1 part mercuric chloride in 30 parts of a mixture of 5 volumes alcohol and 3 of water (absence of most other alkaloids except atropine and hyoscyamine). If to an aqueous solution containing 0.1 gm. of the salt an excess of potassium hydroxide test solution be added, liquid extracted with ether and the latter evaporated spontaneously, the crystals which form should melt at 96 C. (204.8 F.).

Actions and Uses.—Homatropine is less poisonous than atropine, but the same symptoms are produced by it when exhibited in large doses.

The hydrochloride is used as a mydriatic in ophthalmic surgery. The mydriatic effect begins in ¼ to ½ hour and reaches a maximum in one hour and disappears in 36 to 48 hours. Accommodation paresis ceases earlier.

Homatropine hydrochloride is given for the same indications as the hydrobromide, but has no advantage over the latter.

Dosage.—It is applied to the eye in 1 per cent. solution.

THEPHORIN—Theobrominæ Sodio-Formas. — Theobromine Sodium Formate. Thephorin $C_7H_7N_4O_2Na+NaCHO_2,+H_2O$ is a double salt of sodium formate and theobromine sodium.

It is prepared by dissolving 70.1 parts of theobromine sodium in 200 parts of water and adding to it a solution of 23.5 parts of anhydrous sodium formate in 50 parts of water, filtering the mixture, and evaporating to dryness on a steam bath or in vacuo. Thephorin is a white, odorless powder having a saline bitter taste and is readily soluble in water producing an alkaline solution. From its aqueous solution the theobromine is precipitated by acetic acid. In the filtrate formic acid is indicated by the reduction of silver nitrate.

If an aqueous solution of thephorin be faintly acidulated with nitric acid, the filtrate should give no precipitate with barium chloride, nor with silver nitrate, nor with ammonia water and hydrogen sulphide.

Two Gm. thephorin are placed in a porclain dish and dissolved in 10 c.c. water with the aid of gentle heat. A few drops of phenolphthalein test solution are placed in the solution, neutralized with nitric acid, the faint alkaline reaction is again restored by means of diluted ammonia, the solution is then thoroughly stirred and, with frequent stirring, allowed to stand for three hours at ordinary temperature.

The resulting precipitate collected on a weighed filter of 8 cm. diameter, is dried at a temperature of 100 C.; it is then washed twice with cold water using 10 c.c. each time. The filter is again dried at a temperature of 100 C. and weighed. The weight of the precipitate should amount to 1.2 gm.

Actions and Uses.—Thephorin is said not to irritate the stomach and acts as a powerful diuretic, both on account of the theobromine which it contains and also from the action of sodium formate.

It is said to be useful in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.5 Gm. (7½ grains) two or three times a day in the form of powder or as tablets.

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 172,932. U. S. trademark No. 59,581.

Thephorin Tablets, 7 1/2 grains: Each tablet contains thephorin 0.5 gm. (7½ grains).

BENZOSALIN—Methylis Benzoyl-Salicylas. — Benzoyl-Salicylic-Acid-Methylester—Methyl Benzoyl-Salicylate. Benzosalin, $C_6H_4.O(CH_3).COO(C_6H_5CO)$, $1:2 = C_{15}H_{12}O_4$ is the methylester of benzoyl salicylic acid.

Benzosalin is prepared by a reaction between the methylester of salicylic acid and benzoyl chloride in the presence of sodium hydroxide. The resulting product is washed with water and after drying is crystallized out from alcohol.

Benzosalin consists of fine, white crystals with a very faint aromatic odor. It melts at about 85 C. (185 F.). It burns leaving no residue. It dissolves readily in chloroform, benzene and in 35 parts of 90 per cent. cold alcohol, also in pure concentrated sulphuric acid.

Actions and Uses.—Benzosalin is said to pass the stomach unchanged and to be decomposed into its constituents, benzoic and salicylic acid in the intestines. It is said to be free from the undesirable by-effects of salicylic acid. It is claimed that benzosalin is an intestinal antiseptic.

Benzosalin is said to be useful in rheumatic affections, such as arthritis, neuralgia, sciatica and migraine, and in arthritis deformans.

Dosage.—0.5 to 1 Gm. (7½ to 15 grains). Daily dose 3 to 4 Gm. (45 to 60 grains) in powder or tablets.

Manufactured by F. Hoffmann-La Roche & Co., Basel, Switzerland. (The Hoffmann-La Roche Chemical Works, New York.) U. S. patent No. 799,706. U. S. trademark No. 58,757.

Benzosalin Tablets, 5 grains: Each tablet contains benzosalin 0.3 Gm. (5 grains).

FERROUS LACTATE—Ferri Lactas.—Iron Lactate—Ferrum Laticum. (U. S. P., 1890; Pharm. Germ., edit. 4; Pharm. Helvetica, edit. 4; Pharm. Belgica, edit. 3; Pharm. Francaise, 1908); Ferrous lactate, $Fe(C_3H_8O_3)_2+3H_2O$ is the ferrous salt of lactic acid.

Ferrous lactate occurs in pale greenish-white crusts, consisting of small, needle-shaped crystals, or transparent green scales, having a slight, peculiar odor and a sweetish, ferruginous taste. It is slowly soluble in about 40 parts of cold, and in 12 parts of boiling water; almost insoluble in alcohol; freely soluble in a solution of an alkali citrate yielding a green solution.

When strongly heated, the salt froths, gives out dense, white, acid fumes, chars and finally leaves a brownish red residue.

The aqueous solution of the salt has a greenish-yellow color, a slightly acid reaction, and gives a deep blue precipitate with potassium ferricyanide, and a light blue one with potassium ferrocyanide.

A 2 per cent. aqueous solution of the salt should not yield more than a faint opalescence with a solution of lead acetate (limit or absence of sulphate, chloride, citrate, tartrate and malate). The aqueous solution after acidulation with hydrochloric acid should not yield any precipitate or coloration when treated with hydrogen sulphide (absence of foreign metals).

The aqueous solution, acidulated with nitric acid, should not afford more than a slight opalescence with barium chloride solution or with silver nitrate solution (limit of sulphate or chloride). If 25 c.c. of a 2 per cent. aqueous solution of the salt be mixed with 5 c.c. of diluted sulphuric acid, the mixture boiled for a few minutes, an excess of sodium hydroxide added and the mixture filtered, the filtrate when mixed with a few drops of alkaline cupric tartrate solution and boiled, should not yield a red precipitate (absence of sugar).

If a portion of the salt be triturated with strong sulphuric acid, no offensive odor should be developed (absence of butyric acid), nor should any gas be evolved (absence of carbonate), and the mixture after standing for some time should not assume a brown color (absence of sugar, gum, or other readily carbonizable impurities).

If 1 gm. of the salt, contained in a porcelain crucible, be moistened with nitric acid and carefully ignited, it should leave a residue of ferric oxide weighing not less than 0.270 nor more than 0.278 Gm. This residue should not have an alkaline reaction on litmus paper, nor yield anything soluble to water (absence of foreign salts).

Actions and Uses.—Ferrous lactate is a mild chalybeate which because of its feeble taste may be taken without difficulty.

Dosage.—0.08 to 1.3 Gm. (1 to 20 grains). Owing to its liability to oxidation, it is best prescribed in solutions containing much sugar. Syrup dissolves 1 Gm. in 120 Gm. (4 grains to the fluidounce).

DIGALEN—Liquor Digitoxini Solubilis.—Digalen is a mixture said to contain 1 part of Digitoxinum Solubile Cloetta,[1] in 1,000 parts of glycerin and 1,600 parts of distilled water with 7.5 per cent. of alcohol. 1 Cc. is said to contain 0.0003 Gm. of Digitoxinum Solubile Cloetta.

Digitoxinum solubile Cloetta is manufactured as follows:

The dried and finely powdered leaves of digitalis are extracted with dilute alcohol: then the extract is mixed with lead acetate solution in order to remove chlorophyll and resins and filtered. From this filtrate the excess of lead is precipitated with sodium sulphate and the alcohol distilled off in vacuo. From the remaining aqueous solution the substance is extracted by ethereal solvents and precipitated afterwards in an amorphous and pure condition according to a special secret method.

Digalen is a colorless or slightly yellowish fluid of an agreeable aromatic smell and a sweet taste which turns bitter afterwards.

Digitoxinum Solubile Cloetta is described as an amorphous, white or slightly yellow powder. Its solubility is said to be about five times as great as that of crystallized digitoxin. It dissolves very readily in alcohol and choloform and a little less readily in ether. It has an intensely bitter taste and causes violent sneezing. It is claimed to be the form in which digitoxin exists in the digitalis leaf before it is deposited in a crystalline and insoluble form.

In order to test for the active principle in digalen a few drops of dilute acetic acid are added to 2 c.c. of digalen solution and then the mixture is shaken out with chloroform. This solution is evaporated and the residue dissolved in about 2 c.c. of glacial acetic acid containing traces of iron chloride. If to this solution concentrated sulphuric acid is added cautiously without mixing, so as to form a separate layer at the bottom of the test tube, a small brown ring will form first between the two layers which becomes broader in the course of some hours and expands towards the top of the tube in a blue green to black shade and towards the bottom of it in a reddish brown one, while the acetic acid acquires finally a dark green-blue color.

The amorphous character of the digitoxin contained in digalen is proved by the following tests: Dissolve 4½ mg. digitoxin amorphous (the entire content of digitoxin amorphous of an original vial of digalen) in 0.225 c.c. of 96 per cent. alcohol. Place the same quantity, 4½ mg. of crystallized digitoxin, also in 0.225 c.c. alcohol 98 per cent.

The amorphous digitoxin dissolves readily to form an entirely clear solution. The crystallized digitoxin, however, dissolves slowly and incompletely. This solubility difference is still more marked if diluted alcohol is employed.

A drop of the clear filtered alcoholic solution of amorphous digitoxin leaves no crystallin residue on evaporation, but a solution of crystallin digitoxin shows on evaporation an active separation of minute, sharp and distinctly formed crystals arising especially on the edge of the drop.

Actions and Uses.—The same as Digitoxin.

(See Jour. A. M. A., May 8, 1909, p. 1499.)

Dosage.—Average single dose 1 Cc. (16 min.) Maximum single dose 2 Cc. (32 min.), maximum daily dose 6 Cc. (96 min.) Intravenous injections of 1 Cc. (16 min.) may be repeated at intervals of one-half to one hour as necessary. For protracted dosage from 1 to 2 doses daily of from 7 to 14 drops are given.

Manufactured by F. Hoffmann-LaRoche & Co., Basle, Switzerland. (The Hoffmann-LaRoche Chemical Works, New York.) U. S. trademark No. 43,593.

Therapeutics

CHRONIC NEPHRITIS

Chronic interstitial nephritis, Bright's disease, or better named under the clumsy but more descriptive title of cardiovascular-renal disease, is markedly on the increase in this country; consequently, it is necessary for the medical profession to take means of preventing its occurrence. It is unimportant for the discussion of its prevention which part of the anatomy of the individual patient has farthest advanced in the pathologic process. One patient may have arteriosclerosis greatest in evidence, another cardiac weakening, another renal disturbances, but the disease in any case is the same. Increased blood tension seems to be the premonitory condition and the forerunner of all subsequent disturbances in this cardiovascular-renal disease.

A question that has been considerably discussed is: What is the etiology of this increased blood tension? The condition has been variously attributed to tension caused by increased nervous activity; to hypertrophy of the left ventricle, which, however, is probably generally compensatory to overcome the increased arterial pressure; to the circulation in the blood of toxins absorbed from the intestines, which irritate the vessel walls and the central nervous system; to toxins retained in the blood from insufficient excretion by the kidneys; and to a hypersecretion of the vasoconstrictor element of the suprarenals, or to a relatively increased secretion from these glands, at a period of life (after fifty) when the thyroid furnishes a diminished secretion and therefore less vasodilator stuff. It is probable that all or several of these elements, which cause arterial irritation, are at work at once, and there probably is no one cause for a slowly developing endarteritis, increased blood pressure, and a future arteriosclerosis. The parts that chronic lead poisoning, syphilis and its treatment with mercury, serious acute infections, prolonged serious illness, alcohol and the ever frequent over-use of tobacco have played in causing the signs of beginning sclerosis must all be taken into consideration, when the attempt is made to prevent the development of, or to stay, the pathologic process.

It is manifestly impossible to prevent the serious conditions that have gone before, viz., acute illness, syphilis, mercury and lead. It is possible to prevent the continuation of causes that are continuously acting in the individual patient, such as alcohol, tobacco, over-eating, intestinal indigestion, and the nervous tension caused by an excessive amount of mental labor, or by the strenuous life that the patient may be leading.

In this insidious, creeping and almost sneaking disease it is obviously important to recognize early its premonitory symptoms and signs. Not infrequently it is the oculist who is consulted for disturbances of vision, who first notes arterial changes in the retina. The symptoms which the patient has and which he may take note of, or, on the other hand, take no notice of, are: a slight tendency, or an increased tendency, to headache; slight headaches on first awakening in the morning; some early muscle debility in the morning, which soon passes away, as does the headache; at times, some pain in the occipital region; occasionally intermittency of the heart, sometimes an increased force of the beat, especially on first lying down; sometimes slight attacks of palpitation and dyspnea after exertion that should not cause cardiac disturbance; at times, on exertion, a peculiar paleness about the mouth; at other times flushing of the face; slight puffiness of the ankles at night, not real edema; a sensitiveness of the skin to slight irritation, so that rubbing or scratching causes an intense local hyperemia that may persist for some minutes; at times occasional digestive disturbances, nausea and vomiting attacks; frequently a coated tongue and a bad taste in the mouth in the morning; possibly a little diarrhea without adequate food, cold, or inflammatory excuse; days of increased frequency of urination; and the tendency to be awakened once, perhaps twice, at night to urinate. These symptoms may bring the patient to the physician, but often do not. In some instances it is the increased frequency of urination at night, or an irritability of the bladder, or a general weakening of the patient from circulatory debility, or actual cardiac distress with possibly slight anginal attacks, that cause the patient to consult his physician.

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[1] The Council has not determined whether digalen contains "soluble amorphous digitoxin" or not, but accepts it merely as a standardized soluble and fairly stable digitalis preparation.

Besides the above symptoms, the physician finds either increased pulse tension, or, in many instances, a pulse tension that was increased has become lowered from slight cardiac weakness, before the patient has consulted him. In all cases, the blood pressure should be taken and noted, and circulatory treatment directed according to the reading. The physician will often find an intermittency, sometimes an irregularity, of the heart, often slight enlargement, and at times a soft systolic blow at the apex, showing weakness and a slight dilatation of the left ventricle. If there is a systolic blow at the aorta, there may be a slight roughening of this valve, or the sound may be of hemic origin, even if the patient is not anemic; in other words, either one of these cardiac murmurs, the aortic or the mitral, may disappear under proper treatment.

The physician may note an abnormal tendency of the veins of pendent portions of the body (especially of the hands when hanging down) to become dilated, showing some circulatory insufficiency. This may be due to slight arteriosclerosis, or it may be due to cardiac weakness.

The tongue may show varying signs of digestive disturbances or an irregular, patchy, coated condition which is typical of renal insufficiency.

The urine may be of low specific gravity, may contain a trace of albumin, and may show hyaline and granular casts, but all these important urinary findings may be absent. It is essential to examine several specimens of the twenty-four hours' urine to determine the ability of the kidneys to excrete not only nitrogen, but salts. The results of these examinations will decide the modifications of the diet that are necessary.

The results of the examination of the circulation will determine the amount of rest that is necessary, or the amount of exercise that should be allowed.

Drs. N. E. Ditman and W. H. Welker, New York, in a series of articles in recent numbers of the *New York Medical Journal*, ending June 5, 1909, have scientifically presented the symptoms, etiology and treatment of nephritis. They make the statement that in a large proportion of instances this disease is preventable, and certainly ordinarily in its incipiency it may be stopped or stayed. If the patient comes to the physician when the above symptoms only are present, prophylactic measures to prevent the further development and progress of the disease are presented as follows by Ditman and Welker:

Alcohol.—The pernicious effects of alcohol in causing nephritis is attributed generally to its interference with oxidation, and imperfect oxidation is considered by these experimenters to be a distinct cause of nephritis. Consequently, as has long been theoretically known, patients with early signs of cardiovascular-renal disease must not take alcohol in any form.

Cold.—The climate of the temperate zone is more conducive to the development of nephritis than are zones where it is colder and zones where it is warmer. The rapid variations in temperature experienced in temperate climates cause marked changes in the tone of peripheral vessels. Sudden cold raises the blood pressure, inhibits excretion by the skin, and puts more work on the kidneys. For this reason the patient with a beginning chronic nephritis should live during the colder and variable seasons of the year in a warmer climate, if he has the money ability. If he has not the financial means to change his abode, he should be so clothed as to prevent the surface of his body from becoming chilled. Ditman and Welker believe these sudden changes of temperature from warm to cold interfere with oxidation, and for this reason cause kidney irritation.

Exercise and Baths.—The authors believe that exercise for those who devote most of their time to business and its worries, or household duties and frets, and who eat hurriedly, is essential for proper oxidation and, therefore, should enter into the prophylactic treatment of nephritis. Outdoor exercise, plenty of sunlight and sun baths, especially when applied to the whole body, are of great benefit to the patient who is on the verge of arteriosclerosis, chronic nephritis, and their associated conditions. For some patients frequent warm baths and Turkish baths are indicated. This is especially true for the patient who is over-weight, and for the patient whose skin does not normally perspire and therefore does not normally excrete. If the heart is impaired, Turkish baths should not be taken.

Food.—Over-eating of protein nutriment is certainly a promoter of the causes of arteriosclerosis and chronic nephritis. This is especially true if the intestinal digestion is imperfect. Meat, especially, is the protein that is most likely to produce toxins, if maldigested, and if putrefaction occurs in the intestines. Therefore, a patient, who is on the verge of or has a beginning, chronic nephritis, should eat meat but once a day, and that in not large amount. It may be well to take meat out of the diet for a short period, at least. Raw meats, raw oysters, and especially the proteins that contain large amounts of nuclein, as liver and pancreas, should be eliminated from the diet. Meat broths and meat soups that contain a large amount of extractives should be avoided.

Intestinal Putrefaction.—While it is probably not true that if the colon of the human being after forty could be removed he would live to be a hundred, more or less, it certainly is true that intestinal putrefaction, whether mostly in the colon or more or less in the small intestine, is conducive to the absorption of toxins that are irritant not only to the arterial walls, but specifically to the kidneys, and such irritants have been found to promote albuminuria and chronic interstitial nephritis. Any food, diet, regulation of habits, physical or medicinal treatment that will prevent or inhibit intestinal putrefaction will promote the prophylaxis of chronic nephritis.

The primary treatment of this condition is catharsis, followed by such laxative treatment as will keep the intestinal contents normally moving. Radical changes in diet will change the pabulum which aids the growth of the obnoxious bacteria.

Artificially soured milk seems to be a successful treatment of many cases of intestinal putrefaction. Yeast is another valuable treatment of this condition. The so-called intestinal antiseptics are of some advantage and sometimes are curative.

The prevention of the condition, or the prevention of its recurrence after it has been stopped, should begin with proper filling, or extracting, decayed teeth, and frequent and repeated cleansing of the teeth, mouth and throat with such mildly antiseptic or alkaline gargles as are deemed advisable, and the limitation of the food to such articles as are easily and well digested by the particular patient. Foods that tend to carry bacteria and that promote putrefaction should be prohibited, and Herter especially prohibits cheese and the skins of fruit.

Dilute hydrochloric acid is a valuable treatment, if indicated.

Ditman and Welker believe that quantitative determination of the creatinin eliminated will denote the condition of the digestion and the amount of maldigestion and suboxidation, and therefore the likelihood of the development of nephritis.

TREATMENT OF NEPHRITIS WHEN ACTUALLY PRESENT

The above suggestions for prophylactic measures should all be enforced, and Ditman and Welker emphasize the fact that all the methods of treatment, physical and medicinal, found of advantage in chronic nephritis and uremic conditions, are those that tend to promote oxidation in the body.

They have investigated the indican and creatinin excretion in reference to the presence of such symptoms as high tension, headache, lassitude, nausea and vomiting, edema and dyspnea, and find that the arterial tension seems to be increased when there are large amounts of indican in the urine and when the excretion of creatinin is reduced. Also the greater the amount of indican the more the headache, and the less creatinin excreted the more the lassitude, nausea and vomiting. Dyspnea and edema seem to have no relation to the indican or creatinin.

Patients with chronic interstitial nephritis do not excrete sodium chlorid well, and this retention seems to cause edema; hence if there is edema in chronic nephritis the sodium chlorid intake should be reduced, or it should be entirely withheld for a time. Albuminuria is also decreased, when present, by a saltless diet.

The diet in chronic nephritis should be carefully considered. An absolute milk diet is inadvisable. A large amount of water is inadvisable. The amount of meat allowed depends on the ability of the kidneys to excrete nitrogen. There is no difference in the extractives or in the ability of the kidneys to excrete the extractives of ingested red or white meat. The main object in the diet of the nephritic is that he should have a little of all the elements that are necessary for nutrition, nothing that causes indigestion or serious constipation, nothing that has been found by chemical analysis of the urine to be difficult of excretion by the kidneys, and enough food to keep the weight as near normal as possible. He may therefore have some milk, if it agrees; water sufficient to keep the excretions normal, but not sufficient to cause edema, nor in large amounts, if the arterial tension is high, or if he has arteriosclerosis; meat in small amount once a day; eggs; oatmeal, or other cereal; bread, potatoes and other fresh vegetables (no canned food); non-irritating, preferably cooked, fruits; all depending entirely on his ability to digest properly and to excrete the end-products of each particular food. As uric acid is not ordinarily well excreted by kidneys which are in the condition of interstitial nephritis, the purin bases and all such foods as contain large amounts of nuclein should be prohibited, typically liver. Also, all spices and often tea and coffee should be withheld from the diet.

The care of the skin in the nephritic is of special importance. Proper exercise should be taken to cause normal perspiration; warm baths and massage promote normal excretion by the skin. If the skin is a normally excreting organ in the patient who has chronic nephritis he may do well for years. If the skin is dry, diseased and does not properly excrete, he will soon have uremic symptoms.

No drug of any kind that causes irritation of the kidneys during its excretion should be administered to a patient with chronic nephritis. Such drugs are all of the coal-tar products, some of the vasoconstrictors, the stimulant and irritating diuretics, the aromatic oils, and many of the synthetic compounds.

As most nephritic patients are, or soon become anemic, iron in some simple form should be administered, and there is no better iron for this purpose than the tincture of the chlorid, in from 1 to 5 drop doses, in a little fresh lemonade, administered two or three times a day.

It has been shown that the alkalinity of the blood is diminished in patients who are suffering from chronic nephritis. Consequently, the alkalies seem indicated and have long been found of some advantage to these patients. Alkalies are also promoters of oxidation. It should not be forgotten, however, that if they are long administered they may promote tissue waste and therefore loss of weight. While also they are diuretics, diuretics are not always indicated in nephritis, even when the amount of urine passed is small, as injured kidneys do not need stimulation of any kind, but rather derivation such as would be produced by cathartics and by hot baths. Also, urine that is abnormal in its constituency tends easily to have its normal acidity reduced and become neutral or even alkaline, in which conditions bacteria grow and infections disturbances start, and slight inflammation from infection can occur in any part of the urinary passages. In this condition alkalies would promote and not diminish the growth of bacteria, hence would be contraindicated.

Colon irrigations, to wash out fecal débris and cleanse the large intestine of bacteria, are especially indicated when there are any symptoms showing that uremia may be imminent. When the symptoms show that the patient is about to have an uremic attack, purgatives, hot baths, colon washings, almost-total abstinence from food for twenty-four hours, the administration of water, or a small amount of milk and water only, and absolute rest in bed is the best possible preventive treatment.

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INFANT MORTALITY

Probably nothing is more fatal to real progress than a mistaken idea that such progress has already been accomplished. Such assumptions are too common. For instance, there is a very general impression that in the past twenty-five years we have greatly reduced the death rate among infants. Such statistics as are available, however, apparently indicate that whatever advance has been made in lessening infant mortality is due chiefly to the improvement in general living conditions. Dr. Stowell,[1] visiting physician to the New York City Children's Hospital and Schools, in a review of mortality tables for recent years, presents some facts that are rather startling, considering the usual impressions as to our great advance in the prophylaxis of infants' diseases.

The death rate of infants under one year per thousand living, as given by Dr. Stowell, shows very little change in the last thirty years in nearly all the civilized countries. In England, for instance, during the five years from 1876 to 1880, the death rate at this age was 145 per thousand. In the decade from 1893 to 1902 it was 152 per thousand living. In France the figures for the two corresponding periods are 163 and 158; in Prussia, 205 and 199; In Italy, 249 and 173; in Switzerland, 189 and 145, and in the United States, 166 and 165.4. The only country that shows a material reduction in the death rate at this age (and perhaps the last one from which it would be expected) is Italy. There is a good reduction in Switzerland, but that has been made in the last few years, as the death rate under one year in 1895 was higher than that in 1876. In the United States the census figures on this subject are very interesting. The deaths of infants under one year are calculated per thousand deaths in the United States. They run as follows: In 1860, 207; in 1870, 209; in 1880, 231; in 1890, 234; in 1900, 191; in 1906, 202; in 1907, 190. This is, of course, for the registration area, which comprises about one-half of the population of the United States and 90 per cent. of all the population in cities over 8,000.

In spite of all that we have hoped to accomplish by scientific infant-feeding, the mortality records do not support the claim of great advance in the preservation of very young children. From a study of the institutions around New York Dr. Stowell shows that the most important factor in preserving the lives of children is breast-feeding. Children who are fed from the breast have four times the chance of life that orphans or foundlings have.

After this, the most important factor making against infant mortality is the training of mothers in the care for their children and the devotion of the mother to her child. An example of how much this latter factor means for the child is cited from the effect of our Civil War on infant mortality in England. During the war cotton was not shipped from this country to England in the usual quantities. As a result many factories in which mothers worked were closed and the latter had perforce to remain at home and care for their children. This caused a great falling off in infant mortality in the manufacturing cities, in which the death rate of infants is now ordinarily very high.

In France the "consultations des nourrissons," organized in the early nineties, have been found the most effective means of combating infant mortality. Poor mothers bring their babies to the infant consultations each week and are taught how to care for them. Thus the children's illnesses come under observation early. Breast-feeding has increased greatly since the consultations became general, and it has been found cheaper, as well as more effective, to give subsidies for breast-feeding than to furnish pure milk. Over sixty per cent. of the mothers were nursing their children in 1900, but in five years this percentage has increased to more than eighty-one.

The Huddersfield experiment is another instance of the good results of care of the children and encouragement to the mothers. In 1904 the mayor of Huddersfield, England, offered a prize of one pound for every child born during his mayoralty and produced alive and well at the town hall on the expiration of a year from date of birth. A visitor was sent out to note the condition of the children weekly in the meantime; and the infant mortality of Huddersfield for 1904-1905 was reduced from 134 to 54 in the thousand.

Of course the value of these two factors, mothers' milk and mothers' care, has long been recognized; and, by the way, it is rather interesting to observe that two centuries ago the same causes conspired against the welfare of the hapless children of fashionable mothers as to-day. Dr. Stowell quotes Dr. Harris, a physician to William and Mary in the early part of the eighteenth century, who wrote as follows: "It is grievously to be lamented that so many Mothers not only of the high Rank but even of the common Sort can with so much Inhumanity and mere Brutish cruelty desert their tender Offspring and expose them to so many Dangers of mercenary Nurses who are greedy only of the profuse Rewards bestowed on them at Christening and so being weary of their present Employment perform it negligently while they are looking out for a new Prey. Let us make a Survey of the Advantages that permit Mothers so commonly to sacrifice their beloved Offspring. They are the more free Enjoyment of Diversions, the greater Niceness of adorning their Persons, the opportunity of receiving impertinent visits and returning those insipid Favors, the more frequent Attendance on the Theatre or of spending the greater part of the Night at their beloved Cards." And this two full centuries ago! To-day, unfortunately, the family physician must sometimes share the blame for the fact that the child is early deprived of its best chance of life.

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[1] Med. Rec., May 22, 1909.

The question of reducing the death rate among infants, then, is much more a matter of hygiene and care for the children and proper instruction for the mothers than of rules and proportions of artificial food ingredients and special mixtures. Surely this lesson deserves to be emphasized; and therefore nothing can be more opportune than Dr. Ostheimer's article[1] in a recent issue of THE JOURNAL, urging that physicians use every effort to help the mother to nurse her child. As Dr. Gengenbach remarked, in discussing this article, "every day, every week, every month, that the child receives breast-milk, increases its resistance in the battle for existence which no other feeding method makes possible." To advise the premature weaning of the child without exhausting every means to improve the hygiene of the mother and the quantity and quality of the breast-milk is to become an accomplice of that "Inhumanity and mere Brutish cruelty" of which our colleague of the eighteenth century so justly complained.

DR. FREDERICK A. COOK
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COOK AND THE NORTH POLE

After centuries of vain striving, in which scores of expeditions have failed and hundreds of lives been lost, it is a remarkable coincidence that within one week the civilized world should have been electrified by news that the north pole had been discovered independently by two explorers, using different routes. The lure of the pole has never been wholly explainable by the hope of the discovery of valuable lands or scientific data of great practical importance, but there are very few persons who fail to appreciate the ambition of explorers. Men love to go where it is thought that human foot has never trod before, and it is human nature to view the inaccessible as a most important goal. As, little by little, most of the globe has been traversed, explored and added to the maps, the icy wastes of the North have called more and more loudly to be conquered. That the news of the discovery of the north pole came first from a physician gives the medical profession particular interest in this subject, which has filled the newspapers for days past.

Dr. Frederick A. Cook of Brooklyn is a native American, born in Sullivan County, New York, June 10, 1865. After attending public schools in Brooklyn and graduating from the University of the City of New York, he took his medical course at the College of Physicians and Surgeons of Columbia University, New York, and practiced in Brooklyn for a brief period. His interest early turned to scientific exploration, and he became surgeon of the Peary expedition in 1891. Subsequently his time has been devoted largely to exploration work. He was surgeon of the Belgian Antarctic Expedition, in which he conducted himself with so much credit that he was honored by medals from the Royal Society of Belgium and the Royal Geographical Society of Belgium and was decorated with the Order of Leopold by the king. Another exploit was the ascent of Mount McKinley in Alaska, in which he was the pioneer, in 1906. His writings have been read with great interest. "Through the First Antarctic Night" described his trip with the Belgian expedition; "To the Top of Mount McKinley" described his thrilling ascent of that mountain.

The present expedition was without the elaborate preparations customary for those who have sought the pole. In the final dash, which, contrary to the usual plan of explorers, was made in the winter, Dr. Cook reduced his equipment to the minimum to facilitate speed, and took with him only two Eskimos. Furthermore, he slipped away from this country without heralding his goal. So, as his return startled the world, he meets a demand for proof of his success, a demand which he, of course, expected and a demand which is natural under the circumstances. It does not seem to us to be within our province to decide without reservation that he reached the pole. If a cure for cancer were announced we would feel that the layman who accepted it on newspaper report was a little premature. The examination of Cook's records and data and the placing of the seal of approval on his achievements belong to the scientists who are competent to judge in such matters. We wish Dr. Cook a prompt and enthusiastic acceptance by the authorities whose word has weight.

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[1] Aug. 14, 1909, p. 520.

The medical profession is proud of Dr. Cook, thrilled by his invincible spirit for the conquest of a baffling goal and deeply appreciative of the honor which he has conferred on our calling. This spirit of attacking a difficult problem which has baffled many men is the spirit the medical profession loves to uphold as its ideal. With a far different method but often with the same feeling, the scientist searches for the cause of disease and for its cure. We congratulate Dr. Cook and wish him a speedy return to his native shores and to his wife and children who have so bravely and patiently borne his long absence.

THE LOCALIZATION OF CARCINOMA IN EARLY LIFE

Carcinoma in persons under thirty is uncommon enough to cause comment, and under twenty it is a rare curiosity, but there is no absolute limit below which carcinoma may not appear, as it has been observed even in the first few months of life. There seems to be a striking difference between different tissues in regard to the early appearance of carcinoma, as is brought out by Lindemann[1] in a compilation of the literature on this subject. Carcinoma of the skin seldom occurs in the young, scarcely 1 per cent. of some six hundred cases of cancer of the skin and lip being in individuals under thirty, and but about 2 per cent. of breast cancers under this age. In a large series of cases of carcinoma of the stomach, persons under thirty were the victims in from 2 to 3 per cent., and Riegel has recorded two cases of gastric carcinoma in the new-born, and one in an infant of six weeks. Esophageal cancer seems to be almost unknown before the thirtieth year, and extremely rare before forty; and the generative organs seldom become cancerous in youth, although there are reported cases of a carcinoma of the testicle in a child of one and one-half years, an ovarian carcinoma at nine months, and cancer of the uterus in an eight-year-old child. Three cases of carcinoma of the pancreas between the seventh month and the fourteenth year are also mentioned.

On the other hand certain organs show a relatively large proportion of the cancers which affect them occurring in early life, this being especially true of the kidney and lungs. More than one-third of the cases of renal cancer occur before the tenth year, 5 per cent. each in the second and third decennium, and 10 per cent. between thirty and forty; therefore, over half the cases of cancer of the kidney appear in the years when cancer seldom affects the more common sites of this disease. The lungs, a rare site of primary cancer at any age, show that a strikingly large proportion of such cancers develop in the young; thus of eighty-two cases twenty were in persons between 20 and 30, and in eighteen cases the age was between 30 and 40, so that over a third of these tumors appeared during the period of life when persons are supposed to be immune to carcinoma.

Another unusual site of primary carcinoma is the liver, and here, too, a relatively large proportion of the cases occur in the young, and there is at least one case of carcinoma of the liver in the new-born. Carcinoma of the intestines appears rather frequently in the young, it having been estimated that of all the cases of primary intestinal carcinoma one-sixth manifest themselves before the thirtieth year, and one-seventh between the thirtieth and fortieth years, while no fewer than twenty-three authentic cases before the twentieth year were collected from the literature by Lindemann. No explanation is advanced for this peculiar tendency of tissues which seldom become cancerous at any age, to develop cancers particularly in the young.

CULTIVATION OF THE SPIROCHÆTA PALLIDA

Since Schaudinn several years ago discovered the *Spirochæta pallida,* many attempts have been made to grow the organism on artificial media, but only recently has any degree of success been obtained. Schereschewsky[1] observed multiplication of the spirochete in pure horse serum. This medium heated to 58 or 60° C. for an hour or more becomes gelatinous, though it remains perfectly clear. Material obtained from a syphilitic papule or condyloma is immersed in this fluid and placed under strict anaërobic conditions in the incubator. After a number of days the culture is examined and by both the staining method and dark-ground illumination a notable increase in the number of organisms is seen. He recommends the dark-ground illuminator as very satisfactory and easily recognizes the *Spirochæta pallida* by this method. In a more recent paper[2] he gives the results of more extensive studies. In the first culture shortly after inoculation he noted a large number of the refringens type, but in subcultures and in the old original cultures the pallida form prevails.

In Schereschewsky's cultures the syphilitic organisms occurred in mixed culture with other bacteria. Mühlens[3] announces, however, that he has obtained pure cultures of the *Spirochæta pallida* from a syphilitic gland. He used the method employed by him several years ago[4] in obtaining pure cultures of *Spirochæta dentium.* A tube of horse-serum agar (1:3) is inoculated with the syphilitic material and under strict anaërobic conditions after several days very tiny colonies develop on the agar which, by breaking the tube, can be isolated and examined. In the fourth generation he obtained pure cultures and morphologically in living and stained specimens they were identical with the original.

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[1] Ztschr. f. Krebsforsch., 1909, vi, 682.

[1] Deutsch. med. Wchnschr., 1909, xxxv, 835.
[2] Deutsch. med. Wchnschr., 1909, xxxv, 1260.
[3] Deutsch. med. Wchnschr., 1909, xxxv, 1261.
[4] Ztschr. f. Hyg., 1906, lv, 81.

Animal experiments using pure cultures are now being carried on by Mühlens, the results of which will soon be reported. Schereschewsky reports negative results thus far on animals. Successful animal inoculations with subsequent recovery of the organism are highly essential and necessary to complete the chain of evidence in establishing the etiologic relation of the spirochete to the disease. Koch's requisites will then be fulfilled as regards syphilis.

Pure cultures of the spirochete will be of great importance in the further study of the disease, opening up new fields especially along the line of immunology and serotherapy. It will place the etiology and pathology on a substantial basis and afford more rational methods for studying and combating the disease.

POSSIBILITIES OF MODERN PREVENTIVE MEDICINE

It has been asserted that if the knowledge of the transmission of disease which we already possess could be fully utilized it would be possible—without the discovery of a single new fact—to increase materially the average span of human life and immeasurably to diminish human distress. Sanitarians have often longed for an opportunity to prove the truth of this in a community where the necessary authority and facilities could be provided and thus to show what modern preventive medicine is capable of accomplishing. It seems that in the Island of Guam many of the conditions of such a medical Utopia can be found.

This island, which is solely a naval station, has a native population of 11,636 and a foreign population of 398, about one-half of which is made up of the naval forces. The government is a sort of beneficent autocracy entirely in the hands of naval officers, and all affairs relating to health and sanitation are administered by naval medical officers. There are no other physicians in the colony, and so these officers are charged with the care of the sick. Hospital accommodations are ample and, by means of dressing stations and clinics, relief is extended in all parts of the island. There is provision in segregated colonies for all cases of leprosy and gangosa and a small separate hospital for other communicable diseases. A medical officer detailed as pathologist of the station is engaged in investigating the nature and causes of the diseases peculiar to Guam. Such a rare centralization of medical research, sanitary administration and the care of all classes of the sick makes conditions almost ideal for a practical demonstration in preventive medicine. The fact that more than three-fourths of the native population of the island is concentrated in a large town where overcrowding is extreme and that Guam is afflicted with the usual endemic diseases and with general worm infection simply makes the results of the experiment of so much more interest and value.

In the July issue of the *U. S. Naval Medical Bulletin* one may read what has been accomplished in the short period of American occupation. The reports of the medical officers for 1907 and 1908 are full of interest and should be read in detail by all those interested in tropical sanitation, but the results of the splendid work which has been done are sufficiently well shown by the death rate of 24.3 per 1,000. Some idea of what such a rate means in the tropics may be gained from comparison with the mortality in tropical cities which have long been under the control of European governments, and from the fact that Guam's death rate is exceeded in not a few cities in the United States. Twenty per cent. of the deaths in Guam are caused by guha, an epidemic respiratory disease peculiar to the Ladrone and Caroline Islands. The death rate from all other causes was 19.9. In many countries in Europe such a rate as this would be considered remarkably low at the present time, and there are many communities in the most favored parts of this country which have not yet been able to attain it. The results achieved in the Canal Zone have set a standard for tropical sanitation, but the presence there of a large temporary population within an age period having normally a very low death rate renders comparison with other tropical communities less significant than in the case of Guam.

In Guam it is planned to replace the water supply by means of wells with one from an uncontaminated source and to extend the sewer system. With such means of controlling infection from intestinal parasites it is likely that the vital statistics of this insignificant Pacific isle will assume an importance little dreamed of by those who undertook its sanitation as part of the day's work.

It is a strange commentary on our progress in matters relating to the public health that we must go to the edges of the civilized world for examples of what can be done in the control of disease, but if the true lesson of the splendid victories which have been won in Guam, the Canal Zone and our other tropical possessions is ever fully grasped by those who make and administer the laws in our own country the end of the present sacrifice of human lives from preventable causes will be in sight.

Medical News

CALIFORNIA

Railway Surgeons Meet.—The seventh annual meeting of the Pacific Association of Railway Surgeons was held in San Francisco August 27 and 28, and the following officers were elected: President, Dr. Carl Kurtz, Los Angeles; vice-presidents, Drs. Oliver D. Hamlin, Oakland, and Thomas B. Reardan, Oroville; secretary, Dr. George R. Carson, San Francisco; treasurer, Dr. Ernest M. Keys, Alameda, and member of executive board, Dr. David Powell, Marysville.

Hospitals and Sanatoria.—The Sanatorium of the White Crusaders, Sacramento, for the treatment of patients in the first stages of tuberculosis, was dedicated at Alta August 16. The institution will accommodate thirty patients, and Dr. John

Howard will be resident physician.——Articles of incorporation have been filed by the San Jose General Hospital with capitalization of $25,000.——The Peninsula Hospital, Palo Alto, has leased from Stanford University, the Guild Hospital building for the temporary care of patients, pending the completion of the new Peninsula Hospital.——The hospital at the Odd Fellows' Home, Thermalito, was formally dedicated August 14. ——The Fowler Memorial Building at the Pasadena Hospital was dedicated August 25.

COLORADO

Fraternal Sanatorium.—The tuberculosis sanatorium of the Modern Woodmen of America has been formally turned over to the trustees. The site consists of a tract of 1943 acres with a central hospital and a number of cottages.

Personal.—Dr. Thomas D. Palmer, Canon City, has been appointed state penitentiary physician, vice Dr. Frank N. Carrier. ——Dr. Charles A. Ellis, Denver, has been appointed official physician to the Trans-Mississippi Congress.——Dr. George H. Stover, Denver, who underwent operation for the removal of thirty cancers on his hand, due it is said, to exposure to the *x*-ray, has recovered and returned to Denver.——Dr. William Booth, Canon City, has been appointed physician of Fremont county.——Dr. Conway B. Ackley was appointed police surgeon of Denver, August 27.

GEORGIA

Fined for Contempt.—In the mayor's court of Athens, August 27, a fine of $100 is said to have been imposed on Dr. W. T. Hamilton for contempt of court, at his failure to appear as a witness after having been summoned.

Osteopathy May Be Legalized.—The House of Representatives, on August 10, passed the Longley Senate Bill, legally recognizing osteopathy in the state, establishing a state board of osteopathic examiners, regulating the practice of osteopathy, and providing that each duly recognized osteopath shall pay a license fee of $10. The bill passed by a vote of 112 to 33. Medical men all over the state have telegraphed and written urging the governor not to approve the bill.

Medical Officers in Camp.—The following medical officers of the Georgia National Guard attended the camp of instruction of medical officers at Antietam, Md.: Major William C. Lyle, Augusta; Major John W. Duncan, Atlanta; Major Clarence H. Willis, Barnesville; Capt. Benjamin E. Pearce, Atlanta; Capt. Martin Cooley, Savannah; Capt. Thomas E. White, Fitzgerald; Capt. Samuel H. Green, Atlanta; Capt. Joseph G. Jarrell, Savannah; Capt. William D. Travis, Covington; First Lieut. Henry P. Adams, Savannah; First Lieut. Henry W. Copeland, Jackson; First Lieut. Robert G. Stephens, and First Lieut. Arnold H. Lindorme, Atlanta.

Free Treatment for Children.—Dr. Stewart R. Roberts, director of medical inspection of the Atlanta public schools, announces that free treatment for diseases of the eye, ear, nose and throat for poor children will be given at Grady Hospital every Friday from two to four by Drs. F. Phinizy Calhoun, Robert B. Ridley, Jr., and Alexander W. Stirling; at the Atlanta College of Physicians and Surgeons on Thursday from 2 to 3:30, by Dr. Abner W. Calhoun, and on Tuesday at 3, by Dr. Dunbar Roy; and at the Atlanta School of Medicine by Dr. J. M. Crawford every Thursday from 1 to 3, and by Dr. Robert B. Ridley, Jr., every Tuesday from 3 to 4.

State Sanatorium Located.—A tract of 257 acres has been purchased for $2,500 near Alto, Habersham county, by the executive committee of the board of trustees for the State Tuberculosis Sanatorium, on which the new sanatorium will be located. The state appropriated $25,000 for the sanatorium, of which $13,000 is available this year. It is proposed to erect an executive building and individual cottages. At the meeting of the trustees in Atlanta August 17, the purchase was confirmed. The members of the executive committee are Capt. W. G. Raoul, Atlanta, T. D. Tinsley, Macon, Dr. Charles H. Richardson, Montezuma, Dr. Marcus F. Carson, Griffin, and Dr. Henry R. Slack, La Grange.

Society Meetings.—The Eighth District Medical Society held its annual meeting in Madison, August 18, and elected the following officers: Dr. Joshua H. Gheesling, Greensboro, president; Dr. Robert W. Trotter, Madison, vice-president; and Dr. Dupree, Athens, secretary-treasurer. The Morgan County Medical Society entertained the society at a barbecue. The next meeting is to be held in Monticello.——At the annual meeting of Troup County Medical Society, held in La Grange, August 26, the following officers were elected: President, Dr. Henry W. Terrell, La Grange; vice-president, Dr. John M. Poer, West Point; secretary-treasurer, Dr. William R. McCall, La Grange; and censors, Drs. Robert H. Jenkins, Hogansville, and Joseph E. Lane

Personal.—Dr. Mark H. Blandford has been elected city physician of Columbus, vice Dr. Charles N. Howard, resigned. ——Dr. S. C. Wilson, Augusta, has been elected secretary of the board of health, vice Dr. Edward C. Goodrich, deceased. ——Dr. Cyrus W. Strickler has resigned from the board of health of Atlanta.——Dr. James B. Wright, for seven years major and surgeon of the Second Georgia Infantry, has resigned.——Dr. Henry F. Harris, Atlanta, secretary of the State Board of Health, and in charge of the state laboratory, who was operated on for mastoiditis in June, is convalescent.

ILLINOIS

Peoria to Have Tent Colony.—It is planned to have a tent colony in operation in old Prospect Park, Peoria, by the first of next month. The institution is expected to be self-sustaining after the first six months.

Personal.—Dr. Louis J. Linder, East St. Louis, sails for Europe September 11.——Dr. William S. Howell, Winnebago, has been appointed local surgeon for the Northwestern system. ——Dr. William C. Day, Whitehall, is reported to be convalescent.——Dr. William G. Caron, Aurora, has been elected supreme treasurer of the Knights of North America.

Hospital Notes.—By the will of the late Judge Solomon H. Bethea, $150,000 is bequeathed to the Dixon Public Hospital, conditionally on the name of the institution being changed to the Katherine Shaw Bethea Hospital.——The new addition to St. Anthony's Hospital, Rockford, was formally dedicated with impressive ceremonies, August 29, by Bishop Muldoon.

Chicago

Personal.—Dr. Frank Billings has returned from Europe. ——Dr. William Rittenhouse, who was injured recently in a street car accident, has recovered and resumed practice.

Tuberculosis Camp Closed.—The school for tuberculous children which has been maintained by the board of education and the Chicago Tuberculosis Institute at Seventy-fifth street and Vincennes road for the last five weeks, closed September 2.

Bacteriologist Dismissed.—The civil service commission on September 3 sustained the charges of Health Commissioner Evans against Dr. Joseph F. Biehn and ordered that he "be removed from his office as superintendent of the laboratory of the department of health and from the service of the City of Chicago."

MARYLAND

Pellagra.—Several cases of pellagra have been reported in Charles county, and the secretary of the State Board of Health has gone to investigate the conditions.

Semi-Annual State Meeting.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland will be held at Braddock Heights, September 15-17.

Personal.—Dr. Charles A. Wells, Hyattsville, is reported to be seriously ill with disease of the bladder.——Dr. Clarence Nichols, Hudson, left September 3 for a trip of six weeks through Canada and the Pacific Northwest.

Hospital Needed.—The physicians of Queen Anne county are endeavoring to secure a hospital at Centerville. A board of fifteen directors has been appointed. Dr. Laura Ewing Reading, Hayden, has been designated to devise ways and means of carrying out the project.

Baltimore

Anatomists Resign.—Drs. Robert Retzer and Henry McE. McKnower, associates in anatomy in Johns Hopkins Medical School, have resigned to accept similar appointments at the universities of Minnesota and Toronto, respectively.

Hospitals to Have Fire Alarm Boxes.—The fire board has determined to install fire alarm boxes in all hospitals and similar institutions harboring helpless persons. Considerable delay is occasioned in sending in alarms from these institutions by way of the street fire alarm boxes.

Personal.—Dr. Harvey W. Cushing of Johns Hopkins University, gave the William Banks Memorial Lecture at the University of Liverpool, August 4, on "The Pathology and Surgery of Intracranial Tumor."——Dr. Owen Williams, Liverpool, a member of the staff of the Royal Infirmary, has been sent to study methods in use in Johns Hopkins Hospital.——Dr. A. Duval Atkinson has resigned the clinical professorship of medicine in the University of Maryland.——Dr. Walter Van Swearingen Levy has asked the authorities to be allowed to change his surname to Van Swearingen.

MASSACHUSETTS

Personal.—Dr. John A. Barry, Charlestown, was assaulted and severely beaten August 26.——Dr. W. J. Dodd, Boston, has sailed for Europe.

Lodging House Regulations.—The new rules governing lodging houses of Boston apply to the class of houses where the charge for lodging does not exceed twenty-five cents per night. The new rules provide that records shall be kept, that individual towels shall be furnished, and that no spitting on the floors shall be allowed.

To Reduce Infant Mortality.—The sanitary milk committee of Lawrence is cooperating with the physicians of the city in the endeavor to reduce infant mortality, and has undertaken the modifying of milk under the instructions of the attending physicians. Blank formula cards have been issued, to be filled out by the person ordering the milk.

Hospital News.—The state has taken by right of eminent domain all the land lying between Morton, Canterbury, Walkby and Harvard streets, Dorchester. This is the first step in the erection of a great metropolitan district hospital for the insane.——The Babies' Hospital Corporation, Salem, has purchased the old Ropes' Mansion with about nine acres of land, and will use it for a hospital for children.——The Edward Deery home, Ware, has been purchased by the Boston Nurse and Hospital Association, and will be remodeled at once and opened as a hospital.

Ether Day Exercises.—Invitations have been issued by the trustees of the Massachusetts General Hospital to attend the exercises of the sixty-third anniversary of Ether Day, October 16. In the morning demonstrations will be made and operations performed at the hospital, where luncheon will be served at 1 o'clock. The Ether Day exercises proper will take place at 2:30, when diplomas will be presented and an address will be delivered by Charles W. Eliot, LL.D. (M.D., Hon.), and at 7 o'clock the dinner of the Hospital Alumni Association will occur.

MINNESOTA

Personal.—Dr. Hannibal H. Kimball, Minneapolis, sailed for Europe August 18.——Dr. Thomas N. McLean has been appointed local surgeon of the Northern Pacific Railway at Fergus Falls, vice Dr. William T. Duncan, deceased.——Dr. Albert C. Wedge, Albert Lea, has resigned from the state forestry board.

Hospital Notes.—The Von Hagen mansion, Sleepy Eye, has been rented by Dr. G. Schmidt, who will equip the building as a hospital.——The commissioners of St. Louis county have appropriated $20,000 for the construction and maintenance of a tuberculosis sanatorium for the county. The commission appointed to supervise the erection of the sanatorium consists of Mr. George Gray and Dr. Edward L. Tuohy, Duluth, and Mayor Walter J. Smith, Eveleth.

NEW JERSEY

New Quarantine Boat.—The tug boat *Allen*, which has been used for fifteen years for the State Department of Health at Quarantine, has been superseded by the steamer *James Heyer*, a new and modern vessel, and much better adapted to the purpose required.

August Mortality.—There were reported 3,255 deaths in the state, or 46 more than for the corresponding month of 1908. Among the principal causes of death were infantile diarrhea, 656, or 242 more than for the average for the previous twelve months; diseases of the nervous system, 355; tuberculosis, 325; diseases of the circulatory system, 271; diseases of the digestive system, 248; nephritis, 179; cancer, 164; pneumonia, 114; whooping cough, 31; typhoid fever, 29; scarlet fever, 25; diphtheria, 21; and measles, 11.

Destruction of Mosquitoes.—Prof. John B. Smith, head of the New Jersey Entomological Experiment Station, has recently completed a tour of inspection of five counties in the state where the lowlands, soft marshes and meadows have been ditched under his supervision to rid them of the mosquito. Where this work has been done the pest has practically been eliminated. This work was started six years ago in the most populous counties of the state, namely, Essex, Union, Middlesex, Monmouth, and Ocean. Thus far 10,000 acres of meadow and saltwater land have been drained and the cost has been $5 an acre.

Milk Not Cold Enough.—During the first three weeks of August, Charles C. Spear, a milkman of Caldwell, was fined $75 at Montclair, on the charge that the milk he sold was not maintained at the temperature required by the local sanitary code. The defendant intends to appeal the case on the ground that the Montclair Board of Health has no jurisdiction in the matter, as he claims that the milk found to be of a temperature above the 50 degrees required at Montclair, was not for delivery in that place, but in a locality where there is no regulation as to the temperature of the milk to be sold.

Sanatorium Incorporated.—East Lake Sanatorium, Bridgeton, has been incorporated with a capital of $100,000 by Dr. Jacob G. Streets, Joseph Tomlinson and John H. Moore to conduct a hospital and sanitarium.

NEW YORK

Button Day in Albany.—The Woman's Antituberculosis League of Albany attempted on Labor Day to raise money for the cause for which it is working. The city was divided into six districts with twelve substations, and 300 girl button-venders besieged the people of the city to contribute for the cause, and distributed buttons to the donors.

Site for South Shore Hospital.—Property has been purchased near Roosevelt, L. I., for the proposed new hospital of the South Shore Hospital Association, of which Mrs. O. H. P. Belmont is president. Work will be begun as soon as possible and it is hoped that the new hospital will be ready for occupancy by next spring.

New York City

Gives Ambulance.—Former Park Commissioner Elijah Kennedy is so grateful over his recovery from an operation that he is to present to the Long Island College Hospital an ambulance, of which the institution has been in need for a long time.

More Pure Milk Depots.—Two more milk depots, in addition to the seven now in operation, are to be opened. This plan calls for an expenditure of $55,850, part of which sum will be used to carry on an educational campaign among the mothers of the localities in which the milk depots will be established.

Polyclinic Hospital.—The trustees of the New York Polyclinic Hospital have purchased a site for a new hospital between Eighth and Ninth avenues and Fiftieth street. The new hospital will be twelve stories high and will cost about $1,000,000. The old building on Thirty-fourth street will be continued as an east side branch.

Officers of Italian Society.—The officers of the Italian Medical Society, recently organized in New York City, are as follows: President, Dr. Antonio Stella; secretary, Dr. Rocco Bellantoni; treasurer, Dr. Antonio Vernaglia; members of executive committee, Drs. Frank G. Samarelli, Joseph Grana, Louis Criscuoli and Guiseppe Di Santi, and members of the committee on audit, Drs. R. Muoio and Nicola Morano.

School to be Enlarged.—Plans have been filed for enlarging the University Medical School on First avenue, north of Twenty-fifth street. There is to be a six-story building adjoining the Carnegie Laboratory. This building is to be furnished with operating wards, sterilizing and etherizing rooms, and a series of recovery rooms, in addition to general rooms for the university staff and students. The building will cost about $65,000.

Fresh Air and Work at the Otisville Hospital.—The treatment by exposure of the bodies of children to the rays of the sun, so successful in Seysin, Switzerland, particularly in cases of tuberculosis of the muscles, bones and joints, is to be tried at Otisville. Graduated manual labor for adults will also be tried. The sanitarium is now practically managed by the patients, of whom there are about three hundred. They do all the work except the cooking and the nursing.

Engineers of Health and Hygiene.—Columbia University will give four years to the study of this branch of the engineering department. The first year is identical with that of all the courses in the schools of engineering. In the work of the second year courses in quantitative analysis and microscopy will take the place of two civil engineering courses, and in the third and fourth years the work will be taken up in bacteriology, sanitary biology, physical and biologic analysis of water, municipal sanitation, drainage, heating, ventilation and the principles of sanitary science, public health and hygiene.

Buffalo

Personal.—Dr. E. Lowell Marcy has been appointed assistant surgeon on the staff of the Emergency Hospital.——Dr. G. Brinton Hepp and family have removed to Denver, Colo.——Dr. Julius Ullman has returned from a visit to the Saguenay.

Milk Stations Appointed.—The Fresh Air Commission of Buffalo has appointed several milk stations in settlement houses where modified milk and instructions regarding the care of infants can be obtained.

PENNSYLVANIA

New Site for Tuberculosis Camp.—State Health Commissioner Dixon with Robert S. Conklin, commissioner of forestry, and Dr. Wilbur R. Batt, registrar of vital statistics, visited the state forestry reservation, Huntingdon county, August 11 and 12, to select a new site for the State Tuberculosis Camp. Dr. Dixon states that a camp for incurables will be established and if the site prove suitable, a camp for incipient cases will also be arranged.

Society Meetings.—The fourth annual meeting of the Fifth Councilor District Medical Society was held in Gettysburg, August 10. The following officers were elected: President, Dr. Walter H. O'Neal, Gettysburg; vice-president, Dr. William E. Wolff, Arendtsville; and secretary-treasurer, Dr. George E. Holtzapple, York. Hanover was selected as the next place of meeting.——Dauphin County Medical Society, at Harrisburg, August 17, recommended the expulsion from the society of all physicians doing lodge or contract practice, and of members meeting and consulting with physicians engaged in lodge or contract practice.——At the sixth annual meeting of the Northwestern Medical Society, composed of members of the medical societies of Warren, Erie, Mercer, Crawford, McKeown and Venango counties, held in Cambridge Springs, August 25, vaccine therapy was the principal subject of discussion. The officers of the previous year were re-elected.

Philadelphia

Milk Dealers Must Be Licensed.—Under the rules drafted by Director Neff of the Bureau of Health, and approved by the state and national authorities, and by the milk exchange, all milk dealers will be required to take out a license issued by the Department of Health. Fresh milk must contain 12 per cent. of milk solids, including 3 per cent. of butter fat; cream must contain 15 per cent. of butter fat, and skim milk 8½ per cent. of milk solids, exclusive of butter fat. Except in the case of modified milk, the addition of ice will be classed as adulteration.

Work Against Tuberculosis.—The Metal Polishers and Buffers International Union has decided to tax its members to found a house for members ill with tuberculosis. The average life of metal polishers is thirty-four years, or six years less than that of ordinary individuals.——The Independent Order of the Sons of Jacob has pledged financial support for the maintenance of a dispensary to be called the Jewish Consumptive Institution, and to work in conjunction with the Philadelphia Jewish Consumptive Sanatorium, Eagleville. The dispensary is to care for all cases of tuberculosis which cannot be treated in sanatoria.

Personal.—Dr. John B. Stetson has been provisionally appointed third assistant bacteriologist of the bureau of health, vice Dr. Mortimer Herzberg, resigned.——Dr. Joseph P. Walsh has been appointed consulting physician to the department of tuberculosis in the Philadelphia General Hospital, vice Dr. Lawrence F. Flick, resigned.——Dr. James T. Schell, chief surgeon of the Northwestern General Hospital, had his automobile demolished in a collision with a trolley car, but luckily escaped without injury.——Dr. Allen J. Smith has been appointed dean of the Medical Department of the University of Pennsylvania, vice Dr. Charles H. Frazer, resigned.

VIRGINIA

Physicians Liable to Arrest.—By alleged disregard of the postal regulations prescribing how bacteriologic specimens may be sent through the mails, a number of physicians of the state have been threatened with arrest by the postal authorities.

Building for Physicians.—A building is contemplated in Richmond to be occupied exclusively by physicians and dentists. A lot has been selected in the central part of the city, and the Academy of Medicine has already agreed to rent rooms in the building if erected.

Personal.—Dr. May Farinholt Jones, assistant resident physician at the State Hospital for the Insane, Williamsburg, has resigned.——Dr. Thomas J. Pretlow has been elected health officer of Newport News.——Dr. William D. Tewksbury has been appointed superintendent of the Virginia State Tuberculosis Sanatorium, Katawba.

GENERAL NEWS AND COMMENT

New Hawaiian Hospital.—The Maui, Hawaii, Agricultural Company has erected a hospital at Paia for the accommodation of its employés, at a cost of about $15,000. The hospital is 147x108 feet, two stories in height, and equipped with all modern appliances.

Clinical Research.—A circular letter has been issued signed by Dr. James Krauss, Boston, calling a meeting at John Ware Hall, Boston Medical Library, October 27, at 10 a. m., which has for its objects the establishment of an American Association of Clinical Research; the establishment of clinical research on an incontrovertible scientific basis in hospitals, and the institution of an American Journal of Clinical Research, in which the work of the members of the association and others doing clinical research work in a scientific manner shall be published.

Interstate Club Organized.—The Interstate Medical Club has been organized with a membership composed of physicians living in Breckenridge, Minn., Wahpeton, N. D., and surrounding towns in Minnesota and North Dakota. The following officers have been elected: President, Dr. Timothy O'Brien, Wahpeton, N. D.; vice-president, Dr. Nathan F. Doleman, Tintah, Minn.; secretary, Dr. C. P. Rice, Breckenridge, Minn.; treasurer, Dr. Louis W. Armstrong, Breckenridge, Minn., and censors, Drs. Tobias L. Birberg, Campbell, Minn., A. Victor Young, Hankinson, N. D., and Robert H. Devine, Wahpeton, N. D.

Officers Elected.—At the annual meeting of the Medical Section of the National Fraternal Congress, held in Boston, August 17, the following officers were elected: President, Dr. Wallace K. Harrison, Chicago; vice-presidents, Drs. Isabella M. Holdon, Port Huron, Mich., and Elmore S. Pettyjohn, Topeka, Kan.; secretary, Dr. John G. McConnell, Chicago; and treasurer, Dr. Elizabeth M. Hooper, Port Huron, Mich.——At the International Congress on Psychology, held in Geneva, August 6, the invitation to hold the next congress in Boston in 1913 was accepted. Prof. William James, Cambridge, Mass., was elected honorary president; Prof. James M. Baldwin, Baltimore, president; and Drs. Edward B. Titchener and James McK. Cattell, New York City, vice-presidents.

Congress of Colored Physicians.—At the eleventh annual meeting of the National Medical Association, held in Boston, August 24-26, under the presidency of Dr. Peter A. Johnson, New York City, the oration on medicine was delivered by Dr. Joseph J. France, Portsmouth, Va., on "The Treatment of Lobar Pneumonia." The following officers were elected: President, Dr. Marcus F. Wheatland, Newport, R. I.; vice-president, W. F. Lofton, D.D.S., Washington, D. C.; secretary, Dr. John A. Kenney, Tuskegee, Ala.; treasurer, Dr. A. Wilberforce Williams, Chicago, and executive board, Drs. Nathan F. Mossell, Philadelphia; Robert F. Boyd, Nashville, Tenn.; George C. Hall, Chicago; Albert R. Collins, Washington, D. C.; Mahlon A. Van Horn, Newport, R. I.; Charles H. Shepherd, Durham, N. C.; Amanda V. Gray, Washington, D. C.; G. E. Cannon, Jersey City, N. J., and Willis W. Steers, Decatur, Ala. It was voted to hold the next meeting in Washington, D. C.

Antituberculosis Work Among Negroes.—Surgeon Charles P. Wertenbaker, P. H. and M.-H. Service, has suggested a plan for the organization of an antituberculosis league for negroes. The plan is that the vice-president of each county society call together the leading negro ministers, physicians, teachers, etc., and induce them to start a branch of the league in each negro church in the county. Any colored person may become a member of the branch league by payment of the annual dues, and will receive a certificate of membership and be furnished a button bearing the words, "Colored Antituberculosis League," which surrounds a double red cross. The fund from the annual dues is to be used for the care and treatment of society members of that league as may have tuberculosis, and for dissemination of information by publication and lectures, and the establishment of dispensaries, sanatoria, etc. The state league of Georgia has already completed its organization and a number of branch church leagues have already been formed.

CANADA

Canadian Medical Association.—The forty-second annual meeting of the Canadian Medical Association, held in Winnipeg, Man., August 23 to 25, was in many respects the best meeting in the history of the organization. The attendance was the largest in its history, as 338 registered, and this, in view of the fact that the annual fee had been raised from $2.00 to $5.00, speaks well for the enthusiasm pervading the organization. Perhaps the desire to see established an official medical journal for the association may account for this. The executive council placed this matter in the hands of the finance committee, of which Dr. John T. Fotheringham, Toronto, formerly editor of the *Canada Lancet*, is chairman, with instructions to proceed at once to place the matter before the Canadian medical profession. Dr. William J. Mayo, Rochester, Minn., read a paper on "The Removal of Sigmoid Tumors," and was subsequently made an honorary member of the association. The address in surgery, on "Cancer of the Prostate," was delivered by Dr. James Bell, Montreal; and the address in medicine, on "Certain Aspects of the Typhoid Problem," by Prof. J. George Adami, Montreal. The scientific part of the meeting, which was exceedingly well-arranged, was conducted under five sections: General medicine; surgery; obstetrics and gynecology; pathology; eye, ear, nose and throat. In the latter section, Dr. Richard A. Reeve, Toronto, delivered an address on "The Present Status of Ophthalmology;" and in the section on obstetrics, Dr. Adam H. Wright, Toronto, delivered the address. There was held a symposium on the diseases of the kidney, introduced by Dr. R. P. Campbell, Montreal, who dwelt largely on the technic of cystoscopy. He was followed by Dr. Walter McKeown, Toronto, who attended to the surgical aspect of kidney diseases, particularly confining his attention to movable kidney. Dr. John T. Fotheringham, Toronto, dealt with the subject of treatment. Dr. Mayo also contributed to the discussion on this symposium. One of the features of the meeting was the discussion on interprovincial registration, introduced by Dr. Robert H. W. Powell, Ottawa, who took charge of a resolution in the absence of Dr. Thomas G. Roddick, Montreal, whose name has long been identified with this subject. Dr. Powell, after reviewing this matter thoroughly, fathered a resolution which called for an amendment to the present Canada Medical Act, to the effect that whenever five or more provinces shall cause to be ratified the Canada Medical Act in their respective legislatures, these provinces may have interprovincial registration. Representatives were present from every province and it transpired that each province was in favor of dominion registration, some favoring reciprocity with Great Britain in order to thus bring about interprovincial registration. The executive council appointed a special committee to carry on the work to a successful completion. The general secretary's annual report gave a concise review of the work done by the association during the past eight years, which showed that during that time the membership of the association had grown from 900 to 1,500, which with the new members elected at Winnipeg will bring the total membership up to about 1,700. During the past year the association had been incorporated by act of Parliament. As this has been largely brought about through the efforts of the committee on medical legislation, of which Dr. Adam T. Shillington, Ottawa, is chairman, it was thought best to appoint Dr. Shillington, chairman of the committee on public health and hygiene, so that the matter of a bureau of health for Canada, for which the association has been working the past eight years, might be taken up with renewed vigor. The milk commission, through its chairman, Dr. Charles J. C. O. Hastings, Toronto, gave an extended report of the work it had performed during the past year. Mr. A. McGill, chief analyst for the Dominion, spoke by invitation on the legislation the government is enacting in this connection. Dr. Rutherford, chief veterinarian for the Dominion, spoke at considerable length on tuberculosis. The commission was directed to continue its work and report again at the next meeting. In the opinion of the commission, all milk not officially "certified" should be officially pasteurized. The visiting profession was most hospitably entertained by the profession in Winnipeg. There was a conversazione on the evening of the first day; a smoking concert on the evening of the second day; a garden party on the afternoon of the second day extended by the lieutenant-governor of Manitoba, Sir Daniel MacMillan; an excursion up the Red River, besides numerous private functions. From the public standpoint there was a new feature at this meeting, namely, a public address. This was the first time in the history of the association that this had been attempted, and its success was most pronounced. This popular lecture was delivered by Dr. Hugh A. MacCallum, London, Ont., on "The Mind and Its Method of Action in Causing and Curing Disease." It was decided to meet next year in Toronto. Dr. Adam H. Wright, Toronto, was elected president, and Dr. Richard A. Reeve, Toronto, chairman of the executive council. Dr. George Elliott, Toronto, was re-elected general secretary, and Dr. Henry B. Small, Ottawa, treasurer.

FOREIGN

Pure Food Congress.—The second International Congress for the Repression of Adulteration and Frauds in Foods and Drugs will be held in Paris, October 17-24, under the auspices of the White Cross Society. The general secretary is M. Ch. Franche, 16 Place Vendome, Paris, France, to whom all communications relating to papers should be addressed. The congress is divided into three sections: (1) alimentary technology, (2) hygiene, (3) crude drugs, essential oils and crude aromatic substances, chemical products and mineral waters. Important questions concerning the adulteration and misbranding of food and drugs will be discussed in the congress and action taken thereon. State dairy and food commissioners, food and drug officials of the various states and municipalities and manufacturers of and dealers in foods and drugs are invited to become members and take an active part in the proceedings of the congress by attendance in person, presentation of papers or otherwise. Dr. H. W. Wiley (Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C.) has been designated as representative of the White Cross Society in America and will send a pamphlet giving full details and will forward to Paris the names of subscribers and their fees. All who send fees directly to Paris are requested to send Dr. Wiley their names in order that he may have a complete list.

South African Medical Congress.—The eleventh annual South Africa Medical Congress met in Durban, Natal, August 3 to 7. The opening address was delivered by Sir Henry Bale, Chief Justice of the Supreme Court of Natal and Acting Governor of the colony, in which he advocated the establishment of a department of health for united South Africa. The presidential address was delivered by Dr. Dumat. It was devoted chiefly to hygiene and preventive medicine and emphasized the need for study of tropical diseases by army surgeons. Dr. M. MacVicar of Lovedale, Cape Colony, read a paper on "Tuberculosis Among the Colored Population of South Africa." He stated that there are few white communities in the world where tuberculosis is so uncommon as among the Europeans of South Africa, and that this explains the apathy of the colony regarding the tuberculosis problem. Tuberculosis, he said, is now most common among the natives in the places where civilization has been longest established, and it has apparently followed the main line of traffic; just as in tropical Africa it has followed the trade routes from the coast. There are a few places in South Africa in which the disease has hardly yet penetrated. In the Transvaal and Rhodesia it is rare and in Basutaland it is also uncommon. In the Orange River Colony it is rather common; it is still more prevalent in Natal and the eastern parts of Cape Colony, while the center and western parts of Cape Colony are the most tuberculous regions of South Africa, having a mortality from tuberculosis among the natives at least four times that of England and Wales. Dr. MacVicar urged the establishment of government hospitals, sanitaria and day and night camps for tuberculous natives and the enforcement of sanitary regulations for factories. He also urged that instruction in hygiene be given in the schools, colleges and universities. Dr. Ernest Hill, health officer of the Colony of Natal, read a paper on "Death Rates in the Different Sections of the Community of Natal," in which he discussed chiefly the death rate of Hindoo immigrants, who are generally engaged in agricultural industries, mining, miscellaneous subordinate positions, as servants and general laborers. The higher death rate among these people is ascribed to the inferior housing accommodations, poverty, exposure to weather, insanitary surroundings, etc. Tuberculosis among them is three and one-half times as fatal as among Europeans. They are also more susceptible to malaria, diarrheal diseases, syphilis, intestinal parasites, appendicitis, renal diseases, accidents of parturition, general accidents and suicides. Europeans, on the other hand, Dr. Hill states, suffer more from whooping cough, diphtheria, typhoid, cancer, nervous complaints and diseases of the heart and liver. The next congress will meet at Cape Town.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug. 28, 1909.

Increase of Insanity

The sixty-third annual report of the Commissioners in Lunacy, which has just been published, shows a continuation of the increase of insanity which has been chronicled in previous years. On January 1 last there were in England and Wales 128,787 persons certified as insane—an increase of 2,703 compared with the previous year. The average annual increase for the last ten years was 2,370. Heredity is considered responsible for 22.6 per cent. of the cases; mental stress for 21.6 per cent. in private cases and 14.6 in pauper; alcohol for 17.3 per cent. in male private cases and 7.1 per cent. in female, and for 24 per cent. in male pauper cases and 9.1 in female. Influenza was responsible for 2.6 per cent. of the cases.

Nursing in Warfare: Enlarged Scope of the Red Cross Society

An important development of the new territorial army scheme "for the organization of voluntary aid in England and Wales" has been made by the War Office. The scheme for consolidating the medical profession into a homogeneous voluntary corps for service at home in time of war has been previously described in THE JOURNAL. A similar plan has now been promulgated for a nursing service. At present there exist in this country two organizations of which the government has made use. These are the Red Cross Society, which was formed to aid the sick and wounded in warfare, and the

St. John's Ambulance Association, the object of which is to train persons to render "first aid" in the accidents of civilian life. The new organization is modeled on those which exist in foreign countries, notably Japan and Germany. The county system has been adopted because it is on this that the territorial force is organized. Each county association will, through the medium of the local branches of the Red Cross Society, form "voluntary aid detachments" of men and women. The men's detachments will be specially employed in preparing means of transport by road, in converting local buildings into suitable clearing hospitals for the slightly wounded near the area of operations. They must be thoroughly trained as stretcher-bearers, and to a certain extent as male nurses. Some will be trained in sanitary work such as disinfection of buildings. Each detachment should contain some men who are expert carpenters and mechanics. The women's detachments will be employed chiefly in forming railway rest stations for preparing and serving food to the sick and wounded during evacuation by railway and for taking temporary charge in the evacuation stations or temporary hospitals of the severely wounded who are unable to continue the journey. The Red Cross Society is fully competent to work the new scheme. Its services in time of war have been many and great. To go no farther back than the Franco-Prussian war it then provided $1,100,000 for the aid of the sick and wounded.

The Influence of Feeding on the Development of Jewish and Gentile Children

At the health congress at Leeds, Dr. William Hall read a very interesting paper on a subject of which he had made a special study—"The Influence of Feeding on the Development of Aryan and Semitic Children Born and Bred in Leeds." He pointed out that the Jewish woman possesses the instinct of feeding her child which the Gentile woman has lost. Hence the prevalence of rickets among Gentile children. Fifty years ago bow-legs were uncommon; now they were seen everywhere, but not in the Jews. Ninety per cent. of Jewish mothers fed their children from the breast; from 85 to 90 per cent. of Gentile mothers did not. The poor Jewish woman when pregnant was looked on as a sacred object. She was guarded against alcohol, prolonged labor and insufficient food. The Jewish child had therefore two advantages over the Gentile—before birth and in the first twelve months of life. Later they showed a greater power of resisting infectious diseases; 97 per cent. of them were able to attend school continuously for five years. This power could not be due to their surroundings, for their houses were not clean, and often very dirty. But they had clean food and they freely used oil, fish and eggs. This Dr. Hall regarded as the great secret of their health. During the last six years he had adopted the Jewish method of feeding children and had seen bow-legs straighten out under it.

Irish Vital Statistics

The forty-eighth annual report of the Registrar-General for Ireland shows for the first time in more than half a century an increase of population. The increase is small, only 1,853, but its importance is great, as it marks the end of the depletion of the population by emigration. The excess of births over deaths was 25,148, and the loss by emigration 23,295. This is a great decrease on the ordinary emigration figures, which averaged for the decade 1898-1907, 38,036. The most important causes which have led to this decline of emigration are the development of the economic resources of the country, especially agriculture, and the almost complete settlement of the long and bitter agrarian struggle. The marriage rate was 5.2 per 1,000, an increase of 0.1 per cent. compared with the average for the preceding decade.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Aug. 17, 1909.

Personals

I must again begin with the announcement of the death of one of our most distinguished professors. August 16 von Bollinger, professor of pathologic anatomy at Munich, died of heart disease at the age of 66. He was the rector of the University of Munich this year, so that his loss is mourned in wider circles than the medical. He became privat-docent for comparative pathology at Munich in 1870; the next year he accepted a call to Zurich to the newly-established chair of pathologic anatomy and physiology in the veterinary school. At the same time he was privat-docent at the university and a teacher in the agricultural department in the polytechnic school. In 1874 he became professor of pathology in the veterinary school at Munich and of comparative pathology in the university. In 1880 he was made professor of pathologic anatomy and director of the pathologic institute as successor of his former teacher, Professor v. Buhl. His most notable works are the discovery of the actinomycosis fungus, his investigations on the pathology of anthrax, on tuberculosis from food and on the so-called Munich beer-heart. Professor von Bollinger was greatly interested in all that concerns practicing physicians. He took a great part in the development of the *Münchener medizinische Wochenschrift,* being the business manager in the group of fourteen physicians who publish it, and its success is due to him in no small degree.

The Campaign Against Tuberculosis

A police ordinance of the duchy of Anhalt goes to great lengths in limiting the liberty of consumptives in order to prevent the communication of their disease. The ordinance forbids patients of the sanatoria for pulmonary invalids from remaining in the closed rooms of the hotels and saloons. The proprietors are also forbidden to receive temporarily the patients in the enclosed spaces of their premises. The furnishing of alcoholic drinks to the patients is forbidden. The hotel-keepers are also required carefully to clease in hot 2 per cent. soda solution any eating and drinking utensils which have been used by these patients outside of the closed rooms of their places, immediately after their use, and separately from the dishes which are intended for general use.

Centennial of the Berlin University

The centennial jubilee of the Berlin University will be held next year, and the 10th to 12th of October are appointed for the celebration festivities. Oct. 10, 1810, the installation of the first sixteen Berlin professors occurred in the university building; among these the only medical man was the distinguished Hufeland. For the celebration, in addition to a memorial chapel service and a torchlight procession by the students there will be the special assembly, the *Festakt,* in the university hall, at which the present rector of the university, the renowned literary historian, Prof. Erich Schmidt, will deliver an address. The close of the festivities, as is usual in Germany, will be marked by a *Kommers.* In consideration of the great importance of the Berlin University in the development of science in general, and not least of medicine, there is reason to expect that the festival will be largely attended by the people of our own and of foreign countries.

The Imperial Insurance Bill

The strife against the imperial insurance bill has lessened somewhat. A few days ago a convention of the German local *Krankenkassen* was held at which a very decided position was taken in opposition to the demands of physicians. It is officially announced that the bill has been lately discussed by the federal council (*Bundesrat*) and been accepted in its important provisions. But in its details it has received in part some marked alterations. The new bill as it will be presented to the Reichstag for discussion is awaited with anxiety. It will depend essentially on the delegates to the Reichstag to what extent the law will be adapted to the wishes of the medical profession.

Limitation of the Use of Narcotics by Dentists

The employment of narcotics and analgesics by dentists is forbidden by ministerial decree. In pursuance of this the Berlin chief of police has forbidden pharmacists to furnish materials of this kind to dentists.

The German Medical Association at Lübeck

At the annual meeting of the national medical association, the *Aerzte-Vereinsbund,* 333 affiliated associations, with 222,484 members were represented. This is the highest attendance ever recorded.

The most important question taken up at this annual meeting, the *Aerztetag,* held on June 25 and 26, was the proposed imperial insurance law. And, as was to be expected, the association unanimously expressed the opinion that the provisions of the bill which affect the regulation of the relations between physicians and the Kankenkassen would be unacceptable to the medical profession. The association declares that the bill of the imperial insurance law constitutes an exceptional and antagonistic law against physicians and it notifies the imperial government that if this bill shall become a law, no physician belonging to the national medical association, the *Aerzte-Vereinsbund,* will any longer associate himself with industrial insurance. The medical association declares that it will not be satisfied with this legal regulation of the relations between physicians and the insured unless the following demands, not separable from one another, are incorporated in the law: Only those physicians are to be permitted to practice for the Krankenkassen who submit themselves to the conditions of a contract agreed on between the representatives of the organized physicians and the Krankenkassen respectively.

Exceptions shall be permissible only on the basis of general agreements between the Krankenkassen and the representatives of physicians. In every insurance district a commission of contracts must be established on an obligatory footing of equality, to which the agreements between the physicians and the Krankenkassen shall be submitted; also an arbitration committee and arbitration court, on a footing of obligatory equality, for appeal. The right of free medical treatment is, in general, to be limited to those possessing not more than a total income of $480 (2.000 marks).

These propositions and the reasons therefor are to be presented in due form to the federal council; the Reichstag, the governments of the separate states, and the imperial department of the interior. I believe that the government will heed this unanimous declaration of German physicians and that at least the most important of the above mentioned demands will be inserted in the bill. It will have to be subjected to a thorough revision for protests against many of its provisions have been raised by various trade circles. Whether the demands of the physicians will secure a majority in the Reichstag is quite uncertain for the struggle of the physicians, which is surely justified as a fight for their own professional interests but is naturally regarded as in its tendency opposed to the general ideals of social legislation, finds little sympathy among those parties which are interested in social legislation in its widest sense.

Among these parties are included not only the social democrats as representatives of the laboring classes (the majority of the insured) but also a large part of the central and the liberal parties. Should the Reichstag find itself not prepared to comply with the demands of the physicians, we may expect without doubt a severe struggle. If the physicians actually carry out the resolution adopted at the *Aerztetag* to refuse their cooperation in carrying out the social legislation, it might very likely happen that the Reichstag would again introduce the law compelling medical service, according to which every physician is bound to render his assistance in urgent cases. This law existed in Germany until 1869 and naturally was the source of numerous intolerable situations for the medical profession. It will be a severe blow to our liberty if the legislature should resort to such a regulation. Let us hope that this danger will be avoided.

Among the other subjects before the association, the only one of interest to your readers is the report of the hospital commission. The relations of the hospital physicians in many places are still quite faulty, not only with reference to fees but also in the arrangement of the service, inasmuch as many hospital physicians do not have the superintendence, but are to a certain extent the subordinates of "mother superiors," etc. Moreover, in relation to notice of dismissal and to right of pension the hospital physicians have not the standing to which they are entitled. The hospital commission makes the following propositions for the improvement of the position of the physicians: Not merely the medical but the entire superintendence of the hospital with complete independence should be demanded for the physician. He should be appointed by a written contract, should be responsible only to the owner and is to be regarded by the outside world as the official representative of the institution conducted by him. In regard to the management of the institution it may be conducted by the directing physician himself with non-professional boards of managers subordinated to him, or there may be an incorporated managing body (*Kuratorium*, city commission, etc.). In the latter case the following requirements should be enforced: The physician should be chairman or at least should have membership and vote in such a corporation. He should independently decide under all circumstances with reference to the reception, distribution and discharge of patients, the nursing service, the medical part of the correspondence, the hygienic, sanitary and other medical measures in the business conduct of the institution, regarding the supply of medicines, nstruments and nursing materials inside the institution. He should be the head of the entire force of employés and have the right to a full insight into the business of the management and cooperation in the choice of employés, the giving of refernces, the planning of buildings, etc. The directing physician has the right to a sufficient auxiliary service, especially sufficient medical assistance. The subordination of the physician to a layman and the immediate interference of layman and lay commissions, directresses, etc., in the management independently of the physician, should not be permitted. The physician should receive a definite salary, to increase with the period of service, with retiring pension. He should be entitled to demand a fee in the case of all paying patients in the hospital (a discontinuation of the present duty of gratuitous treatment of patients with means). These principles should hold especially for such hospital physicians as occupy the position as their chief employment, and they are to be reasonably adapted to other conditions. Existing relations should be altered only at the desire of the present occupant of the place or on the occurrence of a new appointment.

Pharmacology

Solubility

A knowledge of the solubility of substances is of great importance to the physician, so that he may not order more of an article than will dissolve in the solvent used and so that he may avoid incompatibilities. The Pharmacopeia very properly gives exact information of the solubility of the various drugs.

These facts may be of use to the pharmacist and the chemist, but they are seldom presented in a form to be readily appreciated or easily remembered by the practicing physician. M. I. Wilbert (*Am. Drug. and Pharm. Rec.*, July 12, 1909) suggests that definite values be assigned to certain adjectives by which the limitations of solubility could be expressed without exact figures. He proposes the following definitions for the Pharmacopeia:

Very Soluble: Articles that are soluble in less than 1 part of solvent.

Freely Soluble: From 1 to 10 parts of solvent.

Soluble: From 10 to 100 parts of solvent:

Slightly Soluble: From 100 to 1,000 parts of solvent.

Very Slightly Soluble: From 1,000 to 10,000 parts of solvent.

Nearly Insoluble: From 10,000 to 100,000 parts of solvent.

Practically Insoluble: More than (+) 100,000 parts of solvent.

The same definition might be stated in another form, thus: 100 c.c. of solvent will dissolve 100 gm. or more of a "very soluble" substance; 10 to 100 gm. of a "freely soluble" substance; 1 to 10 gm. of a "soluble" substance; 0.1 to 1 gm. of a "slightly soluble" substance; 0.01 to 0.10 gm. of a "very slightly soluble" substance; 0.001 to 0.01 gm. of a "nearly insoluble" substance; less than 0.001 gm. of a "practically insoluble" substance.

Such terms would be easily understood and if need be could be memorized or the principal official articles could be tabulated as to their solubility for ready reference. The exact solubility of a substance is not readily ascertained since many factors influence this property, notably temperature, physical condition of the substance, and the presence of impurities or of other substances in solution. As a consequence Wilbert shows that there is marked discrepancy between the figures given for the same substance by different authorities. Thus the following is the solubility of acetanilid as given in the several authoritative books:

Solubility in	U.S.P.	B.P.C.	Ph.Brit. Ph.Hisp.	Ph.Ned.	Ph.Helv. Codex.	Ph.Germ. Ph.Belg. Ph.Dan. Ph.Svec.	Ph. Austr.
Water	179	190	200	210	220	230	250
Alcohol ...	2.5	4	3.5	3.6	3.5	3.5	3.5

Attention should be called to the frequent confusion between the terms "slightly" and "difficultly" or "slowly" soluble. A substance difficultly soluble may eventually dissolve in considerable quantity while a substance slightly soluble even if made to enter into solution in quantities above the ordinary limit will separate out on cooling or on standing. Statements of solubility should indicate the temperature and for medical purposes should be calculated for a temperature which is approximately that of the ordinary living room, say 20 C. (68 F.).

Correspondence

Unwise Recommendation of Acetanilid in Heart Failure

To the Editor:—After all the painstaking work done of late to enlighten the profession at large on the dangers of acetanilid et al. (The Journal, July 24, etc.), it is discouraging to me to observe that Dr. A. C. Klebs, in his otherwise valuable work on tuberculosis, just issued, lists acetanilid as a heart-stimulant under the heading, "For Tendency to Heart-Failure," p. 823. While the small dose advised might not prove dangerous, except in advanced cases, it is certainly inconsistent with our knowledge of the physiologic action of acetanilid to recommend it as a remedy to combat heart-failure in a disease in which the heart is most often seriously encumbered.

Erneste Johansen, M.D., San Francisco.

The Smith Operation for Cataract

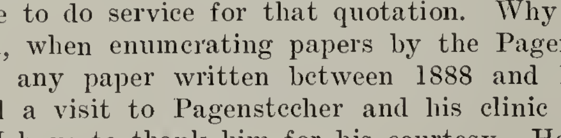
To the Editor:—The paper Dr. Würdemann read at Atlantic City on "Expression of Cataract in Its Capsule" [The Journal, September 4] is misleading to the casual reader.

He quotes as follows from a paper written by Elschnig in 1908: "The lens is expelled after incision of about one-third of the circumference made with a conjunctival flap and an upward iridectomy, either by means of gentle pressure or with the flat spoon acting purely as a gliding surface." Würdemann states that "the above description of Pagenstecher's operation on cataract in the unopened capsule is as short and accurate as has yet been given. Examine these words closely, the various essays of Pagenstecher, digest them, then follow up by reading the essays of subsequent writers, as Cassiani, Gradenigo, Gayet, Landesberg, and other foreign writers, Roosa, Andrew, Henry Smith, Oxley, Maynard, Herbert, Cheney and Greene, then come back to the original of Pagenstecher and give credit for devising the operation in all its details where it belongs, not to later operators, even though of astounding skill, sufficiency and experience."

Again, "But on referring to the original author and in correspondence with German writers, I now fully agree with Elschnig (editor of Czermak's *Augenärztlichen Operationen*) in a letter to me of Feb. 1, 1909, in which he says: 'Pagenstecher's operation is quite the same as Smith's.'"

Dr. Würdemann's paper seems to have been written on the text above quoted from Elschnig's paper of 1908, and all other things made to do service for that quotation. Why does Dr. Würdemann, when enumerating papers by the Pagenstechers, not include any paper written between 1888 and 1908. In 1903 I paid a visit to Pagenstecher and his clinic at Wiesbaden and I have to thank him for his courtesy. He received me in the following terms:

"You are the most interesting man in the world to me. I have advocated extraction in the capsule for the past thirty years, but I have given it up on account of the amount of escape of vitreous. Your operation is quite different. I shall be so much obliged if you will show me how to do it." I then showed him how to do it. Again, "I should be so much obliged if you would preside over me doing it." I did so. He then said: "The best operation in the world, I will now do nothing else."



This explains the hiatus between 1888 and 1908 above noted, and explains why Pagenstecher's operation to-day is the same as Smith's. See the Pagenstecher spoon of the olden days (accompanying illustration). How could this instrument be used as an "inclined plane?" Such is impossible. It was devised to turn concave surface downward after the incision to press on the zonula at the incision and thus dislocate the lens there at least and then to turn concave surface upward to be slipped in through the opening made by thus detaching the zonula, behind the lens and to lift out the lens on it through a "third circumference incision," which means that the capsule would rupture in almost every case. This incision is not big enough, half the circumference would be barely big enough as it has to let out both the spoon and the cataract. Even when no spoon is inserted, the man with considerable experience of the present day operation would be well advised to make his incision half or very nearly half the circumference of the sclero-cornea, if he wishes to avoid mishaps. An incision one-third of the circumference in size, as attributed to Pagenstecher is courting difficulties amounting almost to impossibilities at every step and is courting "slow healing" among other things owing to the excessive manipulation required.

Henry Smith, M.D.

Major Indian Medical Service, Jullendur, India.

The Public Service

Medical Department of the Army

Changes for the week ended Sept. 4, 1909:

Porter, E. H., M. R. C., granted leave of absence for 1 month.

Porter, E. H., M. R. C., relieved from duty at Fort Worden, Wash., to take effect on expiration of leave of absence, and will proceed to his home when he will stand relieved from active duty in the M. R. C.

Hughes, L. S., M. R. C., relieved from duty at Ft. Lawton, Wash., and ordered to Fort Worden, Wash., for duty.

Ford, C. S., major, ordered, on the expiration of his present leave of absence, to proceed to Fort Logan, Colo., for duty.

Coffin, H. L., M. R. C., leave further extended two months.

Le Wald, L. T., capt., leave of absence extended 6 days.

Edger, B. J., Jr., major, granted 2 months' leave of absence, wlth permission to go beyond the sea, to take effect when discharged from treatment at the Army General Hospital, Presidio of San Francisco.

Wooley, H. C., M. R. C., granted leave of absence for one month, with permission to apply for an extension of one month. So much of par. 18, S. O. 174, July 29, 1909, W. D., as relieves Lt. Wooley from active duty in the M. R. C. is so amended as to take effect on the expiration of his leave of absence.

Kendall, W. P., major, granted leave of absence for one month, to take effect about Sept. 10, 1909.

Hull, A. R., M. R. C., granted thirty days' leave of absence when his services can be spared.

Norman, Seaton, M. R. C., ordered to active duty and assigned to Ft. Leavenworth, Kan.

Philips, H. F., M. R. C., ordered to active duty, and assigned to Ft. Sam Houston, Tex.

McCaw, W. D., Kean, J. R., Lt.-cols., and Ireland, M. W., major, detailed as delegates to represent the medical department of the Army at the meeting of the Association of Military Surgeons of the United States, to be held in Washington, D. C., Oct. 5 to 8, 1909.

Wheate, J. M., M. R. C., ordered from Ft. Lincoln, N. D., to Ft. Snelling, Minn., for temporary duty.

Ware, W. H., dent. surg., ordered to proceed to San Francisco, and on arrival, report by telegraph to the Surgeon General of the Army, for annulment of contract.

Cook, G. W., Jones, E. C., Knox, H. A., Mount, J. R., M. R. C., relieved from duty at their present stations and ordered to report on Oct. 1, 1909, to Col. Valery Havard, M. C., president, Army Medical School, at Washington, D. C., for a course of instruction in that school.

Medical Corps of the Navy

Changes for the week ending Sept. 4, 1909.

Wilson, H. D., surgeon, detached from the *Indiana* and granted leave for two months.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Sept. 1, 1909:

Cofer, L. E., assistant surgeon-general, directed to proceed to Cape Charles Quarantine Station and Fisherman's Island, Va., on special temporary duty.

Rosenau, M. J., surgeon, granted 4 months' leave of absence from Oct. 1, 1909.

Nydegger, J. A., surgeon, granted 1 month and 7 days' leave of absence from Sept. 10, 1909.

Sprague, E. K., surgeon, granted 1 month's leave of absence from Sept. 8, 1909.

Wickes, H. W., P. A. surgeon, granted 15 days' leave of absence from Sept. 1, 1909.

Cumming, Hugh S., P. A. surgeon, leave granted July 8, 1909, amended to read 1 month from Aug. 9, 1909.

Foster, M. H., P. A. surgeon, relieved from duty at Elis Island, N. Y., and detailed to accompany the Agent of the Immigration Board of the Territory of Hawaii to the Madeira and Azores Islands.

Gwyn, M. K., P. A. surgeon, leave granted Aug. 17, 1909, for 7 days from Aug. 17, 1909, amended to read 5 days.

Wille, C. W., P. A. surgeon, granted 14 days' leave from Sept. 12.

Boggess, J. S., P. A. surgeon, relieved from duty on Revenue Cutter *Tahoma*, and directed to proceed to Chicago, and report to the Medical Officer in Command for duty and assignment.

Stimson, A. M., P. A. surgeon, granted 7 days' leave of absence from Aug. 23, 1909.

Sweet, E. A., P. A. surgeon, relieved from duty at Boston, Mass., and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Wollenberg, R. A. C., asst.-surgeon, directed to proceed to Rotterdam, Holland, on special temporary duty.

Atilles, Pedro del V., acting asst.-surgeon, leave of absence granted Aug. 4, 1909, amended to read 30 days' leave from Aug. 18, 1909, with pay, and 15 days from Sept. 17, 1909, without pay.

Browne, R. W., acting asst.-surgeon, granted 1 day's leave of absence, Aug. 31, 1909.

Cleaves, F. H., acting asst.-surgeon, granted 21 days' leave of absence from Sept. 13, 1909.

Febian, J. J., acting asst.-surgeon, granted 10 days' leave of absence from Aug. 28, 1909.

Horning, H., acting asst.-surgeon, granted 7 days' leave of absence from Aug. 23, 1909, under paragraph 210, Service Regulations.

Jackson, J. M., Jr., acting asst.-surgeon, granted 5 days' leave of absence from Aug. 20, 1909.

McLarty, A. A., acting asst.-surgeon, granted 10 days' leave of absence from Aug. 27, 1909.

Spolin, A. E., acting asst.-surgeon, granted 1 month's leave of absence from Aug. 1, 1909, with pay, and 2 months from Sept. 1, 1909, without pay.

PROMOTION

Assistant Surgeon Francis A. Ashford, commissioned a Passed Assistant Surgeon (recess), to rank as such from Aug. 11, 1909.

BOARD CONVENED

Board of medical officers convened to meet at the Marine Hospital office, Galveston, Tex., Aug. 31, 1909, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon G. M. Corput, chairman; Acting Assistant Surgeon Wm. H. Gammon, recorder.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 3, 1909:

SMALLPOX—UNITED STATES

Illinois: Chicago, Aug. 14-21, 1 case.
Minnesota: Duluth, Aug. 13-20, 1 case.
Montana: General, July 1-31, 44 cases.
Ohio: Toledo, July 24-Aug. 7, 2 cases.
Oklahoma: Oklahoma City, Aug. 7-21, 1 case, 1 death.
Tennessee: Knoxville: Aug. 14-21, 1 case.
Texas: Houston, March 20-June 19, 20 cases.

SMALLPOX—FOREIGN

Algeria: Algiers, July 1-31, 1 death.
Brazil: Bahia, June 25,-July 16, 7 cases, 3 deaths; Pernambuco, May 15-31, 7 deaths.
Chile: Valparaiso, July 3-31, present.
Egypt: Cairo, July 1-8, 1 case, 1 death.
France: Toulon, July 24-31, 1 death.
India: Bombay, July 13-20, 3 deaths; Calcutta, July 3-10, 2 deaths; Rangoon, July 3-17, 4 deaths.
Indo-China: Saigon, July 3-10, 7 cases, 5 deaths.
Italy: General, Aug. 1-8, 1 case; Genoa, July 8-15, 2 cases; Naples, Aug. 1-8, 34 cases, 2 deaths.
Portugal: Lisbon, July 31-Aug. 7, 6 cases.
Russia: Odessa, July 24-31, 1 case, 1 death; Riga, July 31-Aug. 7, 4 cases; St. Petersburg, July 17-24, 41 cases, 6 deaths.
Spain: Barcelona, Aug. 3-9, 4 deaths; Madrid, July 1-31, 81 deaths; Valencia, July 24-31, 1 case; Vigo, July 31-Aug. 7, 1 death.
Straits Settlements: Singapore, July 3-10, 1 death.

YELLOW FEVER

Brazil: Bahia, June 25-July 2, 2 cases.
Ecuador: Duran, July 16-31, 3 cases.
Mexico: Colima, July 30-Aug. 26, 8 cases; Merida, Aug. 14, 1 death.

CHOLERA—FOREIGN

China: Amoy, July 17-24, 9 deaths.
India: Bombay, July 13-20, 17 deaths; Calcutta, July 3-10, 28 deaths; Madras, July 10-16, 2 deaths; Rangoon, July 3-17, 9 deaths.
Indo-China: Saigon, June 26-July 3, 3 cases, 3 deaths.
Netherlands: The Rotterdam, Aug. 26, 2 cases.
Russia: St. Petersburg, July 29-Aug. 13, 408 cases, 200 deaths.

PLAGUE

Brazil: Bahia, June 26-July 16, 5 cases, 2 deaths.
China: Amoy, July 17-24, 62 deaths; Canton, June 26-July 17, 45 cases, 34 deaths; Chang-Poo, July 23, epidemic; Kang-be, June 1-30, 61 cases, 59 deaths.
Egypt: General, July 23-29, 7 cases, 2 deaths; Alexandria, July 30-Aug. 2, 3 cases, 2 deaths.
Formosa: General, July 10-17, 3 cases, 3 deaths.
India: General, July 10-17, 800 cases, 613 deaths; Bombay, July 13-20, 25 deaths; Calcutta, July 3-10, 29 deaths; Rangoon, July 3-17, 40 deaths.
Indo-China: Saigon, June 26-July 3, 8 cases, 7 deaths.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TWO MORE CRITICISMS OF THE LANGUAGE OF MEDICAL WRITERS

To the Editor:—I agree with Dr. Keen's contention in THE JOURNAL (August 14, p. 572) that the use of "data is" is a violation of an obvious rule of grammar; yet I doubt very much whether this practice prevails on a larger scale than that of the unwarranted promiscuous use of "ought" and "should," of which Dr. Keen himself is guilty, when in the closing sentence of his second paragraph he says "But it ought never to occur." "Ought" is a defective verb and denotes a moral or a personal obligation; and "should" is the imperfect from of "shall," and may, though it does not always, imply a social obligation. Thus, we ought to obey the laws; but we should not give offense.. We should be good grammarians; but ought to be honest. Besides, the use of the neuter impersonal pronoun "it," in connection with the verb "ought," is an incongruous combination, and the sentence referred to should, therefore, read, "But it should never occur."

THOMAS J. MAYS, Philadelphia.

To the Editor:—Dr. Keen's letter concerning "data is," reminds me of some other errors in language that are widely prevalent in current medical literature. For instance "appendiceal" appears perhaps oftener than "appendical." While "appendiceal" is more euphonious there is no such word in the dictionaries. The word "starvation" is used incorrectly for "fasting:" and in your last index "fasting" does not appear, but "starvation" is used instead. "Starvation" was first used by Dundas in 1775, and comes from the Anglo-Saxon *steorfan*, "to die." Obviously we can not starve a patient unless we kill him. In a recent and perhaps one of the best works on abdominal surgery, "curetage" appears throughout the book. It should be "curettage." "Sequellæ is a less common mistake for "sequelæ."

R. M. HARBIN, Rome, Ga.

ANSWER.—Both our correspondents appear somewhat hypercritical, in that each overlooks the fact that both settled usage and derivation are contributory factors in determining the proper use of words.

Dr. Mays, disregarding derivation, insists on a difference in the kind and degree of obligation expressed respectively by the words "ought" and "should," the former, he feels, implying a primary, intrinsic, or moral obligation, and therefore binding *per se*, while to the latter he accords only a secondary, social or extrinsic obligation. But "shall' (A. S., *sceal*) is the first and third persons singular of the A. S. verb *sculan*, to be obliged, to have to do, to owe (cf. the German *sollen*). At least as late as Chaucer's time "shall" was used as the equivalent of "owe:" "By the faithe I schal to God" (Troylus and Cryseyde, 1. 1600). There is, so far as derivation is concerned, no difference between "you should do it" and "you ought to do it." Both mean, "you owe the doing of it to some authority greater than your own mere volition." The distinction suggested by Dr. Mays, therefore, however convenient, is one to be settled merely by good usage; and it would hardly be difficult to show, from the masters of English literature, that such a distinction is not universal or even general. From this it follows, also, that whatever objection can be directed on the ground of "incongruity" against "it ought" must be equally applicable to "it should."

Dr. Harbin, in his criticism of the common use of "starvation" for mere privation from food, appears to err in the opposite direction. It is not practicable to rely solely on derivation to settle the meaning of words. Would Dr. Harbin, for example, restrict "villain" to its original sense of "a villager" or "knave" to that of "boy"? It is true that originally "to starve" meant to perish; it is allied to the German *sterben*. But in modern usage it means to deprive of nutriment or, in a secondary sense, of some other vital essential, to a degree perilous to life. When we wish to say that some one died from lack of food, it is not enough to say "he starved;" we usually say "he starved to death." We are willing to concede, however, that to describe the therapeutic withholding of food, the word "starvation" is hardly apt; for starvation is, properly speaking, always injurious, though not necessarily fatal; while "fasting" means simply the doing without food, and does not imply any injury. We assume, in any case, that the criticism of the title in our index is directed against the author of the paper, for it is obviously impossible, in indexing, to look up each article in the title of which there might be some slight ambiguity, and ascertain just what the author was talking about.

As to "appendiceal" versus "appendical," we note that while the Standard Dictionary gives "appendical," Dorland has "appendiceal." The English language has not been particularly careful, when adopting adjectival suffixes, etc., to restrict their use to their proper limitations. "Appendiceal" was probably formed on the analogy of "laryngeal," "pharyngeal," which in its turn followed "peritoneal;" but the *e* is in the stem in the last-named word, whereas in laryn-, pharyng-, it is not. These words would have been more correctly formed as laryngal, etc. "Appendiceal" is perhaps more euphonious, and will doubtless hold its own with "laryngeal," rather than be replaced by "appendical" on the more correct analogy of "cervical," "vesical," etc.

As to "curettage"—ignoring the derivation from the French *curette*—we may say that when a word ending with a stressed consonantal syllable adds further syllables, the consonant is generally doubled to retain the stress; cf. defer, deferring, remit, remittance. "Sequellæ" is the result of ignorance, pure and simple, and is one of the words that are constantly misspelled because they are constantly mispronounced. It is not "se-quell-æ," but "se-que-læ." This error is parallel to that of "combatting" for "combating," which has arisen from incorrectly laying the stress on the second, instead of on the first, syllable.

BINDING THE JOURNAL IN FOUR BOOKS A YEAR

To the Editor:—I have had my copies of THE JOURNAL bound for the past six years. The volumes are larger each year, which makes them at the present large, cumbersome and unhandy for ready reference. Can we not just as well have four volumes a year instead of two?

E. L. DEWEY, Whiting, Ind.

ANSWER.—There is nothing whatever to prevent anyone who wishes from having his copies of THE JOURNAL bound in four parts to a year, that is, a book for each three months. One of the several sets bound for use in this office is treated in this way. For example, January, February and March of 1909, compose one book labeled "Vol. LII, Part 1," April, May and June are bound in another book labeled "Vol. LII, Part 2." If one wished, one could add the words "With Index" on the back of Part 2, but this is not essential as the user understands that the index is at the end of the second part. As to making four indexes a year, we think that few would prefer this plan. Although it would be an advantage at the immediate time, it would be a disadvantage afterward because it would require twice as much handling to look up an item in back years. A semi-annual index is considered the golden mean. During the issuance of the twenty-six numbers which make up a volume, the majority of readers can find items without much trouble, as they remember the approximate date, and an index is not so necessary. Looking back a year or two years, however, the more indexes there are the more labor there is to find an item, and frequently one wishes that the index were an annual one. Thus the semi-annual index has been evolved as the most desirable arrangement, especially for weekly publications.

One of our readers detaches the pages which are devoted to Current Medical Literature and binds these with the indexes to subjects and to authors. The remainder he binds with the General Index. This plan may commend itself to others.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of August, 1909:

ALABAMA

Douglass, A. G., Birmingham.
Heacock, J. D., Birmingham.
McDowell, Wm. P., Eufaula.
Wheeler, W. C., Huntsville.
Williamson, G. W., Montgomery.

CALIFORNIA

Howe, L. P., San Francisco.
Liverman, J. R., San Bernardino.
Taylor, W. S., Livermore.
Taubles, G. H., San Francisco.

COLORADO

Asquith, A. C., Central City.
Burvenich, C. H., Denver.
Fish, J. B., Edgewater.
Ringolsky, Sol, Denver.
Pollock, R. M., Rocky Ford.

CONNECTICUT

Pike, Ernest R., Lakeville.

DISTRICT OF COLUMBIA

Kress, D. H., Takoma Park.
Parker, E. M., Washington.

GEORGIA

Baird, J. B., Jr., Atlanta.
Bradley, Frances, Atlanta.
Redwine, Word, Cassville.
Winchester, W. R., Macon.

ILLINOIS

Gaul, A. C. A., Chicago.
Miller, W. H., Galena.
Morrison, H. T., Jr., Springfield.
Sparling, A. M., Sailor Springs.
Weirick, A. J., Marseilles.

INDIANA

Asbury, W. D., Coalmont.
Hatfield, S. J., Indianapolis.
Randolph, Frank, Elkhart.

IOWA

Bush, F. W., Bagley.
Culverson, F. P., Greenfield.
Distad, O. E., Holmes.
Harper, J. A., Greenfield.
Harris, E. E., Grinnell.
Hearst, G. E., Cedar Falls.
McBurney, G. F., Belmond.
McGregor, J. C., Downey.
Mulhern, T. W., Greenfield.
Mullins, V. S., Atlantic.
Murphy, M. J., Cumberland.
Shelton, C. D., Bloomfield.

KANSAS

Haake, J. A., Peabody.
Yates, Chas. E., Maple Hill.

KENTUCKY

Montfort, Warren, Woodlake.
Perry, J. R., Fords-ferry.
Strother, J. W., Grayson.

LOUISIANA

Breamx, L. J., Scott.

MAINE

McFadyen, James, Hebron.

MARYLAND

Bates, J. H., Forest Park.

MASSACHUSETTS

Gates, R. E., Mansfield.
Hornbrook, F. W., Boston.
Janes, Jr., B. F., Northampton.
Kenealy, J. H., Natick.
Morse, R. S., Worcester.
Murphy, F. P., Lowell.

MICHIGAN

Fuller, R. T., Grand Ledge.
Jones, G. W., Imlay City.
Lee, E. C., Detroit.
Ross, Zimmerman, St. Ignace.

MINNESOTA

Morse, J. H., Minneapolis.
Schroder, C. H., Duluth.
Warham, T. T., Minneapolis.

MISSOURI

Coughlin, W. T., St. Louis.
Dunlop, H. E., Canton.
Parman, D. R., St. Louis.
Reber, R. L., St. Louis.
Toney, G. W., Fulton.

MONTANA

Parsons, H. H., Missoula.

NEBRASKA

Conlin, F. M., Omaha.

NEW JERSEY

Farr, Jr., J. C., Hoboken.
Whitehead, H. Eugenia, Mt. Holly.

NEW YORK

Davis, W. W., Chester.
Frisch, Frederick, Buffalo.
Michaelis, Julius, Brooklyn.
Peebles, Martha J., Brooklyn.
Robinson, J. A., New York City.
Shaw, G. H., Baldwinsville.
Story, C. B., Bayside.
VanBeuren, Jr., F. T., New York City.
Wolf, C. G. Leo, Niagara Falls.

NORTH CAROLINA

Bolles, C. P., Wilmington.
Horton, W. C., Raleigh.
Lee, Richard E., Goldsboro.
Meadows, W. J., Greensboro.
Utley, H. H., Benson.
Whisnant, A. M. Charlotte.

OHIO

Clarke, D. J., Toledo.
Crumrine, H. C., Cleveland.
Cummer, C. L., Cleveland.
Hitchings, F. W., Cleveland.
Prudhomme, A. J., Cleveland.
Storey, A. S., Cleveland.
Wright, Elizabeth W., Cincinnati.

OKLAHOMA

Kelleam, E. A., Grant.

PENNSYLVANIA

Allen, D. E., Altoona.
Bacon, W. D., Philadelphia.
Cohen, A. J., Philadelphia.
Egbert, W. E., Chester.
Greenewalt, J. C., Chambersburg.
Hallett, H. J., McKeesport.
Johnson, E. E., Philadelphia.
Joseph, L. D., Bradford.
Merrill, W. J., Philadelphia.
Munson, H. G., Philadelphia.
Spiess, W. G., Philadelphia.
Wagner, W. E., Philadelphia.
Weiss, Harry, Bradford.

SOUTH CAROLINA

LaBorde, Oscar, Columbia.
Monsen, M. B., Luray.
Parker, Jr., F. L., Charleston.
Wallace, W. A., Spartanburg.

TENNESSEE

Martin, G. P., Cookeville.
Thomison, J. G., Dayton.

TEXAS

Cary, G. F. S., El Paso.
Combe, F. J., Brownsville.
Combe, J. K., Brownsville.
Hunt, Preston, Texarkana.
Ricks, G. N., Pleasanton.
Smith, P. L., Houston.
Stroud, E. F., Houston.
Wier, W. M., Houston.

VIRGINIA

Coffman, W. H., Richmond.
Smith, J. E., Petersburg.
Wilkins, R. L., Alexandria.

WASHINGTON

Gallogher, P. J., Spokane.
MacLafferty, B. N., Aberdeen.
Melde, Olaf T., Spokane.
Sinks, J. R., Spokane.
Smith, R. W., Walla Walla.
Mathieu, A. L., South Bend.
Mills, J. F., Sedro-Woolley.

WEST VIRGINIA

Ridley, F. T., Bluefield.
LeFevre, E. B., Inwood.
Price, R. C., Morgantown.

Marriages

Almerin W. Baer, M.D., Chicago, to Miss Rose Berns of Peabody, Kan., August 28.

Horace Powell Conley, M.D., to Miss Mary Bond Taylor, both of Memphis, Tenn., August 28.

Albert Roy Hogg, M.D., Haralson, Ga., to Miss Gertrude Allen of College Park, Ga., August 24.

Myron E. Bennett, M.D., Chicago, to Mary M. Wheeler, M.D., of Grant Park, Ill., September 6.

John Langdon Chassell, M.D., Belle Fourche, S. D., to Miss Hines, of Rowan, Iowa, September 1.

John Brooks Kaufman, M.D., U. S. Navy, to Miss Katherine Metcalfe, at San Francisco, July 21.

Ernest Collett McKibben, M.D., to Miss Mary Rachel Rogers, both of Vashon, Wash., August 25.

Raymond E. Gaston, M.D., Cincinnati, to Miss Myrtle McCullough, of Tranquility, Ohio, August 18.

William D. Ducy, M.D., Brockton, Mass., to Miss Edna Ramsay of Bath, Maine, at Portland, June 28.

Theodore Alvin Little, M.D., Spartansburg, Pa., to Miss Euphemia Blee of Jerseytown, Pa., August 12.

Leander F. Cain, M.D., Checotah, Okla., to Mrs. Nora M. Fuller of Washington, D. C., at Rockville, Md., August 21.

Deaths

Mason F. Williams, M.D. University of Louisville (Ky.), 1876; a member of the Oklahoma State Medical Association and formerly president of the Muskogee County Medical Society; for more than 30 years a practitioner of the Indian Territory; a member of the local board of U. S. pension examining surgeons; physician to the U. S. jail; physician to Henry Kendall College, and secretary of the first U. S. Medical Examining Board for the Western District of Indian Territory; died in the Muskogee Hospital, August 15, a few hours after operation for peritonitis following rupture of the gall bladder, aged 58.

Charles T. Wilbur, M.D. Berkshire Medical College, Pittsfield, Mass., 1860; a member of the Michigan State Medical Society; assistant surgeon and surgeon of the Fifty-ninth and Ninety-fifth Ohio Volunteer Infantry during the Civil War; from 1876 to 1884 superintendent of the Illinois State Institution for the Feeble-Minded, Lincoln; superintendent and proprietor of the Wilbur Home for the Feeble-Minded, Kalamazoo, Mich.; a member of the board of trustees of the State Institution for the Feeble-Minded, Lapeer; died suddenly at his home in Kalamazoo, August 19, from cerebral embolism, aged 74.

Herman Williams Gross, M.D. University of Pennsylvania, Philadelphia, 1895; a member of the American Medical Association; lieutenant and assistant surgeon of the Sixth Massachusetts Infantry, U. S. V., during the Spanish-American War, with service in Porto Rico; in 1906 a member of the Quincy city council; surgeon to the Fore River Shipbuilding Company, Quincy, Mass.; was found dead in his quarters in the accident hospital of the company, August 24, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent, aged 37.

James Stafford, M.D. University of Vermont, Burlington, 1885; College of Physicians and Surgeons, New York City, 1886; formerly attending gyneologist to the Northern Dispensary, New York City; assistant attending gynecologist to the out-patient department of Bellevue Hospital; clinical assistant in gynecology in the New York Policlinic; assistant surgeon of the Seventy-first New York Infantry, U. S. V., and of the Fourth U. S. Infantry in Cuba; died at his home in Perth Amboy, N. J., August 3, from septicemia, aged 48.

Edwin J. Dirickson, M.D. Jefferson Medical College, Philadelphia, 1874; of Berlin, Md.; for many years a member of the Medical and Chirurgical Faculty of Maryland; formerly acting assistant surgeon P. H. and M.-H. Service; physical inspector of the U. S. Life-Saving Service for the fifth district of Maryland; health officer of Ocean City, Md.; and a member of the state legislature; died in the Sheppard and Enoch Pratt Hospital, near Towson, Md., August 27, aged 56.

Homer Bushnell, M.D. University of Michigan, Ann Arbor, 1873; of North Adams, Mass.; a member of the Massachusetts Medical Society and Medical Association of Northern Berkshire; a censor of the Berkshire District Medical Society; and for fifteen years associate medical examiner of the North Berkshire District; died at his summer home near Pownal, Vt., August 23, from cerebral hemorrhage, aged 63.

George Colburn Clement, M.D. Harvard Medical School, Boston, 1880; a member of the American Medical Association; from 1886 to 1892 city physician of Haverhill, Mass.; a member of the board of trustees of and surgeon and opthalmologist to Hale Hospital; local surgeon for the Boston and Northern Street Railway Company; died at his home, August 27, from cerebral hemorrhage, aged 54.

Thomas Simon P. Fitch, M.D. Bellevue Hospital Medical College, New York City, 1867; of Orange, N. J.; a member of the Medical Society of New Jersey; attending physician and member of the visiting staff of Orange Memorial Hospital, and consulting physician to the Orthopedic Hospital and the House of the Good Shepherd, Orange, N. J.; died in Portland, Maine, August 24, aged 64.

Samuel Madison Worthington, M.D. Hahnemann Medical College, Chicago, 1883; of Versailles, Ky.; a member of the Kentucky State Medical Association; a member of the board of directors of the Morgan Helm Memorial Library; died in the Woodford Memorial Hospital, Versailles, August 27, from tuberculosis of the larynx, aged 48.

Alexander M. F. McCollough, M.D. Jefferson Medical College, Philadelphia, 1877; of Los Angeles, Cal.; formerly of Wichita, Kan.; for four years president of the Union Savings Bank, Tacoma, Wash.; died in the Pacific Hospital, Los Angeles, August 19, from peritonitis, after an operation for gall-stone disease, aged 56.

Edward Conyers Goodrich, M.D. University of Georgia, Augusta, 1873; a member and in 1900 treasurer of the Medical Association of Georgia; for six years secretary of the health department of Augusta, Ga.; a member of the local board of U. S. pension examining surgeons; died at the home of his brother in Summerville, Ga., August 12, aged 57.

Augustus Franklin Purington, M.D. Medical School of Maine, Brunswick, 1864; of Indiana, Pa.; assistant surgeon in the Army during the Civil War; a member of the Medical Society of the State of Pennsylvania; and formerly president of the Indiana County Medical Society; died at the Markleton Sanitarium, August 19, from heart disease, aged 75.

Levi Coke Stephens, M.D. Medical College of the State of South Carolina, Charleston, 1860; a member and former president of the South Carolina Medical Society and State Board of Medical Examiners; surgeon in the Confederate service during the Civil War; died suddenly at his home in Greenville, August 12, aged 71.

Elmer D. North, M.D. Detroit (Mich.) Medical College, 1881; a veteran of the Civil War; in 1871, superintendent of schools of Ingham county, Mich., and for twenty-one years a member of the local board of U. S. pension examining surgeons; was found dead in his apartment in Lansing, Mich., August 17, from angina pectoris, aged 68.

James M. Borglum, M.D. Homeopathic Medical College of Missouri, St. Louis, 1874; a member of the American Medical Association; for 34 years a practitioner of Omaha; died in his apartments in that city, August 29, from cerebral hemorrhage, five days after a runaway accident, aged 70.

William J. Jones, M.D. New York University, New York City, 1858; a member of the American Medical Association; an honorary fellow and once vice-president of the Medical Society of the State of North Carolina; died at his home in Goldsboro, June 27, aged 71.

Benjamin Ellis Martin, M.D. College of Physicians and Surgeons, New York City, 1861; assistant surgeon of Duryea's Zouaves in the Civil War, and later a member of the Agassiz expedition to South Africa; died at his home in New York City, August 19, aged 70.

Henry Sargent Knight, M.D. Jefferson Medical College, Philadelphia, 1878; a member of the Massachusetts Medical Society; and a member of the school committee of Worcester for many years; died at his home, August 22, from cerebral hemorrhage, aged 50.

Philo William Street, M.D. University of Vermont, Burlington, 1892; formerly a member of the American Medical Association; health officer of Suffield, Conn., and chairman of the school board; died at his home, August 27, from acute nephritis, aged 43.

George Reid (license, Mich., years of practice, 1900); formerly a member of the American Medical Association; for 36 years a practitioner of Reese, Mich.; died recently, at his home in that place from the result of a fall, and was buried August 21.

Zenas Sanford Loftis, M.D. Vanderbilt University, Nashville, 1908; formerly president of the Nashville Student Volunteer Movement; and a missionary at Batang, West China; died from smallpox soon after his arrival at his post of duty, aged 24.

Stella Hager-Colver, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1901; formerly of Philadelphia; a member of the Medical Society of the State of Pennsylvania; died in Dallas, Texas, August 20, from heart disease, after a long illness.

William H. Wells, M.D. Rush Medical College, Chicago, 1848; who went to California in 1849, and afterward practiced in Sacramento, Santa Clara, Solano and Fresno counties; died at the home of his daughter in Sacramento, August 15, aged 91.

William Palmer Wesselhoeft, M.D. Harvard Medical School, Boston, 1857; of Boston; once president of the International Hahnemannian Association; died at his summer home, York Harbor, Maine, August 24, from senile debility, aged 73.

Rhesa W. Read, M.D. University of Pennsylvania, Philadelphia, 1858; major and surgeon in the Confederate service during the Civil War; city physician and health officer of Texarkana, Ark.; died at his home in that city, August 3.

Byron S. Knapp, M.D. Cincinnati College of Medicine and Surgery, 1874; for fifteen years a member of the Owosso (Mich.) Board of Education; died at his home in Owosso, August 20, from cerebral hemorrhage, aged 64.

Jabez Parkhurst Bloss, M.D. College of Physicians and Surgeons, New York City, 1853; for two terms demonstrator of anatomy in the Woodstock (Vt.) Medical College; died at his home in Troy, N. Y., August 26, aged 82.

Frank Eugene Greene, M.D. Eclectic Medical Institute, Cincinnati, 1875; a member and secretary of the New England Society of Specialists; of Roxbury, Boston; died at his summer home in Swampscott, Mass., August 25.

John Emmett Burns, M.D. University of Wooster, Cleveland, 1874; for five years a member of the house staff of Charity Hospital, Cleveland; died at his home in that city, August 18, from heart disease, aged 58.

Robert Walker Robinson, M.D. Long Island College Hospital, Brooklyn, N. Y., 1884; of Auburn, N. Y.; a member of the American Medical Association; died at his summer home in Northport, Maine, August 20, aged 49.

Hamlet Sharp Garland, M.D. Kentucky University, Louisville, 1904; a member of the American Medical Association; died at his home in Oskaloosa, Iowa, August 27, from peritonitis following appendicitis, aged 26.

Samuel M. Plush, M.D. Penn Medical University, Philadelphia, 1876; a veteran of the Civil War, a pioneer in electrical development; died at his home in Arcola, near Pottstown, Pa., May 3, from dropsy, aged 69.

Charles E. L. McCauley, M.D. University of Pennsylvania, Philadelphia, 1853; one of the oldest practitioners of Montgomery county, Tenn.; died at his home in Clarksville, August 14, from senile debility, aged 79.

James William Rochelle, M.D. Kentucky School of Medicine, Louisville, 1893; a member of the State Medical Association of Texas; died at his home in Hooks, August 14, from diabetes and heart disease, aged 56.

Ezekiel Dawson, M.D. University of Pennsylvania, Philadelphia, 1853; surgeon of the Third Delaware Volunteer Infantry during the Civil War; died at his home in Baltimore, June 27, from senile debility, aged 78.

James Milton Carlton, M.D. Medical College of Georgia, Augusta, 1886; a member of the Medical Society of the State of South Carolina; died at his home in Mount Carmel, August 15, from angina pectoris, aged 48.

Allen De Turk Hunter, M.D. Jefferson Medical College, Philadelphia, 1884; a member of the Illinois State Medical Society; died at his home in Savanna, Ill., August 18, after an operation for peritonitis, aged 46.

Louis Feigenblatt, M.D. New York University, New York City, 1872; a member of the Medical Society of the State of New York; died at his home in New York City, May 13, from chronic nephritis, aged 71.

Lewis F. Layton, M.D. Tulane University, New Orleans, 1887; a member of the State Medical Association of Texas; health officer of Cameron county and Brownsville, Texas; died at his home, August 25.

Myron A. Shaw, M.D. Rush Medical College, Chicago, 1883; a veteran of the Civil War; for many years a justice of the peace of Durand, Wis.; died at his home, August 24, from heart disease, aged 72.

William Francis Swalm, M.D. College of Physicians and Surgeons, New York City, 1859; of Brooklyn, N. Y.; a veteran of the Civil War; died at Shelter Island Heights, Long Island, August 26, aged 73.

Henry T. Hunter, M.D. University of Pennsylvania, Philadelphia, 1861; for many years a member of the Medical Society of Virginia; died at his home in Norfolk, Va., August 5, aged 69.

James O. Ackerman, M.D. Hahnemann Medical College, Chicago, 1877; a veteran of the Civil War; died at his home in Fond du Lac, Wis., August 25, from disease of the stomach, aged 67.

James Irving Chapin, M.D. University of Pennsylvania, Philadelphia, 1903; of Philadelphia; died in a hotel in New Orleans, August 24, from the effects of an overdose of morphin, aged 30.

Daniel L. Sweeney, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1882; a member of the Essex County (N. J.) Medical Society; died at his home in Newark, August 20, aged 61.

Louis A. Whitehouse, M.D. Bellevue Hospital Medical College, New York City, 1891; of Brooklyn, N. Y.; died suddenly at the Hotel Garde, New Haven, Conn., August 18, from heart disease.

Charles A. Ball, M.D. George Washington University, Washington, D. C., 1877; a member of the American Medical Association; died at his home in Washington, September 3, aged 58.

Robert Field, M.D. Tulane University, New Orleans, 1868; a Confederate veteran; formerly of Pocahontas, Miss.; died at his home in Hattiesburg, Miss., March 17, from influenza.

J. W. Etheridge, for many years a practitioner of Crystal Springs, Miss.; died at his country home, near that place, January 13, from locomotor ataxia, aged 69.

George A. Martin, M.D. Medical College of Ohio, Cincinnati, 1877; a veteran of the Civil War; died at his home in Brownstown, Ill., August 28, from nephritis, aged 64.

Lewis Harvey Jones, M.D. Barnes Medical College, St. Louis, 1894; died at his home in Ellenboro, W. Va., August 25, from the effects of an accidental overdose of morphin.

John Aloysius Allendorf, M.D. Harvard Medical School, Boston, 1903; of Charlestown, Mass.; died in Carney Hospital, Boston, August 24, from edema of the brain.

Charles Alexander Garnsey (license, Ill., years of practice, 1878); for 65 years a practitioner; died at his home in Batavia, Ill., August 19, aged 95.

John W. Rasmussen, M.D. Marquette University, Milwaukee, Wis., 1898; died at his home in West Allis, Wis., August 27, from acute gastroenteritis, aged 37.

Eleanor Handmacher, M.D. Cleveland Homeopathic Medical College, 1909; of Cleveland; died at St. Alexis' Hospital in that city, August 25, aged 23.

David Sullivan Stevenson, M.D. Lincoln (Neb.) Medical College, 1899; died at his home in Auburn, Neb., July 3, from cancer of the neck, aged 36.

Cyrus Francis Krauser, M.D. Long Island College Hospital, Brooklyn, 1865; formerly of Philadelphia; died in Brooklyn, N. Y., July 9, aged 70.

William S. Cockrell, M.D. University of Maryland, Baltimore, 1879; died at his home near Harper's Ferry, W. Va., August 27, aged 65.

Peter Walter Emmens, M.D. Eclectic Medical Institute, Cincinnati, 1876 of Syracuse, N. Y.; died in Binghamton, N. Y., August 22, aged 78.

C. H. Davidson (license, Utah, years of practice, 1894); died at his home in Brigham, June 12, from carcinoma of the stomach, aged 80.

Roy St. Clair, M.D. Willoughby (Ohio) Medical College, 1858; of Bloomfield, Iowa; died near Humeston, Iowa, July 23, aged 72.

William T. Thurman, M.D. Missouri Medical College, St. Louis, 1885; died at his home in Detroit, Ill., August 25, from nephritis.

John Walker Neil, M.D. Starling Medical College, Columbus, Ohio, 1859; died at his home in Delaware, Ohio, August 4, aged 74.

William Littlewood (license, Mo.); died at his home in Albany, Mo., August 12, from heart disease, aged 64.

Knud L. Boysen, M.D. Kiel, Germany, 1863; died at his home in Chicago, August 25, from nephritis.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phœnix, October 4-5. Sec., Dr. Ancil Martin.
COLORADO: Capitol, Denver, October 5. Sec., Dr. S. D. VanMeter, 1723 Tremont St.
GEORGIA: Regular, Capitol Bldg., Atlanta, October 12. Sec., Dr. E. R. Anthony, Griffin. Homeopathic: Atlanta, October 4. Sec., Dr. R. E. Hinman, 153 Whitehall St.
IDAHO: Boise, October 5-6. Sec., Dr. W. F. Howard, Pocatello.
ILLINOIS: Coliseum Annex, Chicago, October 20-22. Sec., Dr. J. A. Egan, Springfield.
IOWA: State House, Des Moines, September 21-23. Sec., Dr. Louis A. Thomas.
KANSAS: Topeka, October 12. Sec., Dr. F. P. Hatfield, Olathe.
LOUISIANA: New Orleans, October 1-2. Sec., Dr. Felix A. Larue, 211 Camp St.
MASSACHUSETTS: State House, Boston, September 14-16. Sec., Dr. Edwin B. Harvey.
MICHIGAN: Lansing, October 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
MINNESOTA: State University, October 5. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.
MISSISSIPPI: Jackson, October 12. Sec., Dr. S. H. McLean.
MISSOURI: Kansas City, September 20-22. Sec., Dr. J. A. B. Adcock, Warrensburg.
MONTANA: Capitol, Helena, October 5. Sec., Dr. W. C. Riddell.
NEW JERSEY: State House, Trenton, October 19-20. Sec., Dr. E. L. B. Godfrey, Camden.
NEW YORK: Albany, September 21-24. Chief of Examinations Division, Charles F. Wheelock, Albany.
NORTH DAKOTA: Grand Forks, Oct. 5-7. Sec., Dr. H. M. Wheeler.
OKLAHOMA: Ione Hotel, Guthrie, October 13. Sec., Dr. Frank P. Davis, Enid.
RHODE ISLAND: Room 313, State House, Providence, October 7-8. Sec., Dr. Gardner T. Swarts.
UTAH: Room 207, City and County Bldg., Salt Lake City, October 4-5. Sec., Dr. G. F. Harding, 310 Templeton Bldg.
WYOMING: Laramie, October 20-22. Sec., Dr. S. B. Miller.

Preliminary Education and the College Entrance Examining Board

As has been already stated (THE JOURNAL, Aug. 14, 1909, p. 580), no part of the published standards of colleges and state examining boards has been so badly enforced as that relating to preliminary education, chiefly on account of the endless variety of secondary schools and the extreme difficulty of placing the proper value on entrance credentials. When the student has a diploma from a high school the difficulty is not so great since most universities have lists of "accredited" schools and therefore the standing of the high school can be learned. The difficulty arises when the student presents credentials for a year here, a year there and a year somewhere else, with no diploma from anywhere. This is an instance with no end of variation. The difficult question is: "Has the applicant the equivalent of a four-year high-school education?" State boards are trying to deal with the problem and college deans are struggling with it, but, in spite of all, many deplorably weak and badly prepared students are annually admitted to our medical schools.

What we need to-day more than anything else, is an honest, intelligent enforcement of preliminary requirements. One way to bring this about would be to abolish the "equivalents." When the student has a diploma from a high school which is really accredited by a standard university, admit him. If he doesn't have such a diploma require an examination. Who shall conduct the examination, the college, the state board, a high-school teacher, a state superintendent of public instruction, or some one else? All these plans are in vogue now, resulting in an endless variety and confusion of tests from the signing of certificates in blank or the asking of a few oral questions up to a thorough examination which doubtless really does insure that the applicant has the equivalent of a four-year high-school education.

But why go to all this needless bother and permit this confusion when we have at our very doors a board of entrance examiners, the members of which are chosen because of their skill in deciding the fitness of those who are to enter colleges and universities. A passing mark from the college entrance examining board could be relied on as the best evidence that the student really has the equivalent of the high school education. Why should not all those who do not hold diplomas be referred to this board for examination? That procedure would do away at once with all suspicion of graft, fraud or error and insure that our four-year high-school standard was being strictly adhered to. Any medical school which should insist that all its entrance examinations be conducted by that board would at once place itself above the suspicion of permitting a feeble enforcement of its preliminary standards for the sake of obtaining more students.

That the college entrance examining board furnishes a possible solution to the problem is evidenced by the fact that it already holds entrance examinations for twenty-seven colleges and universities, eight of which have medical departments. Its functions might, with little difficulty, be extended to other colleges and medical schools, since in June, 1908, entrance examinations were held in 165 different cities, in 41 different states, and altogether 3,250 candidates were examined.

But whether that board be chosen to conduct entrance examinations or not, the fact remains that medical education should be lifted above the suspicion of purposely adhering to low standards for the sake of securing fees from a few more students. If any college can not honestly enforce its standards for admission and continue to exist then it should at least die an honorable death.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Public Health Movement in Kentucky

The August issue of the *Kentucky Medical Journal* is a Public Health Number and is devoted largely to a discussion of public health matters in Kentucky. It is not only a marked innovation but is also an example to other state society journals of what can be done to awaken interest both in the profession and the public and to inaugurate a sweeping and practical reform along public health lines. The reason for the appearance of the Public Health Number at this time is the work recently completed in Kentucky by Mrs. Caroline B. Crane, who came to Kentucky on the invitation of and under the auspices of the State Federation of Women's Clubs, the public health officers and the medical profession. An introductory editorial says:

"At the request of the State Board of Health, this is made the health number of the *Journal* and is devoted largely to reports made by Mrs. Crane, giving the results of inspections of the various towns and cities visited by her and her final report on 'The Sanitary Condition and Needs of Kentucky.' . . . It is a matter of regret . . . that Mrs. Crane could not be sent to every county in Kentucky. As this could not be done, twelve cities and towns were carefully selected, representing as far as possible every type as to population, water-supply, drainage, dairies, slaughter-houses and other conditions affecting health and life. As some of these conditions she describes and criticizes have their counterpart in every community, rural and urban, health boards, civic leagues and similar organizations can easily utilize them in working out their own problems."

Regarding the results of her work in Kentucky, the *Journal* says:

"Within less than twenty-four hours after her closing meeting in Louisville, the county judge had inspected and condemned the almshouse, and the fiscal court, called in special session for that purpose, had made a generous appropriation for alterations. Prominent laymen called a meeting the following week at Frankfort to organize and inaugurate the reforms suggested by her. There was such a popular demand for dairy reforms and healthy cows that the State Board of Health was enabled to issue a sweeping proclamation providing for the tuberculin test and for improvement in the physical condition of dairies and the handling of milk, and it is hoped that trained settlement workers and nurses will soon be employed in the larger cities and towns to instruct mothers and others in the care and feeding of children and invalids."

The *Journal* also quotes editorially from Mr. Desha Breckenridge, who says in the *Lexington Herald:*

"Irrespective of party every citizen ought to rejoice in any course which will improve the public service and make better conditions in public institutions. Our whole system in Kentucky is rotten. We doubt if there are twenty out of the one hundred and nineteen counties in Kentucky in which the jail is fit for the habitation of hogs much less than human beings. . . . The great majority of our poorhouses are a disgrace to civilization. . . . We are just awakening in Kentucky to the need for the observation of the laws of sanitation, just beginning to understand that there is no higher province of government than care for the health of the citizens. . . . The greatest value from such visits as Mrs. Crane's is the rousing of public conscience, the exciting of the public interest, the increase in the desire of citizens to know conditions in every part of the city in which they live and in every institution supported by the taxes which they pay."

Forty-three pages are devoted to an extended report of the sanitary condition and needs of Kentucky, in which Mrs. Crane summarizes the results of her investigations. The statements made are in each case based on personal observation and knowledge of the facts. In addition, copies of the reports were sent to the State Board of Health, State Pure Food Commission, and the State Federation of Women's Clubs.

A copy of the report on each city was given to the local board of health; and in most instances this report was published in the local papers. After as careful investigation of the sanitary condition and needs of each of the twelve cities as was possible under the circumstances, Mrs. Crane addressed an audience of citizens of the city, setting forth the result of her investigation and making suggestions and recommendations as to the improvement of local conditions. General sanitary conditions in the state were first discussed under the heads of water-supply, sewage and drainage, street sanitation, markets, meat inspection, milk inspection and dairies, school sanitation, tuberculosis, housing conditions, almshouses, jails, workhouses and boards of health, this discussion being followed by special reports on each city visited. Of the twelve cities in question, only five have undertaken any solution of the problem of furnishing pure drinking-water for their citizens. In the other seven, untreated river-water containing the sewage of cities farther up the river is supplied to the citizens by the municipality. These seven cites, although they in the main defend the purity of their water-supply, are seldom free from typhoid fever; yet it is only when there is a violent outbreak and increase in the number of cases that purification of the water-supply is seriously discussed. Mrs. Crane holds that the only solution of the water problem is to furnish pure water, accessible and plentiful to the humblest family, and that a study of vital statistics in the cities which have a pure water-supply should convince any one of the wisdom and economy of this measure. This question is of special interest to women as it affects every household.

Regarding sewerage and drainage, Mrs. Crane states that in almost every one of the cities visited some beautiful creek or river has been transformed into an offensive open sewer by the discharge of the city's sewage into it, making it, especially during the drought of summer, a serious menace to health. Good sewers are worth much more than good roads and each city should, if necessary, issue bonds in order to secure a proper sewage and water-supply system.

Street sanitation and the collection of garbage are very carefully considered in Mrs. Crane's report, and the cremation of all waste is strongly advised. Regarding markets, Mrs. Crane suggests the frequent visitation of committees of good housekeepers into the back rooms and hidden places whence the food supply issues as a remedy for the frightful uncleanliness found in many of these places. Regarding the meat inspection, most of the cities visited seem to be aware of the importance of a clean and wholesome meat supply, but in only a few of them was a sufficient money appropriation made to permit of meat inspection being properly carried on. Special stress is laid on the importance of rigid inspection of dairies, sources of milk-supply and the attention of women's clubs is particularly called to this most important matter. School sanitation, including the consideration of school houses, ventilation, heating and lighting, water-supply and toilet facilities is carefully considered. In this connection Mrs. Crane pertinently remarks:

"Let us remember always that the aim of schools should be to teach children how to live. If we can teach cleanliness and propriety and the use of fresh air, we shall do something worth while. Let us not teach them in the physiology lesson and give the lie to them in the basement."

In discussing housing conditions, Mrs. Crane states that there are in Kentucky, especially in Louisville, Lexington and Frankfort, tenement houses and hovels absolutely unfit for habitation, conditions in Frankfort, the state capital, being by far the worst. Careful consideration is given to county almshouses, in which the inmates were found in many cases to be objects of peculiar neglect, being left almost entirely to their own resources amid surroundings of discomfort, filth and pitiable neglect. Detailed comments of her visits to these reveal almost unbelievable conditions, while the jails are described as medieval types of architecture, unfit places in which to house human beings for any prolonged period. When to the darkness and gloom is added untidiness and filth, these places become hotbeds of disease and contagion as well as schools of crime. Workhouses, local boards of health and state institutions are also carefully considered.

It is impossible to give the details of Mrs. Crane's inspection of the twelve cities visited, but the special reports on these twelve cities should be carefully read by every one interested in public health conditions and problems. These twelve Kentucky cities are probably fair samples of cities of the same size and conditions in other states and, without doubt, an equally careful inspection would reveal as bad or worse conditions in any of our towns and cities. If any county medical society is at a loss to know how to awaken interest in the medical profession of the county and how to secure the cooperation and support of the public, let it take up systematically the inspection of the towns and cities within its boundaries, investigating the sources of water, food and milk-supplies, the manner and effectiveness of sewage and garbage disposal and the condition and management of public institutions, including jails, workhouses, poorhouses, etc. It is safe to say that any county society which will devote two weeks to a careful effort to learn the exact conditons existing along these lines will find that it has discovered all the work which it can possibly do for several years to come, and has brought its energies and activities to bear on questions which are of vital interest to the community.

The best proof of the fact that the times are ripe for such work is the reception given Mrs. Crane by the public press of Kentucky and the large audiences which greeted her everywhere after the nature of her work was understood. Space does not permit of extended quotations, but the following is typical. The Cynthiana *Log Cabin*, commenting on Mrs. Crane's visit, says:

"Cynthiana is having an awakening on the subject of sanitation and it may be that increased diligence on the part of our people may avert an epidemic such as our neighboring city of Georgetown has just experienced. Business was to an extent paralyzed and many lives lost by the recent epidemic of typhoid fever, which was due to contaminated water-supply and filthy premises in some sections of the town. . . . Many people think the Chinese are working backward when they employ doctors by the year to keep them well, but are they? Harrison county and Cynthiana combined spends $300 per year for health officers to avert epidemics while the people themselves pay the doctors $30,000 to $50,000 to treat their diseases. Our people are slowly but surely learning the inestimable value of proper sanitary precautions and cleanliness which will save much sickness in years to come."

The work of Mrs. Crane and of the *Kentucky Medical Journal* has aroused an unprecedented interest in public health matters in Kentucky which will be productive of marked and lasting benefit to all her citizens. The lesson to medical societies is to take up the work that lies nearest at hand and to preach the gospel of modern cleanliness and right living. It has been said that personal cleanliness is a discovery of the last century. Civic cleanliness seems to be a discovery of the last decade. Present conditions offer a wonderful opportunity to the medical profession to lead the way in the campaign for sanitary reform. If we fail to do our duty it will be taken up by others. If we embrace the opportunity the debt of the public to the medical profession, as well as our influence with the people, will be greatly increased.

The question of the proper activities for county and state medical organizations has been much discussed in the past few years which have witnessed such an enormous increase in medical organizations and in the interest displayed in them. In many cases county societies, after preliminary organization work was completed, have apparently been at a loss to know in what direction to turn their energies. A number of county societies, recognizing the constantly growing importance of preventive medicine and the duties of the medical profession to the public in this respect, have taken up some special line of work connected with municipal or county sanitation. This tendency has not been as marked as the importance of the subject demands, but it is an encouraging sign of the possibilities of the future. The work done in Kentucky as set forth in the *Kentucky Journal* may well be taken as a model by our other state associations and state journals. No county can feel that its duty is done so long as sanitary conditions in the county remain uninvestigated and unimproved. In no way will medical societies so clearly demonstrate their reason for existence or so readily secure the support and confidence of the people.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Year—First Month, Second Weekly Meeting

Surgery of Chest Wall

Contusions of Thorax: Local symptoms; association of fracture of rib, rupture of lung, pleura or diaphragm. General symptoms; relation of shock to portion of chest injured. Sequelæ, their dependence on viscera injured

Non-Penetrating Injuries of Thorax: Varying character of wounds. Indications in treatment; shock, fractures, hemorrhage, infection.

Penetrating Injuries of Thorax: Character of external wounds. Symptoms; dependence on location and severity of injury; shock, dyspnea, pain, cough. Physical examination, injury to pleura or lung, pleuritic exudate. Prognosis, in fractures, hemorrhage, injury to lung, in gunshot wounds.

Tumors of Chest-Wall: Benign tumors; lipoma, fibroma molluscum, angiomata, keloid, osteoma and chondroma. Malignant tumors; sarcoma and carcinoma, primary or secondary.

Osteomyelitis of Ribs and Sternum: Varieties, septic, typhoid, tuberculous, syphilitic. Differential diagnosis and treatment of tuberculous and syphilitic varieties.

Book Notices

Surgery of the Upper Abdomen. In Two Volumes. By John B. Deaver, M.D., LL.D., Surgeon-in-Chief to the German Hospital, Philadelphia, and Astley Paston Cooper Ashhurst, M.D., Surgeon to the Out-Patient Department of the Episcopal Hospital, Philadelphia. Vol. I: Surgery of the Stomach and Duodenum. Cloth. Pp. 468, with illustrations. Price, $5. Philadelphia: P. Blakiston's Son & Co., 1909.

The first 30 pages of this volume are devoted to the topographic anatomy of the stomach and duodenum. The latest views concerning the relations of the viscera in question are given, but we regret that more attention has not been given to a discussion of the duodenojejunal angle. Almost twenty years ago Jonnesco described the anatomy of this angle accurately. Surgeons seem to have overlooked this work almost entirely, and are just beginning to realize that the beginning of the jejunum in about 20 per cent. of the cases passes downward and to the right, while in the remaining 80 per cent. it passes downward and to the left. These two forms are associated with definite fossæ, indicating that the direction of the jejunum in the two cases is anatomic. Jonnesco's work should be reviewed, as it has apparently been forgotten by surgeons. Twenty-five pages are devoted to physiology, in which are embodied the latest views concerning secretin and the interaction of intestinal juices. The chapters devoted to gastric ulcer and carcinoma are worthy of much consideration and will receive general approval.

The statements made concerning the treatment of pyloric stenosis in infants on pages 138, 139 and 140 will be disputed by many. Medical treatment will undoubtedly cure in a spasmodic case, but there is a type which medical treatment will not influence. Delay even of a few days in cases of this type increases the mortality. The large number of deaths in cases of this type is due to the fact that the operation has been performed as a last resort when the patient was in a critical condition. While it may seem "inherently wrong to start children off on what it is hoped may be a long life with their gastrointestinal tract so distorted as it is after even the most skilfully executed gastrojejunostomy," the fact remains that this operation performed in time relieves the condition most rapidly and with the greatest percentage of cures, and in most cases is the only operation that can be attempted with any guarantee of permanent cure with safety.

On page 382 is discussed the position of the primary loop of the jejunum. As previously mentioned Jonnesco described several years ago a number of cases in which this loop of the intestine ran in the inferior layer of the transverse mesocolon, being turned downward and to the right in this way. This relation occurs about as frequently as that described by Mayo, in which there is a mesocolic band. It is still a question whether the division of the band as described by Mayo is not an unessential refinement of technic.

The book is beautifully written and is systematically arranged. The facts concerning the surgery of the stomach and duodenum as they exist at the present time are clearly given. One of the most valuable features of this book is a carefully selected bibliography. It is a volume which both the physician and surgeon should have as a reference book.

Sleeping Sickness Bureau. Bulletin No. 3. January, 1909. Paper. Pp. 128. London: Sleeping Sickness Bureau, Royal Society, Burlington House, W., 1909.

This bulletin summarizes the rational prophylaxis against sleeping sickness so far as it is known at this time. A large part of the bulletin is taken up with a consideration of the life history, habits and distribution of the tsetse fly, *Glossina palpalis*. This, of course, is of prime importance, for effective prophylaxis depends to a large degree on a reduction in the number of flies, and on avoidance of localities infected by them. The propagation, the relation of the fly to season, altitude, sun and shade, temperature and humidity, its food supply, enemies and diseases, range of flight, and particularly its close association with bodies of water are discussed.

Methods of prophylaxis are classified under four heads.

1. Attacking the fly in its haunts. The natural abode of the fly is in the brush on the banks of streams or other bodies of water, and here it propagates. It is said that clearing a strip thirty yards wide along the bank of a stream will banish the fly from the strip and also from the country which lies behind it. Pools should be drained or filled, plants noxious to the flies, and animals (birds) which feed on them, should be introduced.

2. The removal of healthy persons from the vicinity of the fly, or their protection from fly-bites. A. Villages or markets should be removed to fly-free areas. B. Occupations carried on in fly areas should be discouraged or forbidden. C. Fly areas should be avoided in the heat of the day, when the flies are most active. D. Roads should be selected which do not traverse fly areas. E. Protection should be afforded by the wearing of suitable clothes, by wire gauze, etc. F. Volatile oily substances should be used to keep off the fly. G. natives should be instructed.

3. The prevention of access of trypanosome-carriers, i. e., infected persons, to fly areas. A. The sick should be segregated away from the fly. B. The moving of persons from infected to uninfected districts, when these contain fly areas, should be prohibited. C. The passage of persons harboring trypanosomes from one infected district to another should be prohibited.

4. Treatment of infected persons, by one of the trypanocidal agents, as sodium aminophenyl arsenate (atoxyl) in order that the peripheral blood may be freed from parasites. In this way the infection of flies may be prevented to some degree.

From this presentation one gains an idea of the herculean task which confronts the colonizers of tropical Africa in their campaign against sleeping sickness.

Handbook of Obstetrics. By R. Cadwallader, A.M., M.D., Assistant in Obstetrics, University of California, Medical Department, San Francisco. Cloth. Pp. 370, with illustrations. Price, $2. Philadelphia: F. A. Davis Co., 1908.

The handbook has advantages over the text-book that probably will be recognized more and more. By the use of thinner paper, slightly smaller type, and thin, somewhat flexible, covers, it is possible to give nearly as much of practical value in 370 pages at the moderate price of $2 as is contained in the ordinary text-book of 600 to 800 pages in a book weighing and costing two or three times as much. Dr. Cadwallader says that he has endeavored to eliminate all possible extraneous matter and to condense into a small volume the essential facts of obstetrics; at the same time he could not resist the temptation to give personal opinions and experiences. In general he has succeeded in his object, but certain blemishes detract from the worth of a book we would otherwise gladly commend.

One of the most obvious defects of the book is the confusion in arrangement of subjects. In the chapter on "Physiologic Puerperium-Fetal" are described asphyxiation of the child, death of the fetus, monstrosities, injuries at birth, umbilical hemorrhage, etc. Inflammation of the decidua is described under "Pathology of Gestation—Fetal." "The Pathology of Pregnancy—Toxemias" is described in Chapter 26, while "Pathology of Gestation—Maternal" is the subject of Chapter 14. The discussion of sepsis is separated by a number of chapters from the pathology of the puerperium.

A number of grammatical errors also show hasty or careless preparation. For example, on page 7 one reads: "Because of the better development of the right side of the body, the right side of the pelvis is often slightly so;" on page 133: "The doctor should call twice daily at first, and as nearly as possible to the minute, for they often worry if he is late." On page 18 "molimina" is misspelled; on page 135 we find the curious plural form "sini," and on page 149 the equally curious "amnia." On page 87 we find the name "Skutsch" misspelled, and on page 108 a mistake in the name "Schultze."

Certain colloquial and facetious phrases are hardly suitable in a scientific book; a few examples of these blemishes may be noted. Reference, in the last paragraph of page 22, to the emotional life of a woman during the obstetrical years, should be omitted; also the advice concerning coitus on page 29: "It should be rare, not as a matter of routine like saying one's prayers or t. i. d." On page 104, speaking of sleep as a dangerous symptom toward the end of labor, Dr. Cadwallader remarks, "I much prefer to hear her swear." Likewise the description of the obstetrical cry on page 104, and the description of the mother's joy on hearing her first-born's cry sound rather out of place. The same can be said of the remark concerning the condition of a patient during the first stage of labor: "'One old hen' remarked to me that at such times she could neither 'lay nor set.'" The remarks on the failure of clergymen to warn their congregations concerning the dangers of criminal abortions would better be omitted, as well as the advice, on page 150, to the physician concerning the management of monstrosities.

Similar evidence of insufficient care in correcting the manuscript or in revising the text appears in some of the scientific statements and rules of treatment. The definition of eutocia on page 99 giving twelve hours as the limit of normal labor and twenty minutes as the length of the third stage is an example; likewise the statement on page 100 that the L. O. A. position occurs in 97 per cent. of all births. On page 112 premature rupture of the membrane is confused with "dry labor." On page 117, discussing the third stage of labor, the singular statement is made that "after half an hour there is danger of the os contracting enough to hold up the placenta like a button in a buttonhole, and it is better to go up and pull down one edge." Speaking of the puerperium, we find: "If it [the baby] cries up will go her temperature and pulse;" on page 144: "Male children should have the foreskin worked back daily and kept from adherence to the glands. . . . In females, the hood of the clitoris should be likewise treated." The following statement, found on page 288, hardly agrees with the average experience: "The use of chloroform (for forceps operation) is not needed except when the woman is very hysterical. It is far better not to use it. There is no pain and this assurance will generally suffice."

It is to be regretted that an author who is evidently a well-informed and interesting teacher should allow inconsiderate statements to disfigure a book that might have been a valuable addition to our obstetric literature.

The Body at Work. By Alex. Hill, M.A., M.D., F.R.C.S., Sometime Master of Downing College, Cambridge. Cloth. Pp. 448, with illustrations. Price, $4.50. New York: Longmans, Green & Co.

This book is not intended for the medical or scientific student but for the amateur. It is therefore written in untechnical language and, although it does not avoid the debatable fields of the subject, it makes no attempt to present the full evidence in any case, and gives only so much of the line of argument as is necessary to an understanding of the conclusion. Mr. Hill forestalls criticism on this score by saying: "If my treatment of vexed questions is unjustifiably dogmatic, this will, I trust, be attributed to the desire to present a definite picture, and not to forgetfulness of considerations which seem to call for qualified statements." He has succeeded in presenting a definite and an interesting picture of the phenomena of life; and, while possessed of considerable mastery over apt phrases and homely, enlightening comparisons, he does not seem to be carried away by his own facility for phrase-making. It is perhaps an excess of scruples against taxing the capacity or patience of the average reader that has led him to omit, "save in a few classical instances," the names of all authorities. While of course elaborate or exhaustive references to authorities would have been out of place in a popular book, we believe that a little more freedom in the citation of the names which are associated with the most important discoveries in physiology would have been of interest as well as of value, even to the unscientific reader.

Manual of Therapeutics. Referring especially to the Products of the Pharmaceutical and Biological Laboratories of Parke, Davis & Co. Limp Leather. Pp. 643. For free distribution to physicians, on request. Detroit, 1909.

This is a rather pretentious book for gratuitous distribution. In one way it may be said to be an extended price-list with the prices left off; that is, it is an alphabetical list of the materia medica, itemizing all the forms and combinations in which the various drugs are available. In addition, however, are almost 100 pages of valuable information, such as tables of measures and equivalents, an obstetric calendar, eruptive fever table, food percentages, diet tables, lists of poisons and antidotes, synonyms, a vocabulary of medical Latin, classification of remedies according to physiologic action and classification of remedies by diseases for which they are indicated. These help to make the manual practical and worthy of constant use.

A System of Diet and Dietetics. Edited by G. A. Sutherland, M.D., F.R.C.P. Cloth. Pp. 893. Price, $10.50. New York: Oxford University Press.

The Oxford medical publications have achieved an enviable reputation which this addition to it well sustains. Each of the nineteen contributors to the "system" is responsible for his own department, and, as the editor says, each was asked to give his "own views and experiences rather than to make a collection of all the views of different authorities." Thus the views and methods of practice of these men is given in a way that is very valuable to the practitioner. Unlike many works on dietetics, the book is free from "freak" views and fads, a sane and conservative tone dominating the whole work. This characteristic is nowhere more evident than in the chapter on "Alcohol in Health and Disease," by Dr. Harry Campbell. The least satisfactory chapter in the book is that by J. Rose Bradford, who discusses "Diet in Diabetes" in less than eleven pages. Not only is this subject dealt with in an abbreviated manner which, considering its importance, is entirely unwarranted, but several important points are not touched on at all. For instance, the need of regulating the quantity as well as the kind of food in treating diabetics, is entirely ignored. In an excellent chapter on the treatment of obesity, various fake remedies are shown up and their composition given. Most of these are of British origin and the American physician will be surprised to read in regard to these proprietary fakes that "fortunately thyroid extract is not used, its dangers are too great for even the most reckless advertiser." Evidently Dr. Edmund Cautley, who writes thus, is not familiar with the ways of the American nostrum vendor or he would know that the most widely sold "obesity cures" in this country depend for their action on thyroid extract. The chapters on "The Feeding of Infants and Children in Health" and on "Diet in the Diseases of Children" are by the editor of the "system," Dr. G. A. Sutherland, and both are excellent. The work is one that every physician who realizes the importance of diet in health and disease—and there are few modern physicians who do not—will do well to add to his library. Although this is a large, 900-page book, the light-weight but opaque, unglazed paper makes it easy to handle, while the clear type and widely spaced lines make reading a pleasure.

The Practical Medicine Series. Edited by Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. 1. General Medicine. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Cloth. Pp. 403, with illustrations. Price, $1.50. Series 1909. Chicago: The Year-Book Publishers.

This is the first of the ten volumes of the series for the present year and is also the first of the two sections that appears on the subject of general medicine. It contains a carefully selected summary of the literature of the preceding year on the diseases of the respiratory and circulatory organs, diseases of the ductless glands, metabolic diseases, and diseases of the kidneys. This volume, in common with the rest of the series, is written primarily for the benefit of the general practitioner and the arrangement and the selection of the subjects adapt it to this purpose. The sections devoted to tuberculosis and diseases of the heart, respectively, deserve especial notice. The book is well illustrated and contains complete indexes, both of subjects and of authors. The volume should prove of more than ordinary interest and value to those physicians who are careful to keep in touch with newer methods of treatment and the more exact methods of diagnosis.

Rudiments of Latin. With Special Reference to the Nomenclature of the U. S. Pharmacopeia, the National Formulary and the Text-Books in Materia Medica and Botany. Including also Prescription Writing and Notes on the Nomenclature of the German Pharmacopeia. By Julius Williams Sturmer, Ph.G., Professor of Pharmacy, Purdue University, Lafayette, Ind. Cloth. Pp. 92. Price, $1. Published by the author.

This little book is in no sense an exhaustive one; in fact, Professor Sturmer specifically states that he has included only such portions of grammar as are required for the correct use of medical nomenclature. He has used the same matter in the class-room for several years in manuscript form and has thus tested its efficiency.

Medicolegal

Pyemia, "Pennyroyal Pills" and Evidence in Abortion Case

The Supreme Court of Indiana says, in Carter vs. State, where an indictment charged said Carter with producing a woman named to miscarry from taking "a certain drug, medicine, and substance," that the woman died from "pyemia" (pus in the blood produced by a germ shown to be introduced invariably from the exterior), and that the accused laid stress on the fact of this cause of death, arguing therefrom that some means other than drugs or medicines were used by which infection was produced. But that was simply one presumption built on another. The gravamen (essence) of the offense, under section 2256 of Burns' Annotated Statutes of Indiana of 1908, is prescribing or administering to a pregnant woman, or woman supposed to be pregnant, any drug, medicine, or substance whatever, with intent to produce a miscarriage, or the suggesting, directing, or advising the use of any instrument or means whatever with such intent, whereof the woman miscarries or dies, miscarriage not being necessary to preserve her life. In this case death occurred in about two months after the miscarriage, but the offense is complete when the miscarriage is produced contrary to the statute.

It was insisted by the accused that there was no evidence in the record that the "drug, medicine, or substance" taken by the deceased at his instigation produced the abortion. But the court holds otherwise, it being shown, among other things, that he procured and urged her, over her objection, to take what he told her were pennyroyal pills for the purpose of procuring a miscarriage; that she took them as he directed, taking the last one on Sunday evening, and aborted Thursday night; that she took nothing except what he had given her, and did nothing else. The ingredients of the "pennyroyal pills" which she took were not known or shown, but "pennyroyal pills" are an emmenagogue, and are used for that purpose, and is a name given to some two dozen varieties of compounds of various substances, including ergot, an emmenagogue. It was true that there was evidence that pennyroyal pills will not produce miscarriage, this evidence being based on the supposition that pennyroyal pills are made of pennyroyal; but the evidence also showed that it is a name used for compounds which are emmenagogues, and that they are such compounds, and. while there was no evidence as to the compound in the particular pills, the accused evidently understood their uses, and procured them, and urged the woman to take them for the express purpose of producing her miscarriage.

There was also evidence that no medicine can be said to be sure to produce a miscarriage, and that nothing but mechanical means can be so relied on; but that many kinds of medicine may and do produce miscarriage, depending on the physical condition of the female. The evidence showed that the woman had an adhesive womb, and that the likelihood of miscarriage was greater, both from natural and artificial means, than in case of the normal womb, and it was argued that an abortion was inevitable, and could as well be ascribed to the peculiar condition of the womb as to some unknown drug, medicine, or substance. If the position of the accused was correct on that point, it only accentuated the offense by showing that the woman was in a condition the more readily to abort by the use of pennyroyal pills. But the evidence showed a medicine, drug, or substance given, the specific properties of which were to contract the female womb, and produce menstruation, or miscarriage; that it was procured by the accused, and urged by him to be taken for the specific purpose on his part of producing a miscarriage, and that it was taken as directed by him, and that a miscarriage resulted. The evidence also showed that the woman became very ill, and was unconscious and unattended when the miscarriage resulted, and for a day or two afterward, and the conditions could be better imagined than described, so that the opportunities for the infection from which death actually resulted were doubtless attributable to these conditions, but they did not avoid the force of the evidence on the one question which constituted the crime with which the accused was charged.

Complaint was also made of the refusal of certain evidence offered, claimed as part of the res gestae (essential circumstances of the case)—that some days prior to the taking of medicine the woman had made inquiries as to mechanical methods of producing miscarriage. At most, it could only be an inference that she might have used some mechanical means, and that such means might have produced her miscarriage, and inferences can not be built on inferences. It is manifest that such evidence was not competent as a part of the res gestæ when shown to be a matter of inquiry only, and made some days before the taking of the medicine, and unconnected with any act or declaration of intent, and especially when taken with the other evidence in the case, in which it was disclosed that nothing was used but the drugs procured by the accused, and was clearly not admissible under the evidence and charge here of producing an abortion by medicines or drugs.

Under these circumstances the court holds there was evidence to support every material fact necessary to constitute the offense charged, and affirms a conviction.

Admissible Evidence When Attending Physician Was in Employ of Defendant

The Supreme Court of Minnesota holds, in the personal injury case of Brown vs. Minneapolis, St. Paul & Sault Ste. Marie Railway, Co., that a witness having testified that he knew in whose employ a physician was, it was error to refuse to allow him to state whether or not the physician was in the employ of the defendant. In this case it was sought to fasten on the railway company liability for injuries which it was contended were caused by the explosion of a torpedo negligently left on the track. After the accident the plaintiff was taken to a hospital where his injured eye was removed. It was claimed that a small piece of tin was removed from the eye, and for the purpose of showing that fact, and statements made by the physician, the plaintiff offered to show that the physician was at the time in the employ of the defendant company. As the plantiff's counsel put it, he proposed to show that the physician who performed the operation was the company's physician, in its employ, and that any declaration made by the physician to the plaintiff was admissible in evidence as that of an agent of the company, against interest. The court holds that it was error to exclude the evidence, it being material to the plaintiff's case as it tended to connect the injury with what the plaintiff claimed was the cause of the action. It says that if the physician was, at the time of the operation, in the employ of the railway company, it was competent for the plaintiff to show statements made by him at the time as to the condition of the wound and that the article which he then exhibited to the patient had been taken from the eye.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

August 28

1 *Serology of Syphilis. R. C. Matson, Portland, Ore.
2 *Scarlatina and Diphtheria Successfully Treated without Medicine. W. H. Thomson, New York.
3 *Large Glioma Growing from the Basal Ganglia Producing Symptoms Suggestive of a Growth in the Frontal Region. T. Diller, Pittsburg.
4 Diagnosis of Tricuspid Stenosis. D. Felberbaum, New York.
5 Unusually Intractable Case of Iritis. Etiology of Iritis. W. C. Posey, Philadelphia.
6 Early Diagnosis of Pulmonary Tuberculosis. L. M. Gaines, Atlanta, Ga.
7 *Estimation of the Urinary Ammonia, and New Instrument for its Rapid Estimation. H. R. Harrower, Chicago.

1. Serology of Syphilis.—Speaking of the Wassermann reaction, Matson says that the rarity of a positive reaction in normal serum and the high percentage of positive reactions in syphilis or suspected cases clearly shows the test to be of much value. A positive reaction is found with the greatest frequency in early cases, and least frequently in latent cases.

A positive reaction means that active syphilis exists, but does not necessarily mean that the present pathologic condition is due to syphilis that must be determined clinically; but it does indicate that there should be a trial of antisyphilitic treatment. A negative result may be interpreted in many different ways. A negative reaction occurring in one who has had syphilis does not mean absolutely that the patient is well, but that the infection, if present at all, is quiescent. If a negative reaction occurs in an early suspected case, it is from 95 to 100 per cent. against syphilis. If obtained in a suspected secondary case, the chances are from 75 to 95 per cent. against syphilis. If obtained in a suspected latent case, the chances are from 50 to 75 per cent. against syphilis. If obtained in a suspected parasyphilitic case, the chances are 70 to 80 per cent. against its existence. Since antisyphilitic treatment may cause the reaction to disappear it may be an index as to the efficiency of a line of treatment in that particular case.

2. Abstracted in The Journal, June 19, 1909, p. 2017.

3. **Glioma of Basal Ganglia.**—Diller describes a case of glioma of the brain with optic neuritis, headache, confusions, slowness of mind, loss of memory and absence of any hemiplegia, or other paralysis, which was very suggestive of a tumor of the frontal lobes. Autopsy showed a glioma in the right hemisphere the size of a Tangerine orange. An exploratory operation did not reveal any tumor, but gave great relief to the headache and eye symptoms.

7. **Estimation of Urinary Ammonia.**—Harrower uses a graduated tube of glass. The test is made by filling the tube up to the 10 mark with the urine to be tested, and adding 3 drops of an indicator, in the form of 0.5 per cent. solution of phenolphthalein in 50 per cent. alcohol; then 3 or 4 grams of a potassium oxalate solution are added and the tube filled with water to the zero mark. The tube is closed, shaken and decinormal soda solution added up to a pink color. The total acidity is read off and marked down. Then 2 or 3 c.c. of dilute formalin solution are added. The pink color is discharged by the acids; and decinormal soda solution is again added till the pink color is again produced. Each cubic centimeter of decinormal soda solution represents 0.00068 grams of ammonia. The amount per cent. is obtained by multiplying by ten. The normal degree of urinary acidity fluctuates between 30 and 40 degrees.

New York Medical Journal

August 28

8 The Medical Profession for 6,000 Years. J. J. Walsh, New York.
9 Peritoneal Adhesions. B. Robinson, Chicago.
10 Mind and its Relation to Heredity. C. F. Clowe, Schenectady, N. Y.
11 Tuberculosis of the Knee Joint. I. D. Steinhardt, New York.
12 *Pathology of Pseudohypertrophic Muscular Dystrophy. F. C. Potter, Philadelphia.
13 *Results of Treatment in 172 Cases of Pulmonary Tuberculosis in the Out-Patient Department of the German Hospital. G. L. Rohdenburg, New York.
14 *Blood Pressure in General Paresis. A. Schmiergeld, New York.

12. **Pseudohypertrophic Muscular Dystrophy.**—Potter reports a case which he believes supports the view held by others as well as by himself that there may be transitional forms of dystrophy in which alterations in the nervous system go hand in hand with diseases of the muscles. Pseudohypertrophic muscular dystrophy developed in a boy with no antecedent or family history early in life; and from the age of 9 until the time of his death at 15, he could not walk. At the time of death, resulting from pneumonia, there was inability to use the lower and to a less extent the upper limbs, hypertrophy with fatty infiltration of the calf and thigh muscles, protrusion of the abdomen, atrophy of the chest, shoulder and arm muscles, and a complete loss of reflexes.

Necropsy demonstrated typical changes in the peripheral muscles, smallness and degeneration of the peripheral nerves, diminution in the size and degeneration of the anterior roots with a degeneration and some disease of the cells of the anterior horns, most marked in the ventromesial group and in the cells of Clarke's column, especially of the lumbar cord. Besides there was a marked fatty infiltration in the liver with an hypertrophy, atrophy and fatty infiltration of the heart muscle with a slight fibrosis.

13. **Tuberculosis.**—Of 172 patients under treatment, 16 died, and are not taken into consideration, except in estimating the percentage of results. The cases were not selected, and Rohdenburg says that fully 25 per cent. of those patients now classed as improved will in another 12 months be placed either in the apparently cured or arrested class, if the present rate of progress is kept up. The results obtained in the various stages of the disease are as follows: All stages: Apparently cured, 3 (1.75 per cent.); arrested, 14 (8⅛ per cent.); improved, 65 (37⅝ per cent.); not improved, 74 (43 per cent.); died, 16 (9.05 per cent.). Cases in the first stage, 76: Apparently cured, 3; arrested, 8; improved, 43; not improved, 22. Cases in the second stage, 56: Apparently cured, 0; arrested, 6; improved, 20; not improved, 30. Cases in the third stage, 24: Apparently cured, 0; arrested, 0; improved, 2; not improved, 22.

14. **Blood Pressure in General Paresis.**—Schmiergeld found that the blood pressure in general paresis is very variable. In the majority of cases, however, it seemed to be lower than in normal individuals. There apparently exists no relationship between the mood of the paretic and the arterial tension; elated paretics may have a high pressure and depressed paretics a low one.

Boston Medical and Surgical Journal

August 26

15 Heart Disease in Infancy and Childhood. J. L. Morse, Boston.
16 Differential Diagnosis of Cerebellar Tumors. E. Jones, Toronto.
17 *Work as an Immediate and Ultimate Therapeutic Factor. F. L. Hills, Rutland, Mass.
18 Studies in Psychopathology (continued). B. Sidis, Brookline, Mass.
19 Pregnancy, Uterine Myomata and Peritonitis. J. G. Mumford, and J. B. Hartwell, Boston.

17. **Work as a Therapeutic Factor.**—At the sanatorium at Rutland, a system of work has been in operation for several years. All patients who can exercise without symptoms are expected to work from half an hour to two hours daily. The work allotted to them is the making of beds, care of the wards, wiping the woodwork with damp cloths, carrying trays, serving lunches, picking up about the lawns and walks, running a lawn mower, etc. The lighter work is first given to the patients, and the heavier work, such as carrying trays and running the lawn mower, is given after they have demonstrated their ability to do the light work without reaction. The number of patients at present doing this grade of work is 132, or 38 per cent. of the whole number under treatment.

The ultimate results of exercise seem to be well exemplified by the subsequent history of those patients who worked while in the sanatorium and also played ball on the team, which for several years has been a feature at Rutland. The rather strenuous exercise in which these patients indulged, in addition to their work, afforded a pretty severe test of their physical condition. During the last five years, 27 patients were allowed to play on the ball team. All these men were working four and one-half hours and their exercise was not restricted. They were picked men, selected from the daily average population of 180 men. All had been under observation and sanatorium treatment for several weeks or months and had been worked up to this amount of exercise gradually. The disease was incipient in 12 and moderately advanced in 15.

Their condition on discharge from the sanatorium was as follows: Apparently cured, 3; arrested, 11; improved, 13; average duration of residence, eight months.

The subsequent history of these men showed that 22, or 81.4 per cent., are to-day doing fulltime work, 2 are working part of the time, but have had relapses, and 3 are dead. Of the latter, 2 resumed intemperate habits after leaving the sanatorium, and their early death was directly traceable to dissipation. One had a relapse after returning to work and died of a pulmonary hemorrhage.

The above facts are given, not in advocacy of baseball as a therapeutic agent, but simply to show that, in selected cases, pretty strenuous exercise can be allowed with safety and even with advantage to the patient in hardening him and building up his resistance.

Lancet-Clinic, Cincinnati

August 21

20 Surgical Treatment of Puerperal Eclampsia. M. A. Tate, Cincinnati.
21 Pathology and Diagnosis of Dilatation of the Renal Pelvis. L. W. Bremerman, Chicago.

Kentucky Medical Journal, Bowling Green

August 1

22 *Sanitary Condition and Needs of Kentucky.
23 Acute Gastroenteric Infection in Children. Diagnosis, Complications, Prognosis and Treatment. J. C. McCreary, Cave City.
24 Case of Inverted Uterus. T. J. Bullock, Freedom.
25 Mechanical Therapeutics and its Application in Chronic Diseases. J. T. Green, Leitchfield.
26 Chorea and Conditions Leading to it. W. J. Shacklett, Nolin.
27 Marvelous Advance in Medicine in the Nineteenth Century. J. N. Todd, Fredonia.

August 15

28 Management of Chronic Valvular Heart Lesions in Childhood and Adolescence. J. R. Morrison, Louisville.
29 The Medical Director. D. H. Kellar, Louisville.
30 Angiosarcoma of Kidney. A. M. Vance, Louisville.
31 Cancer of Bladder. A. Schachner, Louisville.
32 *Pseudocyesis. H. E. Tuley, Louisville.
33 Double Suppurative Parotitis Following Salpingo-Oöphorectomy. J. H. Peak, Louisville.

22. Abstract of and comment on this article appears in the Department of Medical Economics, this issue.

32. **Pseudocyesis.**—Tuley reports the case of a woman, aged 54, married 25 years, who never conceived. Her last regular menstruation was in July, 1908. She missed in August, but menstruated on September 15, when due. This period lasted the full five days, but the amount was much less than usual. From this time there was no menstruation until January, 1909, when the flow lasted only part of a day and was very slight. This spotting was repeated in February for a part of a day. Early in October, morning sickness was noted, especially when brushing her teeth, this continuing until early in January. At no time was there vomiting. In January it became necessary to increase the size of her skirt bands, which were uncomfortably tight owing to increase in size. A noticeable tenderness of her breasts and an apparent enlargement were present at this time. Very shortly cravings for unusual articles of food were noticed and commented on by patients and friends. On Feb. 10, 1909, a faint flutter was noticed in the region of the pubes, which was thought to be quickening, but it was very indistinct, and it was not until February 12 that the movements could be felt and confirmed by the patient with the hand on the abdomen. This movement was continuous and often annoying to the patient when awake.

From this time until March 26 the "pregnancy" advanced normally, with gradually increasing enlargement of the abdomen. Tuley then saw the woman. Inspection of the abdomen revealed an enlargement extending midway to the ensiform cartilage, entirely symmetrical, and on palpation the abdomen was soft and no tumor could be felt. By vagina the uterus was found to be practically normal in size and in good position. The enlargement of the abdomen was entirely a gaseous distention of the intestines. Under restricted diet, daily high colon irrigations, saline cathartics once daily and lactic acid bacteria tablets three times a day, the abdominal distention disappeared. The patient returned home in ten days, having entirely recovered.

Medical Fortnightly, St. Louis

August 10

34 The Crusade Against Cancer of the Uterus. A. Samuels, Baltimore.
35 Little Stories of Physician and Patient. A. H. Moodricker, Wabash, Ind.

Journal of Ophthalmology and Oto-Laryngology, Chicago

August

36 Pterygium. M. Iverson, Stoughton, Wis.
37 Interstitial Keratitis Probably Due to Autointoxication. H. B. Williams, Chicago.
38 A New Eye Irrigator. G. G. Lewis, Syracuse, N. Y.
39 Diagnosis of Adenoids in Children and in Adults. H. Hays, New York.
40 A Critique of the So-Called Modified Radical Mastoid Operation. S. J. Kopezky, New York.

Bulletin American Academy of Medicine, Easton, Pa.

August

41 *American Characteristics and Professional Responsibility. H. C. Putnam, Providence, R. I.
42 Functions of the Medical School. E. H. Long, Buffalo.
43 Standards of Medical Education. H. S. Pritchett, New York.
44 A Medical Student in 1867. J. A. Wyeth, New York.
45 The Combined Course. W. H. Carpenter, New York.
46 The Present Status of Medical Education. F. C. Zapffe, Chicago.
47 The Five-Year Medical Course. J. Rogers, New York.

41. Abstracted in THE JOURNAL, July 17, 1909, p. 224.

Journal of Biological Chemistry, Baltimore

August

48 *Spontaneous Oxidation of Cystin and the Action of Iron and Cyanids on it. A. P. Mathews, and S. Walker, Chicago.
49 Action of Metals and Strong Salt Solutions on the Spontaneous Oxidation of Cystein. A. P. Mathews and S. Walker, Chicago.
50 *Nature of the Chemical Mechanism which Maintains the Neutrality of the Tissues and Tissue Fluids. T. B. Robertson, Berkeley, Cal.
51 *Uricolysis, with Particular Reference to the Pathogenesis of "Uric-Acid Infarcts" in the Kidney of the New-Born. H. G. Wells, and H. J. Corper, Chicago.
52 Protein Metabolism in Cystinuria. H. B. Williams, and C. G. L. Wolf, New York.
53 Indirect Colorimetric Determination of Phosphorus with Uranium Acetate and Potassium Ferrocyanid. R. B. Gibson and C. Estes, Columbia, Mo.
54 Effect of Shaking on the Activity of Ptyalin. M. M. Harlow, and P. G. Stiles, Boston.
55 Estimation of Total Sulphur in Urine. S. R. Benedict, Syracuse, N. Y.

48. **Action of Iron and Cyanids on Oxidation.**—Mathews and Walker conclude their work on the oxidation of cystein with the following summary: The spontaneous oxidation of cystein to cystin is enormously accelerated by a very small amount of iron. In $\frac{M}{100,000}$ solution the oxidation is doubled. The acceleration involves a temporary union of the oxidized iron with cystein, forming a violet compound. The combination is probably with the sulphur of the cystein. The oxidation is accelerated also by gold, platinum, copper and mercury among the metals; and by arsenic among the metalloids. It is strongly retarded by lead, nickel, cobalt, uranium, thorium, zinc and cadmium. Cobalt inhibits more than nickel. These salts inhibit the accelerating action of the iron. The oxidation is not affected by medium amounts of manganese, barium, calcium, sodium or potassium salts. It is greatly reduced by concentrated barium chlorid solutions and by 4 molecular solutions of sodium, potassium and calcium chlorid solutions. In the particulars just noted, the spontaneous oxidation of cystein shows many interesting parallelisms to the oxidations of the cells.

50. **Neutrality of Tissues.**—According to Robertson's view, the proteins play a prominent rôle in the preservation of the neutral reaction of animal organs and fluids, since they are capable of absorbing a large amount of acid without materially affecting their reaction. The readiness with which the proteins combine with alkalies, expelling carbon dioxid from the bicarbonates, may explain the escape of carbon dioxid from the blood during respiration. The opinion of Henderson that "the importance of the proteins, through their alkali compounds, in the preservation of neutrality in true solution is surely secondary," is not justified, according to Robertson, by the facts described in his paper.

51. **Uricolysis and Uric-Acid Infarcts.**—The results of the work of Wells and Corper indicate that the human organism has power to form uric acid from other purins, but possesses no uricolytic power so that it can not destroy the acid once formed. The absence of uricolytic enzymes is demonstrated not only in the human fetus, but also in the organs of adults. The experiments of Schittenhelm indicated that the liver, kidney and muscle of the fetus were actively uricolytic, but Wells and Corper found the opposite to be the case. The uric-acid deposits in the kidneys of infants can not be explained by a tardy development of a uricolytic enzyme, but are probably due to the high proportion of uric acid in the urine of infants together with local conditons in the kidney which favor its deposition.

Journal Oklahoma State Medical Association, Muskogee

August

56 Diagnosis and Treatment of Malaria in Different Localities. F. B. Erwin, Wellston.

57 Abdominal Myomectomy for Large Uterine Fibroids. W. J. Frick and H. P. Kuhn, Muskogee.
58 Use and Abuse of the Curette. T. J. Dodson, Mangum.

Annals of Surgery, Philadelphia

August

59 *Jejunal and Gastrojejunal Ulcer Following Gastrojejunostomy. H. J. Paterson, London, Eng.
60 *Surgical Procedures Designed for the Relief of Pulmonary Tuberculosis. C. A. Powers, Denver, Colo.
61 Pistol-Shot Wound of the Axillary Artery. F. W. Murray, New York.
62 *Treatment of Diffuse Septic Peritonitis. R. G. LeConte, Philadelphia.
63 Volvulus of Giant Sigmoid Colon. W. B. Coley, and I. S. Chaffee, Sharon, Conn.
64 *Large Sliding Hernias of the Sigmoid. L. W. Hotchkiss, New York.
65 The Fat Appendix. H. A. Kelly, Baltimore.

59. **Jejunal Ulcer.**—One of the two cases reported by Paterson is of interest because it is the first case in which an attempt has been made to obtain an accurate analysis of the gastric contents, and of the fluid escaping from the jejunal fistula before and after operation for ulcer of the jejunum. The operation was an anterior gastrojejunostomy for pyloric stenosis with perforation of a jejunal ulcer five years later; resection of the affected portion of the jejunum, and anterior gastrojejunostomy "en-Y" ("Roux operation"). The patient recovered. Paterson also cites briefly 61 other cases recorded in the literature, a study of which shows that the risk of jejunal ulcer following gastrojejunostomy is probably under 2 per cent.

Clinically, there are two groups of cases: (1) Those in which perforation into the general peritoneal cavity ensues; (2) those in which general peritonitis is prevented by the formation of adhesions. Pathologically, the cases may be classified as follows: (1) Ulcers of the jejunum; (2) gastrojejunal ulcers, or ulcers at the site of the anastomosis.

Jejunal ulcers in some instances are of infective origin. In these cases ulceration commences within a very short interval after gastrojejunostomy, and usually the ulcers are multiple. In a large proportion of cases the ulcer is single, and is probably the result of the toxic action of hydrochloric acid, which injures the cells of the mucous membrane so that they are digested by the intestinal juice. Possibly other agents than hydrochloric acid may play a part in injuring the mucous membrane. Gastrojejunal ulcers are a direct consequence of the wound made in effecting the anastomosis, and their persistence is probably the result of hyperacidity of the gastric juice. Closure of a gastrojejunostomy opening is the consequence of cicatrization of a gastrojejunal ulcer. It is more likely to occur when the pylorus is patent, not because of the patency of the pylorus, but because in such cases hyperacidity is usually markedly present.

Any procedure or disease which diminishes the amount of bile and pancreatic juice in the jejunum favors the occurrence of jejunal and gastrojejunal ulcer. For this reason operations of the "Y" type and enteroanastomosis are inadvisable, at any rate in cases in which free hydrochloric acid is present in the gastric contents, as after these procedures the anastomosis and a portion of the jejunum are deprived of the protective influence of the alkaline bile and pancreatic juice. As no instance of ulcer after the posterior no-loop operation has yet been recorded, it must be assumed that its occurrence after this type of operation is less likely. It is possible, however, that this immunity is partly the result of improvements in technic, and in the after-treatment of gastric operations in general. In cases in which perforation into the general peritoneal cavity occurs, immediate laparotomy offers the only chance of saving the patient's life.

Inasmuch as there is some evidence that jejunal gastrojejunal ulcers may heal, an operation should not be performed in the chronic cases until after a thorough trial of medical treatment. Even when surgical intervention is necessary, an attempt should first be made to diminish hyperacidity, if this be present. The aim should be to prevent the occurrence of this complication of gastrojejunostomy. Preventive treatment consists in (1) careful and appropriate surgical technic, and (2) prolonged after-treatment. Paterson is of the opinion that every case of recrudescent pain of a constant character after gastrojejunostomy, especially when associated with hyperacidity of hypersecretion, should be regarded as a case of potential ulcer and treated accordingly.

60. **Surgical Procedures for Tuberculosis.**—Pneumotomy with drainage of a tuberculous cavity was employed twice by Powers, in each case draining a cavity in a lower pulmonary lobe. In the first instance, a man, aged 42 years, suffered from a fairly large cavity in the left lower lobe. Costal resection was done and the pleuræ were found adherent; the lung was incised and the cavity entered at a depth of about 1½ inches; drainage. Improvement was but temporary, a sinus persisted and the patient succumbed to tuberculosis in a few months.

In the second case, a woman of 27 gave a history of pulmonary tuberculosis of six months' duration; she had lost in flesh and strength and had a purulent expectoration of 6 ounces daily. She was supposed to have an encapsulated empyema just below and within the angle of the right scapula. Costal resection showed that the pleuræ were adherent. Pleural separation discovered no pus. A needle thrust into the lung withdrew pus. An incision was made and a moderate cavity was entered at a depth of about one inch. Trabeculæ were broken down, gentle curettage was made; drainage was instituted. Bacteriologic investigation showed a mixed infection. This patient underwent a fairly speedy improvement. At the time of last report, one year after operation, the woman had gained materially in flesh and strength; expectoration was practically *nil*. A discharging sinus persisted.

62. **Treatment of Diffuse Septic Peritonitis.**—In three cases reported by Le Conte the essentials of the Murphy treatment were practiced: namely, a speedy operation; removal of the cause with the least possible traumatism to the peritoneal surface; no douching of the peritoneal cavity; the exaggerated Fowler position; and continuous enteroclysis by the drop method. In six other cases the peritoneal cavity was flushed with warm saline solution. The head of the bed was but slightly raised, the patients lying on the back or being turned on the right side, and salt solution was given by rectum—six fluid ounces every fourth hour.

In this series of nine cases there was but one death, which occurred on the fourteenth day after operation, probably from secondary infection of the liver, plus secondary hemorrhage. A postmortem examination was not allowed. In all instances the patients arrived in the hospital in such serious condition that they were at once transferred from the receiving ward into the operating room.

64. **Sliding Hernia of Sigmoid.**—In Hotchkiss' case the sac was large and reached well down into the scrotum. It contained omentum and small and large intestine. All the contents were easily reducible, through the wide internal ring, save a long piece of the sigmoid colon which was adherent by a short mesocolon to the posterior wall of the sac, to the extent of about four inches. Under these conditions it was, of course, impossible to close off the neck of the sac by any of the usual means of ligation or suture. The mesosigmoid being short, could not be tied off so as to permit the reduction of the gut without danger of causing necrosis. In order to overcome this difficulty, Hotchkiss constructed an elongated mesocolon from the tissues of the hernial sac wall in such a manner as to permit of the easy and perfect reduction of the gut into the abdominal cavity, and not to interfere with the suture of the internal opening of the sac. The steps of the operation are as follows:

Having freed the sac from the cord to its full extent, the sac is opened anteriorly and its reducible contents replaced within the abdomen, and held there by a gauze pad. The incision in the sac is then prolonged upward to the internal ring and downward nearly to the lowermost point of attachment of the mesosigmoid on its posterior wall, which permits easy eversion of the sac wall. Grasping the adherent sigmoid and pulling it gently forward, it will be found that the peritoneum of the split hernial sac will become everted in such a manner as easily to form a new and elongated mesentery for the sigmoid, with its smooth peritoneal surfaces turned outward to form its free surface, and its outer or non-peritoneal surfaces falling in contact. Suturing the edges of this new mesentery together permits its enlongation to an extent sufficient to allow the perfect reduction of the sigmoid into the abdominal cavity. When this step has been accomplished the somewhat irregular-shaped opening into the abdominal cavity may be sutured tightly by a purse-string suture introduced from within, or by any other form of suture which seems best to meet the case.

Therapeutic Gazette, Detroit

July

66 Operative Treatment of Papilledema Dependent on Increased Intracranial Tension. G. E. de Schweinitz, and T. B. Holloway, Philadelphia.
67 Prognosis and Treatment of Certain Prostatic Diseases. F. W. Robbins, Detroit.
68 Relation of the Eye to General Disease. L. F. Appleton, Philadelphia.

August

69 Selection of Cases and the Limitations of Specific Treatment in Tuberculosis. K. von Rnck, Asheville, N. C.
70 Treatment of Facial Neuralgia with Injections of Alcohol Loco Dolenti. A. Gordon, Philadelphia.
71 Stypticin in Uterine Hemorrhage. H. I. Berger, Indianapolis.
72 Nutrition in its Application to Health. R. S. Tyrrell, Toronto.

American Medicine, New York

July

73 Abstracts of Medical Articles. H. Stern, New York.
74 Coordinance of Laboratory Work and Inspection in Supervising the Milk Supply. W. R. Stokes and T. M. Wright, Baltimore.
75 Psychology of the Tobacco Habit. J. L. Tracy, Toledo, Ohio.
76 Problem of Race Suicide: Problem Rather of National Hygiene and Prophylaxis than Political Economy. E. H. F. Pirkner, New York.
77 Dispensaries. F. D. Lewis, Buffalo.
78 Action of Glandnlar Extracts on Diuresis. I. Ott, and J. C. Scott, Philadelphia.

Journal Missouri State Medical Association, St. Louis

August

79 *Diagnostic Value of the Systolic Murmur at the Apex of the Heart. F. W. Froehling, Kansas City.
80 Prevention of Ophthalmia Neonatorum. P. I. Leonard, St. Joseph.
81 The New Standard of Diet. I. J. Wolf, Kansas City.
82 *Fractures: Problems and Possibilities of a Country Practitioner from a Surgical Standpoint. T. F. Lockwood, Butler.
83 The Missouri State Medical Association: What it should Mean to a Missouri Doctor. T. Brown, Hamilton.
84 The Missouri State Medical Association: What it should Mean to the State at Large. E. C. Grim, Kirksville.
85 Prosecution of Irregnlars: From Experience of a County Secretary. M. A. Smith, Gallatin.
86 The Secretary's Work: From a Business Standpoint. E. N. Chastain, Butler.
87 What the County Secretary can do to make the State Journal a Forceful Element in Medical Organization. E. J. Goodwin, St. Louis.

79. **Systolic Murmur.**—Froehling warns against basing a diagnosis of heart disease on the presence of a systolic murmur at the apex. The totality of the symptoms, with the history of the case, must also be taken into consideration.

82. **Fractures.**—Lockwood details cases of fracture of the skull, and describes at length his treatment, including the use of splints especially devised by him for Colles' fracture, Pott's fracture and fracture of the femur. It is the purpose of the paper to show that equally good results can be obtained in the country from the proper treatment of these cases as in the cities.

Journal of Advanced Therapeutics, New York

August

88 The General Practitioner his own Radiographer. E. G. Edwards, La Junta, Colo.
89 The Static Brush Discharge. F. De Kraft, New York.
90 Static Electricity. E. G. Wilkinson.
91 Alto-frequent Cytolysis of Cancer (continued). J. A. Riviere, Paris, France.

Texas State Journal of Medicine, Fort Worth

August

92 *Appendicostomy, with Review of Literature and Report of Cases. W. B. Russ, San Antonio.
93 Gynecologic Progress. H. M. Doolittle, Dallas.
94 The Diathesis. G. H. Moody, San Antonio.
95 The Clinical Laboratory for the Internist; its Essentials for Equipment; its Uses; its Abuses. O. I. Halbert, Waco.
96 Syphilis as a Cause of General Paresis. W. L. Allison, Fort Worth.
97 Organization of the Texas Antitnberculosis Association. W. N. Brumby, Austin.
98 Tumors of Orbit. E. H. Cary, Dallas.
99 Obscure Causes of Fever Occurring in Infancy and Early Childhood. W. W. Butterworth, New Orleans, La.

92. **Appendicostomy.**—Russ publishes a rather complete review of the literature on this subject, and reports four cases seen by him in which he resorted to appendicostomy. These comprised two cases of amebic dysentery and one each of anemia and mucous colitis. The results obtained were very encouraging. He also describes the technic of the operation and its indications.

New York State Journal of Medicine, New York

August

100 The Physician's Demands of the Pharmacist. W. A. Bastedo, New York.
101 *The Sufficiency of Standard Remedies for Therapeutic Needs. R. A. Hatcher, New York.
102 The Pharmacist's Ability to Meet the Physician's Demands. H. C. Dickman, New York.
103 The Relations of the Physician and the Pharmacist. W. C. Anderson, Brooklyn.
104 *Reform in Proprietary Medicines. W. D. Alsever, Syracuse, N. Y.
105 The Expert in Psychiatry on the Witness Stand, and Certain Causes of Insanity. H. E. Schmid, White Plains, N. Y.
106 Acute and Chronic Nephritis in the Young. A. A. Gillette, Rome.
107 Essentials in the Diagnosis of Diseases in Children. New Rochelle.
108 Fracture of the Skull. H. C. Rooth, Buffalo.

101. **Sufficiency of Standard Remedies.**—Standard remedies are those which measure up to the requirements approved by well-informed members of the profession. The Pharmacopeia is the highest standard for therapeutic agents. The large number of official substances—far exceeding the capacity of any man to know thoroughly and to use with skill—is presented under a great variety of forms to suit the most varied conditions. But the crucial question is to what extent does it include that which is really valuable in therapeutics. Many would be sadly handicapped by the loss of all unofficial remedies, but Hatcher believes the true explanation of this lies in the fact that we have permitted the proprietary interests to train us in the use of their products, until we have come to depend on them instead of familiarizing ourselves with official substances, and learning the possibilities afforded by the intelligent use of them. This crucial question can be answered correctly only when we have determined how many of the unofficial substances are indispensable even to one who is well acquainted with those which are official and is able to use them properly.

The stock argument of those who cling to the use of proprietary preparations and ready-made mixtures is that phenacetin and antifebrin were indispensable long before they became official. To cite these in support of the argument of the insufficiency of standard remedies is a confession of ignorance. They are the result of careful scientific investigations, the highest aim of therapeutics, but it is, indeed, a far cry from phenacetin to antikamnia. Every proprietary remedy is in the experimental stage, and physicians owe it to themselves and to their patients to disregard the literature gratuitously supplied by the manufacturers. Commercial men are not philanthropists; they are optimists and use the bright lexicon of youth which lacks a certain word with which their followers become all too familiar. Even in Germany, there are signs of awakening from the apathetic attitude toward this question, and protests are being made against the flood of fraudulent nostrums.

We do not need more new remedies which will save us the trouble of thinking, says Hatcher. The most urgent need in therapeutics to-day is the careful study of the best standard remedies which we now possess, for that man is recreant to his trust who accepts a fee from his patient and then trifles with that patient's health, while experimenting with secret remedies or those of which he knows little, and that little, often the mere statement of an irresponsible detail man who is hired to talk about that which he does not understand.

104. **Reform in Proprietary Medicines.**—Alsever says that many good men tell us that if we will confine our prescribing to U. S. P. and N. F. preparations we can accomplish more and have as elegant preparations as though we used proprietaries. The book entitled "New and Nonofficial Remedies," which contains descriptions of the remedies which have been accepted by the Council on Pharmacy and Chemistry of the A. M. A., gives reliable information regarding the remedies which since the last revision of the Pharmacopeia have seemed

to be of value. If we will confine ourselves to the drugs and preparations described in these three books we can not go far wrong. If we will decline to discuss with detail men remedies which do not bear a printed statement of their composition, and if we decline to use others unless they have been submitted to the Council for acceptance, we will not only keep our own skirts clear, but will also influence manufacturers to market only ethical goods. It is probably useless for a general practitioner to attempt to "try out" a new remedy. His observations will be so few and they will be made on people with such varying physical defects and modes of life that they will be valueless. If we can by individual and united efforts influence the medical, the religious and the daily papers to refuse medical advertisements which contain untruthful or grossly exaggerated statements, we will have accomplished a great good. It is our duty to the public to limit the use of secret remedies as much as possible.

110. **Wassermann and Noguchi Complement Fixation Test.**—Fox claims that of the different methods of serodiagnosis of syphilis depending on the principle of complement-fixation, that of Noguchi seems most perfect from a theoretic standpoint, and from the standpoint of simplicity in technic it stands without a rival. Fox states that his comparative analysis of the Wassermann and Noguchi tests shows, in cases of syphilis, a larger proportion of positive reactions with the Noguchi than with the Wassermann test.

Journal of Cutaneous Diseases, New York

August

109 Progress in Dermatology. T. C. Gilchrist, Baltimore.
110 Comparison of the Wassermann and Noguchi Complement-Fixation Tests. H. Fox, New York.

Montreal Medical Journal

August

111 Obstetric Nursing. H. M. Little, Montreal.
112 Psychoanalysis in Psychotherapy. E. Jones, Toronto.
113 The Divided Responsibility in Regard to Public Health. C. A. Hodgetts, Toronto.
114 *Ulcerative Stomatitis Associated with Vincent's Bacillus. H. B. Cushing, Montreal.
115 *Diphtheria of Intestines. R. E. McKechnie, Vancouver.
116 Further Indications for Cesarean Section. A. L. Smith, Montreal.
117 Gas-Air Anesthesia in Major Surgery. E. Archibald, Montreal.
118 Pirates of Medicine. J. McCrae.

114. **Ulcerative Stomatitis.**—Cushing reports cases to illustrate the association of a mildly contagious form of ulcerative stomatitis with the presence of Vincent's bacillus, i. e., with the symbiosis of *Bacillus fusiformis* and *Spirochæta dentium.* They occurred in institutions, in children from 3 to 8 years of age, all of whom suffered from malnutrition or ill-health, and there seemed to be a mild infectiousness about the disorder. The disease began as a small superficial ulcer at the margin of the gums and afterward extended in some cases in the form of an adherent false membrane or superficial necrosis to the mucous membrane of the cheek, the tongue or the fauces; there was a characteristic fetid odor, mild constitutional disturbance and enlargement of the neighboring lymph glands. Smears from the lesions showed the characteristic organisms in great numbers. All recovered in from one to three weeks. Potassium chlorate given internally seemed to hasten the recovery.

115. **Diphtheria of Intestines.**—McKechnie records an unusual case of dysentery. The patient was a girl, 6 years old, born in Fiji. The parents were on their way home to Germany, taking the child with them. Shortly before leaving Suva, the child was taken ill with what seemed a mild dysentery, and the condition persisted throughout the trip of two and a half weeks. On arrival at Vancouver, the child was emaciated and very much exhausted. The dysentery was fairly well held in check by the treatment the patient received on ship board, but she was having several small stools daily, stained with blood and consisting of mucus and pus. Some of the motions were of pure mucus—about half a pint at a time. Enormous quantities of streptococci were found in the stools. These rapidly disappeared under treatment with streptolytic serum, but the symptoms did not abate. Finally, cultures showed bacilli of the diphtheritic type. At once antidiphtheritic serum was used, with immediate improvement of the symptoms, and two days later a complete cylindrical cast of the bowel, about four inches in length, was passed. The child made a slow but uninterrupted recovery after this. The cast was examined microscopically, and proved to be a true diphtheritic membrane. It was noted that the patellar reflexes were absent. Later the patient developed paralysis of the anus, so that for a couple of weeks the bowels moved involuntarily.

Kansas City Medical Index-Lancet

August

119 Open Operation and the Internal Splint in the Treatment of Fractures. H. E. Pearse, Kansas City.
120 Causes and Prevention of Nervous Diseases. J. Punton, Kansas City.
121 Intrauterine Treatment. H. C. Crowell, Kansas City.
122 Treatment of Hay Fever. C. W. Gosney, Kansas City.
123 Treatment of Syphilis. N. O. Lewis, Kansas City.

Albany Medical Annals

August

124 *The Insanity Defense for Crime. J. B. Chapin, Philadelphia.
125 Selection of a Site for the Albany Tuberculosis Hospital. A. T. Laird, Albany.
126 Field of the Albany Red Cross in the Fight Against Tuberculosis. H. Van Rensselaer, Albany.
127 Review of Recent Work on the Pancreas. W. Tileston, Boston.

124. **The Insanity Defense for Crime.**—The prominent points presented by Chapin were suggested by participation as a witness or spectator in court, or by perusal of public reports. The important or dominating thoughts may be condensed as follows: He says that from common observation and experience, we recognize the fact that indulgence in passions may result in a loss of self-control and gradual degeneration which is acquired and not due necessarily to disease, inheritance or environment. If this is true of individuals, it is equally true that whole communities and even nations may degenerate to a low state or be destroyed from a lax administration of justice. Human and divine laws are intended to secure the preservation of social order and the betterment of a community. On their execution depends the security of human life. If self-preservation is a maximum or principle which may be a sufficient defense of the individual, in a larger sense self-preservation may be a warrant for a community to adopt extraordinary measures for its protection as well as for the prevention of crime. If persons actually insane have been convicted of capital crimes, which Chapin believes has been of rare occurrence, it has more frequently happened that crime committed in an exacerbation of some one of the human passions has been condoned mainly through a doubt of the sanity of the criminal, created by the evidence of medical witnesses who would not have felt warranted in signing a certificate of insanity for detention in a hospital, as no single symptom had been presented that antedated the criminal act.

In the opinion of some, the trial judges have freely opened the way to the introduction of extraneous issues; have permitted the introduction of highly technical questions, the use of scientific terms that do not imply necessarily advances in psychiatric knowledge, nor are universally accepted. It is admitted the names are new discoveries, unfamiliar, beyond the comprehension of the court and jury, in themselves having no significance, yet they have a mysterious influence, and work the court into a state of doubt or scientific indigestion. Chapin believes that insufficient attempts are made to differentiate the operation of the uncontrolled human passions from what we ordinarily understand to be the disease or condition we call insanity. Some amendment or change in the present practice of introducing the medical witness on the stand without bias or the suspicion of it would be welcomed, but it might be regarded as a gratuitous offer for a medical man to make suggestions about legal procedures that belong properly to the courts. The penologist must study whether it is possible that any modification of the penalties for crime can be made that would more justly recognize degrees of criminality.

Memphis Medical Monthly

July

128 The Narcotic Drug Addictions; Etiologic Factors; Principles Involved in Treatment; Reasons for Past Failures. G. E. Pettey, Memphis.
129 Fibroma of the Nasopharynx. R. H. T. Mann, Texarkana.

130 Mydriatics and Their Use in Eye Practice. J. W. Price, Memphis.
131 Chronic Appendicitis as a Cause of Dysmenorrhea. O. S. McCown, Memphis.
132 Diagnosis and Treatment of Acute Diseases of the Respiratory Tract in Infancy and Early Childhood. W. C. Campbell, Memphis.

University of Pennsylvania Medical Bulletin, Philadelphia

August

133 Opening of the New Medical Amphitheatre and Clinical Laboratory of the Hospital of the University of Pennsylvania. G. Dock, Ann Arbor.
134 *Active Bacterial Immunization in Animal Experimentation. B. A. Thomas, Philadelphia.
135 *The Typhoid Cutaneous Reaction. S. J. Deehan, Philadelphia.
136 A Rare Anomaly of the Kidney. G. Fetterolf, Philadelphia.
137 The Chemical Composition and Chemical Properties of Fluid Derived from a Pancreatic Fistula. J. B. Nutt, Philadelphia.

134. **Active Bacterial Immunization.**—Thomas found by experimentation that bacterial immunization can be established in rabbits by inoculations of various bacterines. The immunity endures for a period, the duration of which is, as yet, undetermined, but then declines. The duration and degree of bacterial immunization by some bacterines or bacterial suspensions is more lasting than by others, notably, in this series, that by the suspension of the tubercle bacilli, although absolutely properly sized and spaced inoculations might nullify these differences. In the presence of a severe intercurrent infection, the opsonic content of the blood is markedly diminished.

135. **Typhoid Cutaneous Reaction.**—The typhoid cutaneous reaction is a simple test which can be applied by the physician at the bedside. It is free from danger, and, is, therefore, far superior to the ocular reaction. It yields a positive reaction in from fifteen to twenty hours, or less, without giving rise to any discomfort or annoyance to the patient. The reaction gave positive results in every case of typhoid fever in which it was tried by Deehan, and negative results in diseases other than typhoid fever.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

July .

138 Variations in the Medicinal Therapy of Pneumonia in the Last Half Century. A. Jacobi, New York.
139 Progress and Changes in the Treatment of Tuberculosis During the Past Twenty Years. E. R. Baldwin, Saranac Lake, N. Y.
140 Standardization of Materia Medica Products. F. R. Stewart, Philadelphia.
141 Pneumonia: Its Danger Point and How to Avoid it, According to Dr. Sajous. J. M. Taylor, Philadelphia.
142 Sciatica. J. V. Shoemaker, Philadelphia.
143 A Question in Therapeutics. B. Horne, Gas City, Ind.
144 Intestinal Obstruction Complicating Advanced Pregnancy: Operation; Recovery. J. A. McGlinn, Philadelphia.
145 The Effect of Tasteless Cold-Storage Chicken used as Food. E. Cutter, West Falmouth, Mass.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 14

1 *Double-Filigree Operation for the Radical Cure of Inguinal Hernia. L. McGavin.
2 Acute Necrosis of the Skin. C. Coombs.
3 Congenital Malformations of Palate, Face, and Neck. A. Keith.
4 Prognosis in Tetanus. J. Paton.
5 *Sterilization of the Skin of Operation Areas. J. L. Stretton.
6 Account of the Officer's Training Corps, with Special Reference to its Medical Branch. H. E. R. James.
7 Physical Training of Recruits in the Army. R. Porter.
8 Contrast between Treatment of the Wounded under the Moghul Emperors and King Edward VII, Emperor of India. T. H. Hendley.
9 Diagnosis of Syphilis by Laboratory Methods. P. W. B. Smith.
10 Arylarsonate Treatment of Syphilis. F. J. Lambkin.
11 Arsenical Compounds in Treatment of Syphilis. H. C. French.
12 Beneficial Results of Recent Sanitary Work in Malta. G. S. Crawford.
13 Permanent Attachment of Transport to Field Medical Units. P. B. Giles.
14 A British Man-of-War at Messina. F. F. Mahon.
15 Existing Ambulance Organization of the Home Railway Companies. J. M. Carvell.
16 Rhinology as an Aid to Diagnosis of Pulmonary Tuberculosis. W. C. Rivers.
17 Detailed Scheme for an Unexpected Landing Party Using Material Available on Board Ship. J. G. Wallis.
18 Fractures Occurring During Epileptic Fits. S. J. O. Dickins.
19 Christchurch Hospital, New Zealand. P. C. Fenwick.

1. **Double Filigree Operation.**—This method consists in strengthening the walls of the inguinal canal by the implantation of two filigrees of silver wire in the tissues in such a way that subsequent stretching or bulging is rendered impossible, and the necessity of a truss is entirely done away with. The filigrees are made in two sections—a pubic and an iliac section. The former is always made of the following dimensions: At the narrow end its width is ¾ inch; at the wide end, 1½ inches, this being the usual length of the adult inguinal canal. Being constructed on the principle that every filigree, whether abdominal or inguinal, should be made with not fewer than eight loops to every inch of its midrib, this will give thirteen loops on either side of the pubic section of an inguinal filigree. The iliac section is made in such a way that its inner third corresponds in shape and size to the outer two-thirds of the pubic section. Its outer end must meet the requirements of the case, being trapezoid, square, or what is more usual, oblong, and of a total length of from 2½ to 3 inches, as may be found necessary. The wire must be unalloyed silver. These filigrees are so placed that the cord comes to be sandwiched, as it were, between two layers of filigree in the canal, the natural relations of which are hardly altered; and further, that the area external to the internal abdominal ring is fortified by a filigree of any size which may be deemed necessary.

5. **Sterilization of Skin.**—Stretton employs a modification of the method of skin sterilization with iodin, as used by Dr. A. Grossich of Fiume. He paints a wide area of the surface to be operated on with a 1 to 3 alcoholic iodin solution previous to the administration of the anesthetic. It is painted on very freely, especially over hairy parts, and allowed to soak in. It is again painted immediately preceding the operation. After the stitches are inserted they are painted over for a margin of an inch all round. The first and only dressing is usually made on the eighth day; the stitches are then removed, and the line of incision, with a margin of 1 inch, is painted with the iodin solution. If for any reason the wound requires to be inspected at an earlier date, it is painted as above described. No previous preparation of any kind is undertaken—no bath, no scrubbing and no shaving. The latter is an important point, because it saves the patient a good deal of after-discomfort. This is at variance with Grossich's method, and combined with the weaker solution of iodin constitutes the difference.

Lancet, London

August 14

20 *Malformations of the Heart. A. Keith.
21 *Preparation and Keeping Properties of Antityphoid Vaccines. D. Semple and H. S. Matson.
22 *Congenital, Hereditary, and Family Hematuria. J. Aitken.
23 The Genesis of the Modern Infirmary. F. S. Toogood.
24 Acute Pancreatitis with Fat Necrosis. F. W. Goyder.
25 Purpura Hemorrhagica Following the Use of Fibrolysin. S. C. Prichard.
26 Tetanus Treated with Antitoxin. R. C. Pitt.

20. **Malformations of the Heart.**—In this paper Keith discusses transposition of the arterial stems; reversion of the heart; imperfect separation of aorta and pulmonary artery; patent ductus arteriosus; malformation of the semilunar valves; imperfect formation of septa; the foramen primum; and patent foramen ovale.

21. **Antityphoid Vaccines.**—Semple and Matson found that the sterilization of antityphoid vaccine can be accomplished efficiently by the addition of 0.5 per cent. carbolic acid. Heating a vaccine in order to sterilize it introduces a harmful and unnecessary element which acts in two ways: (1) It diminishes its immunizing properties, and (2) it curtails its keeping properties. In the experiments recorded the deleterious effects of heat are clearly shown. Antityphoid vaccine sterilized by the addition of 0.5 per cent. carbolic acid retains its immunizing properties unimpaired for two years at least. This is proved (1) by the fact that animals and men treated with a two-year-old vaccine prepared by this method showed the same blood changes as did those treated with a fresh vaccine similarly prepared; and (2) by the fact that animals treated with a two-year-old vaccine prepared by this method withstand the same amount of a virulent typhoid culture when given intra-

peritoneally as do those treated with a fresh vaccine similarly prepared. Animals inoculated with antityphoid vaccine sterilized by the addition of 0.5 per cent. carbolic acid attain a higher degree of immunity than similar animals inoculated with a vaccine sterilized by heat (60 C. for 20 minutes or 53 C. for one hour) and the subsequent addition of an antiseptic. An antityphoid vaccine sterilized by heating for 20 minutes at a temperature of 60 C., and the subsequent addition of 0.5 per cent. carbolic acid has considerably deteriorated after being kept for two years.

22. **Family Hematuria.**—The seven cases reported by Aitkin are of one family which has been under his observation during the past seven years. So far as the history goes, the family is comprised in all of 17 persons, of whom 10 have suffered from hematuria. Testimony is conflicting as to whether the great-grandmother had hematuria or not. She died at an advanced age from "senile decay" with dropsy. The great-grandfather was healthy. Their only child, a daughter, had hematuria (according to relatives), married and had eight children (seven sons and one daughter), and died aged 38 years from Addison's disease. Four of her sons died in infancy from an unknown cause; and one, aged 14 years, from an indefinite "brain trouble." There is no evidence of any of those having suffered from hematuria. The remaining three are alive. The eldest son, aged 31 years, has not had hematuria, but his six children have all been hematuric; the second son, aged 28 years, has suffered from hematuria, and his only child, aged 2 years, is also hematuric; and the daughter, aged 23, unmarried, is also hematuric. There is no history of hemophilia, nor is there any rheumatic tendency in the family. It is interesting to note that in this family the hematuria has been inherited, first, through the female side, and then on two occasions through the male side, in one case the transmitting male not being affected.

Clinical Journal, London

July 21

27 Obstruction of the Large Intestine. A. A. Bowlby.
28 *Mitral Stenosis in Childhood. F. J. Poynton.
29 Treatment of Neurasthenia and the Relation of this Disease to Exophthalmic Goiter. T. D. Savill.

July 28

30 Family Jaundice. R. Hutchinson.
31 *Relationship Between Exophthalmic Goiter and Diabetes. G. R. Murray.

August 4

32 Rheumatoid Arthritis. W. P. Herringham.
33 *Popliteal Aneurism. H. M. Rigby.
34 Diseases of the Thyroid Gland. A. T. Davies.

28. **Mitral Stenosis in Childhood.**—The treatment of mitral stenosis in childhood is mainly the treatment of rheumatism. Warn the parents of the meaning of sore throats, fleeting pains, nervousness and chorea, feverishness and pallor. If possible get such children taken from damp, low-lying houses, and see that they are properly clothed and their extremities protected. Large unhealthy tonsils should be enucleated. Spring and autumn and particularly sudden damp cold after much heat, should be a signal for added watchfulness. Early symptoms should be promptly treated by rest and warmth, and the use of salicylate of soda.

31. **Exophthalmic Goiter and Diabetes.**—Murray's attention was drawn to the relationship between the thyroid gland and the pancreas by a group of four cases which came under his observation, in which exophthalmic goiter was accompanied or succeeded by a severe form of diabetes. One patient recovered from a typical attack of exophthalmic goiter, which was, however, followed by a severe form of pancreatic diabetes, to which she succumbed. The disappearance of the exophthalmic goiter was evidently due to the return of the thyroid to a normal condition, and is an interesting example of how complete this recovery of the gland may be. The diabetes was the result of the destruction of the islands of Langerhans. When a second patient first came under observation she was suffering from exophthalmic goiter without glucosuria, whereas three years later she had practically recovered from exophthalmic goiter, but was suffering from a severe form of diabetes. A third patient with exophthalmic goiter who apparently recovered relapsed on taking thyroid tablets, the second attack persisting and becoming complicated by the development of composite diabetes. The fourth case illustrates the development of diabetes nearly eleven years after the onset of exophthalmic goiter. In all these cases, one patient being a man and three women, severe diabetes developed at a variable interval after the disease had either subsided or decreasd considerably by the time the diabetes had declared itself.

33. **Popliteal Aneurism.**—Rigby reports two patients operated on by the obliterative method in which the results were all that could be desired.

Journal of Tropical Medicine and Hygiene, London

July 15

35 *Piroplasma Bigeminum.* A. R. Wellington.
36 Fasciolidæ in the Pancreas. R. B. Low.
37 *Cholera. R. W. Burkitt.

37. **Cholera.**—Elsewhere Burkitt emphasizes the great value of a large injection of morphin in cholera immediately the disease is suspected. He now reports a number of cases of bad collapses in all of which from 2 to 10 pints of saline solution were infused intravenously. The pulse instead of being quite impalpable, became full, strong and quiet, being at its acme by the time 3 pints had been infused, whereas twenty minutes previously the heart was beating at a rate of from 140 to 170, as recognized by the stethoscope. The face became fuller, and the awful sunken look to a large extent disappeared. Restlessness became less, the intelligence became brighter, the skin became warm. Burkitt suggests that the poison of cholera attacks principally, or perhaps only, the vasomotor system, that the heart is not at fault, that the abdominal veins are holding most of the blood in the body, and that the treatment in this condition should be that of shock. He further noticed in a number of cases that if persons sleep after an injection of ½ or ⅓ grain of morphin their chances of recovery are good; that morphin does not induce sleep in those patients who are badly collapsed, but only stops the diarrhea and vomiting.

Heart, London

July

38 *Irregularities of the Mammalian Heart Observed under Aconitin and on Electric Stimulation. A. R. Cushny.
39 *Nodal Bradycardia. J. Mackenzie.
40 *Paroxysmal Tachycardia. T. Lewis.
41 *Measurement of Systolic Pressure in Man. L. Hill.

38. **Irregularities of the Heart.**—Under aconitin many forms of irregularity of the heart occur, but most of these may be reduced to certain types. These, according to Cushny, are the following: (1) Reversed rhythm, in which the impulse to contraction is generated in the ventricle and spreads upward to the auricle; (2) impaired conduction through the auriculoventricular bundle which may lead to partial or complete block in either direction; (3) alteration in the strength of the contractions in auricle and ventricle; (4) extrasystoles in auricle or ventricle which sometimes occur at regular intervals (continuous bigeminus); (5) sudden changes in the rhythm of the whole heart. Two or more of these types may be present simultaneously. Aconitin has a greater tendency to cause pulsus alternans than most other poisons, and this is ascribed to its production of exhaustion and of delayed recuperation of contractility. Other drugs may induce alternans in the damaged heart by increasing its irritability, and thus make demands which the contractility is unable to meet. Other forms of irregularity were observed by Cushny in unpoisoned hearts under the influence of cold and electric stimulation and are described.

39. **Nodal Bradycardia.**—Mackenzie found that the heart's action may start continuously from a place other than the normal starting place, and in the resultant rhythm the auricular systole no longer precedes the ventricular. This abnormal rhythm is provisionally called "nodal rhythm." The rate of the "nodal rhythm" is usually more frequent than the normal rate. Mackenzie describes a form of nodal rhythm of infrequent rate. This form of bradycardia may arise suddenly in a heart previously showing the normal rhythm, or it may arise in a heart previously showing the nodal rhythm with a rate more frequent than the normal. It may be quite regular or may show premature beats, or it may be continuously irregular with a tendency to long pauses. While related to the

more common forms of nodal rhythm. it may occur in a patient with a slight heart block.

40. **Paroxysmal Tachycardia.**—Lewis reports in detail the findings in a case of paroxysmal tachycardia of the variety in which the auricle is responsible for the ventricular beat. He points out that two forms of paroxysmal tachycardia are encountered; in one the sequence of contraction of the cardiac chambers is normal; in the other the auricle fails to contract at the usual instant in the cycle. In the first, or auricular form of the affection, extrasystoles occur, but their nature is different from the beats of the paroxysm. The rhythm of the paroxysm is one *sui generis.* The evidence is, on the whole, opposed to the view that the paroxysm is to be regarded as the result of altered central innervation. It is more rationally ascribed to an intrinsic change in the heart itself. It is probable that the rhythm between the paroxysms is the normal rhythm of the heart, and that the rhythm of the paroxysm is present during the paroxysm alone. Paroxysmal tachycardia (of a ventricular form) was readily produced experimentally by Lewis by ligation of the right coronary artery, and in this condition the dog's ventricle may beat at a rate of 400 a minute. The ventricles contract first and their contraction is followed by the auricular systole. Vagal stimulation, when the heart is in this condition, as a rule, slows or stops the auricle, while the ventricular rhythm continues unaltered.

41. **Arterial Blood Pressure.**—Hill shows by experiments that in reading systolic pressures there are two factors to take into account: (1) The actual maximal pressure of the cardiac output; (2) the conductance of the pressure wave by the artery. The force of the wave is damped down in soft arteries, as sound waves are damped by velvet. Blood-pressure readings should be taken, therefore, under uniform conditions, with patients lying horizontally, not emotionally excited, not after exercise, not after taking hot food, tea, coffee or alcohol, not after the hand and wrist have been warmed or chilled. Comparatively synchronous readings of hand and foot arteries, the effect on the readings of oscillating the pressure up and down, and the effect of local heat gives information as to the state of the arteries, the value of which will grow with extended clinical observation.

Annales de Gynécologie et d'Obstétrique, Paris

July, XXXVI, No. VI, pp. 385-441

42 Abdominal Hysterectomy for Cancer of Uterus. H. Hartmann.
43 Primary Epithelioma of Fallopian Tube. (Epithélioma primitif de la trompe.) P. Lecène.

Archives Générales de Chirurgie, Paris

July 25, III, No. 7, pp. 661-770

44 *Anesthesia by the Rectum. F. Legueu, L. Morel and H. Verliac. Commenced in No. 6.
45 *Treatment of Osteomyelitis Chronic from the First. (Ostéomyélite chronique d'emblée.) Marquis.
46 *Gonorrheal Phlebitis. D. G. Zesas.
47 *Bismuth Paste for Fistulas. (Le bismuthage des trajets fistuleux.) P. Mauclaire.

44. **General Anesthesia by Way of the Rectum.**—Legueu asserts that he has been able to eliminate the injurious factors in rectal etherization and states that its advantages are so great in operations on the face, mouth, neck and thorax that it deserves the preference in these cases. Irritation of the bowel, by the fumes of ether, can be avoided, he states, by blending the ether with oxygen, at body temperature, and preceding the application by a brief inhalation of ethyl bromid to relax the ileocecal valve. With this technic, general anesthesia by the way of the rectum is no more dangerous, he asserts, than by inhalation, unless the intestines are diseased. He uses a Y tube to convey the oxygen to the rectum, one branch conveying the oxygen alone, the other branch passing it through a flask of ether which thus mixes with the oxygen as it passes along, the two branches uniting in a single tube which conveys the mixture into the bowel. The oxygen and ether are rapidly absorbed by the bowel and there is no meteorism as when air is insufflated. He gives the details of experiments with 20 rabbits, 5 cats and 7 dogs to illustrate the harmlessness of this technic.

45. **Treatment of Osteomyelitis.**—Marquis calls attention to the panosteosis which inaugurates osteomyelitis chronic from the start, the Haversian canals, periosteal and medullary spaces all becoming ossified, without any acute stage. There is no necessity to sacrifice the limb; trephining will drain any possible collection of pus, and if the pain is not intense and if there are no signs of abscess or sequester it is best to temporize. The whole process may heal spontaneously, or if an abscess or sequester forms it can be treated as it develops. This form of chronic osteomyelitis is rare. He has found only a dozen cases on record besides the one he here records. The patient was a boy of 8, free from syphilis and tuberculosis, who began to limp, with some pain. The child was kept in bed for three months, but there was no improvement and the lower part of the femur became greatly enlarged, but without tenderness and with no symptoms on the part of the knee. The x-rays showed the compact tissue forming a cylinder nearly twice the circumference of the femur above. Treatment was restricted to rest; the patient is still under observation, but recovery occurred in the cases on record, with or without operative intervention.

46. **Gonorrheal Phlebitis.**—Zesas reports a case and commends immobilization in treatment, the limb being raised to control the edema. The patient was a man of 30 with chronic gonorrhea which had been rebellious to all measures for a year. The phlebitis developed suddenly after a long walk.

47. **Bismuth Paste for Fistulas.**—Mauclaire found the bismuth paste of the greatest use in defining the indications in a case of tuberculosis of the spine, and he commends it for all such cases when examination of the urine shows the integrity of the kidneys. This preliminary examination of the urine is especially necessary, he asserts, when there has been long suppuration.

Bulletin de l'Académie de Médecine, Paris

July 27, LXXIII, No. 30, pp. 81-134

48 Pyloric Stenosis from Aberrant Pancreatic Lobule. P. Reynier and Masson.
49 Case of Meningococcus Septicemia without Meningitis. A. Netter.
50 *Outcome of Serotherapy in Sixty-eight Cases of Cerebrospinal Meningitis. Id.

50. **Serotherapy of Epidemic Meningitis.**—Netter shows the great improvement that has followed the introduction of serotherapy of epidemic cerebrospinal meningitis, the reduced mortality and duration of the disease and the lesser proportion of persisting disturbances. In one case he made twenty-two intraspinal injections and one intravenous injection before the grave disease with its three relapses was conquered. Discovery of the meningococcus on lumbar puncture gave the signal for renewed injection each time. He is convinced that certain other patients might have been saved finally if the serotherapy had been kept up more perseveringly.

Lyon Médical, Lyons

XLI, No. 24, pp. 1201-1256

51 Use of Fat Substances in Dermatology: Indications, Combinations and Therapeutic Rôles. (Corps gras en dermatologie.) Carle. Commenced in No. 22.

No. 26, pp. 1317-1372

52 *Renal Tuberculosis Simulating Chronic Nephritis. (Tuberculose rénale fermée à forme de néphrite chronique.) L. Gallavardin and J. Rebattu.

No. 27, pp. 1-54

53 Moist Erythema in Alcoholics. L. M. Bonnet.
54 Peritonitis from Perforation of Cancer of the Rectum. A. Chalier.

No. 28, pp. 55-96

55 *Method of Opening into Ureter or Bladder through the Vagina without Risk of Fistula. Rochet.

No. 29, pp. 97-136

56 The Lineage and Internal Secretion of Connective Tissue Cells. (La lignée des cellules connectives et leur caractère spécifique majeur: l'activité sécrétoire rhagiocrine.) J. Renaut.
57 First Phases of Defense of Connective Tissue against Experimental Tuberculous Infection. (Les premiers stades de la defense du tissu conjonctif contre sa tuberculisation expérimentale.) J. Renaut and G. Dubreuil.

52. **Tuberculosis of the Kidney.**—In the two typical cases described the syndrome seemed to be that of ordinary Bright's disease in every respect, and nothing suggested the old tuberculous kidney lesions revealed by the autopsy. The "closed" tuberculous lesions, cheesy changes, etc., coexisted with diffuse and severe lesions of non-specific chronic nephritis. Gallavardin does not deny that an "open" tuberculous process in the kidney might spontaneously change into a "closed" lesion, but thinks it more probable that in these cases there is an autonomous

form of renal tuberculosis primarily and definitely "closed." The patients were men of 57 and 60.

55. **Method of Opening Bladder or Ureter Through the Vagina.**—Rochet has opened up the bladder or ureter in three cases by a simple vaginal technic which excludes the possibility of development of a fistula while it allows ample access for extraction of a calculus or for other intervention. About 1 cm. back of the mouth of the urethra and below, a transverse incision, about 3.5 cm. long, is made through the vaginal mucosa and through this alone. Then with a grooved sound the mucosa is worked free from the urethra above and then from the bladder. This mobilization of the mucosa is easily done, and it can then be pushed back to permit ample access to the bladder and ureter.

Presse Médicale, Paris

July 28, XVII, No. 60, pp. 537-544

58 Systematic Hyperesthesias and Allied Disturbances. F. Trémolières.

July 31, No. 61, pp. 545-552

59 Small Epidemic of Beriberi in French West Africa. Saltet and Legrand.
60 Sporotrichosis of Eyelids. (Sporotrichose palpébro-conjonctivale.) A. Cantonnet.
61 When to Administer Colchicum. A. Martinet.

August 4, No. 62, pp. 553-560

62 *Survival of Thyroidectomized Animals given Calcium or Magnesium. A. Frouin.
63 Malta Fever at Constantinople. Euthybule and Gabriélidês

62. **Survival of Animals After Removal of Entire Thyroid Apparatus.**—Frouin's extensive experimental research confirms the power of calcium and magnesium to neutralize the otherwise fatal effects of complete removal of the thyroid apparatus, as described in an editorial in The Journal, Jan. 30, 1909, page 388. He concludes that calcium salts have a promising future in treatment of thyroid insufficiency.

Revue de Chirurgie, Paris

August, XXIX, No. 8, pp. 253-412

64 *Rational Treatment of Fractures of the Base of the Skull. E. Vincent.
65 *Partial Atrophy of the Optic Nerve in Fractures of Base of Skull. A. Cantonnet.
66 Indications and Operative Results in Abdominal Injuries from Small Bullets. (Plaies pénétrantes de l'abdomen par petits projectiles de guerre.) J. Poche.
67 *Tumors of the Spermatic Cord. (Tumeurs du cordon spermatique.) M. Patel and A. Chalier. Commenced in No. 1.

64. **Fracture of Base of the Skull.**—Vincent is convinced that the only rational treatment of fracture of the base of the skull is to forestall the development of meningitic disturbances, opening a way for the escape of infectious agents and their toxic products, without waiting for them to make their influence felt on the meninges. In most cases the fracture communicates with the exterior by openings into the cavities in the face or the petrous bone, but attempts to disinfect by rinsing and spraying through these cavities have always proved ineffectual. After symptoms of meningitis have developed, it is then too late to arrest the fatal progress of the infectious accidents. Treatment should forestall them, and this is possible by trephining at once, leaving a permanent opening for the escape of the cerebrospinal fluid. There is thus no retention and no cultivation of the microbes in a closed cavity to enhance their virulence. Both microbes and toxins are eliminated as soon as they develop, and this is the rational treatment of all serous membranes when infection threatens or is installed. Repeated lumbar puncture is useful in aiding the elimination of the infectious products. Cushing's subtemporal trephining answers the same purpose as lumbar puncture, but has a more rapid and energetic action, although Cushing does not recommend it for more than the relief of compression. Vincent reports two cases in which it answered its purpose admirably. He trephined as near the fracture as possible, incising the dura mater to expose the surface of the brain over the entire extent of the opening in the bone, then introducing a drain down to the brain and suturing the skin around it. He kept up the drainage for about two weeks and the patient in his first case recovered without a sign of meningitis, although the tympanic membrane and Eustachian tube had been torn by the accident, as evidenced by the bleeding from both, and the fractured parts gaped considerably. The patient was a man of 60. The results at first were equally good in the second case, but lack of care later, after removal of the drain, permitted tardy infection after the patient was supposed to have been cured. In this case thirty hours had elapsed after the accident before the wound was taken care of. With the Cushing subtemporal decompressive technic the trephining is done in the temporal region, where the bone is thinnest; the temporal muscle is merely pushed aside, not severed. In case of rupture of the meningeal artery or one of its branches the extradural clot is reached at once and the artery can be easily ligated. In most cases of fracture of the base of the skull the point of the temporal and the base of the frontal lobe are most liable to be injured, and the subdural effusion resulting is most readily drained by this technic, as also the edema resulting from the contusion of the brain. In conclusion, he adds that this intervention reduces materially the number of complications, especially traumatic neuroses, which are so frequent in these cases of bursting fracture of the skull healing without operative intervention.

65. **Partial Atrophy of the Optic Nerve After Fracture of the Base of the Skull.**—Cantonnet states that in 268 cases on record the injury of the visual apparatus from fracture of the base of the skull involved the optic nerve close to or in the optic canal in all but 43 cases. The lesions were bilateral in 17 cases, and they entirely retrogressed in 6 of these and in 4 of the 208 unilateral cases. In 2 cases personally observed the atrophy was only partial on one side. The injury of the optic nerve is generally due to a fissure of the optic canal; vision, though totally lost at first, may gradually return. It is necessary to wait for some time before deciding as to the outcome; blindness coming on after the accident may subside partially or entirely in time, and, on the other hand, after an interval of normal vision blindness may become installed later. His first patient was a man of 60; after a fall from a horse unconsciousness for half an hour and blindness in the left eye with defective vision in the right were the only signs of fracture of the base of the skull. Vision gradually improved in the right eye by the end of a year and is now 1/6 normal. In the second case a physician hit the left orbit against a ladder; there was no unconsciousness, merely a little dizziness, but the eye was apparently totally blind thereafter for two weeks, after which vision in this eye began to improve and by the twenty-fifth day had recuperated all that was possible, and there has been no change since. The partial optic atrophy in this case affects only the maculary fibers, the peripheral fibers being still intact.

67. **Tumors of the Spermatic Cord.**—Patel and Chalier here conclude their long study of this subject with summaries of 110 cases.

Semaine Médicale, Paris

July 28, XXIX, No. 30, pp. 349-360

68 *Pupil Sign of Aortic Insufficiency: Circulatory Hippus. M. Landolfi.

August 4, No. 31, pp. 361-372

69 *Indications for Use of Electricity in Ileus. (Le lavement électrique dans l'iléus.) F. Lejars.

68. **Pupil Sign of Aortic Insufficiency.**—Landolfi announces that in pure aortic insufficiency, free from other valvular lesions and aneurism there is sometimes a true hippus, that is, the iris contracts and dilates synchronous with the heart beat, contracting with the systole and dilating with the diastole. He found this sign marked in one of the 24 patients with aortic insufficiency examined, and later was able to elicit it in three more after giving fifteen drops of digitalis a day for four days. It seems to be the equivalent of Corrigan's pulse and the other signs of aortic insufficiency, but, unlike them, it seems to be strictly limited to well-compensated, pure aortic insufficiency. It is merely an exaggeration of the physiologic cardiovascular hippus in the peripheral vessels and iris. The "circulatory hippus" was observed also in a dog with experimental aortic insufficiency, when heart stimulants were given.

69. **Electrical Treatment of Ileus.**—Lejars occasionally has witnessed good effects from application of electricity in ileus, and thinks that this method should be a routine measure in hospitals, at least. When the occlusion is incomplete, and the result of prolonged constipation, electricity, applied early, is

an important aid in treatment. But in occlusion from cancer it should be used with great caution. Complete ileus contraindicates more than a single test application of the electricity, the physician being ready to proceed with a laparotomy at need. Whenever there is a suspicion of appendicitis or peritonitis electrical treatment is strictly contraindicated and dangerous. Under other conditions, if applied gently, with a medium current and without too frequent interruptions, it is not dangerous in itself, but may become so if too prolonged or too often repeated. He refers especially to the method introduced by Boudet of Paris twenty years ago.

Archiv für Gynaekologie, Berlin

LXXXVIII, No. 3, pp. 417-618. Last indexed July 24, p. 330

70 *Operation for Uterine Prolapse. Heidenhain.
71 *Suprarenals and Sexual Characteristics. (Nebennieren und Geschlectscharakter.) Bortz.
72 *Operative Treatment of Extensive Hernia in Linea Alba. M. Henkel.
73 Intrauterine Trophoneurotic Skin Lesions. (Intrauterine trophoneurotische Hautaffectionen.) H. Sieber.
74 Tumor Formation in the Ovaries or Testicles of Pseudohermaphrodites. (Zur Kenntniss der Geschwulstbildungen an den Keimdrüsen von Pseudohermaphroditen.) P. Zacharias.
75 Prolonged Latency of Chorioepithelioma. E. Krösing.
76 *Retrospect and Outlook in Treatment of Contracted Pelvis. (Therapie des engen Beckens.) Scheffzek.
77 Organs that Support and Move the Uterus. (Zur Kenntniss der Befestigungs- und Bewegungsorgane des Uterus.) N. J. Macry.

70. **Operation for Uterine Prolapse.**—Heidenhain gives an illustrated description of the stretching apart of the cleft between the levator ani muscles in childbirth, of the resulting incompetency of the supporting floor of the pelvis, and the means to remedy it by closing up the stretched cleft to restore normal conditions.

71. **Connection Between Suprarenals and Sexual Characteristics.**—The case reported with illustrations by Bortz differs from others on record, as the patient was not a hermaphrodite, but an apparently normal girl of 16 who had been menstruating for a year. Menstruation suddenly ceased then and a full growth of beard and hair on the body followed, while the voice changed to a more masculine tone. Otherwise the girl was feminine in appearance. She soon succumbed to an intercurrent phlegmonous affection following several felons, and the suprarenals were found enlarged and degenerated, actual suprarenal struma in both, while the ovaries were atrophied.

72. **Operative Treatment of Extensive Hernia of the Linea Alba.**—Henkel remarks that the choice of an anesthetic is of great importance, as a tendency to vomit strains the wound too much; he prefers lumbar spinal anesthesia for the purpose. Good results are obtained with a technic which makes a thick pad over the linea alba where the tissues are liable to be very thin in old neglected cases of hernia at this point. He incises the skin and fat tissue horizontally and turns it back, above and below, to allow space for an oval incision through the fascia. The edges of this oval incision are then drawn together and sutured, pushing inside all the tissue between. The muscles are then drawn together and sutured, then the fascia and finally the transverse skin wound. He claims a number of advantages for this technic.

76. **Retrospect and Outlook in Treatment of Contracted Pelvis.**—This communication from the maternity at Breslau, of which Baum is director, reviews the experiences with 1,301 cases of contracted pelvis encountered among 11,126 parturients in ten years. Premature delivery was induced systematically in 23.9 per cent. of 1,011 cases of contracted pelvis; 54.2 per cent. of the women were spontaneously delivered at term; perforation was required in 1.2 per cent.; high forceps in 3.7 per cent.; Cesarean section in 1.7 per cent.; pubiotomy in 2.4 per cent. and prophylactic version was attempted only in 0.7 per cent. The mortality of the children was 18.8 per cent., including 20 children delivered spontaneously. Scheffzek discusses the indications and results, his final conclusions being that the general practitioner must be trained in methods of artificial premature delivery, prophylactic version and high forceps—and should be ready to apply them at need in the home when it is impossible for him to convince the parturient or the family that the ideal management of contracted pelvis is the expectant supervision possible in an institution with all in readiness for operative delivery if demanded. The former methods are not the ideal, but they are the best possible in the home, and give fairly good results.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XIV, No. 2, pp. 167-340. Last indexed July 31, p. 420

78 Arrested Development of Müllers Ducts. (Hemmungsbildungen der Müllerschen Gänge im Lichte der vergleichenden Anatomie und Entwicklungsgeschichte.) E. Holzbach.
79 Rudimentary Development of Müllers Ducts. (Zur Lehre von der rudimentären Entwicklung der Müllerschen Gänge.) O. Büttner.
80 Case of Actinomycosis of the Female Sexual Organs; Twenty-third on Record. (Aktinomykose der weiblichen Geschlechtsorgane.) A. Hamm and R. Keller.
81 One Hundred and Fifteen Forceps Deliveries. (Ueber Zangenoperationen.) E. Kurihara.
82 Need and Incapacity for Breast Nursing. (Zur Frage der Stillungsnot und Stillungsunfähigkeit.) G. Bjelenky.
83 *Multiple Carcinomas. (Multiplizität der Karzinome.) T. Tsuji.
84 Behavior of the Uterine Mucosa with Myomas. (Verhalten der Uterusschleimhaut bei Myomen.) Y. Iwase.
85 *Cancer Statistics. (Zur Karzinomstatistik.) L. Seitz.

83. **Multiple Carcinomas.**—Tsuji reports the case of a woman of 58 with a carcinoma of the uterine cervix, a second at the mouth of the urethra and a third on the nostril. In connection with this case he reviews the cases of multiple carcinoma in the literature.

85. **Permanent Cures of Cancer.**—Seitz reports from Döderlein's clinic at Munich 1,044 cases of carcinoma during the last twenty years. The operability averaged only 20 per cent., and thus only 221 radical operations were performed. Only 3.8 per cent. of the 850 patients with carcinoma of the cervix and 30 per cent. of the 20 with carcinoma of the body of the uterus have been permanently cured. In the latter group 6 of the 10 patients operated on have been free from recurrence for more than 5 years. Only 8 have been permanently cured of the 46 radically operated on out of the 475 cases of carcinoma of the uterine cervix, and 24 of the 90 operated on of the 375 patients with carcinoma of the vaginal portion of the uterus. The permanent cures are thus 36 per cent. and the absolute cures 6.8 per cent. in this latter group, while in the cervix group the figures are 27 per cent. permanent cures and 1.75 per cent. absolute cures.

Berliner klinische Wochenschrift

August 2, XLVI, No. 31, pp. 1437-1476

86 Cripples in Germany. (Umfang und Art des jugendlichen Krüppeltums und der Krüppelfürsorge in Deutschland.) F. König.
87 Paralysis of the Shoulder and Arm with Cervical Ribs. (Einige ätiologisch interessante Fälle von Schulter-Armlähmung nebst Bemerkungen zur Pathologie der Halsrippen.) M. Bernhardt.
88 Improved Technic for the Cutaneous Tuberculin Reaction. (Zur Technik der v. Pirquet'schen Cutanreaktion.) A. Buschke and P. Kuttner.
89 Papillary Tuberculosis of Vaginal Portion of Uterine Cervix. K. Everling.
90 *Abdominal Manifestations with Beginning Pneumonia. B. Glaserfeld.
91 *Diabetic Lipemia. M. Adler.
92 *Low Intestinal Lesions. (Zur Diagnostik und Therapie der tiefsitzenden Dickdarmerkrankungen.) E. Rosenberg.
93 *Morbid Blushing. (Zur Psychologie und Therapie des krankhaften Errötens.) O. Aronsohn.
94 Stereoscopic Roentgen Lantern Slides. (Projektion von stereoskopische Röntgenbildern.) M. Levy-Dorn.

90. **Abdominal Phenomena with Incipient Pneumonia.**—Glaserfeld has encountered two cases in which the syndrome deceptively simulated appendicitis but in a few days the abdominal symptoms subsided as severe pneumonia became installed. In one of the cases there was an interval of nine days before the symptoms of pneumonia became manifest. In both these cases and in 13 of 21 reported by Bennecke the pneumonia terminated in an abscess or other serious complication. The necessity for differentiating these cases of "pneumogenic abdominal shock" from actual appendicitis is beyond question, as a useless appendicectomy would weaken the pneumonia patient. The most important points in differentiation are: (1) the expression of the face, which is not so distressed as in appendicitis; (2) the tongue, which is generally moist and not much coated; (3) the rapid breathing; (4) the rigidity of the abdominal wall, which is never so circumscribed as in beginning appendicitis; the abdomen is only superficially tender, deep pressure is not particularly painful; (5) careful objective examination of the chest, regardless of the assumed

appendicitis. Differentiation may be rendered much more difficult by drugs previously given. In his first case the patient was subject to lead colic and opium was given at first, which masked the diagnosis for a time. It is probable that the pain caused by the inflammation in the lung is reflected into the abdomen. The irritation may even be transmitted through the sympathetic nervous system to the splanchnic nerves, inducing tympanites.

91. **Diabetic Lipemia.**—Adler reports two cases which show that the lipemia is due to cholesterin and not to lecithin.

92. **Diagnosis and Treatment of Rectal Lesions.**—Rosenberg has obtained excellent results in treatment of proctitis and sigmoiditis by application of a powder after thorough rinsing. The powder is a mixture of from 15 to 30 parts tannin to 100 parts magnesia usta, to which some disinfectant may be added. He insufflates the powder through a long tube commencing at the upper part and powdering downward. He also gives an illustrated description of an instrument for dilating strictures, spreading concentrically the 5 or 6 stout branches by a gradulated thumb screw.

93. **Morbid Blushing.**—Aronsohn has found that persons addicted to excessive blushing are diffident, anxious to appear different from what they really are, and that the tendency to morbid blushing can be overcome by urging them to be more natural and true. He has always been able to cure it by moral suasion supplemented by a little hypnotic suggestion to inspire the patient with courage and decision.

Centralblatt für die Grenzgebiete der Medizin und Chirurgie, Jena

July 30, XII, No. 13, pp. 481-528

95 *Latest Methods of Treating Inoperable Cancers. (Neuere Behandlungsmethoden bei inoperablen Krebsgeschwülsten.) K. H. Schirmer. Commenced in No. 8.
96 *Persistence of Thymus and Thymus Hyperplasia. C. Hart. Commenced in No. 9.

95. **Treatment of Inoperable Cancer.**—Schirmer reviews critically 245 articles in recent literature on the treatment of inoperable cancer, especially with radium, fulguration, serum (toxin) and trypsin. Czerny has applied fulguration in 59 cases and states that it accomplishes in half an hour more than Roentgen or radium treatment in three months. The wounds are very painful and sometimes the fulguration seems to stimulate the tumor to grow. He has never seen enlarged glands retrogress under its influence, and it has only a slight action at a distance. Moore's experiments have shown that scraps from a mouse tumor retain their vitality after immersion in liquefied air for from twenty to thirty minutes, thus resisting a temperature said to kill all germs and bacteria. This experience speaks against a parasitic origin of cancer. In order to obtain a correct opinion of the efficacy of the different methods of treating inoperable cancer, the experiences should be published with all details, body weight, blood picture, local details of the tumor, subjective findings, etc., with records of the duration, intervals and dosage of the measures used. The future seems to lie in a combination or mixture of the various measures, to attack the cancer from all sides, with local and general measures, internal and external. Podwyssotzki explains cancer as a battle between the younger and older cells, the younger devouring the older, and our aim should be to promote this autophagism for which he recommends potassium iodid, arsenic, alien serum, tuberculin and radium, to which list Schwartz adds the *x*-rays as one of the most effectual measures. In conclusion Schirmer calls attention to the central office at Berlin of the International Cancer Research Association which offers to supply data and information on request in regard to the experiences to date with any of the methods of treating cancer in vogue. One of the statutes of the association states that it is to be an international information bureau for all questions affecting cancer research.

96. **The Thymus.**—Hart concludes his critical review of 158 articles in recent literature on the anatomy, pathology and physiology of the thymus and records of cases of "thymus death," with the statements that the thymus must be regarded as an epithelial organ and probably as an organ with an internal secretion. It seems evident that an excess rather than a deficiency of thymus tissue and its metabolic products is injurious for the organism. It is possible, although not proved, that the death of new-born infants in asphyxia is "thymus death." The mechanical thymus death is usually due to a combination of several factors. The results of excessive thymus functioning are an autointoxication with a special harmful influence on the innervation of the heart which explains the sudden deaths in which the thymus is found much enlarged. The recent publications on the frequency of persisting large thymus in exophthalmic goiter demonstrate that the thymus is an important injurious factor in these cases and explains the postoperative heart failure of patients with exophthalmic goiter. The abnormally increased and perhaps perverted internal secretion of the persisting and enlarged thymus is responsible for the instability of the heart which causes it to break down at even slight extra demands on it. He is inclined to recommend surgical intervention in case of symptoms of "hyperthymization" without waiting for severe disturbances. Mere tracheotomy does no good; the gland must be partially or totally removed or space made for it by partial resection of the manubrium. Persistence and hyperplasia of the thymus are of the greatest importance for the surgeon; the discovery of a persisting thymus in an adult should contraindicate general anesthesia, especially with chloroform. Exophthalmic goiter should forbid any operation unless the thymus is previously removed. There does not seem to be much prospect of relief from Roentgen-ray exposures as they seem to act only on lymphadenoid tissue.

Deutsche medizinische Wochenschrift, Berlin

August 5, XXXV, No. 31, pp. 1337-1376

97 *Opsonins in Typhoid Bacillus-Carriers. (Opsoninuntersuchungen bei Typhusbazillenträgern.) W. Gaehtgens.
98 *Isolysin in Blood Serum with Cancer. (Vorkommen von Isolysinen im Blutserum bei malignen Tumoren.) H. L. Richartz.
99 *The "Remains" Test in Diagnosis of Gastric Ulcer and Catarrh. (Restprobe in der Diagnostik von Magengeschwür und Magenkatarrh.) K. Grandauer.
100 *Treatment of Congenital Megacolon. (Beitrag zur Hirschsprungschen Krankheit.) Sommer.
101 Healing under Fibrin and Serum Supplied from Without. S. Bergel.
102 Deep Roentgen-Ray Exposures. (Erfahrungen mit der Dessauerschen Röntgen-Tiefenbestrahlung.) Schüler.

97. **Opsonic Index in Typhoid Bacilli Carriers.**—Gaehtgens has found that the opsonic index returns to normal in a few months after typhoid, unless the persons become chronic bacilli-carriers, in which case the opsonic index persists high.

98. **Hemolysis with Special Reference to Cancer.**—Richartz reports negative findings in 112 normal individuals and in 103 with various bronchial, kidney, joint, gastrointestinal and other affections, syphilis and benign tumors, while in 73 cases of malignant tumors hemolysis was pronounced in 46 per cent., as also in 52 per cent. of 40 cases of tuberculosis. He compares his findings with those of Crile. His conclusions are that under certain circumstances hemolysis may be of differential importance for the diagnosis of gastrointestinal cancer. Benign stenosis, peptic ulcer, nervous dyspepsia and chronic gastritis are not accompanied by hemolysis. He regards the isolytic element in the serum as a reaction of the organism to the destruction of the red corpuscles by the toxic products of the cancer or tuberculosis.

99. **The "Remains Test" in Stomach Lesions.**—Grandauer has applied the principle of the food-remains test to detect ulceration or excessive secretion in the stomach. In normal conditions the smooth surface of the stomach lining allows it to be completely emptied, but when the surface is ulcerated or covered with tenacious mucus, particles cling to it. In order to test this he gives the patient at night 2 gm. (30 grs.) of bismuth. The next morning he takes a fat-zwieback test breakfast, and an hour later the stomach content is siphoned out; the stomach is then rinsed out with 100 c.c. of water, and then it is rinsed again until the fluid is completely clear. This test applied to 64 persons proved a reliable index for ulcer or severe catarrh, and in the absence of the latter sustained the assumption of gastric ulcer when large amounts of bismuth were found in the rinsing water. This pathologic retention of bismuth does not occur in the absence of ulcer except with pronounced catarrhal gastritis.

100. **Congenital Megacolon.**—Sommer's case was distinguished by the sudden onset of the signs of trouble which had remained comparatively latent until the age of 13. The results of the technic used commend it to others. An artificial anus was made into the cecum; two weeks later a median laparotomy disclosed the enormous sigmoid flexure. A small incision was then made into the left groin, through which the sigmoid loop was pushed and sutured to the abdominal wall. The median incision was then sutured, and two days later the sigmoid loop was resected. The preliminary bringing out of the loop proved an important aid for rapid healing after the resection.

Münchener medizinische Wochenschrift

July 27, LVI, No. 30, pp. 1521-1576

103 *Physiology of Milk Secretion. H. Cramer.
104 Changes in Character and Moods as Result of Arteriosclerosis. (Arteriosklerotische Verstimmungszustände.) L. W. Weber.
105 The Cobra Venom Hemolytic Test. (Ueber den von Much und Holzmann angenommenen Einfluss des Blutserums von Geisteskranken auf die Kobragifthämolyse.) G. Eisner and A. Kronfeld. Id. (Much-Holzmannsche Psychoreaktion.) J. H. Schultz. Id. F. Plaut.
106 Ocular Reaction with Deuteroalbumose. K. Weihrauch.
107 Suture of Recent Perineal Tears. (Zur Vereinigung der frischen Dammrisse. Muskelnaht, Michelsche Klammern.) O. Betz.
108 Transplantation of Spleen. (Ueber Milztransplautationen.) H. Lüdke. Commenced in No. 29.
109 Medical Faculty at Leipsic in 1523. (Aus Leipzigs medizinischer Vergangenheit.) K. Sudhoff.

August 3, No. 31, pp. 1577-1624

110 *Relations between the Lipoids and Action of Drugs. (Beziehung zwischen den Lipoiden und pharmakologischer Wirkung.) H. H. Meyer.
111 Has the Causal Agent of Trachoma been Discovered? (Ist der "Trachomerreger" entdeckt?) S. Rimpler.
112 Cholesteatoma at the Umbilicus. (Nabelcholesteatom.) H. Coenen.
113 Kinking of Sigmoid Flexure. (V-förmige Schlinge der Flexur.) H. Thiemann.
114 Etiology of Deforming Arthritis. J. Heckmann.
115 Cobra Venom Hemolytic Test. (Die Kobrareaktion.) W. Geissler.
116 Is Phrenocardia a Morbid Entity? (Ist die von Max Herz beschriebene "Phrenokardie" eine scharf abzugrenzende Form der "Herzneurosen"?) G. Treupel.
117 Treatment of Whooping Cough Spasms by Lumbar Puncture and Douche. (Behandlung der Keuchhustenkrämpfe mittels Lumbalpunktion und Uebergiessungsbädern.) Eckert.
118 Intravenous Injection of Diphtheria Antitoxin. (Intravenöse Injektion des Diphtherieserums.) E. Schreiber.

103. **Functional Independence of Mammary Glands and Stimulation of Function by Sucking.**—Cramer ascribes great importance to sucking of the nipple as the main factor in setting up the mammary secretion, and reports a number of cases which confirm his assumption that the mammary gland is to a certain extent independent of the other organs of the genital apparatus and that it can be stimulated to secrete milk, even before the termination of the pregnancy, by letting a child suck the breast. There is certainly some factor in a pregnancy which inhibits the secretion of milk; even in twin births the milk does not "come" until after the birth of the second twin, although a considerable interval may elapse between the births. As it is so important for the new-born animal to have its mother's milk, Nature compels the already born to seek their food elsewhere as soon as the mother becomes gravid again. But at the same time systematic sucking will install the mammary secretion and counteract this inhibiting tendency. Mothers can leave their infants for weeks at a time and then be able to suckle them on their return. Cramer mentioned a case of the kind in which two three-week intermissions on account of operations did not interfere with resumption of the child's nursing on the mother's return home.

110. **Relations Between Lecithin, Cholesterin and Other Lipoids and the Action of Drugs.**—Meyer ascribes anesthesia to the physical change in the conditions of the cell lipoids. The lipoid-dissolving anesthetics cause a change in the entire makeup of the protoplasm. His communication, read at the recent International Congress for Applied Chemistry, presents evidence to sustain this view. It explains why the effects of anesthetics vanish as the unstable, reversible combination, dependent on the tension of the anesthetic, is broken up. It is thus evident that the cell lipoids are essential vital elements of the protoplasm.

Therapie der Gegenwart, Berlin

August, L, No. 8, pp. 361-408

119 *Disturbances from the Food in Breast-Fed Infants. (Ernährungsstörungen der Brustkinder.) H. Finkelstein.
120 Serous Expectoration after Puncture of Pleura. A. Wassmuth.
121 *Relations between Nose and Other Organs of the Body. (Beziehungen der Nase zu anderen Organen des Körpers.) B. Goldschmidt.
122 Direct Inspection of Pharyngeal Region. (Meso- und Hypopharyngoskopie.) F. Schilling.

119. **Disturbances from the Milk in Breast-Fed Infants.**—Finkelstein admits the possibility that a woman's milk might be toxic, but is convinced that this is the very rarest exception. He protests against the assumption current among the laity and some physicians that if a child is not thriving it is because the mother's milk is not good. In nearly every instance the indigestion ascribed to the composition of the milk is the result of an undersupply or, more frequently, to an oversupply. When this factor can be eliminated, if a child is not thriving on breast milk, there is some constitutional anomaly interfering with the proper digestion of the breast milk. The indigestion occurs entirely independent of the amount of milk ingested, and seems to be the result of a peculiarly irritable condition of the stomach, the manifestation of a neuropathic predisposition. All the children in the family are liable to display this same tendency to digestive disturbances on breast milk, and the history of the family generally contains records of tics, migraine, nervous headache, neurasthenia, hysteria, universal tendency to gastroptosis, enteroptosis, etc., or Stiller's universal asthenia. Examination of the infant will generally reveal some of these stigmata, and children who have dyspepsia on breast milk generally grow up lean and nervous, usually bright, but inclined to nervous dyspepsia, overexcitable vasomotor system, etc. He calls attention further to the fact that the stools may have an abnormal appearance while still the child is thriving. Determination of phosphates in the urine is a much more reliable sign of something wrong than the aspect and consistency of the stools, as the slightest disturbance in health is revealed by the appearance of phosphates in the urine. In practice, however, if the child is not being fed too little or too much, and its weight is duly increasing, the mother can be reassured even if the stools are abnormal. There is no need to torment the child with drugs or change to a wet-nurse—these first render actual the dreaded disturbance. The syndrome of indigestion in breast-fed infants corresponds to that in bottle-fed infants on mixtures containing considerable fat and sugar with little salt and casein. The neuropathic indigestion is generally observed early; if the child gets past the first weeks without it, there need be no fear of it later. When it develops it continues about the same for several weeks and then gradually improves or it may persist for a number of months. No drugs give any relief, but the dyspepsia of breast-fed infants is cured promptly when they are put on a mixture of cow's milk. The restless, crying, weakly infant begins to thrive at once after this change to cow's milk, the complete change in the gastric chemistry evidently providing better conditions for the oversensitive organ. In his practice he tries to ward off this resort to cow's milk as long as possible. Buttermilk, sweetened, or skim milk is the best substitute for a certain proportion of breast feeding, especially when the tendency is toward restlessness and colic. He is generally able to accomplish the desired result with three breast and three cow's milk feedings, even in the most serious cases, satisfied if the infant is sleeping well and increasing in weight, and paying no attention to the aspect and consistency of the stools. In his experience the children did not show marked progress until they were taking from 100 to 120 calories; some children required surprisingly large amounts on this mixed feeding. Whether this extra demand was due to the extra exercise of the restless children or to loss of energy from increased fermentation or was merely a peculiarity special to the existing constitutional anomaly, is a mystery. He has never found it necessary to wean the infant completely, although in two cases this was warded off only by a change of scene, the mother taking the infant into the country—another argument in favor of the nervous origin of the indigestion in these cases. He emphasizes the necessity for studying with special care all such cases of indigestion in breast-fed infants and the prompt and certain means of treating them, as otherwise the children are liable to be allowed to suffer needlessly, and confidence in the superiority of breast nursing may be shaken.

121. **Nerve Connections Between the Nose and Other Organs of the Body.**—Goldschmidt calls attention anew to the close connection between the nose and certain other organs, and relates a number of striking instances of complete cure—by cauterization of certain points in the nose—of pain in the stomach, genitalia, in regions innervated by the lower spinal nerves and in the head and face. His experiences confirm the assertions of Fliess in regard to the close relation between the nose and sexual organs, but he thinks that other organs are involved with equal frequency. He has not been able to find any special point in the nose connected with the various organs, but, as a rule, when relief follows application of cocain to any part of the nose, a permanent cure is obtained by cauterizing the spot with trichloracetic acid. He cites a number of instructive examples of each type. Nearly all the patients had applied merely for some nasal affection, and the discovery of the other trouble was a casual incident. In one case a woman of 30, being treated for a slight throat trouble, casually mentioned that she had had repeated gall-stone colics for seven years but had never passed any gall-stones and no treatment had been able to ward off the attacks which utterly prostrated her. He applied a cocain tampon to the outer end of the left middle turbinate during an attack and the pain was reduced in a few minutes. He cauterized the spot later and the patient was free from pain for a long time; then the colic recurred, on which he resected the part of the turbinate involved and also cocainized the outer end of both inferior turbinates and there has been no recurrence of the colic since. In another case a medical student, 28 years old, had suffered for ten years from vomiting, nausea and intense pain in the stomach after every meal, and had been under the treatment of many internists, in turn, without the slightest relief. After cocainization of the outer end of the middle turbinates the sensation of oppression in the stomach vanished. These points were then cauterized and the patient was told to eat anything he chose; notwithstanding a hearty diet there was no recurrence of pain or nausea until after the scab had dropped off, when the bone was resected and the outer end of the left inferior cauterized, since which there has been no further disturbance, the patient having been entirely cured for nearly two years. In another similar case the patient was not told that the little operation on the nose had anything to do with the stomach trouble, so that suggestion had nothing to do with the prompt and permanent cure. Cocainization of the nasal mucosa also proved effectual in curing subjective auditory and visual symptoms, and neuralgia in the face—the temporary breaking of the reflex arc evidently having a remarkably favorable influence on the disturbance. Migraine, he states, is of nasal origin in many cases, the progress of rhinology having explained it as a reflex from the nose. He warns that the nose is too important for heedless operations, while its intimate connection with so many vital organs deserves careful study.

Wiener klinische Wochenschrift, Vienna

August 5, XXII, No. 31, pp. 1091-1118

123 Analysis of Electrocardiogram. H. Eppinger and C. J. Rothberger.
124 *Palpation Signs of Enteroptotic Predisposition. (Palpatorisch bestimmbare abdominale Zeichen der asthenischen Konstitutionskrankheit Stillers.) T. Hausmann.
125 Behavior of Appendix in Status Lymphaticus. (Verhalten des Wurmfortsatzes bei Lymphatismus.) H. Shiota.
126 Complement-Binding Substances in Tuberculosis. M. Laub and J. Novotny.

124. **Movable Viscera as Sign of Predisposition to Enteroptosis.**—Hausmann has been making a special study of deep palpation of the intestines and states that Stiller's congenital universal asthenia is revealed by discovery of a palpable and movable pylorus, unusually low location of the greater curvature of the stomach and of the transverse colon or a movable cecum and sigmoid flexure. When the greater curvature is only 1 or 2 cm. above the umbilicus, as the patient reclines, this indicates ptosis and is an unmistakable sign of constitutional asthenia. He is convinced of the importance of the floating tenth rib as a sign of constitutional asthenia, and advocates rejection of recruits with this finding as unfit for military service; a movable cecum and palpable pylorus are similar stigmata. In 300 persons examined the cecum was movable in 22 and all had the floating tenth rib with other signs of constitutional asthenia.

Zentralblatt für Chirurgie, Leipsic

July 31, XXXVI, No. 31, pp. 1073-1104

127 *Prophylactic Treatment of Inflammatory Ileus. Helle.
128 Resection of Hip Joint with Fixation of Upper End of Femur to Pelvis. (Hüftgelenksresektion mit Fixation des oberen Femurendes am Becken.) F. de Beule.

Supplement, pp. 1-134

129 Transactions of XXXVIII German Surgical Congress.

August 7. No. 32, pp. 1105-1136

130 Technic of Chondrectomy for Emphysema of the Lung. M. Hofmann.
131 Functional Ultimate Results after Beck's Operation for Hypospadias. A. Exner.

127. **Prophylaxis of Postoperative and Other Forms of Ileus.**—Heile makes a point of stimulating peristalsis in all cases of diffuse peritonitis, etc., by injecting from 50 to 100 c.c. of warm castor oil directly into a high loop of the small intestine before closing the abdomen. A silk draw thread closes the small hole made by the needle in injecting the castor oil. It seems to work more effectively if emulsified with a little soda and water. He has had 30 very severe cases among 250 of peritonitis in recent years, and 5 died of the 20 treated without the castor oil while only 1 died of the 10 receiving the oil, and the one fatality was in a patient practically moribund when operated on. He uses a special syringe which allows aspiration of bowel content before injection of the oil.

Zentralblatt für Gynäkologie, Leipsic

July 31, XXXIII, No. 31, pp. 1067-1104

132 Abdominal Hysterectomy for Placenta Prævia with Uncontrollable Hemorrhage. (Ventrale Totalexstirpation des gebärenden Uterus bei Placenta praevia mit unstillbarer Blutung.) M. Runge.
133 *Mode of Diffusion of Anesthetic in Spinal Anesthesia. (Ausbreitungsmodus des Anästhetikums bei der Lumbalanästhesie.) C. J. Gauss.
134 *Local Anesthesia for Gynecologic Operations. H. Freund. Id. Fisch. Id. J. Wernitz.

August 7, No. 32, pp. 1107-1136

135 *New Technic for Extirpation of the Uterus in Operations for Cancer. (Neues Verfahren zur Exstirpation des Uteruskarzinoms.) P. Zweifel.
136 Abdominal Total Extirpation of Uterine Cancer. (Weitere Mitteilungen zur abdominellen Totalexstirpation des Uteruskarzinoms.) L. Seeligmann.
137 Influence of Roentgen-Ray Exposures on Prenatal Determination of Sex. (Beeinflussung des Geschlects.) M. Fraenkel.

133. **Mode of Diffusion of Anesthetic in Spinal Anesthesia.**—Gauss reiterates that the anesthetic spreads upward only according to the specific gravity of the solution. A solution with a high specific gravity, if the patient is seated, remains localized in the lower part of the subarachnoid space, while the cerebrospinal fluid above does not contain any of it. On the other hand, with a low specific gravity the anesthetic solution spreads rapidly throughout the fluid to the upper thoracic vertebræ which seem to be the top of the column of water, the fluid above being connected with the subarachnoid space in the brain only by capillary interstices, without any solid body of fluid. He states further that the anesthetic introduced is rapidly taken up by the spinal cord, so that the cerebrospinal fluid, even as soon as five minutes after the injection, contains scarcely any of the anesthetic, but after death the nerve substance yields up the alkaloid again so that postmortem the entire amount may be found in the cerebrospinal fluid. The results in experiments on animals can not be applied to man, as the dog has only about 6 c.c. of cerebrospinal fluid throughout the entire subarachnoid space; in the monkey the fluid is so scanty and the spinal cord fills the canal so closely that the injected fluid from lack of space is forced into the upper parts of the canal from purely mechanical reasons. If the patient remains sitting up for four or five minutes after the injection in the arachnoid space the anesthetic is taken up by the spinal cord and the individual can then recline, with the pelvis raised, without fear of spreading the anesthetic above the desired point. The high or low location of the field of operation should determine whether a solution with a low or high specific gravity is to be used. Gauss adds that he has applied spinal anesthesia in a continuous series of 1,500 cases without a mishap, the few observed in a preceding series of 300 cases being evidently due to the imperfections of the early technic.

134. **Local Anesthesia for Operations on the Female Genitalia.**—Wernitz reports 300 cases of abortion requiring curetting in which favorable results were obtained with local injection of a 1 or 2 per cent. solution of cocain representing from 0.02 to 0.04 gm. (5/16 to 10/16 grs.) of cocain. The anesthesia lasted for about 25 minutes and no mishaps were observed in any case, although general phenomena were observed—the ordinary symptoms of the action of cocain, not of intoxication. The injections can be repeated at need, he says, no cumulative effect or special after-effect having been observed in any instance.

135. **New Technic for Hysterectomy for Cancer.**—Zweifel found that peritonitis was responsible for the death in the large majority of the fatalities in the operations for uterine cancer at the Leipsic clinic, and consequently he has been devoting special attention to warding off this complication by complete exclusion of the uterus from the peritoneum. He ligates through an abdominal incision the ovarian and uterine arteries, separates the ureters, also the bladder and rectum from the vagina, leaving the vagina intact until after the two sheets of the pelvic peritoneum, in front of and back of the uterus, have been drawn together and sutured, thus roofing over the uterus. The abdominal wound is then temporarily sutured, completely closing the cavity of the peritoneum. The uterus is then removed through the vagina, the vaginal portion being drawn out until the vagina is inverted and the whole uterus is then removed with the vagina. The only objection to this technic is the necessity to change from the Trendelenburg position to the horizontal; the only bleeding that can occur is from the vaginal artery, which is easily controlled. He reports the case which led to the development of this technic, a very large myoma complicating the carcinoma. The myoma was so large that he had to use a piece of pig bladder to patch the roof of the peritoneum over the uterus; in future he would use rubber tissue for this purpose as the bladder was fetid when expelled. But nothing of the kind is required in ordinary cases. He has treated twenty-four patients by this technic and the surprisingly smooth afebrile convalescence, without a sign of peritonitis, has confirmed the value of this method.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 27, XXX, No. 89, pp. 937-944

138 Blood Picture in Alcoholics. (Formula ematologica negli alcoolisti.) T. Salvetti.
139 Transparency of Lipoma in Comparison with other Tumors. (Per la diagnosi differenziale tra lipoma e sarcoma.) I. Tansini.

August 1, No. 91, pp. 953-968

140 *Scleroderma and Thyroid Deficiency. (Sclerodermia ed atiroidismo.) F. Pedrazzini.

August 3, No. 92, pp. 969-976

141 *Epidemic Resembling Typhoid. (Di una epidemia tifosimile.) G. Dell'Oro.

August 5, No. 93, pp. 977-984

142 *Importance of Parathyroids for Healing of Fractures. (Influenza delle paratiroidi sul processo di ossificazione nelle fratture.) A. Canal.

August 8, No. 94, pp. 985-1000

143 *Abdominal Inflammation Simulating Cancer. (Pseudo-neoplasmi inflammatori addominali simulanti tumori maligni.) R. Cassanello.

140. **Thyroid Origin of Scleroderma.**—Pedrazzini reports five cases of scleroderma in four of which the thyroid was small and atrophied, while in the other the thyroid was large and hard. Thyroid treatment gave good results in the two in which it was applied, commencing with small and progressive doses. None of the patients presented signs of nervous changes suggesting a trophic origin, but everything confirmed the assumption of some connection between the cutaneous affection and the thyroid gland.

141. **Epidemic Resembling Typhoid.**—Dell 'Oro reports a small epidemic in which the disease seemed to be typhoid from the clinical manifestations, but the bacteriologic and agglutination tests were constantly negative and the convalescence was unusually brief.

142. **Influence of the Parathyroids on Fractures.**—Canal's experiments showed that fractures healed very slowly in animals after removal of all or part of the parathyroids. The results indicate that the parathyroids have an important influence on the processes of ossification in healing of fractures. His findings sustain the statements of MacCallum in regard to the influence of the parathyroids on lime metabolism.

143. **Abdominal Inflammation Simulating a Malignant Tumor.**—Cassanello has encountered several cases of apparent cancer in the gastrointestinal tract, but operation revealed merely inflammatory infiltration, and the modifications induced by the laparotomy were followed by the complete subsidence of the tumor. By analyzing his own cases and those in the literature he finds that these inflammatory tumors spread and involve the surrounding organs to a much larger extent than a malignant tumor, so that this lack of clinical individuality, the involvement of several organs, speaks against the cancerous nature of the lesion. In one of his cases the hard woody mass included the stomach, omentum, liver and part of the abdominal wall. The lack of marked outlines and the confused objective findings distinguish these inflammatory tumors; they simulate but do not reproduce the symptomatology and objective signs and course of true neoplasms, and incision of the abdomen is generally followed by the vanishing of these apparently serious disturbances.

Riforma Medica, Naples

August 2, XXV, No. 31, pp. 841-868

144 *Immunity and Immunization against Tuberculosis. E. Maragliano.
145 Transformation of *Staphylococcus pyogenes aureus* into *Staphylococcus pyogenes albus* in Intravenous Inoculations. F. Stinelli.
146 Different Technics for Experimental Research on Effects of Tobacco Smoke. (Studio sperimentale degli effetti del fumo di tabacco.) A. Bosi.
147 Arteriosclerosis and Heart Affections of Industrial Origin. (Arteriosclerosi e cardiopatie da lavoro.) P. Boveri.

144. **Immunization to Tuberculosis.**—Maragliano claims priority for immunization against tuberculosis, having immunized animals in 1895 and having now a group of patients vaccinated against tuberculosis seven years ago. He here describes the history of immunization against tuberculosis and the various technics followed and urges vaccination on a large scale of persons peculiarly exposed to tuberculous infection. The vaccine is easily made and harmless. None of those vaccinated seven years have shown signs of tuberculosis since, and he is convinced that this personal prophylaxis is the true secret of an effectual campaign against tuberculosis. It should rank with vaccination against smallpox. His technic was described in THE JOURNAL, April 2, 1904, page 933, and Dec. 8, 1906, page 1965.

Hospitalstidende, Copenhagen

June 9, LII, No. 23, pp. 705-736

148 Differentiation of Ovarian Cyst from Pregnancy. (Til Belysning af Vanskelighederne ved Differentialdiagnosen mellem Ovariecyste og Graviditet.) H. v. Thun.
149 *Preservation of Instruments from Rust. (Steril Opbevaring af Instrumenter.) P. Videbech.

June 16, No. 24, pp. 737-776

150 Electrolytic Scarification for Acne Rosacea. P. Videbech.
151 Case of Pseudotumor in the Brain. (Pseudotumor cerebri.) G. E. Schroder.

June 30, No. 26, pp. 809-840

152 *Two Cases of Juvenile Paretic Dementia. G. Neve.
153 Case of Congenital Heart Defect with Cyanosis and Polycythemia. (Tilfaelde af medfødt Hjertefejl med Cyanose og Polyglobuli.) V. Bie and V. Maar.

July 7, No. 27, pp. 841-872

154 Sensibility to Light of Albuminoid Substances. (Undersøgelser vedrørende albuminoide Stoffers Lystølsomhed.) A. Meisling.

July 14, No. 28, pp. 873-896

155 Tonic Accommodation Reaction of Sluggish Pupil. (Om tonisk Akkomodationsreaktion af lysstive Pupiller.) H. Rönne.

149. **To Keep Instruments from Rusting.**—Videbech has been using for five years a mixture of crude carbolic acid and ordinary potash soap, equal parts, in a 3 per cent. solution, to prevent instruments from rusting. He has found also that one or two glass dishes filled with calcium chlorid attract any moisture in the case where instruments are kept. He does not rely on the carbolic-acid solution alone for disinfection, but boils the instruments in it and then keeps them in it.

152. **Juvenile Paretic Dementia.**—Neve reports the clinical and postmortem findings in two cases, discussing the etiology.

In one case the Wassermann reaction was positive in the serum and spinal fluid, although there was nothing to indicate syphilis in the history.

Norsk Magazin for Lægevidenskaben, Christiania

August, LXX, No. 8, pp. 665-768

156 *Free Bone Plastic Operation for Pseudarthrosis of the Neck of the Femur. (Pseudarthrose i collum femoris behandelt med fri benplastik.) H. Wille.
157 *Two Hundred and Seventy-five Cases of Eclampsia. J. Horn.
158 Otogenic Sinus Phlebitis and Thrombosis. Prognosis, Prophylaxis and Treatment. (Den otogene pyæmi, sinusflebit og sinusthrombose, med hensyn til prognose og behandling.) V. Uchermann.
159 Operative Treatment of Glaucoma. J. Borthen.

156. **Treatment of Pseudarthrosis with a Bone Peg.**—Wille cut a peg six inches long and about the size of the little finger, from the tibia, with its periosteum. This peg was driven into the neck of the femur after fracture of the neck which refused to heal under the ordinary measures. The hole was bored for the peg with an electric motor, the peg driven in and a plaster cast applied, and the patient has been cured of all disturbances since, although he still limps slightly.

157. **Two Hundred and Seventy-five Cases of Eclampsia.**—Horn reviews the experience of twenty years with eclampsia, comparing the outcome under different methods of treatment. Since more active measures have been introduced, the mortality of both mother and children has been reduced by one-half. He tabulates the details of 14 cases; the 10 treated by vaginal Cesarean section are to be discussed later.

Ugeskrift for Læger, Copenhagen

July 8, LXXI, No. 27, pp. 751-788

160 *Standardization of Drugs, Etc. (Om Standardisering af Lægemidler.) A. Erlandsen.

July 15, No. 28, pp. 789-812

161 Experiences with Sixty Gall-stone Operations. (Galdesttenssygdommens kirurgiske Behandling.) E. Müller.

July 29, No. 29, pp. 813-840

162 *The Danish-French Leprosy Expedition. (Den dansk-franske Spedalskhedsexpedition.) E. Ehlers.
163 Coffee and Substitutes. (Om Kaffe, Kaffesurrogater og koffeinfri Kaffe.) E. E. Faber.

160. **Standardization of Drugs.**—Erlandsen reviews what has been done in this line in various countries in regard to ergot, digitalis and suprarenal preparations.

162. **The Danish-French Leprosy Expedition.**—Ehlers was the leader and was accompanied by one Danish and two French experts. Before starting, at Metchnikoff's suggestion, they spent two months at the Pasteur institute at Paris where several lepers were under treatment and volunteered as subjects for experiments, among them a medical student from Haiti with a peculiarly malignant form of leprosy. The special aim of the expedition was to determine whether insects are involved in the transmission of leprosy. Their findings all indicate that this is not the case. Even when they punctured a nodule and sucked the blood into the pipette with the mouth—a new method aiming to imitate the bite of an insect—and found numbers of bacilli in the fluid, insects biting the same person merely took up pure blood. The blood-sucking insects, he says, merely suck blood; they do not introduce a poison, like bees. The experiments were made on 50 lepers in the Danish West Indies, and the Wassermann test gave constantly positive findings in all patients with nodular leprosy, while the reaction was vague or negative in the anesthetic form and in the stationary and cured cases. The expedition regards this test as destined to prove as important in leprosy as it has been found in syphilis. Turpentine fixation abscesses gave negative results, and no signs of leprosy were found in 160 rats examined. A casual finding was the discovery of *Filiaria sanguinis hominis* in the stomachs of body-lice. The chief expenses of the expedition were borne by the Danish engineer, Davidsen, at Paris; the French government paid the expenses of one member; the transportation companies carried them all free of charge.

On the way home Ehlers stopped at Porto Rico and states that he thinks that leprosy there is much more common than generally recognized. He mentions in conclusion that he was summoned to Washington, on his arrival in New York, to testify as a leprosy expert in the case of a man (Early) who was suing the authorities for damages for unwarranted incarceration, as compulsory isolation had been imposed on the assumption that he was a leper. After careful examination Ehlers thought that the man really was afflicted with leprosy, contracted in the Philippines. [This case has been mentioned in The Journal, and an account of it appears in the September *Munsey*. The patient is now under observation at the New York Skin and Cancer Hospital, but not under restraint.—Ed.]

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Université de Toulouse: Année Scolaire 1907-1908: Rapport Annuel du Conseil de l'Université (6 Janvier 1909). Comptes Rendus des Travaux des Facultés et des Observatoires. Rapports sur les Concours Lus au Conseil de l'Université le 6 Décembre, 1908. Paper. Pp. 165. Toulouse: Imprimerie et Librairie Edouard Privat, Libraire de l'Université, 14 Rue des Arts, 1909.

An Inquiry Concerning the Etiology of Beriberi. By Henry Fraser, M.D. (Aber.), Director, Institute for Medical Research, and A. T. Stanton, M.D., Bacteriologist, Institute for Medical Research. Studies from the Institute for Medical Research, Federated Malay States, No. 10. Paper. Pp. 24, with illustrations. Price, 3 shillings 6 pence net. Singapore: Kelly and Walsh, Limited, Printers, 1909.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D. Complete in Eight Volumes. Volume VI. Cloth. Pp. 916, with 624 text illustrations, and 39 plates. Price, $7. New York: William Wood & Co., 1909.

Modern Problems in Psychiatry. By Ernesto Lugaro, Professor of Neuropathology and Psychiatry in the University of Modena. Translated by David Orr, M.D., and R. G. Rows, M.D. Publications of the University of Manchester, Medical Series, No. XII. Cloth. Pp. 305, with illustrations. Price, 7 shillings 6 pence net. Manchester: University Press (Sherratt and Hughes), 1909.

Studies on Leprosy. IV. The Utility of the Examination of the Nose and the Nasal Secretions for the Detection of Incipient Cases of Leprosy. By Walter R. Brinckerhoff, S.B., M.D., Director Leprosy Investigating Station, Public Health and Marine-Hospital Service and W. L. Moore, M.D., of Honolulu, Hawaii. Paper. Pp. 29. Washington: Government Printing Office, 1909.

The Harvey Lectures. Delivered under the Auspices of the Harvey Society of New York, 1907-08. By Professors Edwin O. Jordan, James Ewing, David L. Edsall, Ernest H. Starling, George Crile, Joseph Jastrow, Otto Folin, Ross G. Harrison, E. A. Schäfer and Alonzo E. Taylor. Cloth. Pp. 266. Price, $3. Philadelphia: J. B. Lippincott Co., 1909.

Manual of Chemistry. By W. Simon, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore, and Daniel Base, Ph.D., Professor of Chemistry in the Maryland College of Pharmacy. Ninth Edition. Cloth. Pp. 714, with 87 illustrations, 9 colored. Price, $3 net. Philadelphia: Lea and Febiger, 1909.

The Principles of Bacteriology. By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Eighth Edition. Cloth. Pp. 631, with 100 illustrations, 26 colored. Price, $2.75 net. Philadelphia: Lea and Febiger. 1909.

Obstetrics. A Manual for Students and Practitioners. By David James Evans, M.D., Lecturer on Obstetrics and Diseases of Infancy, McGill University, Montreal, Canada. Second Edition. Cloth. Pp. 440, with 172 illustrations. Price, $2.25 net. Philadelphia: Lea and Febiger, 1909.

A Text-Book on Physiologic Chemistry. By John H. Long, M.S., Sc.D., Professor of Chemistry in Northwestern University Medical School, Chicago. Second Edition. Cloth. Pp. 396, with 42 illustrations. Price, $2.50 net. Philadelphia: P. Blakiston's Son and Co., 1909.

Sprains and Allied Injuries of Joints. By R. H. Anglin Whitelocke, M.D., M.C., F.R.C.S., Honorary Surgeon to the Radcliffe Infirmary and County Hospital at Oxford. Cloth. Pp. 241, with 65 illustrations. Price, $3. New York: Oxford University Press, 1909.

Immunity and Specific Therapy. By W. D'Este Emery, M.D., B.Sc., Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green. Cloth. Pp. 448, with illustrations. Price, $3.50 net. New York: Paul B. Hoeber, 1909.

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Original Articles

THE RELATION BETWEEN THE SCIENCE AND THE ART OF INFANT FEEDING *

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During the past few years there has been much discussion in reference to scientific infant feeding. On closely examining the points discussed, however, it will be found that little attention has really been paid to the science of infant feeding, as almost all the efforts have rather been directed to the art of infant feeding. The science of infant feeding consists in knowing why certain things should be done, or not done, and the effects of different procedures. The art of infant feeding comprises the methods employed in preparing food and administering it. Most of the articles concerning infant feeding have related to methods of making foods acceptable to infants, and many diverse methods have been proposed. As infants have been found who have thriven, to a certain extent, on all of the different methods that have been advocated, it is evident that there has been something in common possessed by all of them.

The reason that every method of infant feeding can be shown to have been occasionally successful is that all of the foods contained more or less proteins, mineral matter, fats and carbohydrates, without which no infant can live or grow. Various infants will thrive on some foods better than on others, owing to the fact that the food elements are present in more suitable quantities and forms. The form of a food element has an important effect on its usefulness, and a large part of successful, practical feeding consists in changing or adapting the form of the food elements to suit different infants, for they are not alike in their capacity for digesting and assimilating even the same forms of food elements.

It is self-evident that the infant belongs to the animal kingdom and is accordingly subject to the general laws of animal nutrition.

It is also evident that the infant is still in the last stages of embryonic development while normally at the breast, and that its digestive organs are not adapted for ordinary food. All young mammals are in this condition for some time after birth and it is found that the food supplied by the mother has the property of changing its physical form when it comes in contact with the gastric secretions of the young. The food assumes a more or less solid form in the stomach, and the character of this solid differs as the stomachs of the young animals differ, rather than according to the composition of the food. The composition of the food supplied by the mothers of various species of young animals varies according to the rate of growth of the young, the milk supplied to rapidly growing young animals containing more protein than that furnished to those whose growth is less rapid.

In reference to the infant's nutrition, we have always to deal with milk in some form, as biology shows that this is always the primary and elemental food mixture, containing in easily assimilable form all the food principles. While the different manipulations required to make various milks, or other forms of food, acceptable to the infant's stomach constitute the art of infant feeding, before any of these details can be accepted as scientific and thus of permanent utility, it must be decided how far they are in accordance with biologic laws. Biology must thus finally decide both the possibilities and limitations of every method that is advanced. This will call for a knowledge of the structure and functions of the various digestive tracts in connection with the peculiar characteristics of the milk early furnished to each species. This study will show not only how far different milks are interchangeable, but also throw light on the various manipulations that aim to make them so.

A chemical analysis of milk will show the ingredients of this fluid, and, to a certain extent, their potential food values from their quantitative amount. There is something beyond this, however, that chemistry can not explain. While the fats and carbohydrates in their composition and reaction to the digestive secretions are a good deal alike in different milks, the proteins are essentially different. Chemistry alone can not explain this phenomenon. We must study the reaction of the protein to the digestive secretions, and then examine such reactions in relation to the growth and development of the digestive tract—in other words, investigate the question biologically before we can understand the problem. A certain portion of the protein of all milks coagulates on coming in contact with rennin or rennin and acid, but the manner and extent of this coagulation stands in a direct relation to the proper evolution of the digestive tract of the animal.

While there are many grades of coagulability in the milks of different animals, for practical purposes, we may distinguish three of these grades and consider their significance. The protein may coagulate in a solid, gelatinous or flocculent manner. In the ruminant, herbivorous animals, such as the cow, sheep or goat, the protein coagulates in solid, tough masses that can not readily leave the stomach. In these animals, digestion is always largely gastric and the stomach forms 70 per cent. of the digestive tract. Later, this stomach will be called on largely to digest tough, stringy masses of hay and straw and the previous exercise on the tough curds of the milk develops it for this future work. In the non-ruminant herbivora, such as the mare and ass, the protein coagulates in gelatinous masses that can easily leave the stomach. The reason for passing the curds quickly along is, that in this class of animals digestion is largely intestinal, and the intestines form about 90 per cent. of the digestive tract. Later, grain and grasses must be largely digested in the intestinal portion of the tube, and hence the curd is here also especially adapted to develop the intestinal tract for its future work. In human milk, the curd is thrown down in flocculent masses—a form intermediate between the solid and gelatinous types of curd previously noted. While digestion begins in the stomach it is largely carried on and completed in the intestine, and the stomach forms about 20 per cent. of the digestive tract. The curd is thus adapted to start the development and motility of the stomach and finishes by instituting these functions in the bowel which is destined to play a predominant part in digestion. Here again the curd, so far as the form is concerned, furnishes an analogue and precursor of the future food of the infant. The curd forms small, flocculent masses, and the future food must be separated later into small masses by chewing before digestion can take place to the best advantage.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

We have thus seen that the milk of herbivorous animals whose digestion is principally gastric forms solid curds which can not easily leave the stomach; that the milk of herbivorous animals whose digestion is principally intestinal forms gelatinous curds which easily leave the stomach and pass into the intestines; and that women's milk, which is intended for a digestive system in which gastric digestion is more than that of the horse or ass, but not so great as the cow or goat, curds in flakes that stand between the other two types of curds.

Biologic science thus shows us that, while a certain amount of protein is present in the milk of all animals, and is necessary for tissue building and growth, this protein must not only be coagulable, but must curd in a certain specific way in each species of animal. The protein is thus the least readily interchangeable of the ingredients of the milks of different species. In this way, science teaches that the protein must not be thrown into a soluble form or so altered as not to react normally to the digestive secretions if we would have healthy growth. We must always remember that the protein has a developmental as well as nutritive function to perform. While immediate nutrition is of great importance to the growing infant, we must not, by putting all food in a soluble form for quick absorption, neglect to give proper work for the secretions and musculature of the digestive tract. It is only by the latter method that the natural food for the adult can later be digested by a normally developed tract. The science of infant feeding will thus influence the art by showing what should and what should not be done in the various manipulations that may be advised. Briefly, all the food principles must be present and in about the same proportion as in the natural food of the infant. Chemistry will tell us this from an average of many examinations, but can not say the final word. It can tell us that protein exists in certain amount, but the form and adaptation of the protein for the infant's digestive tract can only be determined by biologic methods.

A few simple illustrations may show the practical application of these biologic standards. From chemical analyses we know approximately the quantity of protein an infant needs to produce growth. If chemistry alone is the standard, any form of protein should be satisfactory. It would be possible to give sufficient protein in the form of whey, but this protein (lactalbumin) is in solution and remains fluid in the digestive tract. The same would be true of complete peptonization. However desirable for temporary use, for routine employment these forms of milk are contraindicated by the biologic principle that in all young animals a portion of the protein of the milk is thrown by the young stomach into a more or less solid form, which evidently has for its purpose the development of the motility of the digestive tract.

As another example, if there is a persistent appearance of curds in the stools, it may indicate an intestine too weak in digestive power to take care of the normal curd. Here the use of a substance like citrate of sodium may be scientifically indicated from its action in altering the character of the curd to make it suit the weakened condition of the bowel. As a routine measure for normal infants, however, this should be looked on as an unscientific procedure.

Again, it is well understood that gastric digestion in the adult depends essentially on the action of pepsin and hydrochloric acid on proteins, and in infancy there is little acid secreted. As the stomach develops, more pepsin and acid are secreted. Is it not, then, contrary to biochemical science to check the beginning action of the gastric secretion by loading the food with bicarbonate of sodium, or other strong ant-acids, as a routine measure? Biology teaches that organs improve in capacity by a normal increasing use. What chance has the stomach to develop its function if the food constantly contains ingredients that will more than neutralize the acid it secretes and thus check one of its functions? On the contrary, if there is an acid intoxication, or an abnormally acid secretion, then it will, indeed, be scientific to correct such abnormal conditions by giving ant-acids. These illustrations show that when the science of infant feeding is understood the methods to be used under different conditions will be self-evident, which could never be the case so long as chemical data alone are assumed to be the exclusive basis of scientific infant feeding.

The scientific principles involved in infant feeding are few and simple. The methods of applying them are many and may be as simple or as complex as one desires to make them. The point ever to be kept in mind is: What is the effect of a proposed method and does it apply correct scientific principles? Many of the methods that have been proposed are unscientific when employed as routine measures, although they may be scientific under certain conditions; and methods that may be scientific as routine measures may be unscientific when applied to abnormal conditions.

Various methods of preparing food have been well worked out and simplified, but they will be of little value to the physician unless he knows why, and how, and when to use them. In this way only can scientific methods prevail. Infant feeding can only become scientific by being placed in line with the methods of science in general.

Early Use of Chloroform in Eclampsia.—J. R. Fothergill, in the *Journal of Obstetrics and Gynecology of the British Empire*, reports a case of eclampsia, occurring in 1849, in which his father, John Fothergill, M.R.C.S., used chloroform to control the convulsions during delivery. He states that this is probably one of the earliest recorded cases in which chloroform was used for this purpose.

INVESTIGATION OF BLOOD FOR TUBERCLE BACILLI

CONTAMINATION OF DISTILLED WATER WITH ACID-FAST ORGANISMS A SOURCE OF ERROR

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In view of the recent publications by Rosenberger[1] of the remarkable results of his investigations of the blood for tubercle bacilli, it seems worth while to publish my experiences in a similar investigation conducted in November, 1908, without knowledge of this author's work. The report is intended to repeat a warning by calling attention again to the dangers of contamination with other acid-fast organisms.

In his text-book, "Clinical Pathology of the Blood," Ewing reviews briefly the work done previous to 1891, in which various investigators found tubercle bacilli in the blood. He then says: "Grave doubt was, however, thrown on all previous work in this field by the negative results obtained by Guttman and by Kossel, who called attention to the danger of contamination in such specimens. This method of diagnosis has not been followed up in later years, although Kronig, in 1894, recommended the staining of centrifugalized laked blood in doubtful cases of miliary tuberculosis." Ewing further cites Kuhnau, who obtained only one positive result from twelve inoculations with the blood from severe febrile cases of tuberculosis.

TECHNIC

It should be recalled at once that ordinary methods of heat sterilization have no effect on the staining properties of tubercle bacilli and of the other members of the acid-resisting group of bacilli. Exposure for a few seconds to pure nitric acid, however, and also to the direct flame destroys their staining properties. In this work, therefore, the slides and cover-glasses used were exposed to the flame, and other glassware was treated with pure nitric acid and rinsed with alcohol and ether. A few drops to 10 c.c. of blood were drawn either from a vein or from the finger-tip, the skin being cleaned with soap and water, alcohol and ether. For laking the blood I used very dilute acetic acid or 0.2 per cent. ammonium oxalate in distilled water, which was furnished daily by the Canal Commission for drinking purposes. This laked blood was then centrifugalized and smears made from the sediment, a very pretty field of thickly spread leucocytes being obtained. Each cover-glass smear was traversed ten times with the 1/12 lens, as an arbitrary standard of search. Nitric acid, 25 per cent., followed by 95 per cent. alcohol, decolorized the preparations, and a counter-stain of methylene blue was used. The distilled water and all solutions used were repeatedly centrifugalized, and smears made from the sediment were examined for acid-alcohol-resisting bacilli. At first results were constantly negative. An earnest attempt was made to exclude every possibility of contamination.

BLOOD EXAMINATIONS AND ANIMAL INOCULATIONS

On Nov. 1, 1908, a patient was admitted with high fever, meningeal signs, convulsions, and a moderate leucocytosis. Blood culture (10 c.c. in Conradi's medium) gave no growth after twenty-four- and forty-eight-hour transplants on agar. Lumbar puncture, November 2, showed an increased quantity of cerebrospinal fluid under a pressure of 212 mm. The fluid was very faintly turbid, contained a considerable quantity of proteid, and a slight increase of leucocytes, the large mononuclears predominating. Cultures from the spinal fluid were negative. A portion of the fluid was diluted with distilled water, centrifugalized and examined. Acid-alcohol-resisting bacilli were found. The patient died November 3, and the autopsy showed edema of the cerebral meninges; bronchopneumonia; a small tuberculous cavity, 1 cm. in diameter, in the apex of the right lower lobe; a calcified and pigmented tubercle, 1.5 by 1 cm. in size, in the pleura of the right lower lobe; one calcified peribronchial lymph-node on the right side. Cultures on agar-slant from the spleen were negative.

Having found tubercle-like bacilli in the spinal fluid, the idea suggested itself that this case might be one of "typhobacillose" described by Landouzy.[2] I took, therefore, a portion of the bile, in which had been placed 10 c.c. of blood, diluted with distilled water, and centrifugalized. In the smear 58 acid-alcohol-resisting bacilli were found. A diagnosis of acute tuberculous septicemia was made. Fifteen days later, after most of the work had been done, it occurred to me that it would be interesting to make another transplant from the bile-blood culture, which had been fortunately saved. To my surprise, a fairly good growth on agar of a small diplococcus was obtained. On blood agar, after several transplants, this diplococcus developed a well-defined, distinctly staining capsule, and proved to be a pneumococcus. Pneumococcus septicemia, without pulmonary consolidation, is not an infrequent occurrence in Panama, and in several cases I have been able to isolate the organism from the blood before a meningitis developed and when there were no signs other than high fever, leucocytosis, arthritis or epididymitis. Eventually, therefore, the diagnosis in this case was corrected to pneumococcus septicemia.

The first findings, however, led me to investigate the blood of other patients, and in cases of pulmonary tuberculosis the results were uniformly positive. Altogether twenty-six positive examinations were made, including cases of pulmonary tuberculosis, cervical and inguinal adenitis, pleurisy with effusion, miliary tuberculosis, intestinal hemorrhage of obscure origin, abdominal pain and diarrhea, dysentery of obscure origin, arthritis of hip-joint, and other obscure fevers. In none of these cases could a diagnosis of tuberculosis be excluded clinically. There were negative results in one case of pneumonia, one of cervical adenitis which later subsided with antisyphilitic treatment, one case of pregnancy, and one of obscure continued fever. During this time there was only one autopsy on a non-tuberculous body. Examination of a mixture of cerebrospinal fluid and blood from this case showed two atypical and indefinitely staining, but suspicious bodies.

These remarkable results were rendered more credible by certain coincidences which seemed to be at the time convincing evidence of their validity. Two patients were admitted early in the course of an acute continued fever, the temperature ranging from 102 to 103. Blood was taken at the same time for cultures in ox-bile and for examination for tubercle bacilli. The examination for tubercle bacilli was made at once with positive findings in each case. Although both resembled typhoid fever, I predicted that the cultures would be negative for the typhoid-colon group. They proved to be so.

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[1] Am. Jour. Med. Sc., February, 1909; New York Med. Jour., June 19, 1909

[2] Internat. Cong. on Tuberculosis, Washington, 1908, Section ii, No. 2.

A typhoid fever patient, who had given a positive blood-culture, developed meningeal signs. On lumbar puncture 30 c.c. of clear fluid under a pressure of 200 to 225 mm. was obtained. It contained a small quantity of proteid and two leucocytes per c.mm. A culture made in ox-bile was negative for typhoid bacilli. Before this fluid was examined for tubercle bacilli the patient died and the autopsy showed typhoid lesions, but no tuberculous lesions of the cerebral meninges. Immediately afterward I examined the spinal fluid by precipitating the proteid with alcohol, dissolving in sodium carbonate 0.6 per cent. in distilled water, centrifugalizing and making smears from the sediment. Seventeen tubercle-like bacilli in one smear were found. Dr. Williamson, the pathologist, at my request, then removed the cord. Caseous areas were found scattered in the spinal meninges. Tubercle-like bacilli were found in the blood preparations, also, from this case.

In another instance, for a control, an apparently healthy patient, who had been admitted for malarial fever and who had had no fever for several days, was selected. In his blood acid-alcohol-resisting bacilli were found. I then made a more careful examination of the patient and discovered a pleural effusion reaching about 4 cm. above the normal border of the base of the left lung. The diagnosis of effusion was confirmed by thoracentesis.

Another patient had a high continued fever, the temperature remaining at 104 to 105 F. for two weeks. Two blood cultures in ox-bile were negative; leucopenia was marked with an almost complete absence of polymorphonuclear leucocytes which fell to 5 per cent. There was a profuse hemorrhage into the conjunctivæ with purpura of the lids; other purpuric areas developed on the trunk, and there appeared peculiar bullous skin lesions, very superficial on a hemorrhagic base. Extensive noma of the lower lip developed, a few scattered râles were present in both lungs, the spleen was enormous. Tubercle-like bacilli were found in the blood, stools, urine and scrapings from the base of one of the skin lesions. The stool was boiled in 0.6 per cent. sodium carbonate in distilled water and centrifugalized; the urine was diluted with distilled water, sedimented, and the lower portion centrifugalized; and subsequently I learned that the ward physician who examined the skin lesion had teased the scraping in distilled water. A lesion examined later without using water was negative. A diagnosis of miliary tuberculosis was made. Later, and after I had discovered the source of contamination, the patient's fever terminated by crisis and recovery was good. I was never able to arrive at a satisfactory diagnosis.

These acid-alcohol-resisting bacilli were likewise readily found in pleural effusions and in stools and urines examined by the method indicated above. The morphology of the bacilli was typical of tubercle bacilli. There were long beaded forms and shorter solidly-staining ones; they were frequently scattered, but usually in clumps of two, ten, thirty, and sometimes one hundred or more. The number of bacilli in one cover-glass preparation varied from two to several hundred.

During all this time, sources of error in technic or sources of contamination were diligently sought, for the ease with which positive results were obtained rendered it almost incredible that such a bacillemia had not been demonstrated before. The water, sodium carbonate, sodium hydrate, ammonium oxalate, acetic acid, and alcohol were repeatedly centrifugalized separately and smears from the sediment examined with negative result. The carbol-fuchsin solution and methylene blue were likewise examined and nothing found. More time was consumed in searching for error than in the examination of blood.

On November 11 the heart's blood of five guinea-pigs was drawn for examination. On November 12 four of these pigs were inoculated intraperitoneally with the sediment from three to nine drops of blood taken from two positive cases of pulmonary tuberculosis and two cases of suspected tuberculosis. The fifth pig had been inoculated subcutaneously on October 11 with sputum from a case of suspected pulmonary tuberculosis. Immediately after inoculation the bloods drawn the day before from the heart were examined and tubercle-like bacilli found in all five instances. One of the pigs inoculated from a suspected tuberculous case was killed at once, and the autopsy showed no tuberculous lesions. But again in blood taken from its heart at autopsy similar bacilli were found. The other four pigs all remained healthy for more than four months. On March 19, 1909, two more of them were killed and examined with negative results. One of these had been inoculated with blood from a patient with pulmonary tuberculosis, the other with sputum from the suspected case. The remaining two, being apparently healthy, were returned to the pen.

The result of the examination of these guinea-pigs weakened my faith in the validity of the observations and stimulated my desire to find a source of contamination. On November 13 scrapings were made from the hair and skin of a guinea-pig and from the skin of my hands. These scrapings were placed separately in dilute acetic acid made with distilled water, in order to reproduce the technic of blood examinations, and the suspension was centrifugalized and sediment examined. Tubercle-like bacilli were found in both instances.

THE SOURCE OF ERROR

On November 14 the real source of error was discovered by the simple device (which should have been used before) of fixing to the slide with egg albumin the sediment from distilled water in the laboratory jar. In traversing the smear one time about 600 acid-alcohol-resisting bacilli were found. Smears made with egg albumin alone were negative. Other laboratory solutions made up with distilled water were then examined in the same way, and sodium carbonate, sodium hydrate, ammonium oxalate, etc., were all found to contain similar bacilli. Freshly delivered distilled water (250 c.c.) was sedimented and examined. I estimated that in one cover-glass preparation there were about 30,000 of these organisms. In the tap-water an occasional acid-alcohol-resisting bacillus could be found, about one in each loopful of sediment. The sediment from 250 c.c. of distilled water and from 1,000 c.c. of tap-water was used to inoculate guinea-pigs. They both remained healthy, and at autopsy March 19, 1909, showed no tuberculous lesions.

I now had distilled water made in the laboratory. The receiving flask was treated with pure nitric acid, and, after the first portion of the distillate had passed over, the flask was rinsed with the second portion, and the third portion was saved. The flask was plugged with cotton, which was not sterilized. Examination of the bottom portion of this water (fixing with egg albumin) was negative for tubercle-like organisms.

To a portion of spinal fluid that had shown acid-fast bacilli on previous examination with Canal Commission distilled water, alcohol was added, and the precipitated proteid centrifugalized and examined with negative result. A portion of a pleural effusion was placed in 0.2 per cent. solution of ammonium oxalate (prepared with the laboratory distilled water), centrifugalized and examined with negative results. A bile-blood culture from an obscure case of remittent continued fever, in which tubercle-like bacilli had been found previously, was centrifugalized and examined. Five suspicious bodies were found, but they were atypical and indefinite.

It was my intention to review the work with water and solutions assuredly bacteria-free, but circumstances at that time and since have prevented. When Rosenberger's first article appeared three months later, however, I selected a positive case of pulmonary tuberculosis and examined the blood by his method, using my old laboratory distilled water in making up the citrate solution and in laking the blood on the slide. I had no difficulty in demonstrating acid-alcohol-resisting bacilli.

I then made three thick blood smears directly on glass slides, laked the blood with the laboratory distilled water and examined them. The first two smears were negative after a thirty-minute examination of each, but in the third I found fifty-seven tubercle-like bacilli in fifty-five minutes. This seemed to be very conclusive, for absolutely the only source of contamination had to be the distilled water which was allowed to dry on the smear after laking the blood. But, my confidence in distilled water having been shaken, I examined with egg albumin the small sediment that had formed and found considerable numbers of acid-alcohol-resisting bacilli.

The identification and description of this organism and the method of contamination remain for further investigation. It is probable that they belong to the grass bacilli. Guinea-pigs were kept in the laboratory where my water was distilled and kept, and the Canal Commission water was delivered in tanks drawn by horses. In both instances it is not very difficult to see how contamination might have occurred.

It seems probable, also, that contamination of distilled water with acid-fast organisms does occur frequently in all laboratories where animals are kept. Recently I have had an opportunity to examine the distilled water of a laboratory in the State of New York. Animals are kept in the basement of this laboratory just beneath and communicating with the room where water is distilled and kept. The still is a Jewell Automatic, and the glass reservoir for distilled water is constantly connected with the still by means of a rubber tube passed through a cotton plug. Acid-alcohol-resisting bacilli were demonstrated in the small quantity of sediment in the reservoir. In a second laboratory, which is on the third floor of a building, in the basement of which animals are kept, no tubercle-like bacilli were found in the distilled water, but there were present acid-semifast (Piffard) spore-like bodies which might have caused some uncertainty if present in suspected specimens.

Rosenberger makes the following statement:

> In the investigations I used sodium citrate solutions made at five different institutions. Some of the spreads were made in one laboratory and laked and stained in another. . . . The solutions of sodium citrate and ammonium oxalate were sterilized by the autoclave or steam sterilizer. . . . Spreads made from the *sediment* [italics mine.—W. V. B.], which occasionally took place in the citrate solution failed to show any so-called citrate bacilli.

Rosenberger fails to state explicitly whether or not a thorough search for acid-fast bacilli in the citrate and oxalate solutions and in the distilled water used in laking the blood was made by fixing the sediment with albuminous material. This procedure in technic is the crux of the whole matter. One result of his animal experiments, 30 guinea-pigs showing acid-fast bacilli in the blood suspensions while having no tuberculous lesions, is strong evidence in favor of contamination rather than of the presence of tubercle bacilli in the circulating blood. Had he examined the blood of these guinea-pigs *before* inoculation, as was fortunately done in my series, his results would probably have been the same. Evidence in favor of Rosenberg's view, however, is furnished by his negative autopsies on seven bodies whose blood suspensions during life had been negative for acid-fast bacilli. But it is only necessary to refer to the almost convincing coincidences of my own work to indicate that "experience is fallacious and judgment difficult."

SUMMARY

1. In examining blood, urine, stools, sputum and exudates for tubercle bacilli, the greatest care should be used to exclude contamination of water and all solutions used with members of the acid-resisting group of bacilli (whether dead or alive).
2. In this investigation, coincidences occurred which were all but convincing of the presence of tubercle bacilli in the blood in every case of tuberculosis.
3. Animal experimentation was negative, but the quantity of blood used for inoculation was too small for the results to be of great value.
4. Acid-alcohol-resisting organisms were found eventually in fresh distilled water furnished by the Isthmian Canal Commission, in tap water, in old distilled water made with care in the pathologic laboratory, and in all solutions made up with the Canal Commission water. These bacilli were either dead or non-pathogenic to guinea-pigs.
5. There is as yet no conclusive proof of the frequent continued presence of tubercle bacilli in the circulating blood.

I wish to express my thanks to Col. W. C. Gorgas for permission to publish this report, and to Dr. Wiliamson, pathologist, and Dr. Glines, in charge of the clinical laboratory, for their interest and assistance in the work.

MEDICAL VERSUS LEGAL RESPONSIBILITY *

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Among the various problems of human activities there is none more important than the relation of mental state to responsibility. The idea of human liberty and responsibility forms the basis of the penal system. This principle has been recognized by law as indispensable in order to assure the working of social discipline. The doctrine of liberty is old and in its crude form is accepted now, but modern science, based on accurate clinical and experimental methods, has helped to modify to a great extent the fundamental features of the old conception of liberty and responsibility. Mental medicine, through its more elaborate classifications and its continuously widening field of investigations, has revealed new pathologic manifestations and types which previously had not been suspected. Normal and pathologic psychology in its turn has availed itself of these discoveries and assisted in throwing light on the obscure problems of personality, memory, volition and reason. The conclusions of modern science lead to a broader and more humane consideration of human responsibility. The old traditions and the material interest which are threatened are not the only elements to be considered. The individual himself, his most intimate and most profound beliefs, the principles of his life in all its manifestations, in the domain of his individual consciousness as well as in their application to social discipline—all these questions are taken into consideration by modern science in its effort to arrive at a proper appreciation of mental responsibility.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Unfortunately the new investigations do not always bear the fruit which could and should be expected. One of the principal reasons is the fact that the studies of the subject are ignored by those who create the laws and those who administer justice. They view exclusively the social side of the law and are not at all interested in psychologic and medical studies which present a different concept of criminality and of the criminal himself. It is true that penal legislation and legal medicine are distinct and separate sciences, but positive criminology must rely on both branches of human knowledge. An intimate unity of these two sciences is an indispensable and an essential condition of progress. Mathematics is a rational science, physics is an experimental science; a union of the two helped to reveal the essential phenomena of matter. Chemistry and medicine are also distinct sciences, but Pasteur's work built the bridge between the two. Psychology finds its elements in mental pathology and physiology. Modern philosophy is bound to look for assistance in medical sciences.

Criminology has for its object the formation of positive laws concerning crimes and the discovery of remedies for them. With this object in view it searches the truth wherever it can be found and takes from medical and legal sciences data which it needs to form a scientific foundation. By the union of the two sciences the old and too narrow boundaries of human conception of liberty and mental responsibility will be broken and progress will be assured.

An attempt in this direction is presented in the present essay, which is based on a personal experience in the courts of the State of Pennsylvania.

In a number of instances of civil and criminal cases in which the question of responsibility was involved the main issue consisted of the test of "right and wrong." Every other element has been invariably eliminated by the skilful attorneys and even by some judges. It seemed in many cases that the criminals' legal knowledge of right and wrong was all that was necessary for determining the question of whether they were mentally responsible or not. The expert has not been permitted to enter into any explanation and to refer to any facts of the criminal's life, character, demeanor or to facts of marked hereditary nature indicating abnormality of mental processes or insanity, feeble-mindedness, imbecility—all showing complete or limited responsibility. Mentally abnormal individuals, as we shall see later, may know the distinction between lawful and unlawful acts and still be not mentally responsible.

The first test of wrong and right was proposed in 1843 by fifteen judges in England. It appears in the phrases "unable to distinguish right from wrong," or to discern "that he was doing a wrong act," or was "ignorant that he was committing an offence against the laws of God and nation." In 1846 Chief Justice Gibson, of Pennsylvania, said:[1]

> A man may be mad on all subjects; and then, though he may have glimmerings of reason, he is not a responsible agent. This is general insanity; but if it be not so great in its extent or degree as to blind him to the nature and consequences of his moral duty, it is no defence to an accusation of crime. It must be so great as entirely to destroy his perception of right and wrong, and it is not until that perception is thus destroyed that he ceases to be responsible. It must amount to delusion or hallucination controlling his will, and making the commission of the act in his apprehension a duty of overruling necessity.

Speaking further on partial insanity, the judge remarks:

> Insanity may be confined only to one particular subject, and then the individual continues to be a legitimate subject of punishment, although he may have been laboring under an obliquity of vision; a man whose mind squints, unless impelled to crime by this very mental obliquity is as much amenable to punishment as one whose eye squints.

Afterward in 1858 the judge said:[2]

> So far as the act is concerned, insanity must be so great in extent and degree as to blind him to the natural consequences of his moral duty and must have utterly destroyed his perception of right and wrong.

The legal conception of insanity as defined in these few examples had such a strong hold that it could not be shaken. It continued to form the basis of decisions and rulings in subsequent cases.

In spite of advancement of scientific research in the field of mental science and psychology, the results are totally or greatly ignored by some jurists. In many instances they continue to follow the old traditional path, no matter how unscientific, irrational and inhumane the test of right and wrong may be.

In discussing the various forms of mental disease we shall see that a person in committing a crime may realize the enormity and the lawlessness of the act and still be irresponsible for the act. The so-called moral insanity presents the most striking example of impracticability of application of the generally accepted test. Here the abnormal moral conceptions, the extraordinary propensities, eccentricities, the abnormal conceptions of obligations, etc., may be present a long time together with the proper conception of wrong in a criminal act. Shall such an individual be considered entirely responsible?

In sane life the knowledge of right and wrong is not the only factor that affects the free choice of our actions. We have to count also with impulses, with powerful motives. The power of restraint is in a certain relation with ideas and feelings which are opposed to the impulses. Will-power may suppress the latter. Will-power depends on the power of deliberation and self-control. The latter two factors differ immensely in various individuals. In normal life consequently an overwhelming pressure of external circumstances may sometimes and in some individuals remove to the background and even check completely the power of restraint or of self-control, although the distinction between right and wrong is totally preserved.

The pathologic states of mentality are characterized precisely by a more or less marked diminution or even complete abolition of the power of deliberation, of will, of self-control, and yet the ability of understanding that an act is morally wrong or forbidden by law may be present in its integrity.

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[1] Commonwealth vs. Mosler, 4 Barr, 264, 1846.

[2] Commonwealth vs. Ferth, 3 Phila. 105, 1858, per Ludlow, J.

Let us, therefore, consider in detail the various forms of mental abnormality in connection with the principle of right and wrong.

In melancholia, homicide occasionally occurs. The individual kills because he does not wish the victim to suffer through his sins. The delusion is usually intensified by hallucinations and the latter hasten the act. Here an insane motive prompts the action and the morbid condition has affected the mind generally so that the impulse of action is derived from the state of feeling and thought. The distinction between right and wrong is impossible.

In mania all the functions are exalted and there is more or less marked diminution of controlling power, so that even slight stimuli may lead to intense actions. In ordinary cases the intellect is not affected and the individual committing an unlawful act may know perfectly well the significance of the act and still, because of the decrease or complete disappearance of inhibition power, which forms the essential characteristic feature of the disease, the impulse is overwhelming. It is, however, true that in pronounced cases or in chronic cases there is an intellectual weakness and a confusional state so that the maniacal patient is then incapable of understanding the nature of his acts.

In no form of mental disorder can the legal test of right or wrong lead to more errors than in a certain class of paranoia. In the hallucinatory variety of this psychosis the impulse to poison, to kill, to massacre, to persecute is prompted by the hallucinatory images and the power of discriminating between a lawful and unlawful act is distinctly abolished. In another variety of paranoia, the individual is to all appearances a reasonable being, capable of comprehending an ordinary conversation, capable of discussing various subjects, and still on one particular subject his judgment is paradoxical and abnormal. He may then fail to exhibit in a long conversation evident signs of mental derangement until the subject of his main or only delusion is touched on. This is the so-called "partial insanity." Jurists and laymen then say that that individual's insanity is confined to a particular subject, the man being sane in every other respect. Sometimes they say that the man's criminal act is only the expression of depravity or of passion which in their eyes does not appear to differ materially from those of sane men and consequently the criminal impulse is simply an incident in the life of a sane man who is expected to overcome it. Such an individual, in spite of his apparent sane demeanor and attitude not infrequently labors under a special and fixed delusion which he conceals quite skilfully. He silently contemplates revenge and in the most careful and deliberate manner he plans its execution. The criminal knows perfectly well that he is committing an offence against the law and that he may be punished, but his act is prompted by an irresistible impulse which is the direct result of his delusive ideas. In this class of cases one must consider the true factors affecting the criminal act, viz.: the delusion, the defective power of inhibition and the abnormal feeling. These are the only elements that affect the power of free action. They alone must be taken into account in our attempt to appreciate a paranoiac's action. The legal view is totally inadequate and narrow, as alongside of those morbid elements the realization of an unlawfulness of an act may be well preserved.

In general paralysis of the insane the question of responsibility may come up during any of the periods of the disease. When the dementia is pronounced, there can be no doubt as to the patient's incapacity of distinguishing wrong from right. But before mental failure becomes accentuated, the individual may present only peculiarities of conduct, tendencies to deception, fraud or theft, extravagant mode of living, suspicious relations to his surroundings and in addition to this some physical signs also—all showing clearly the development of paresis. While committing an unlawful or criminal act the patient may be fully aware of the illegality of such act and of the consequences he will have to suffer for such an act; nevertheless the man is insane in the true sense of the word and the criminal act itself, as well as the above abnormalities of disposition, character, conduct, is an early sign of the disease. If the test of right and wrong is strictly applied to such cases, the man must inevitably be punished and when the crime is assault and murder he will be hung or electrocuted. Such a procedure is unquestionably a miscarriage of justice and essentially inhuman. A paretic at any of the phases of his disease is insane: his power of control, his feeling, his deliberation are fundamentally defective, abnormal and consequently his acts are the result of sudden morbid impulses. These are the immediate causes of his irresponsibility, but not the legal principle of right and wrong. Illegal acts are sometimes the first manifestations of the disease and the peculiar features with which they are sometimes surrounded lead us to the right road for a diagnosis.

Senility is not necessarily a cause of irresponsibility. Many individuals preserve the integrity of mental faculties until a very old age. When the senile involution has progressed so far as to abolish completely the faculties, all responsibility disappears. But the involution may be slow, irregular and at the same time progressive, and in such cases there may be a long phase during which the moral conceptions, obligations, the sense of propriety, affection may gradually undergo radical changes so as to lead to most unexpected acts. A senile dement, no matter how slight his dementia may be, is apt to commit the most extraordinary acts. In making a will, for example, he may be guided by petty motives which are easily aroused; anger, desire for revenge, jealousy can be stimulated with the greatest facility, and a will signed by a senile dement may express the most extraordinary, most unjust, most inhumane wishes. As he is easily influenced, he may change his will at each change of his humor. In spite of this variability of actions, he may be fully aware that he is doing a wrong act. He may fully realize the injustice done to persons whom he deprives of the worldly goods and he will, therefore, be legally responsible. The test required by law is positive here, but is it just? A senile dement is in a pathologic state; he is insane in the most proper sense of the word. Scientifically he can not be considered responsible, and consequently by relying exclusively on the classical legal test, injustice is easily done.

Let us now turn our attention to the application of the legal test to the question of responsibility in individuals with congenital mental infirmities. The subject is a very important one, as we deal here not with insanity or qualitative changes of mind which are acquired in adult life, but with quantitative deficiencies inherent to the individual. To this group belong idiocy, imbecility, feeble-mindedness and a host of intermediary, transitional varieties. To this group belong also the deficiencies of a large class of neuropathic individuals.

who present during life episodic psychasthenic manifestations, such as 'phobias, obsessions, abulia, *folie de doute, délire de toucher*, etc.

The idiot and the low-grade imbecile can not be expected to realize the enormity and the lawlessness of a criminal act, but when an attempt is made to apply the classical legal test to cases of milder intellectual weakness, to the large class ranging between imbecility to simple backwardness, one is bound to appreciate its inapplicability.

This class of individuals present, besides a certain degree of intellectual inferiority, a certain inaptitude to acquire knowledge, to perform mental operations of a more or less complex nature, but also and particularly an inherent deficiency of inhibitory power. Their whole existence is composed of incidents of an instinctive nature, as the instinct predominates in them and, therefore, their actions are invariably the result of impulses. Some of these individuals may be fully aware of the illegality of a certain act, they may fully realize that murder, assault, arson, deception which they sometimes commit are morally wrong and punishable by law, and yet they can not for the above reasons be held totally accountable for their actions. Is it an act of judicial wisdom to hang or to send to the electric chair or else imprison for life, if they have committed capital crimes, individuals who present an arrested mental development of various degrees, also the so-called peculiar, eccentric, queer individuals, those who present episodically during life obsessions, 'phobias or other deviations from normal cerebral functions—otherwise speaking individuals with an abnormal psychic make-up, although not insane in the proper sense of the word—is it, I say, an act of justice to consider them completely responsible and consequently inflict a corresponding severe punishment for only this reason, that they can discriminate legally wrong from right?

Régis has recently said:

> Mankind unfortunately can not be divided from a psychologic standpoint into two distinct categories, viz., one side mentally sane or totally responsible and on the other side, insane and totally irresponsible. Between the two there is a large province, the so-called intermediary zone populated by individuals tainted in various degrees and consequently presenting very different degrees of responsibilities. Although it is impossible to measure the latter by millimeters, it is neverthless possible to establish for them from this standpoint an ascending or descending scale and consider quite precisely three progressive degrees, viz., slightly, sufficiently and very largely limited responsibility.

The group of cases which I have just discussed is, scientifically speaking, composed of individuals whose responsibility can by no means be total; it must be limited. The latter is not a subterfuge of the expert, but a scientific fact established on scientifically accurate clinical observations which can not be denied. It is, therefore, evident that the legal test of wrong and right can not be applied to those cases, and if it is applied, as it is frequently done, the results are bound to be disastrous as far as the administration of justice is concerned.

Mental disturbances caused by intoxication with alcohol, opium and other poisons deserve some consideration with regard to the medicolegal test. Alcohol is a very powerful etiologic factor of criminality. One may say that it plays a very important rôle in the majority of committed crimes.

When a crime is committed by an individual while in a state of intoxication, several possibilities must be considered, viz.: whether the intoxication occurred in an individual with a pre-existing mental affection or without it, also whether the intoxication was intentional for the purpose of committing the crime during that state. It stands to reason that the delirious or confusional or stuporous states caused by an intoxication *per se* render the affected person irresponsible. It is impossible to expect from an acutely intoxicated individual a clear conception of right and wrong. His reasoning, judgment and discrimination are qualitatively and quantitatively disturbed. If, however, the test of right and wrong is the legal criterion of responsibility or irresponsibility, grave mistakes must be committed; a criminal will become intoxicated intentionally and then claim excuse for his act in the drunkenness; if he is acquitted or only slightly punished on that ground the community will suffer an injustice. On the other hand, an inability to distinguish right from wrong means insanity from a legal standpoint. A man who became incidentally intoxicated can not be considered insane and committed to an asylum. It is, therefore, evident that from every standpoint in such cases the law can not rely on its classical test in determining the question of responsibility.

Chronic intoxication (alcoholism, morphinism, etc.) are characterized chiefly by a gradual progressive mental enfeeblement. But before the latter becomes pronounced there may be evident changes in the affective sphere of life. Irritability, susceptibility, outbreaks of anger, indifference, loss of affection for the near and dear ones—may all be the initial symptoms. These manifestations may be more pronounced than the intellectual enfeeblement which in some cases progresses very slowly. Crimes or any illegal act may be committed during any of the phases of chronic alcoholism, morphinism or other intoxications. They may, therefore, occur at a stage when, in spite of the gradual deterioration, the faculty of discrimination is preserved to a more or less sufficient extent so as to know that his acts are wrong or right. Nevertheless the individual is in a diseased condition, his organs and tissues are undergoing degeneration. His demeanor, attitude, relation to others, show that his volition suffers, his power of inhibition is deficient. Such an individual, even with preservation of a large part of the faculty of discrimination, can not be held totally responsible. The legal test applied to such cases will naturally lead to a miscarriage of justice. Chronic alcoholism, morphinism or other intoxications at any of their phases are veritable diseases requiring medical supervision.

A very important and serious problem confronts alienists and jurists in deciding the question of responsibility of a person during the state of lucid intervals. For the purpose of simplification I embrace under this term intermissions, viz.: apparently normal intervals between individual attacks of a certain mental affection; also brief periods of apparent lucidity of mind occurring in the course of any psychosis, finally the remissions, viz., an attenuation of symptoms for a more or less long period.

A question arises: How much is the legal test of wrong and right justifiable in cases of criminal acts committed during lucid intervals? There can be no doubt that at that time the discrimination between lawful and unlawful acts is possible; consequently should the individual's responsibility be then considered complete?

A person once affected with acute melancholia or acute mania may have recurrences at intervals of months' or years' duration. The question is whether the person thus affected can be considered as entirely cured during those intervals. Experience teaches that the degree of recovery and its duration are variable. When we are in presence of an individual with a history of several attacks of a certain mental affection, who has just recovered from one, perhaps to enter another, and who happened to commit a criminal act during the interval—are we justified in considering him completely normal and perfectly responsible only because he is able to realize legally the criminality of his act? The fact of his being repeatedly subjected to attacks of mental derangement, even at long intervals, is a proof of the individual's mental and moral make-up being abnormal and pathological. These remarks are particularly applicable to the lucid moments proper, which occur in the course of a certain psychosis and which are brief or very brief in duration. Such lucidity is only ephemeral, more apparent than real. A civil act such as a will, for example, executed or altered during the lucid interval, should not be considered valid, in spite of the individual's knowledge of the wrong he did to those who are the interested parties.

During remissions, particularly those of paresis, various degrees of improvement are observed in the mentality. The improvement may in some cases be so marked as the patients appear perfectly normal. But it must be borne in mind that a remission is only a temporary amelioration of the psychic manifestations, but in no respect a recovery. In paresis, for example, alongside of apparent lucidity of mind, all or some of the sensory and motor symptoms of the disease, always persist. The disease is essentially progressive and not curable, in spite of great improvement that may occur in the psychic sphere. If, therefore, an illegal act is committed by a paretic during a remission, when he is able to distinguish between right and wrong, should he be considered as a normal individual and consequently held totally accountable for his act? From a physiologic standpoint a paretic is at no stage of his affection responsible, and if the legal test is applied to him he must be imprisoned and severely punished. Such a procedure is certainly a miscarriage of justice, as paretic must be housed in asylums or hospitals instead of in prisons.

There are two other affections in which the legal conception of right and wrong, when applied during apparently lucid intervals, may lead to disastrous consequences. I mean dipsomania and epilepsy. As it is well known, the first is characterized by an episodic irresistible desire to absorb alcohol. The dipsomaniac in the early stages of his infirmity presents apparent lucidity of mind and control of his faculties between the attacks of craving for drink. Dipsomania is always the result of a chronic use of alcohol. Whether in its early or later stages, it is a diseased condition and impulsive acts of any nature are likely to occur in such individuals. It is true that in an advanced period there is marked intellectual enfeeblement. In earlier stages the power of reasoning is sufficient for a realization of the criminality of an act, but, being affected by a malady which interferes with his normal life, although paroxysmally, such an individual can not be considered totally responsible; the responsibility is naturally only limited. The legal test consequently is not applicable to cases of this nature; if it were, the prison or gallows would take the place of hospitals. A dipsomaniac's chief characteristic is a pathologic state of inhibitory power.

Turning our attention to epilepsy, we find that the legal application of the usual test encounters some difficulty. In epilepsy a convulsive attack may be followed by an impulsive act of which the patient has no recollection; and then an epileptic seizure itself may consist of intellectual disturbances instead of the habitual muscular manifestations; instead of convulsions there may be unconscious aggressive acts; the patient may steal, rob, attack or kill. The irresponsibility in such cases is, of course, absolute. But when violent acts are committed by epileptics in the lucid intervals between the seizures, viz., when they are capable to appreciate the lawlessness and the consequences of such acts, the legal test of right and wrong appears to be the proper test. Nevertheless, if we consider the permanent state of morbid irritability which renders epileptics more than normal individuals predisposed to outbreaks of anger, of violence (and this is particularly true in cases with frequently occurring seizures); if we also consider that fact that the majority, if not all, epileptics are neuropathic individuals whose unstable nervous system is predisposed to various functional nervous disorders, we can conceive that epileptics between the seizures are only incompletely accountable for their acts; their responsibility must necessarily be limited and a strict application of the legal test is not an act of justice.

CONCLUSIONS

The foregoing review of various mental abnormalities leads directly to this deduction that in cases of insanity or other forms of mental deviation there may be a fair understanding of a morally wrong or right act and of a legal or illegal act, and yet there may be a pathologically insufficient controlling force. Every student of psychiatric problems, every psychiatric clinician knows that these two conditions may coexist, and the absence of the first does not exclude insanity or other psychic abnormality, and consequently does not exclude irresponsibility. Indeed, in some cases the absence or diminution of the faculty of inhibition predominates in the mental picture—or forms the entire symptomatology of the disease. The deviation in the manner of thinking, feeling and acting may not be present in its entirety, but may be dissociated in its original elements. The insane or abnormal feeling is just as important as the insane or abnormal thinking. In a large number of cases the change of feeling may for a long time be the earliest or the only manifestation of disturbed cerebral functions and this morbidly altered feeling may be the direct motive for abnormal or criminal actions. Intellectual capacity alone, therefore, can not constitute a proper criterion in consideration of criminal acts, and if the legal test refuses to take into account anything else but intellectual capacity it is radically unscientific and can not properly serve the ends of justice; judicial errors will invariably occur. The whole problem of a test in such cases depends, therefore, on the acceptance of the scientific data accumulated and elaborated from a large number of clinical observations.

To diagnose a mental malady special knowledge is indispensable. The latter is absolutely necessary for the proper appreciation of those cases in which illegal acts are committed by individuals, with all the evidences of reasoning, premeditation and reflection, who are nevertheless lunatics or otherwise mentally abnormal. It is indispensable because sometimes alterations in the psychic sphere are apparently very slight and yet are in reality considerable but concealed. It is indispensable because discovery of important elements for appreciation of certain crimes which are peculiar or unusual in their nature can be made by men who have had a special experience in psychologic analysis. Examination of these cases must be made not only in relation to the circumstances which preceded, accompanied or followed a certain lawless act, but also and particularly in relation to the entire previous and present medical history of the individual himself in all its minutest details, as they all are important in appreciation of his mental make-up. Every clinician is well aware of the importance of all these details. Reliance on one clinical element at the exclusion of all others is contrary to the scientific spirit. Adherence to such a procedure must invariably lead to errors, and this is especially observable in cases in which mental operations are involved. The law that holds a person accountable for his acts only on the basis of discrimination between right and wrong is wholly inadequate, because it is not based on accurate data gathered from clinical experience. The jurist must cooperate with and, I should say, almost entirely rely on the alienist. But the latter must be given the greatest latitude in presenting all the details concerning the medical history of a given case. Under no consideration should he be restricted to limit his opinion as to the exclusive right-and-wrong test. If the expert is ordered to confine himself exclusively to the determination of whether the accused individual is capable to distinguish legally right from wrong, he is then forced to omit extremely important facts which, as we have seen above, constitute sometimes real elements of alienation. Thus a lunatic, in the proper medical sense of the word, will be condemned while in a state of irresponsibility.

Personal experience in the courts of Pennsylvania has convinced me that this test is very strongly adhered to in the majority of instances. In view of our present knowledge of normal and pathologic processes in the psychic sphere, in view of our experience in the manner and methods of the proper appreciation of abnormal mental operations, in view of the evident injustice that may be done to some individuals who are rather subjects for treatment in hospitals than to be placed in prisons and considered as criminals—for all these reasons I believe a revision of the old classical test of right and wrong is strongly required. A combined effort of medical and legal experts must be made for mutual enlightenment on this important subject and avoidance of the repetition of grave errors of the past will thus be accomplished. Human liberty and responsibility are two most serious elements of life that can not be dealt with in a purely technical manner. They must be viewed from the standpoint of the broadest principles governing the interrelation between the individual and the community.

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ABSTRACT OF DISCUSSION

Dr. Charles W. Hitchcock, Detroit: I had occasion during the past year to review the laws of a number of our states regarding the matter of mental responsibility and in the ultimate analysis it seems to me that a great loophole is afforded to the insanity defense by the breadth of the laws, which almost uniformly permit any proof of insanity as an adequate defense for crime, instead of going further and inquiring not only whether the prisoner is insane, but whether he is so insane as to be irresponsible for his act, and is his act in any way the direct fruit of his insanity, if that be proved.

Dr. A. C. Brush, Brooklyn: The question of impulsive acts in insanity is one of grave social importance. It is held in the laws of the state of New York, 157 N. Y., by Justice O'Brien, that, although there may be such a form of insanity recognized, that the patient knows the nature of his act and deplores and fears its consequences, yet he is impelled by an impulse over which he has no control to perform the prohibited act. Whatever authority there may be in medicine there is none in law, and that is a wise decision from a sociologic standpoint; otherwise any prisoner might claim that he had an irresistible impulse to commit crime, and consequently society would be at the mercy of the criminal. It is not the fault of law, but the fault of medicine primarily. So long as we can not define insanity, can not define a dividing line between the sane and the insane, for there is none, the law must have some standard to set up for the defense of criminal cases, and that standard is still the old wild beast theory, and it must remain so until medicine evolves some more modern standard. Lawyers and judges are perfectly willing to accept any new standard if we can furnish it; but as yet we have failed, and until that is done, until we ourselves can evolve some more carefully and clearly defined rule, the present one must prevail.

THE STABILITY OF TYPE OF THE TUBERCLE BACILLUS

A STUDY OF THE TYPE OF CULTURES FROM OLD CUTANEOUS TUBERCLES OF BUTCHERS *

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It is now generally conceded that the tubercle bacillus of cattle at times incites tuberculosis in man. This conclusion has been definitely established only through the possibility of distinguishing between a bovine and a human type of bacillus, and through employing this method and isolating the bovine type of organism from human tuberculous infections. The studies thus far carried out in different countries, using the same methods of differentiation, agree in charging the human bacillus with a marked preponderance of infections. In this connection, however, there is one disturbing criticism that is now and again brought forth to shake the confidence reposed in these conclusions, based, as they are, on the differentiation of the types of bacilli. It is asserted by some capable workers that it is possible for the bovine bacillus to be so altered by years of sojourn in the human tissues that its essential characteristics become altered and it simulates the human type of bacillus. Without doubt, if this metamorphosis can readily take place, some of those infections which we now believe to have been of human origin may well have had their source in bovine infections of years ago, and it is to no purpose to designate them as human. In fact, if this be so, the entire method of differentiation which has accomplished so much in the past decade, and promises so much more in the practical and theoretical study of tuberculosis, would have to be regarded as not only unreliable, but misleading.

The main difficulty in studying this question in man is that we are rarely certain of the nature of the original infection and accordingly can not judge of the change of type. Our main reliance is generally circumstantial evidence. An exception to this rule, however, is furnished by those few cases of inoculation tuberculosis in which the bovine source of infection is definitely known. I have with difficulty found two cases of this nature, both in slaughter-house workers, and report a study of them coupled with some other experiments relating to the stability of the types of tubercle bacilli.

Case 1.—This man had been employed in his present trade for seven years. Four years ago, while slaughtering an animal,

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* From the Research Laboratory, Board of Health, New York.

he cut the middle finger of his right hand on the pointed end of a rib. He gave no thought to this injury until he found that it was slow to heal; he then merely applied various ointments. Gradually a nodule appeared at the site of the wound which assumed its present condition. He was aware of the tuberculous nature of this nodule, and in fact directed me to another worker who had the same skin lesion. I shall not enter into a minute description of the appearance of this nodule. It was of the size of a large pea, brownish-red and very firm in consistency. The glands at the elbow and axilla were not enlarged. The general health of the man was excellent.

CASE 2.—This case was very similar to the previous one. This man, while slaughtering a tuberculous cow, cut himself with a knife across the knuckles. This accident happened about six years ago. He remembered the date, as he was forced by this disability to quit work for some weeks and to enter the employment of another firm. As in the previous instance, a nodule appeared at the site of injury. The nodule was situated over the fourth left metacarpal joint, and resembled the tubercle described in the previous case, except that its surface was rougher and papilliform. This man also was healthy to all appearances; a large hard epitrochlear gland was palpable at the right elbow.

Both of these men were induced to have their nodules excised. After excision the surface of the growths was removed, and they were thoroughly washed in sterile water. Two guinea-pigs were inoculated subcutaneously with each growth. All four animals developed tuberculosis. It is not necessary for me to give in detail the method of isolating tubercle bacilli from the tissues or the criteria for differentiating the types. The method employed was that now generally followed and made use of by me in previous studies.[1] The cultural growth from these two cases proved to be very similar; in fact, I could not distinguish between them. They both grew sparsely on egg media. They also showed a high degree of virulence for rabbits, producing a generalized tuberculosis when inoculated intravenously in the dose of one milligram. In other words, they were typically bovine.

Before discussing these results I shall describe an experiment undertaken with the object of transforming the bovine type of the tubercle bacillus into the human type. An attempt was made to produce a culture medium resembling in its composition as closely as possible the human tissues. From the outset the inherent variance between an artificial culture medium and the living tissues was clearly realized. For this purpose, however, what may be termed "human-placenta glycerin broth" was devised. Human placenta was obtained under strict aseptic precautions and from this a broth was made, treating the placenta just as the beef is treated in preparing the broth for common use. One per cent. peptone, 0.5 per cent. salt and 5 per cent. glycerin were added. The entire preparation of this culture medium was conducted under as sterile conditions as possible. In order not to destroy the complement of the human placenta, heat was applied only to 55 C. It was possible in most instances to obtain a sterile broth by means of filtration through a Berkefeld filter.

Two bovine strains of known virulence, one of them having been under artificial cultivation for many years, the other only recently isolated, were grown on this culture medium for nine months, comprising eight generations. At the end of this period their virulence for rabbits was found to be as marked as at the beginning, showing that in this respect they had not approached the human type. In fact, the only change that was noted was one to be anticipated from artificial cultivation of any nature, namely, a greater facility of growth in the case of the strain which had been the more recently isolated. As this experiment was very laborious and promised so little, it was discontinued.

The question of the stability or variability of the types of tubercle bacilli has been discussed so frequently that I shall not review the testimony. In connection with this report, however, a few words on this subject seem in place. From the outset it should be realized that this question has a practical as well as a theoretical aspect, and that the two need not be in absolute accord. The former considers whether it is in any way possible by natural or artificial means to convert one type of bacillus into another type; the latter, whether the bacilli isolated from man and designated as human have been converted in his tissues from an original bovine type. These two points of view must not be confused. It is true that it has been demonstrated that under artificial cultivation strains may be greatly changed in their cultural and biologic characteristics. Indeed, a culture isolated almost ten years ago from a cow, and kindly sent to me by Prof. Leonard Pearson, I recently found to simulate the human type both in luxuriance of growth and diminished virulence for rabbits. Even after this long period of artificial cultivation, however, its virulence was still greater than cultures of the human type. Another bovine culture of about the same age was found to be markedly virulent for rabbits.

Such experiments clearly can not be translated into practical evidence on this question. Again, it may be advanced that experiments have been reported showing a conversion of human into bovine bacilli by means of passage through cattle; or of bovine into avian bacilli by means of passage through birds. Even if we accept these interpretations, however, and forego the criticism that has been levelled at them justly by others, we find these experiments to be very few in number and far outweighed by the many others in which no conversion of type was effected. When we consider the practical side of this question and draw our arguments from what we know of tubercle bacilli in man, the following should be borne in mind: It is true that atypical strains have been isolated by many investigators, strains neither typically human nor bovine. This intermediate group may in part be accounted for by attributing the variation to a change of environment, for example, of bovine bacilli in the new environment of human tissue. These atypical strains, it should be remembered, are exceptional; among three bovine and four human strains which I have isolated from man none belong to this category. Furthermore, this deviation from type can not be regarded as evidence of the possibility of a complete change of type. In this connection, it is worthy of note that typical bovine bacilli have been isolated from calcareous lymph nodes of human beings; in such instances the bovine bacilli must have existed in the human tissues for years without undergoing transformation. It has never been shown that the older the tuberculous lesion the less the likelihood of isolating bovine bacilli from man; and yet this corollary should obtain if the bacilli are readily converted in the human tissues. The question may be approached from another point of view. It is well known that no case of primary pulmonary tuberculosis has been indisputably proved to have been incited by the bovine bacillus. These cases form the great mass of tuberculosis and have been studied more than all others. If this form of disease is due in some instances to a bovine bacillus which has been transformed in the human body, we should at least occasionally encounter this type of bacillus before it has been converted into the human type, namely, in the early stages of the disease. Not only do we know that this is not the case, but we find that even the intermediate types are rarely met in the primary pulmonary cases. So that it would seem from a practical standpoint the question of transmutation of types may well be disregarded and we can safely continue to investigate the etiology of tuberculosis by means of differentiating the types of bacilli.

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[1] Hess: Cultures of Tubercle Bacilli isolated from Milk, Jour. Infect. Dis., June, 1909, p. 329.

The two cases of cutaneous tuberculosis which I report claim some degree of interest because they constitute bovine infections occurring in adults. The fact that they remained localized should not be attributed to the low degree of virulence for man of the bovine bacillus, as it is well known that cutaneous affections due to the human type of bacillus, such as lupus or the "anatomic tubercles" contracted in the dissecting-room likewise do not tend to systemic invasion. Their main significance, however, lies in the fact that they furnish exceptional instances of bovine tubercle bacilli which have lived in the human tissues for many years without acquiring characteristics of the human type. From this point of view they constitute evidence against the conversion in the human tissues of bovine bacilli into human tubercle bacilli. It would be interesting and of undoubted value if those who have access to similar long-standing cases of tuberculosis would make them the basis of bacteriologic study.

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SYPHILITIC PSEUDOPARALYSIS*

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Few diseases have been studied with greater care than syphilis, nor have their individual manifestations been noted more in detail, and I am perhaps not far wrong in saying that the literature of medicine is more voluminous on syphilis than any other single disease. This is not a matter for surprise, for no disease has a more widespread influence on human ailment; yet it appears to me that, while the acquired form of syphilis is reasonably well understood, we are still lamentably ignorant of the significance of the hereditary form as it relates to many of the obscure conditions of childhood and young adult life. I therefore deem it not inadvisable to draw attention to just one manifestation of this taint and to report two cases illustrative of several observations which have been made on this class of case.

Syphilitic pseudoparalysis is a manifestation of inherited syphilis which exhibits itself during the first few months of life in a failure, disinclination or inability to move one or all of the extremities, and is variously alluded to in the literature as syphilitic pseudoparalysis, Parrot's paralysis, or merely described under the pathologic condition syphilitic epiphysitis, and belongs under the general class of osteochondritis.

There are various gross appearances dependent on the stage or degree of cartilaginous inflammation. Thus there may be a ring or collar apparent on palpation, partly or wholly surrounding the bone at the junction of the epiphysis with the shaft (usually upper) due to proliferation of the cells, or there may be a distinct separation at the same point due to absorption of the cartilage with accompanying free motion at the false joint thus formed. Or again, there may be complete breaking down of the tissue with pus formation, finally rupturing through the skin forming an open abscess. Such cases, however, are thought to be due to secondary pus infection.

The first symptom to attract attention to this condition is the fact that the child does not move one or all of its extremities. Only one upper extremity may be affected or both arms and both legs. The frequency with which the various extremities are affected does not appear to be settled, and the only observer who reports a sufficient number of cases from which conclusions may be drawn is Bednar, who lists nineteen, as follows: Arms alone, 16 times (does not state whether one or both arms were affected—presumption both); legs only, once, and all limbs twice. While some authors state that it may occur in only one extremity, none cites a case without either both arms or both legs or all four extremities being affected. In case one or both arms are affected the child will lie with them rotated so far inward that the palms face outward. These cases resemble and are in appearance identical with brachial birth paralysis. When the legs are affected, however, the rotation is apt to be outward. Usually the affected limb is in a state of flaccidity, and if the arm is lifted and let fall it will drop again to the same position; or it may be rotated, and if there is separation at the epiphysis it may be moved freely at the point of separation. I doubt if in such cases as this the children ever give evidence of pain, but they certainly have no power of voluntary motion.

In other instances there is a more or less spastic condition, the joint resisting motion and the child crying out with pain on being handled. In addition are the symptoms which I have already described apparent at the joints.

The exact cause of these various symptoms, all accompaniments of the same pathologic process, seems to be as yet undetermined. Sundry theories have been advanced in an attempt to explain the several states of immobility; thus, some consider the flaccidity due to an inability to move on account of separation or absorption of cartilage, some to myositis, others to pain, and still others to involvement of the peripheral branches of the brachial plexus. Each of these may have a basis of fact in individual instances, but are all open to objection when a number of patients are observed, and do not hold true for all cases. Those which I shall report illustrate some of these points very well.

The diagnosis of this condition is exceedingly important since epiphysitis is said to be the most frequent manifestation of inherited syphilis and further because it may be the only evidence of the presence of the taint. There are but four conditions for which it is likely to be mistaken, viz.—scurvy, infantile paralysis, septic epiphysitis and brachial birth paralysis.

Scurvy is rarely seen before the fifth—usually from the sixth to the fifteenth month—is always bilateral and affects the shafts of the bones, while epiphysitis is located at the extremity, though it is well to bear in mind that cases have been described in which tenderness was present along the shaft as well—and appears rarely after the third month. Infantile paralysis also appears at a later date, is frequently epidemic and the history, onset and course are entirely different. In septic epiphysitis the constitutional symptoms are pronounced and the temperature elevated.

The diagnosis from brachial birth paralysis seems to me to be the most important and presents the greatest difficulties, for, as has been stated before, when the arms alone are affected the picture is more or less typical of Erb's paralysis. It is to be noted, however, that in Erb's paralysis there is usually a history of difficult labor, with traction either with the forceps or with the hands as in delivery of the shoulders, or in lateral traction as in the delivery of the after-coming head in breech cases. It has been known, however, to occur in normal labors. Erb's is usually unilateral, while pseudoparalysis is more apt to be bilateral. (This latter statement is largely inferential since, as stated, I am unable to find positive statements on this point.) The time of the appearance of the immobility of the two conditions may be the same. When separation is present or the characteristic bony ring can be felt, the diagnosis is rendered easy. In Erb's paralysis the electric reaction of degeneration may be present early, whereas in pseudoparalysis, as stated by Holt, the reaction is normal. It is well to bear in mind on this point the statement of Dr. Eustice Smith, that a form of real paralysis is occasionally observed, affecting the branches of the brachial plexus, causing partial or total loss of motion. It is not stated by him whether this paralysis improves under specific treatment. In Erb's paralysis there is a selection of definite groups of muscles and even a sympathetic involvement as shown by narrowing of the palpebral fissure and contraction of the pupil (Bailey). In pseudoparalysis the various groups of muscles are rendered immobile but there is an apparent selection or involvement of the sympathetic.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In Erb's paralysis slight tumors are sometimes seen at the point of the tear in the nerve fibers. Some patients with Erb's paralysis improve spontaneously, in which event it appears that the diagnosis may become difficult if not impossible. In patients with pseudoparalysis not treated promptly there may be a permanent deformity from partial or complete absorption of the cartilage, and in after life a case of this deformity may again be indistinguishable from the similar deformity resulting from Erb's paralysis, cases of which rarely escape without some deformity. Bailey states that "as a practical fact electricity is rarely necessary in the diagnosis of this form of paralysis, as the flaccid condition of the affected muscles is usually evident before the child is old enough for electrical examination to be feasible." I would again suggest the fact that the diagnosis may not be so easy as this for the reason as stated, that in pseudoparalysis the flaccidity may very closely resemble the condition found in Erb's paralysis.

The following cases illustrate the various points which I have attempted to bring out:

Case 1.—Colored male 4 weeks old, well developed and nourished; in fact, normal in general appearance, somewhat inclined to be fat. The mother stated that child had appeared all right at birth and up to two weeks of age, when it began to lose use of arms, and that now it made no effort whatever to move them.

Examination.—I found the child lying in its mother's arms apparently comfortable and contented. Both arms hung limp by the sides, and rotated inward to such an extent that the palms faced outward, and at first I thought I had a case of bilateral Erb's paralysis. The arms were freely movable, dropping again to the same position on being lifted and let fall. No ttempt was made on the part of the child to move the arms or ven the fingers and tickling the palms elicited no reflex. There was apparently a complete paralysis of the entire upper extremity, but not the slightest evidence of pain either on pressure or on motion. The junction of the epiphysis and the shaft f the upper end of the humerus presented a slight enlargement surrounding the bone, barely perceptible owing to the fatness of the infant. There were no discernible blemishes of any kind, in fact, nothing to suggest anything but a healthy infant, except that the spleen was palpable. The temperature was normal, and was at each subsequent examination. I sought out the granny who had presided at the delivery and with difficulty ascertained that the birth had been normal in every particular, of short duration and that this was the mother's fourth child. The cord was not around the neck.

Treatment.—Mercurial inunctions were instituted at once, and after the fourth treatment the child began to move the fingers; in ten days good use of the forearms occurred, and by the end of three weeks the child seemed to be entirely well, including disappearance of thickening of the epiphysis and enlarged spleen. This child died one year later of enterocolitis.

Remarks.—At the time of my first visit I was unable to secure any family history which would aid in a diagnosis. Several months after, however, I had an interview with the father who gave a good history of secondary eruption, following sore on penis, at the time of conception.

Case 2.—Colored male, 5 weeks old, presented a typical picture of syphilitic infant. He was poorly nourished, had fissures around mouth and anus; skin was dry and scaly, and there was evidence of subsiding pemphigus of palms and soles. Spleen was enlarged, liver apparently was not.

Examination.—The arms hung in the characteristic position already described, no attempt being made at motion, though both arms could be handled and moved freely without evidence of discomfort. In this case the examination of the arms was easy, since the child was thin. A distinct separation could be detected at the upper cartilage on both side with free rotary motion. In this case, as in the first, there was no reflex of the palm, and, in fact, so far as the upper extremities were concerned, it was a reproduction of Case 1 except for the cartilaginous ring. The lower extremity, however, presented a different picture. The legs were rotated outward and were in a state of spasticity and could not be moved on account of the pain thus caused. I could make out no thickening or separation. The legs were rigidly flexed and were exceedingly tender on pressure as well as painful on motion. On tickling the soles of the feet the toes were readily flexed. At no time was there any temperature. There was possibly some tenderness along the spine but this was difficult to determine.

Treatment.—The inunctions were begun at once, and by the end of two months the child was apparently perfectly healthy. It soon passed from observation and I have never seen it since.

In these cases we have every one of the varieties which I have seen described. In the first we have a well-developed child with flaccidity of the upper extremities, slight thickening of the cartilage, no pain on motion or tenderness on pressure, no attempt to move even so much as the fingers and no response to tickling the palms. In this case the immobility can hardly be ascribed to pain, but, as it appears to me, the general appearance is strongly suggestive of nerve involvement.

In the second case we have a poorly developed child, flaccidity of upper extremities as in Case 1, separation of the epiphysis, no attempts to move even fingers, no pain or tenderness on handling or motion. Here the immobility might be ascribed to separation of the epiphysis, but this does not account for the lack of motion in the fingers and the failure to respond to irritation of the palm, and again we have a strong suspicion of involvement of the nerves.

As noted, the legs presented a different picture. They were rotated outward. There was every evidence of pain on pressure or the slightest motion. Muscles were contracted and painful and general spasticity was present, yet the toes contracted when the soles were tickled. In this case we have the suggestion that immobility was due to pain either from myositis or epiphysitis, the muscles contracting in an effort to immobilize the joint, rather than from nerve involvement.

The treatment of the condition should be directed to the counteraction of the specific poison by means of inunctions. Sutherland suggests splints and local applications of mercurial ointment, which he believes to be of special value since he has seen pseudoparalysis develop while child was taking general syphilitic treatment.

I have attempted to write nothing new, but merely to call attention to the importance of the recognition of this condition and its diagnosis, and in the light of what we have before us it seems to me that further investigation of this very interesting condition would be profitable.

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NODULAR OPACITY OF THE CORNEA

WITH SPECIAL REFERENCE TO ITS ETIOLOGY*

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The ophthalmic literature of the last thirty years contains occasional references to a rare ocular disease characterized by the presence of fairly well-defined opacities situated in the central portion of the cornea. These opacities vary in size and contour and lie in the otherwise relatively clear tissue. The condition was not recognized as a distinct malady until Groenouw, in 1890,[1] and again in 1898,[2] made it the subject of clinical investigation and pathologic study. Since then a number of observers have dealt with the condition and a few have subjected the diseased tissue to histologic examination.

Groenouw states that nodular opacity of the cornea begins with slight inflammatory signs, which are often so insignificant as to escape the notice of the patient. It attacks both eyes and is distinguished by the appearance of numerous, small, roundish or irregular, gray discrete opacities in the otherwise relatively clear corneal tissue. The larger masses, which are situated principally in the superficial layers of the center of the cornea, attain a diameter of 0.25 mm. The overlying epithelium is frequently elevated, but not vesicular. Under high magnification the corneal surface between the masses is seen to be very faintly cloudy.

Our knowledge of the condition was considerably extended by Fuchs[3] on the basis of eight carefully observed cases. He found that the trouble showed a special predilection for young men; (11 males, 1 female, in the 12 cases in the literature up to 1902). It was characterized by: (1) considerable roughness of the corneal surface; (2) gray, roundish or irregular opacities situated in the pupillary area and projecting above the corneal surface; (in general the larger irregular masses were surrounded by smaller roundish ones, the latter exhibiting a circular arrangement); (3) a faint diffuse opacity of the rest of the cornea which, under high magnification, resolved itself into very tiny punctations. The configuration of the opacities slowly altered in the course of years.

The extreme rarity of this disease is attested by the fact that Fuchs encountered the condition only eight times in a material comprising upwards of 250,000 eye cases. At present writing the literature contains only 22 authentic cases. (Groenouw 2, Fuchs 8, Holmes-Spicer 2, Chevallereau 1, Krukow 3, Gillius 2, Wehrli 2, Treacher Collins 1, and Paderstein 1.)

SYMPTOMATOLOGY

The disease is ushered in by moderate photophobia, epiphora, and occasionally a foreign body sensation. There is no true pain but only a sense of ocular discomfort. These signs are accompanied by diminution of visual acuity. Throughout the long course of the disease there is a conspicuous absence of active inflammatory appearances, although now and again a transient redness, accompanied by photophobia, will manifest itself. The course of the disease is essentially chronic.

In view of its progressive character and rebelliousness to all therapeutic methods, the disease is one that deserves the careful attention of ophthalmologists. The final visual outcome varies from tolerably good vision to finger-counting.

DIFFERENTIAL DIAGNOSIS

Nodular opacity of the cornea is to be distinguished from a number of more or less similar conditions. Fuchs calls attention to some distinguishing features between this disease and superficial punctate keratitis. In nodular opacity the spots are compact and homogeneous. There are no inflammatory appearances and the clinical aspect may remain unchanged for years. In superficial punctate keratitis, on the contrary, the spots are made up of an agglomeration of the very finest dots. Inflammatory appearances are invariably present and the condition undergoes rapid changes. Von Reuss,[4] under the name of "keratitis maculosa," describes a disease consisting of disc-like masses surrounded by a ring occupying for the most part the periphery of the cornea, but also at times the center. Nummular keratitis (Stellwag[5]) consists of very large masses of a saturated yellowish tint lying mostly in the periphery of the cornea and in the superficial layers. Both types, in contradiction to nodular keratitis, offer a good prognosis. Grill-like keratitis is a condition which, in respect to its course, its situation in the center of the cornea and the elevation of the epithelium over the lesions, presents many points of similarity. It is distinguished by the very definite mesh-work or interlacing arrangement of the linear opacities. Fuchs suggests that nodular opacity bears some resemblance to certain cases of old eczematous keratitis in which a thinning of the epithelium over one or more of the denser opacities produces a bluish-white prominence of the corneal surface. According to Morax[6] the disease may be confused with syphilitic nodular keratitis, in which the infiltrations, either solitary or in groups, are of a grayish-yellow color. They develop slowly, last for several months and finally disappear, leaving only insignificant deep or superficial opacities in the cornea. Under the title "Spotted Family Degeneration of the Cornea," Fehr[7] describes a condition observed by him in two sisters and a brother. Each cornea showed a milky opacity in which scattered dots of greater saturation were distinguishable. Under magnification the diffuse opacity resolved itself into tiny punctations and the more saturated masses were seen to be due to the crowding together of the individual punctations. This condition is distinguished from nodular opacity by the fact that the periphery of the cornea is involved and that the corneal surface is smooth and shiny.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Arch. f. Augenh., xxi, 281-289.

[2] Arch. f. Ophth. (von Graefe's), xlvi, 85.

[3] Arch. f. Ophth. (von Graefe's), 1902, liii, 423.

[4] Wien. klin. Wchnschr., 1889, No. 34.

[5] Wien. klin. Wchnschr., 1889, p. 613.

[6] Encycl. Franç. d'ophth., v. 949.

[7] Centralbl. f. prakt. Augenh., 1904, p. 1.

HISTOLOGY OF THE AFFECTION

Fragments of the diseased tissue have been studied histologically by Groenouw,[2] Fuchs,[3] Chevallereau,[8] and Wehrli.[9] The only report based on the examination of the entire globe is the recent one of Paderstein.[10] Groenouw's specimens showed a foreign substance lying partly isolated and partly in large masses in the substantia propria of the cornea. Just beneath the epithelium the material appeared finely granular and exhibited a certain parallel or interlacing arrangement. It had the appearance of a foreign substance interposed between the corneal fibers. Adjacent to the deposits the corneal corpuscles were deformed and greatly increased in numbers. There was no change in the epithelium or Bowman's membrane. From the chemical reactions of the amorphous substance Groenouw was led to believe that it was of a hyaline nature. The presence of this substance he explains on two grounds: either it was a transformation product of the corneal substance or a foreign mass deposited in it. He admits the possibility of a combination of the two processes.

In Case 6 of Fuchs' series, a fragment of the corneal tissue from the pupillary area, 4 mm. in diameter and 0.25 mm. in thickness, was excised with a corneal trephine. The pathologic appearances, which were confined to the superficial layers of the cornea, were as follows: The epithelium covering the nodules was greatly thinned and the cells flattened. The more superficial corneal lamellæ were swollen and, at sites corresponding to the nodules, were separated. Between the superficial and deeper layers appeared a deposit of amorphous substance, which was not present beneath the nodules. The substance contained isolated corneal fibers and wandering cells. Bowman's membrane could not be seen. When stained with thionin those layers beneath the amorphous deposit took a violet color, instead of the usual blue-green of normal corneal tissue. There appeared then four alterations from the normal: (1) swollen appearance of the upper corneal layers throughout; (2) fibrillation of these layers in limited areas; (3) a deposit of amorphous substance; (4) a change of the underlying lamellæ. Fuchs assumed a metabolic change in the superficial layers leading to the formation of a pathologic fluid. This fluid brought about a swelling of the superficial layers, and, accumulating between the lamellæ, separated and finally destroyed them. He was unable to reconcile the anatomic findings in his case with those of Groenouw and others and was forced to adopt the hypothesis that etiologically and anatomically different processes gave rise to clinically indistinguishable corneal conditions. He concludes that the disease is due to a general, as yet unknown, nutritional disturbance of which the sole expression so far observed is the eye disease.

Chevallereau[8] found crystals of sodium urate lying between the superficial corneal layers.

Paderstein[10] reports the only histologic examination of the entire globe in a case of nodular opacity of the cornea. He found thinning of the epithelium and altered relations of the round and cylindrical cells. The space of the missing cells was filled with a homogeneous hyaline substance, which also appeared on or slightly separated from Bowman's membrane. In places the nodules appeared to be made up of layers of hyaline "like the flakes of an onion." Elsewhere the hyaline assumed a fibrous appearance. Bowman's membrane varied in thickness and was pressed together by the overlying nodules. In places a sharp differentiation between the hyaline and Bowman's membrane was not possible. The hyaline lay also on the basal epithelial cells. These, and to some extent other epithelial cells, had separated from neighboring cells. Their nuclei were partly normal, partly degenerated, and vacuolated. There were no pathologic changes in the corneal parenchyma. Paderstein believes that the basal epithelial cell layer was the primary seat of the affection, and outlines the series of pathologic events as follows: A degeneration of the epithelial cells resulted in the formation of hyaline. The nodules and projections were formed by agglomeration of degenerated cells. Between the cell groups, which had passed through a complete transformation, were scattered some in which the degenerative process was not completed. Thus are to be explained the cells and cell remains in the spaces between the layers of the deposit.

From the above descriptions it can readily be seen that the histologic findings, though presenting some points of similarity, are widely at variance in others. Entirely unrelated to any appearances described by other observers are the findings of Wehrli.[9] This author encountered the disease in two brothers, one of whom had passed through an attack of tuberculous peritonitis. He excised some of the nodules and introduced them into the anterior chamber of a rabbit. There was a sharp reaction with the appearance of a transient yellowish exudate around the fragments, but nine months later the rabbit's eyes were apparently normal. The histologic findings included enlargement of a portion of the fixed corneal cells and increase and regressive processes in a number of the same. The large cells were arranged in groups and bore a striking resemblance to the histologic disposal of the cell nests of epithelioid nodules of tuberculous or syphilitic granulomata. Furthermore, there were found large cells with several nuclei, similar to giant cells. The connective tissue fibers had a sort of cicatricial character. Those next to the so-called tubercles were granular and homogeneous. An amorphous substance deposited in the superficial layers was regarded by Wehrli as necrotic débris from the destruction of tuberculous nodules. By the Ziehl-Nielson method Wehrli found, after long search, two apparently segmented, slightly curved bacilli, coloring faintly red, which he believed to be tubercle bacilli.

In view of the extraordinary rarity of the affection, and also of Wehrli's dictum that every observed case deserves recording, I venture to present the following typical example of nodular opacity of the cornea:

REPORT OF CASE

General History.—R. V. O., aged 27, male, married, came under observation Oct. 30, 1908. His mother died of tuberculosis of the lungs at the age of 40, the patient being 10 years old at the time. A maternal aunt also died of the same disease. As a young boy the patient was perfectly healthy. At the age of 9, he fell out of a swing and landed on his back. The following day a "ridge" appeared around the waist, not accompanied by pain. This remained and two or three weeks later a swelling appeared on the left hip, which was lanced and discharged pus. Other swellings of a similar nature appeared to the right of the sacrum near the coccyx and over the left gluteal muscles. All these swellings were lanced and discharged pus for several years, finally healing when the patient was about 17 years old, leaving large deep scars. For a time the left knee was flexed and the patient had to use a crutch. There was no pain in the joints at any time. At the age of 16 the patient passed several kidney stones, preceded by severe pains in the lumbar region. Six years before he came under my observation he had a severe attack of measles and gonorrhea three years later—mild attack, no complications. He positively denied syphilis. For the past ten years he had been exceedingly healthy, though troubled with a winter cough. His average weight was 135, maximum 150 (present weight.)

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[8] France méd., May 2, 1891.
[9] Ztschr. f. Augenh., 1905, xiv, 322.
[10] Klin. Monatsbl. f. Augenh., February, 1909, p. 156.

General Examination.—I am indebted to Dr. L. M. Warfield for the general physical examination. This showed a puckered scar on the left groin three inches in length, one on right groin, one large deep scar opposite the left trochanter, one on each side of the upper part of the sacrum, small one to the right of the coccyx, one puckered scar below the edge of the gluteus maximus. At the lowest lumbar spine the bones were thickened; there was no pain, no limitation of motion, slight limitation of adduction. The lungs and heart were normal. The scars were typical tuberculous cutaneous scars. There was no evidence of syphilis.

Ocular History.—About three years before the time of examination the patient noticed a sandy or gritty sensation accompanied by slight epiphora and photophobia and found that his sight was growing dim. There was no noticeable redness and at no time any true inflammatory signs. A year later he consulted an oculist who used various local medicaments and gave mercury by the mouth. Vision grew slowly worse, though there were transient periods of slight improvement.

Ocular Examination.—There was no conjunctival or ciliary congestion in either eye. R. V. 18/150. L. V. 18/96. Examination with the binocular loupe disclosed five or six, very irregular, rather ill-defined grayish masses occupying the center of the right cornea. These masses were, in general, grouped in the form of an ellipse, the center of which was occupied by a nebulous area. The left cornea presented much the same appearance, the opacities being of irregular shape, rather more sharply defined than in the right eye and arranged in the form of a flattened ellipse. The center of the ellipse was rather clearer than in the right eye. With the aid of the Zeiss corneal microscope a very beautiful picture presented itself. In the right eye (Fig. 1), the irregular masses appeared fluffy, like cumulus clouds, with ill-defined margins, shading into relatively clear cornea. The masses could not be resolved into separate dots, but appeared quite homogeneous. Where two separate masses lay near together there was a decided tendency for them to merge or coalesce. The tissue occupying the center of the ellipse was distinctly nebulous. Here and there, the epithelium over the nodules appeared elevated, so that it formed a tiny facet and reflected a laterally projected pencil of light. Outside the involved central area the cornea was very faintly nebulous and this cloudiness extended right up to the corneal margin. The lesions were situated in the superficial layers, but here and there appeared to dip well back into the corneal stroma. The iris showed no alteration. In the left eye (Fig. 2) the masses were somewhat better defined than in the right, i.e., the line of demarcation between the individual nodules and the contiguous tissue was better defined. The nodules themselves were not as fluffy as in the right eye but appeared homogeneous. The space between the masses was rather less nebulous than the corresponding space in the right eye. The epithelium over the nodules was elevated and irregular. The periphery of the cornea contained an extremely delicate gray opacity which resolved itself into the finest of dots. The fundus of each eye was normal. Tension normal; pupils equal; pupillary reaction normal both to light and convergence. The general appearance of the cornea is well illustrated by the accompanying pictures. These were drawn, however, some three months after treatment was begun and do not show the distinct internodular opacity in the left eye visible at the first examination. The history of the case, together with the quite typical appearance, left no doubt as to the diagnosis of nodular opacity of the cornea.

Treatment and Course of Disease.—Bearing in mind the clear tuberculous family history, and the unquestioned tuberculous nature of the old cutaneous ulcerations, I was impressed with the possibility that the eye lesion might be of the same nature. It was, therefore, decided to try the effect of a diagnostic injection of tuberculin.

October 31: At 3 p. m., 3 mg. of old tuberculin were injected into the upper left arm. The following day, November 1, 11 a. m., temperature was 98.4 F. There was very slight redness and soreness at the point of inoculation, with some palpable thickening. At 8 p. m., temperature 99 F.

November 2: Arm quite sore; 3 mg. old tuberculin were injected in the right arm.

November 3: Both conjunctivæ were injected and there was some ciliary congestion. Patient complained of much discomfort, increased photophobia and stickiness of the lids. On examination with the corneal microscope the nodules in the right eye especially were denser and more fluffy than at the first examination. R. E. V. 18/192. L. E. V. 18/96.

November 5: Both arms were found to be indurated at the site of the injections. Three mg. old tuberculin were given.

November 6: Patient stated that he had had a bad night; severe headache; now felt quite sick. At 10 a. m., temperature 99.4 F. Large induration at point of inoculation. At 4 p. m., temperature 100.6 F. R. V. 18/75. L. V. 18/38. The corneal microscope now showed a distinct thinning of the cloudy nodules in the right cornea and a diminution in the internodular opacity. The left eye showed a very distinct diminution in the internodular opacity but no noticeable change in the nodules themselves. The patient expressed his surprise at the sudden improvement in vision.

Diagnostic tuberculin injections were suspended and the patient was not seen again until November 12, on which date therapeutic doses were instituted, beginning with 0.01 mg. of old tuberculin. At intervals of three or four days old tuberculin was injected, increasing 0.01 mg. at each dose.

December 3: The dosage was 0.05 mg. and, for the first time, evoked some soreness at the point of injection.

The dosage was reduced to 0.02 and gradually increased at intervals of a week to 0.03, 0.04 and finally 0.055 mg. when treatment was suspended. The therapeutic injections between Nov. 12, 1908, and Jan. 13, 1909, numbered fifteen. At each visit the corneæ were very carefully examined with the corneal microscope and it was possible to note a gradual diminution in the internodular opacity, especially of the left eye.

On March 1, 1909, the masses were decidedly less dense and in the right eye were more sharply delimited than at first. This change in the appearance was accompanied by gradual improvement in vision so that at this date R. V. 18/60. L. V. 18/30. The patient was much gratified with the improvement in vision as he had about made up his mind that he was going blind. Local treatment has been confined to bland collyria and (for a week only) dionin 3 per cent solution. This was suspended, as it provoked a good deal of discomfort. I was anxious to secure a fragment of the cornea for histologic examination but the patient declined any operative interference whatsoever.

I have later learned that the patient's sister, residing in Kentucky, has had defective vision for a number of years. To a letter requesting particulars of the malady she replied that she had been troubled with her eyes for five years. There had never been any inflammation, the main difficulty being defective vision. She had tried several pairs of glasses but found none that helped. "Over the sight of the eyes are several white specks about the size of a pin-head."

We have, then, in a patient with a very clear family history of tuberculosis, who himself had passed through a severe cutaneous tuberculous affection, a typical nodular opacity of both corneæ. The absence of any etiologic factor aside from tuberculosis which might conceivably have given rise to such a process, the general and local reaction to the diagnostic tuberculin test, the lessening of the density of the nodules, the clearing of the internodular opacities and notable improvement in vision under tuberculin therapy, lead me to the belief that this case is an attenuated tuberculosis of the cornea.

Writers subsequent to Wehrli have been disposed to ignore his findings and conclusions, seeming tacitly to assume that because they did not coincide in any particular with those of other observers they must be faulty. In the light of my own case such a point of view seems to me not justified.

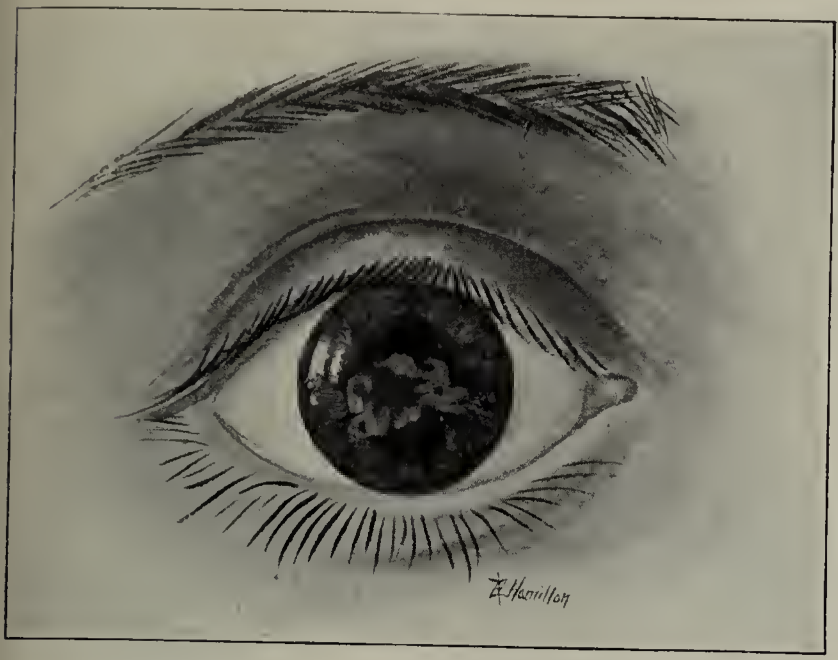


Fig. 1—Nodular opacity of the cornea, right eye.

In the present state of our knowledge with regard to this peculiar affection, we must adopt the view that cases of nodular opacity of the cornea, clinically indistinguishable, may differ with respect to their etiology and histology. It seems proper to regard the cases of Groenouw and Fuchs as instances of a general nutritional disturbance of which the sole expression is the corneal lesion. On the other hand, the histologic findings of Wehrli and the diagnostic and therapeutic efficiency of tuberculin in the case here reported seem to indicate that some of these cases may be, as Wehrli has pointed out, examples of attenuated tuberculosis of the cornea.

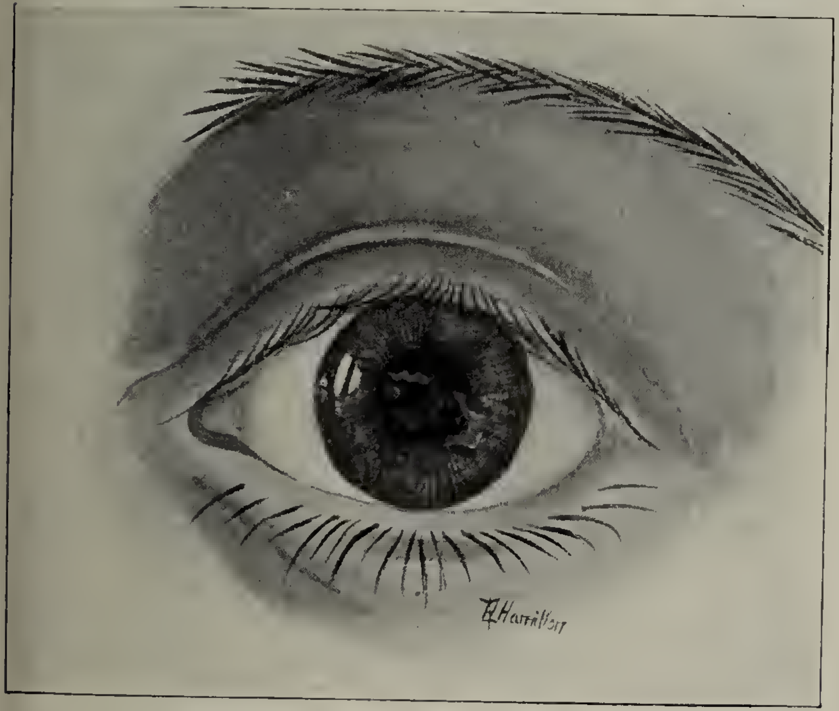


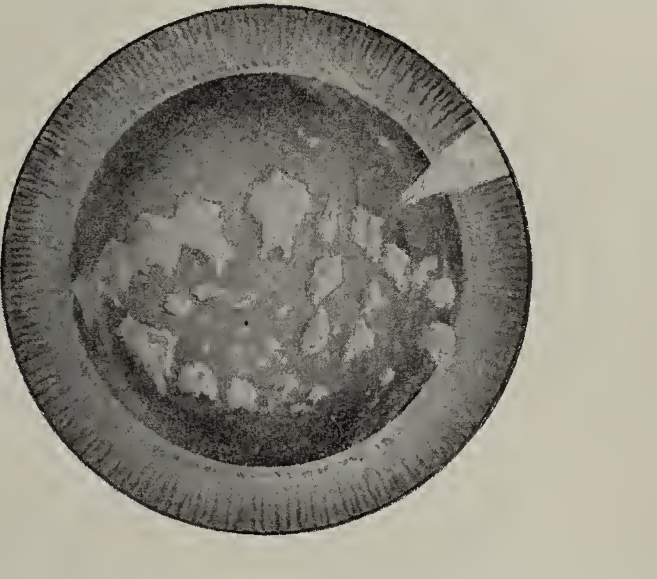
Fig. 2.—Nodular opacity of the cornea, left eye.

626 Metropolitan Building.

ABSTRACT OF DISCUSSION

Dr. Edward A. Shumway, Philadelphia: Any communication which helps to determine the etiology, and to suggest the treatment, of an obscure condition must be considered of great importance. Reports of cases of nodular keratitis are becoming more frequent in ophthalmic literature, especially in Great Britain. Hancock (*Trans. Ophth. Soc. United Kingdom*, 1905, p. 64) reported two in a mother and son, and Dawnay (*ibid.*) reported two in sisters in 1905. Leslie Buchanan (*Ophthalmoscope*, December, 1907) gave the histories of two brothers in whom the disease was apparently arrested, and the vision much improved by iridectomy, and three cases in one family were seen by A. McNab (*Trans. Ophth. Soc. United Kingdom*, 1907, p. 81) and described in the same year. In December, 1908, Folker (*Ophth. Rev.*, xxvii, p. 385) reported seven cases in three generations of one family before the Ophthalmic Society of the United Kingdom, and in the discussion McNab advanced the suggestion that a tuberculous diathesis might be the cause of the condition. Finally, a patient was shown by Zentmayer before the Ophthalmological Section of the College of Physicians, in Philadelphia, in February, 1909, in whom a general but no local reaction to tuberculin was obtained. So that even if we limit the case to the typical nodular form, with discrete opacities in the center of otherwise relatively clear corneæ, and with roughening of the surface, as a result of the elevations of the corneal epithelium, and exclude the cases of grill-like keratitis and family degeneration of the cornea, often considered to be of the same general type, the literature of the subject has greatly increased in recent years.

Most surgeons who have reported cases of nodular keratitis have assumed that some dyscrasia was at the bottom of the trouble, and that the opacities were due to degenerative changes, beginning either in the corneal epithelium or in the superficial corneal lamellæ. If it can be shown that in at least some of them tuberculosis is present, a notable advance will be made in treatment. The entire absence of inflammatory reaction and the absence of cellular infiltration in the majority of cases which have been examined histologically, except as in Paderstein's case, as a secondary condition, have probably prevented the authors from taking tuberculosis into consideration, as the ordinary forms of tuberculous keratitis are attended with stubborn and well-pronounced signs of inflammation. Moreover, the occurrence of a general reaction to tuberculin is not proof positive that a local condition in the cornea is tuberculous, although of sufficient importance to warrant antituberculous treatment. It is imperative for us to examine each new case minutely for the presence of a tuberculous history, or a focus of tuberculosis elsewhere in the body, and especially to try the subcutaneous test with tuberculin. In the presence of such a factor, the treatment with tuberculin injections, commencing with small doses, as Dr. Green has done, should be adopted. If such treatment fails of success, the results obtained by Buchanan by iridectomy should be remembered, in our efforts to check what has been considered a hopelessly progressive form of blindness.



Drawing showing corneal lesions in left eye in case mentioned by Dr. Zentmayer in the discussion. Right eye practically the same.

Dr. William Zentmayer, Philadelphia: I hesitate to report a case in discussion, but I desire to record the condition present in my case [see illustration above] and to report the pathologic findings. The epithelium varies from 20 to 30 cell layers to 2 or 3 cell layers deep. There is a general cloudy degeneration of all the epithelial cells tapering off at the extremity of the specimen into healthier cells which are probably a part of the surrounding clear cornea. The basal cells in one part of the section are approaching horny change, while in others they shade off into the partially homogeneous stroma. The cells of the stroma are degenerated, cloudy, the fibers in some parts have completely coalesced and in this region take a dull bluish stain like nuclear degeneration (hyaline degeneration). Bowman's membrane is absent in places; in others it is broken up and vacuolated. These findings correspond closely to those of Fuchs and Paderstein. The patient had a high-pitched apical note but there were no evidences of tuberculosis.

Dr. O. Wilkinson, Washington, D. C.: I reported a case several years ago in an elderly captain in the army aged about 70. He had been a hard drinker all his life, but there was no history of syphilis or tuberculosis. The opacity in the center of the cornea was highly nodular, while toward the periphery it was not so pronounced. The left eye, which was first affected, practically only had vision to count fingers. In the right eye, more recently involved, there was a typical central nodular opacity about the size of the ordinary pupil, but with dilated pupil he had fairly good vision. No histopathologic examination was made and he declined any form of operation. I suggested iridectomy for the benefit of vision, but that also was declined.

OSTEOMYELITIS OF THE LOWER JAW *

H. H. GERMAIN, M.D.
BOSTON

That true osteomyelitis of the mandible is an infrequent condition is generally conceded. Considering the opportunities offered for infection in this bone, it seems strange that the disease is not more commonly observed.

Many authors have remarked that the lower jaw is closely allied in structure to the long bones. This is partly true for the body, but not at all for the rami. The body differs from the long tubular bones in that teeth germs are present in childhood, while in the adult alveoli exist for the teeth. The rami resemble the flat bones, since their structure is denser and the marrow is of the spongy or diploetic variety. After the teeth have been lost and the alveolar process absorbed the body also assumes the character of the flat bone. In the jaw of the adult containing teeth the presence of large open marrow spaces together with the inferior dental canal favors the spreading of infection in the body of the bone. It appears, in fact, as has been emphasized by Dependorf,[1] that the canalis mandibularis possesses the same characteristics pathologically as the medullary cavity of the long bones. Infection travels along this canal with the greatest ease, while the surrounding medullary spaces act as reservoirs for pus. Hence in the body of the jaw the process is often a diffuse rapidly spreading disease. The above conditions do not obtain for the rami, and here we should expect the disease to be more localized. Kaleibe[2] and Dependorf,[1] who have investigated this condition, state that this is true and that small foci of suppuration are most often found in this portion of the bone in hematogenous infection.

ETIOLOGY

Having the above anatomic conditions in mind, our next task is to review the etiology of the disease. That the infectious agent finds entrance into the bony substance by way of the teeth goes without saying. Probably eight-tenths of all cases arise in this way. Infections from gangrenous pulps or from abscessed teeth are the most common (see Cases 1, 2 and 3). Impacted third molars also furnish a fair number of cases if one can judge from the number reported. Perthes[3] lays great stress on this latter cause. Pyorrhea alveolaris, noma and gangrenous stomatitis furnish occasional cases (Case 4).

Traumata without fracture may act as predisposing factors, as they produce extravasations and disturbances of circulation which furnish an opportunity for the carriers of infection to settle at the point of injury. Trauma resulting in fracture frequently furnishes a direct path for infection from the oral cavity or outer skin, since the majority of these fractures are compounds. Cases 5 and 6 are examples of fractures compound into the mouth, while Case 9 opened into the external auditory canal.

Excluding infection from the mouth or outer skin, the remaining cases are the result of hematogenous infection. These may follow acute infectious diseases, as scarlet fever and typhoid, or may accompany a septicemia from any cause. Hematogenous osteomyelitis is the only example of pure infection, usually of *Staphylococcus aureus* or streptococcus, which we have in the mandible. This refers, of course, to the condition before communication with the mouth is established. All others are necessarily mixed infection from contamination with mouth bacteria. It is probable that long exposure to cold and dampness is a predisposing factor to this disease; the same may be said of metallic poisons.

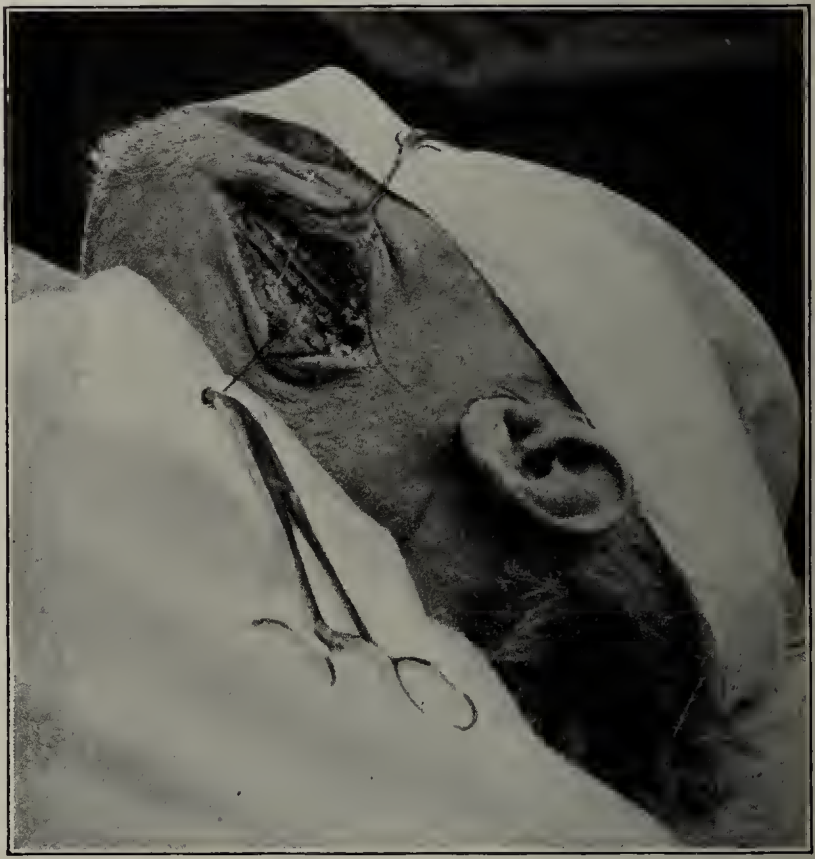


Fig. 1.—Completed operation, showing facial wall of lower jaw removed.

Previous to 1881 so-called idiopathic osteomyelitis was mentioned by Rosenbach[4] and Lannelongue,[5] but in that year Kaleibe pointed out and discussed in detail acute infectious osteomyelitis, recognizing the true nature of the disease.

SYMPTOMS AND COURSE

The sudden spontaneous appearance of gnawing pain is a phenomenon which is well known in all cases of osteomyelitis, regardless of situation. This is usually followed by more or less swelling of soft parts accompanied by fever, and after a time abscesses form and point into the mouth or externally through the cheek or outer skin. With the evacuation of pus temporary relief from pain is observed, but with the progress of the disease more abscesses form with recurrence of symptoms. If the process is diffuse the periosteum is stripped from the bone and the teeth loosen or are extracted to promote drainage of pus. Sooner or later part of the bone dies, and with the casting off of the sequestrum the process usually stops. Not infrequently a different course is seen; the suppuration and swelling are reduced and the disease becomes localized; the jaw thickens and the soft parts become dense and indurated. This localized form occurs most frequently in the ramus of the jaw in hematogenous cases, but it may occur in the body, provided good drainage is established.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] Dependorf: Volkmann's Sammlung klinischer Vorträge, 1906, No. 440.

[2] Kaleibe: Inaug Diss., Halle, 1881.

[3] Perthes: Verletzungen und Krankheiten der Kiefer, 1907.

[4] Rosenbach: Deutsch. Ztschr. f. Chir., x, 492.

[5] Lannelongue: Bull. et mém. Soc. de chir. de Paris, viii, 263.

The diffuse form is, as a rule, very acute, impairing the general health rapidily by septic absorption and also by the fact that the trismus which is present makes it impossible to masticate and swallow food. These patients can open the mouth a quarter of an inch or less, a condition which makes speech, deglutition and mastication difficult or impossible. It often happens that a large amount of pus is swallowed from discharging sinuses in the mouth. How much effect this has on the general condition is hard to estimate, but no one will deny that the circumstance is unfavorable to good digestion.

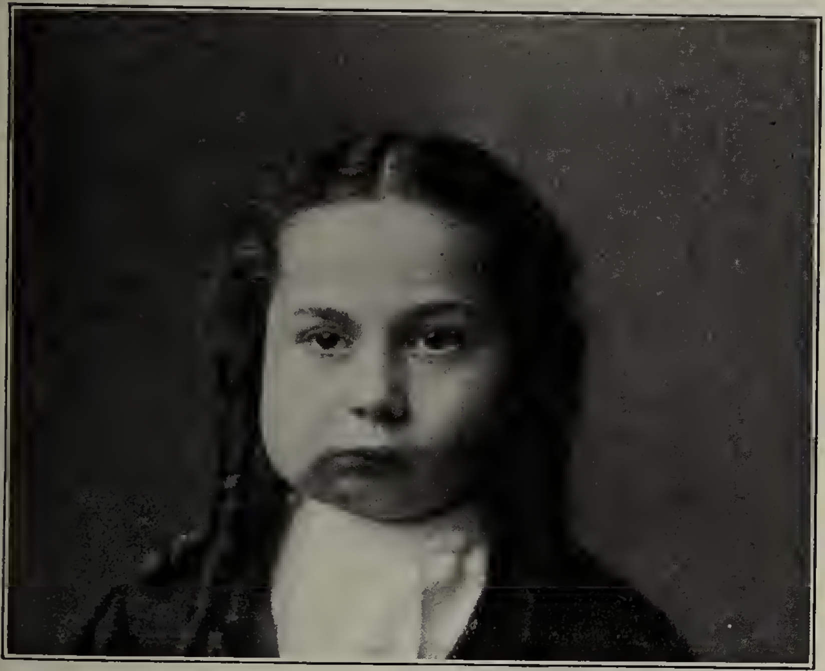

Fig. 2.—From photograph of Patient 3; note shortening of lower jaw.

Exactly what controls the size of the sequestrum in an untreated patient is impossible to say accurately. That a total necrosis does not frequently occur seems to be due to an inherent tendency which the marrow possesses to wall off the disease by the formation of dense bone from the endosteum. We have seen that anatomically and pathologically the long bones and the lower jaw are very similar, and it is to be noted that there is a third analogy, i. e., the uniformity in the conduct of the periosteum after loss of parts of the cortical bone. If diffuse necrosis occurs before complete development the longitudinal growth is, of course, much disturbed, but it is the rule that the diametrical growth will go on and new bone be formed provided the periosteum remains intact. The time required for the formation of a loose sequestrum varies in individual cases from twelve to twenty weeks, at the end of which time a fairly firm involucrum, or shell of periosteal bone, is formed. For some time the involucrum is soft and the muscles of the face and jaw produce a certain amount of deformity by shortening the newly formed mandible if the sequestrum includes the entire diameter of the jaw. As a result of this shortening there is malocclusion of greater or less degree as is seen in Case 3. As a rule it may be stated that the body and ramus will be reproduced, but the alveolar process will not be restored after destruction.

It has been noted that in practically all cases pus finds an outlet on the facial side of the mandible either in the mouth or externally. It is also true that part of the facial wall often becomes necrotic and is cast off as a sequestrum, while the labial side is rarely affected in cases of partial necrosis. The exact reason why the disease selects preferentially the facial side is not perfectly clear, but the large size of the marrow spaces below and to the outer side of the inferior dental canal offers the most likely explanation, since the line of least resistance is in this direction, i. e., toward the facial wall.

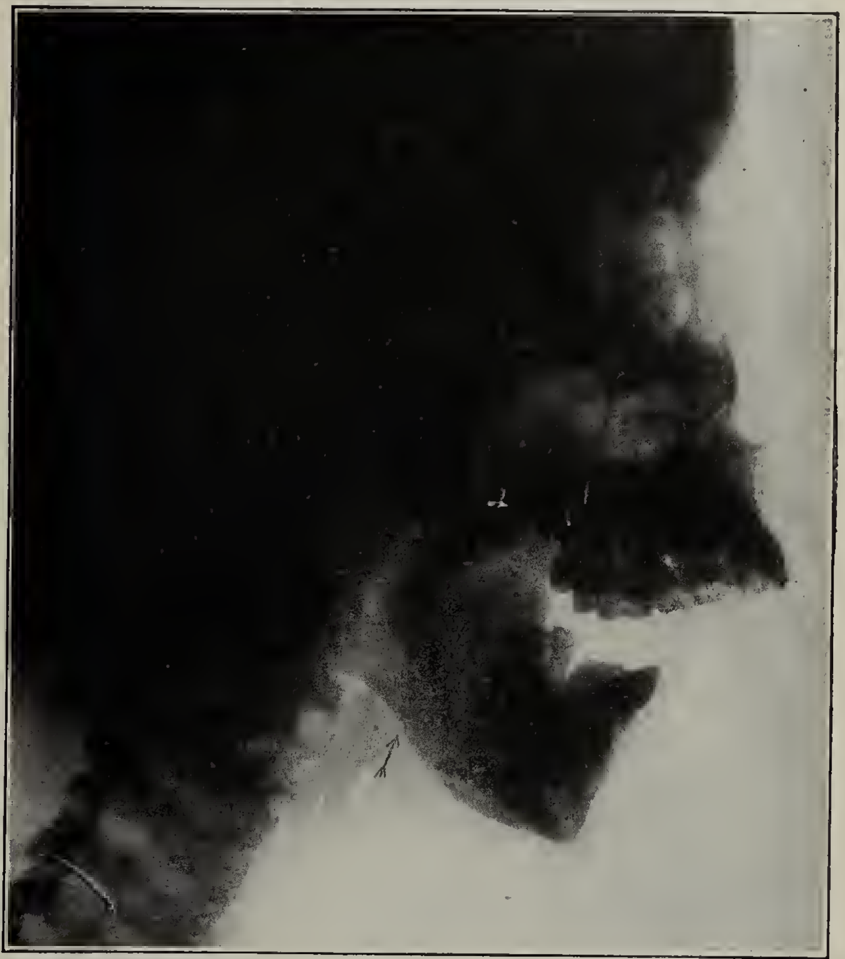

Fig. 3.—From x-ray of Patient 3; shortening of lower jaw apparent here also.

As has been observed, the symptoms in an acute case may subside, sinuses form and the disease take a subacute or chronic course. In this event it is usually found that there is a sequestrum present which must be removed. In the jaw there is also a possibility that there may be a dead tooth which can give the case the appearance of a chronic osteomyelitis. Cases of this kind are frequently seen and a number have been reported in which the external opening of the sinus was at a distance from the original cause in the jaw. The following is an example of one of these cases: Male, age 20, developed spontaneously a small abscess about the center of the anterior border of the right sternomastoid muscle. Abscess was drained, but a sinus persisted which resisted all treatment. Finally a dead second molar was extracted. Immediately blood appeared from the sinus and methyl blue dropped into the cavity left after extraction made its appearance at the external opening. Similar instances are reported by Perthes. In Case 9 of this series there was a sinus in the external auditory canal which on superficial examination resembled otitis media.

These teeth sinuses are particularly frequent in the region of the chin, where a dead incisor or cuspid may be the offending agent. Extraction of these dead teeth may be insufficient for cure, since a pocket of pus and granulations may be present at the apex of the root. Case 10 in the following series is an example.

DIAGNOSIS

Occasional difficulties in diagnosis will be experienced, but they are fortunately rare. Cases of malignant disease with secondary infection are stumbling-blocks which occur now and then. Syphilis and actinomycosis may, of course, confuse. Suppurating dentigerous cysts have been seen often enough to make one consider the possibility. Phosphorus necrosis is extremely rare at the present time. In all of the above conditions, except syphilis, the treatment is surgical and at operation there is rarely any difficulty as to the best course to pursue.

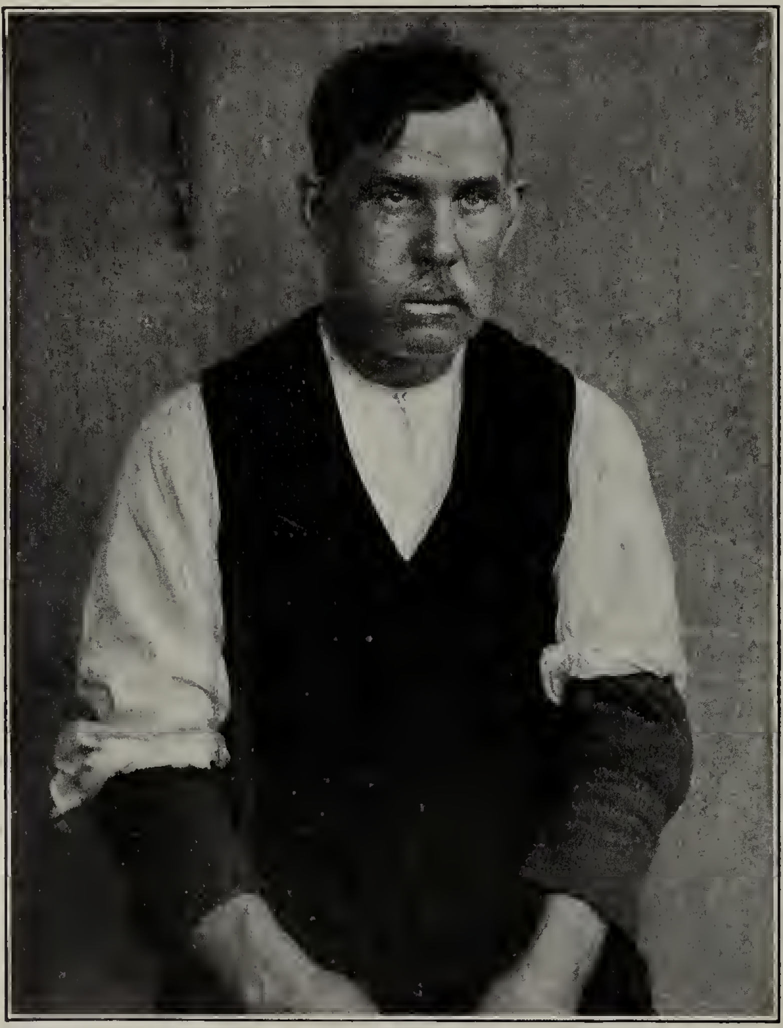

Fig. 4.—From photograph of Patient 6, front view.

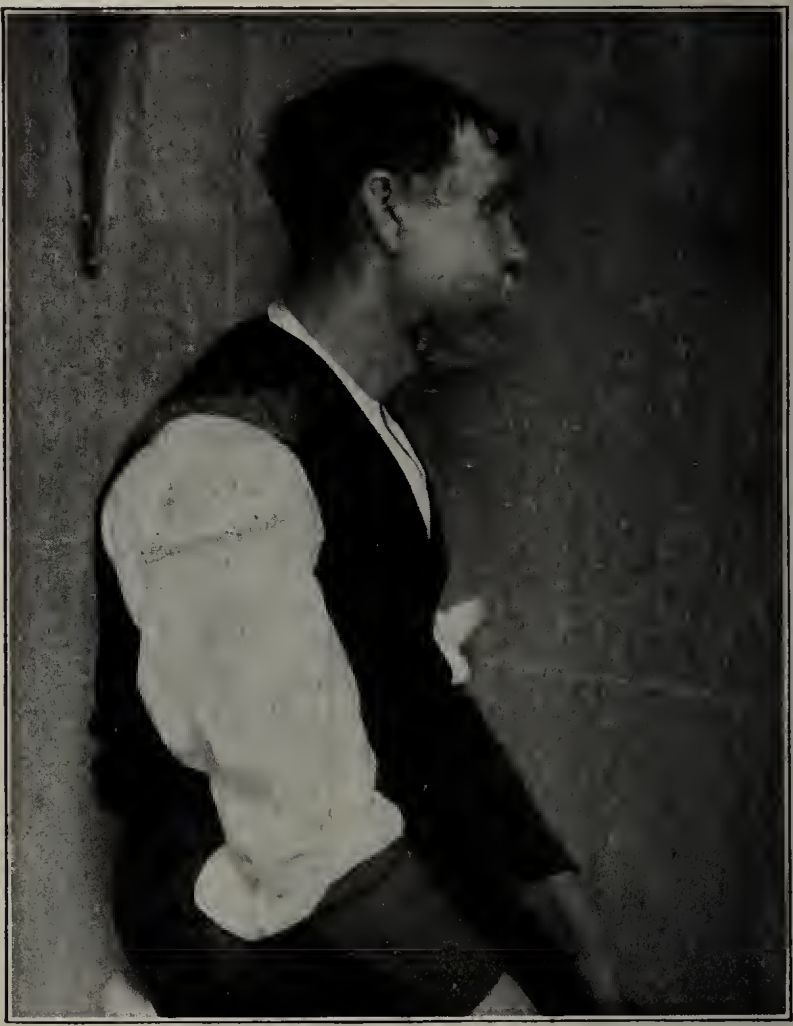

Fig. 5.—From photograph of Patient 6, side view.

The most valuable information may be obtained by the x-ray in cases in which the disease is localized, in which there is a definite sequestrum or in which fracture is a starting-point of the disease. In Cases 10 and 11 foci of suppuration were located with accuracy. In Case 6 the x-ray showed a fracture which was the starting point of the infection. In Case 3 a definite sequestrum was found to be present. Good x-rays are difficult to obtain of the condyle and upper part of the ramus, but when obtained may be of the greatest aid.

A careful study of the plates may rule out sarcoma and syphilis in certain doubtful cases, but at times both cancer or sarcoma accompanied by bone destruction are difficult to differentiate from osteomyelitis by any known means except the microscope.

TREATMENT

In acute cases affecting the body of the mandible the general rule for treatment should be to remove the facial wall of the lower jaw through an external incision, exposing the inferior dental canal (Fig. 1). In this way all large marrow spaces are opened, the best possible drainage obtained, the firm inner wall is left which keeps the jaw in shape and an opportunity is given to retain the teeth. A good example of the result of this procedure is seen in Case 6, in which the disease was checked and all of the teeth retained. That this method is far superior to incisions in the mouth is obvious and needs no discussion. The gravity of the disease demands radical treatment and leaves us little choice as to whether scars should be left or not.

Subacute and chronic cases are a law unto themselves and no definite method of treatment can be laid down for their relief. In general we may say that the treatment of each case is a hunt for diseased teeth, pockets of pus and sequestra. Sequestra representing the entire thickness of the jaw should be left until a firm involucrum is formed in order to minimize deformity. These cases need careful watching, as acute exacerbations occur frequently and are troublesome and dangerous.

Trismus is frequently an annoying feature and rectal or nasal feeding may be necessary. Hot applications externally may give some relief from this condition, which is usually a combination of muscular spasm and inflammatory edema.

Lymphadenitis and angina Ludovici may occur at any time. The latter demands immediate surgical intervention.

DEFORMITY

After loss of large portions of the jaw, as in Case 3, a certain amount of deformity results with shortening of the body on the affected side. Certain plastic operations have been devised to relieve this condition and it seems probable that bone might be implanted successfully in order to overcome the difficulty. Up to date I have been unable to find a patient who was willing to undergo the ordeal after recovering from an acute process in the iaw.

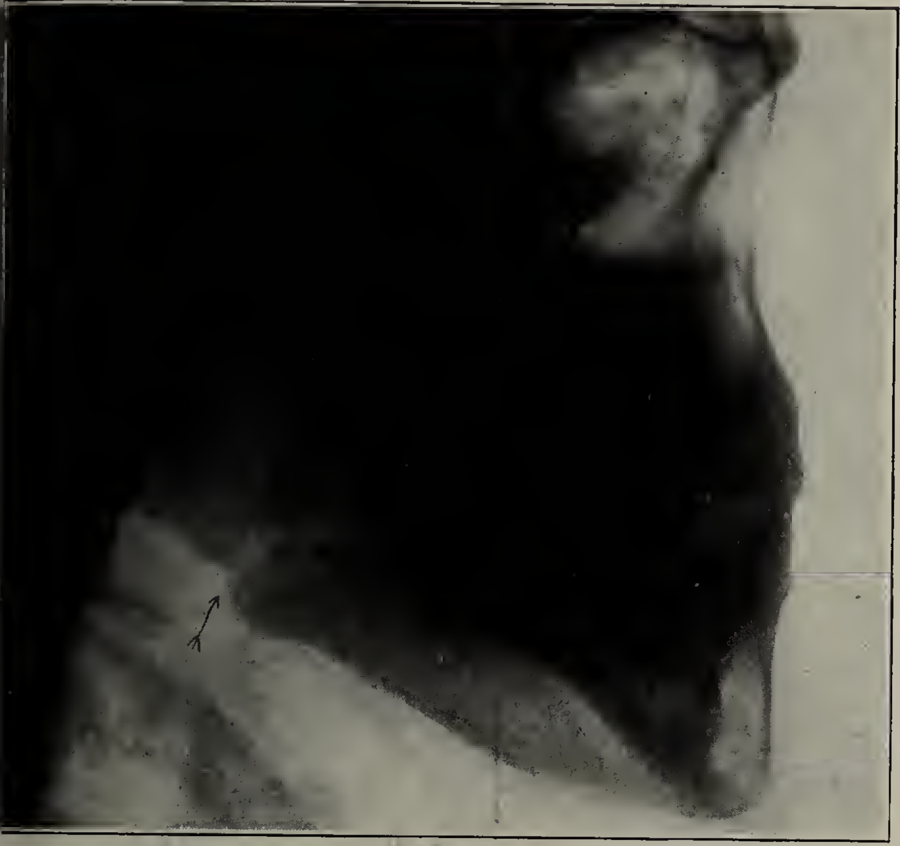

Fig. 6.—From *x*-ray of Patient 6; note fracture.

SUMMARY OF CASES

CASE 1.—A man, aged 41, entered hospital May 5, 1905; no history of injury. Illness had begun two weeks previously with pain and swelling in cheek; now showed indurated swelling of lower jaw to the left of the median line the size of half an orange. Operation was performed; chin incised and bone curetted. Patient returned to hospital Oct. 3, 1905; had several sinuses which had never healed. Examination showed two sinuses leading to bone near median line. Incision from one angle of the jaw to the other showed the whole jaw to be necrotic and large amount of bone was removed. Patient returned to hospital again a year later when more dead bone was removed from the left side of the jaw. Since then he has been well.

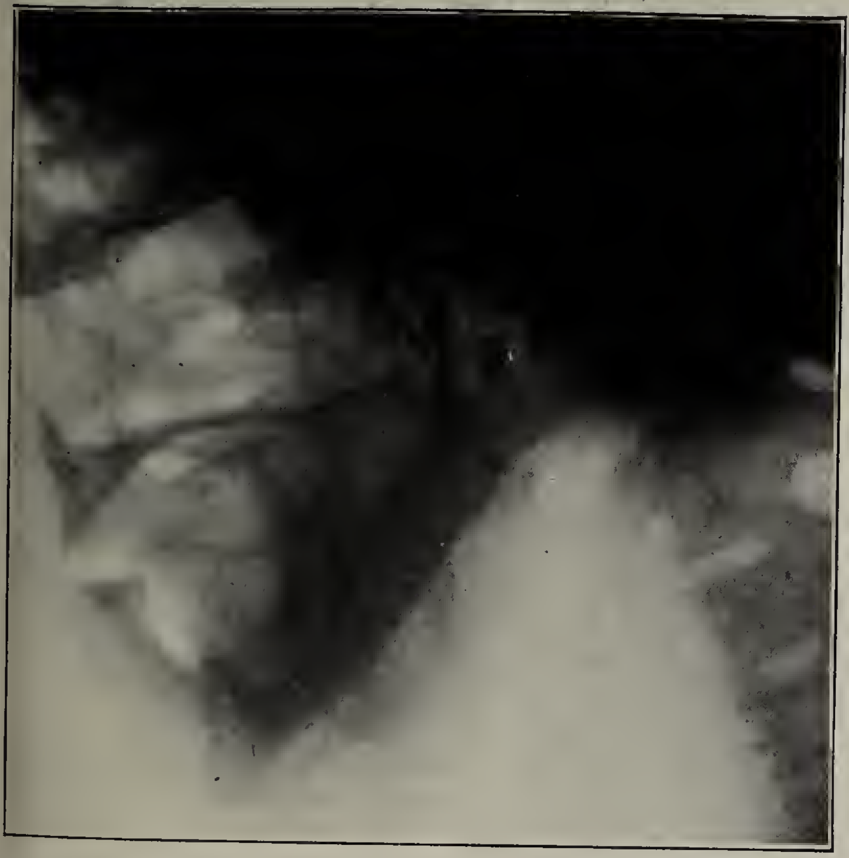

Fig. 7.—From *x*-ray of Patient 9; note absence of condyle and upper part of ramus.

CASE 2.—A man, aged 56, for ten weeks had pain in lower jaw following extraction of a molar tooth, with trismus, painful deglutition and constant pain which was worse at night; he had lost thirty pounds in ten weeks. At operation the sequestrum was removed from left side of jaw which consisted of alveolar process and part of body. Uneventful recovery.

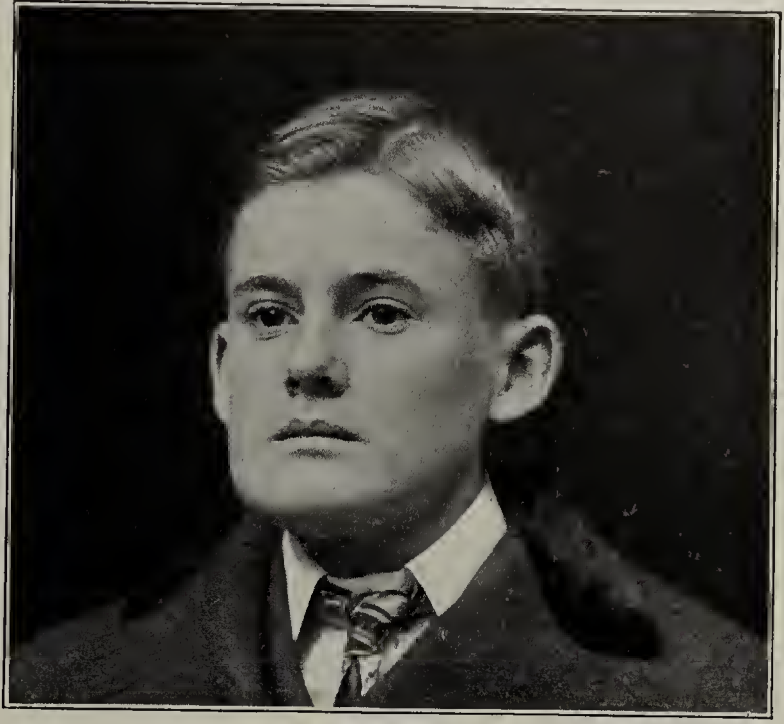

Fig. 8.—From photograph of Patient 10; note swelling on right of lower jaw.

CASE 3.—A girl, aged 9, five months previous to examination had had abscessed molar removed without relief from pain; later had all of teeth removed on same side without relief. The jaw became swollen and tender and was lanced several times. Examination showed whole face of affected side much swollen with external sinus at angle of the jaw (Fig. 2). *X*-ray showed large sequestrum (Fig. 3). Operation was performed and sequestrum consisting of large part of the body and all the ramus on right side removed; fairly firm involucrum present.

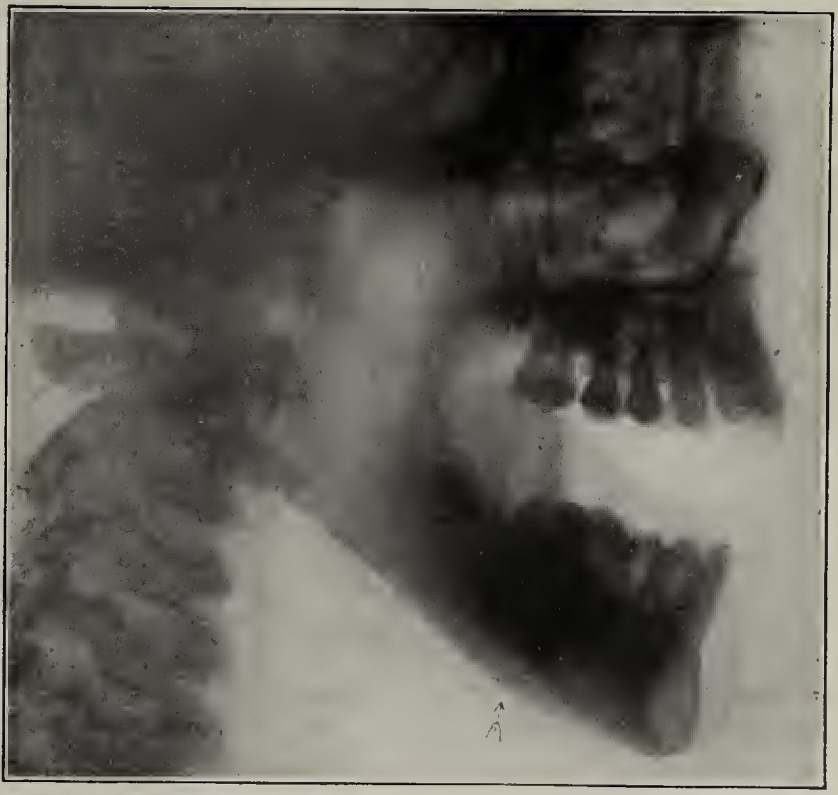

Fig. 9.—From *x*-ray of Patient 10; note thickening of periosteum.

CASE 4.—A girl, aged 3, had lost all teeth of lower jaw with alveolar process during an attack of noma. Lower lip was adherent to jaw with mouth about three-quarters of an inch in diameter.

CASE 5.—A boy, aged 7, whose lower jaw had been fractured during extraction of a tooth fourteen months previous to the time he came under observation, after this had an abscess under the jaw which was opened several times. At operation sequestrum was removed from left half of body of lower jaw. Recovery was uneventful.

CASE 6.—A man, aged 50, received blow on chin Feb. 24, 1809; twenty-four hours later he had acute pain with trismus, difficulty in swallowing and in speech. Examination showed diffuse swelling (Figs. 4 and 5); abscess was opened three days afterward. *X*-ray showed a fracture of the lower jaw through the last molar (Fig. 6). Six weeks later, owing to persistent pain and swelling, the facial wall of lower jaw was removed with good recovery.

CASE 7.—A boy, aged 19, six years before operation was kicked in the chin, following which an abscess developed and was opened; sinus was persistent. At operation sequestrum was removed from under incisor teeth; recovery was uneventful.

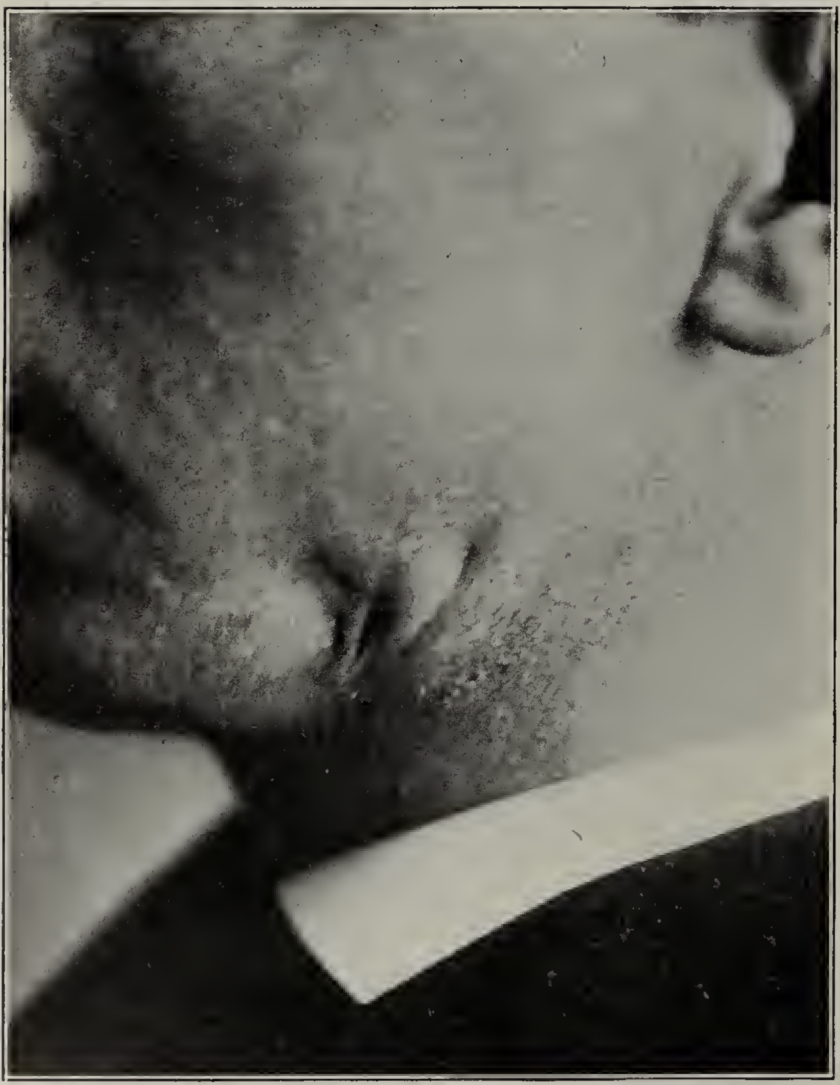

Fig. 10.—From photograph of Patient 11; sinus at angle of jaw.

CASE 8.—A girl, aged 11, two and a half years before operation was struck in the chin by a blow of the fist. Following this an abscess developed, which was opened, leaving a persistent sinus. At operation the sinus led into a cavity under the first molar, into which the root projected. Tooth was extracted and cavity curetted; recovery was uneventful.

CASE 9.—A man, aged 42, was struck in the chin by a limb of a tree three months before examination; he was rendered unconscious and awoke in hospital. At that time diffuse swelling of left side of face with facial paralysis and bleeding from the left ear were present; the patient was in hospital six weeks. He now sought aid on account of discharging ear with pain in region of ramus of jaw on the same side. Examination showed sinus leading forward from cartilaginous canal to region of glenoid fossa. At operation necrotic condyle was found broken off and lying in zygomatic fossa (Fig. 7). Recovery uneventful.

CASE 10.—A boy, aged 13, had had abscessed bicuspid removed six weeks previously. The mucous membrane healed, but persistent swelling of the whole lower jaw and cheek remained (Fig. 8). This swelling varied and at times partly closed the right eye. *X*-ray showed thickening of the periosteum with increased density of the bone (Fig. 9). At operation a cavity, the size of a cherry, containing pus and granulations was found below the bicuspid. In this case there was no sinus. Uneventful recovery.

CASE 11.—A boy, aged 20, for ten months had had a discharging sinus which appeared spontaneously after an acute swelling in the region of the angle of the jaw (Fig. 10). *X*-ray showed area of dense bone in the ramus suggesting a sequestrum (Fig. 11). At operation a small bone abscess was found in lower part of ramus.

CASE 12.—A woman, aged 29, a few weeks before operation had the lower right bicuspid extracted on account of pain; six weeks before examination had three lower molar teeth extracted for same reason with no relief. Two weeks before examination incisor teeth were removed without relief. Right side of jaw began to swell five months previously; at times the patient had trismus and difficulty in swallowing. Examination showed lower jaw on right swollen and tender; remaining incisor teeth loose. At operation lower incisors were removed and sequestrum consisting of part of body removed through the mouth. One month later another piece of necrotic bone was removed from jaw near the median line.

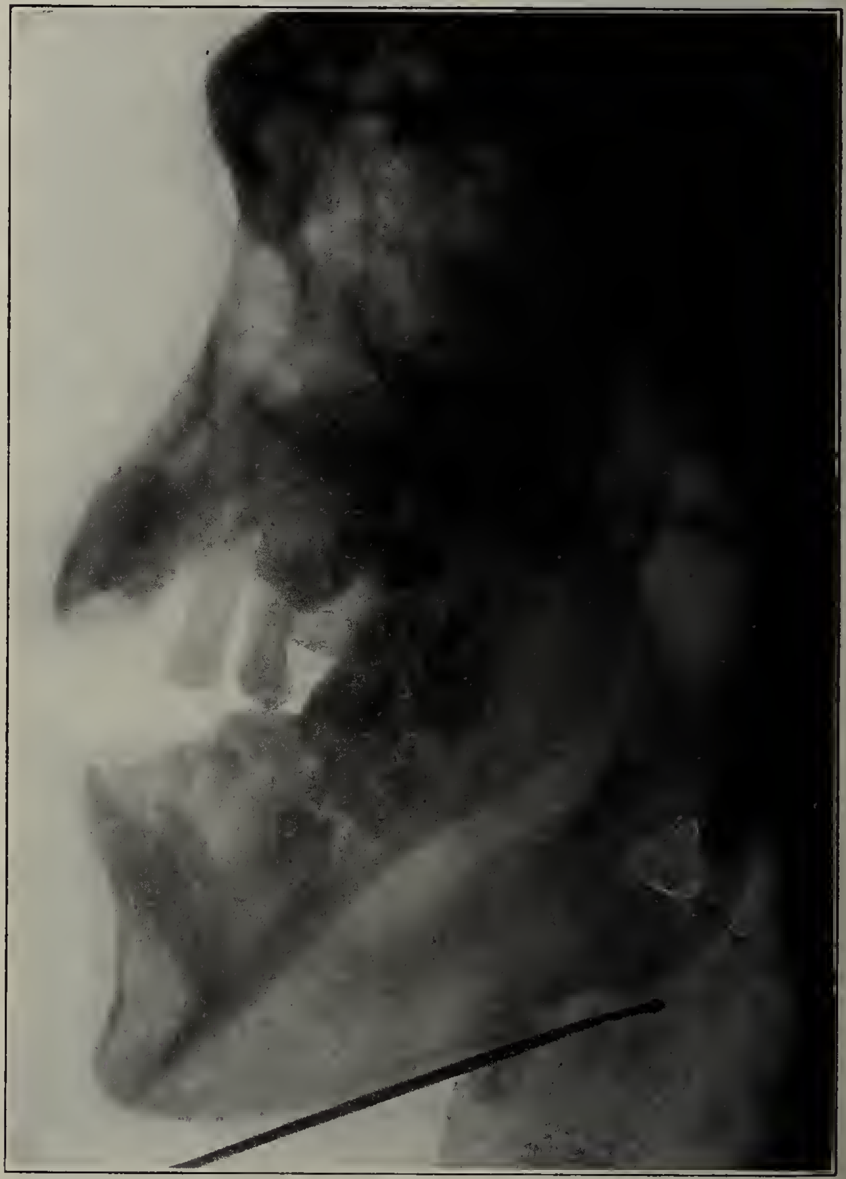

Fig. 11.—From *x*-ray of Patient 11; note focus in ramus.

In closing I desire to thank Drs. Munro and Bottomly for the use of the clinic at the Carney Hospital and opportunity furnished for the study of their cases.

416 Marlborough Street.

ABSTRACT OF DISCUSSION

DR. EUGENE S. TALBOT, Chicago: Few physicians and surgeons are able to differentiate conditions due to diseased pulps, death of pulp with alveolar abscess and osteomyelitis due to other causes. There is not a stomatologist who, in his medical life, has not met many surgeons who know nothing of the subject. I could cite 15 or 20 cases in which surgeons have operated on jaws for simple alveolar abscess. The essayist, from his experience, can discriminate between these conditions, which is important in treatment. Patients with osteomyelitis due to dead pulps can be sent to the stomatologist and successfully treated, thus avoiding unnecessary mutilation.

DR. GEORGE V. I. BROWN, Milwaukee: Every point of this paper has been proved by slides. The changes occurring in the bone structure in degeneration and regeneration, and the cases illustrated are exceedingly interesting. I was called the other day to see a little boy in Nashvillle with congenital ankylosis, his jaw was very much drawn to one side, even more than the one shown by the essayist. In another case, a little girl of six with an ankylosed mandible, I operated and gave relief and she can now open her mouth; but I do not really know what caused the ankylosis in either of these cases. I would be glad to have the doctor tell us more of his conclusions, because his radiograph pictures are much clearer than any I have been able to secure.

DR. STEWART L. MCCURDY, Pittsburg, Pa.: In no case, especially in the suppurative stage, will it be possible to tell whether the disease was primarily periostitis or osteomyelitis. In ankylosis we will find a history of suppurative middle-ear disease. The disease extends into the temporo-mandibular joint and results in its destruction and subsequent ankylosis. That is the condition I found in a great many of these cases. The treatment is the removal of the head of the bone.

In the treatment of these cases I have removed half of the bone in one case and nearly two-thirds in another case. In another, the bone was denuded from the angle throughout its extent of the ramus, and I could pass a probe along the entire surfaces of the rami on both sides. Fifty per cent. of these cases are specific, and repair will only take place under potassium iodid treatment. This was followed by readhesion of the periosteum to the bone and recovery under specific medication.

DR. H. H. GERMAIN, Boston: This man who had a fracture of the condyle had a double fracture of the lower jaw. The second one just below the region of the condyle was not discovered. The first fracture was treated, and he developed an apparent suppurative condition of the middle-ear. He had never had any middle-ear disease. This led me to believe that it was a condition following the fracture. I passed a probe down to the sinus anteriorly and felt sure that if I followed the sinus I would go down to the condyle. The condyle was found broken off and necrotic and was removed. He got a very good jaw, considering the fact that he had been suffering for four months. I do not think it is a fair statement that 50 per cent. of cases of osteomyletis are due to syphilis. Very much less than this, if any, is more nearly true.

THE WASSERMANN REACTION IN ITS RELATION TO DISEASES OF THE CENTRAL NERVOUS SYSTEM *

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Neurologists will appreciate the importance of a method which will enable them to state positively whether or not a suspicion of syphilis is justified, or whether every thought of syphilitic disease may be eliminated from the consideration of a given case. Just such service as this the complement-fixation test of Wassermann has promised to render. It seemed well worth while to become thoroughly conversant with the method, the details of which will be described by others, and during a period of very nearly one year to submit to this test as many patients as possible suffering from nervous disease, so as to determine whether or not it would be of service in the diagnosis and treatment of nervous and mental disorders. Shortly after the publication of the investigations of Wassermann, Plaut, Bruck, Neisser, Georg Meier, Porges, Taylor, Citron and others, the inference was drawn that the Wassermann reaction would be of great service in the diagnosis of locomotor ataxia and general paresis—the two diseases which have long since been held to be due to preceding syphilitic infection. Dr. Nonne,[1] of Hamburg, whom we are fortunate enough to have with us to-day, was among the first to make the attempt to determine the general value of the Wassermann reaction in neurologic practice. In this country Drs. Noguchi, Castelli, Gay, Butler, Swift, and Fox have taken up the Wassermann test. I have felt from the very beginning that, while it might be desirable to have further corroborative evidence in tabes dorsalis and dementia paralytica, such corroborative evidence is not often needed and that it would be much more important, as my own hospital experience has taught me, to possess a test which would help to establish the differential diagnosis between a number of other conditions. It seemed much more important, for instance, to be able to differentiate between disseminated sclerosis and cerebrospinal syphilis, between a central gliosis or a specific central myelitis; to decide whether the symptoms of intracranial pressure were due to malignant neoplasm or to a gummatous meningitis; and it was for the purpose of determining the value of the Wassermann test in this larger group of cases that liberal use has been made of the reaction in cases coming under my notice in my hospital[2] as well as in private practice.

First, a few words as to the reaction. It has shared the fate of all new diagnostic methods in receiving either excessive praise or excessive condemnation. It is only by prolonged experience that we can arrive at the exact truth. The test is cumbersome, is not altogether easy to acquire (laboratory practice of a few months is demanded), and the performance of it calls for an unusual amount of patience and of time on the part of the investigator. It will, of course, be far easier to carry out the test in an established laboratory, but it is not altogether beyond the capacity of a private laboratory such as I have been able to arrange, in association with Dr. Castelli, to whose assistance and cooperation I am deeply indebted. The chief defect of the test is that it is altogether a relative one and that the question of the inhibition of hemolysis can be determined only by a comparison with control tubes in which the syphilitic extract or the specific serum is wanting. There are so many possibilities of error in the performance of the test that credit can be given to the results only if those working by it are known to be thoroughly conscientious and capable. It is entirely natural that attempts have already been made to modify the Wassermann technic so as to place the reaction within easy reach of every practitioner. Among those who have made the laudable attempt to simplify the original reaction has been Noguchi, and you will no doubt hear from him to-day to what extent we may substitute his modification for the original Wassermann method. It is very gratifying, however, to be able to state that in a series of forty-five cases examined by Dr. Castelli and myself, according to the original Wassermann method, and by Dr. Noguchi ac-

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[1] Deutsch. Ztschr. f. Nervenh., 1908, xxxvi; Syphilis des Nervensystems, Ed. 2.

[2] I am indebted to Dr. Gregory of Bellevue Hospital, and to the members of the house-staff at Mt. Sinai Hospital, Drs. Sophian, Bass and Muncker, for much amiable assistance.

cording to his recent modification, the reactions have tallied in all but four cases. Such discrepancies as have occurred will no doubt be accounted for by greater perfection in the technic of both methods. Noguchi's method appears to be unusually sensitive, and we trust that he will be able to satisfy all of us that a positive Noguchi reaction means active lues, as I am fully persuaded a positive Wassermann reaction does.

I must leave the determination of methods and the description of their imperfections, if there be such, to others. I am concerned in this paper with the relation of the Wassermann reaction to diseases of the central nervous system, and, in order to avoid criticism as to the method employed, Dr. Castelli and myself have adhered closely to the technic of the Wassermann school, as we acquired it in Berlin, and have not deviated from the original method in any particular, except that we have substituted the alcoholic extract of the syphilitic fetal liver for the aqueous extract. This is supposed by some to make the reaction less sensitive. Wassermann himself was opposed to the introduction of the alcoholic extract for a time, but this point, I believe, has now been yielded by him and his followers. At all events, using the alcoholic extract has given us most satisfactory results, as was proved by a large series of tests in which all precautions regarding the necessary controls were employed. It is well known, no doubt, by the majority of those present, that the theory on which the reaction was founded has received rather a serious blow, inasmuch as the inhibition of hemolysis was obtained not only when syphilitic liver extract was used, but also when the extract of normal liver was employed and when other lipoid substances were used.[3] Whatever the explanation of this may prove to be, the fact remains that in an unusually high percentage of cases of syphilitic and parasyphilitic diseases the blood serum, if examined according to Wassermann's directions, gives a very definite inhibition of hemolysis, whereas complete hemolysis ensues in the serum taken from patients who are not afflicted with any syphilitic taint.

The conditions of practice and even of my hospital service have made it necessary to restrict my examinations largely to the examination of the blood serum. No doubt Nonne is correct in insisting that the full truth can be obtained only after a consideration of the cellular elements in the spinal fluid, the globulin content, and the specific reaction of blood and serum and of the spinal fluid. In a small number of the cases (15) the spinal fluid has been examined, and in one case of a child, when it was impossible to obtain sufficient blood for the Wassermann test, a blister was drawn—following the suggestion of Dr. Kaplan to one of my assistants—and serum obtained in this fashion. I wish in this communication to give some of the more important results obtained in a series of about 250 cases. In many of these several tests were made.

All investigators are agreed as to the value of a positive Wassermann reaction. If it signifies anything at all, it indicates a more or less active luetic process somewhere in the system. A negative reaction by common consent does not preclude the presence of syphilis and yet a negative reaction, it seems to me, often gives valuable information. In the vast majority of cases in which the negative reaction is obtained, the thought of syphilis may be dismissed. In a large number of others, however, in which a positive reaction has been found present at the beginning of the disease, and in which a negative reaction has been obtained in the course of or after prolonged treatment, it is only fair to assume that the syphilitic virus has been neutralized as a result of the therapeutic measures employed.[4] In this connection it is important to note that a positive Wassermann reaction may often be wanting in spite of the true syphilitic nature of the disease, if intense or prolonged antisyphilitic medication had been employed before the first test was made. As a matter of routine in my hospital practice the rule had been established that neither mercury nor iodids were to be administered to any patient until the Wassermann test had been done. Assuming, then, that a Wassermann reaction may furnish corroborative evidence as to the presence or absence of an active syphilitic virus, let me give in some detail the results obtained in various groups of cases.

I. IN TABES AND GENERAL PARESIS

As I have intimated before, the reaction is hardly needed as corroborative evidence in these two conditions, because in fully 95 per cent. of the cases the diagnosis can be safely made. The chief difficulties have been experienced in the differential diagnosis, in former years, between tabes dorsalis and syphilitic spinal disease simulating tabes, or between general paresis and specific pseudoparesis. But the Wassermann reaction will be expected to be positive in all of these conditions and can, therefore, throw little light on the exact nature of the morbid process. It may be of some value in those cases in which the differential diagnosis has to be made between general paresis and neurasthenia. The preponderance of opinion would seem to favor the idea that if a Wassermann reaction is positive, the disease is necessarily paresis and not neurasthenia. But if we suppose that the neurasthenic individual has had a preceding syphilitic infection, as well he might have, it would not be fair to infer general paresis merely because the patient gives a positive reaction. And this leads me to the first opinion which I wish to express, as a result of my experience, and that is that a positive Wassermann reaction implies an active luetic process somewhere in the system. Any inference beyond this point seems here hardly to be justifiable. I can in this way account for the discrepancy between the figures published abroad regarding tabes and general paresis and those which have been obtained by Dr. Castelli and myself. We have not found a positive reaction to be universally present in general paresis and almost universally present in tabes, as has been published by so many writers abroad. The presence or absence of the reaction, even in tabes and general paresis, depends more or less on the active luetic virus and less on the terminal cortical or spinal cord changes which are responsible for the symptoms of general paresis or of tabes dorsalis. Our own results in tabes and general paresis have been as shown in the accompanying table.

In this series of 28 cases of tabes, 18, or 64.3 per cent., were positive and 10, or 35.7 per cent., were negative. For the purpose of this table I have considered all weak positive cases of the same value as the more positive ones. This percentage is a little lower than that of some of the former investigators, though it is even a little higher than the statistics of Hoehne, who found a positive reaction in 60 per cent. of 45 cases of tabes, but he has in his list 12 cases of doubtful tabes in which there was a positive reaction in 41.7 per cent. In our list we have had no doubtful cases of tabes, and I take it that in every neurologic clinic there will surely not be 25 per cent. of doubtful cases of tabes dorsalis as there are in this list, which has been issued from a dermatologic and not a neurologic clinic. Wassermann and Plaut found a positive reaction in 70 per cent. of their tabic patients; others claim as high as 90 per cent., and Nonne apparently obtained a positive reaction in 90 per cent. of the blood examinations and 50 per cent. in the examinations of the spinal fluid. Our own figures are, therefore, in general agreement with those who place the percentage somewhere between 65 and 70 per cent. The character of the patients has much to do with the percentages of the reaction. Of the 28 cases of tabes referred to in this paper, 19 were observed in my private practice, and of these at least half were patients who had been under constant observation over a period varying between three and ten years and all of them had received much treatment. Even before the importance of the Wassermann reaction had been disclosed I had been in the habit of subjecting my tabic patients to a course of sublimate injections at least twice a year. This will account for the fact that of the nine negative cases of tabes in my series seven were cases of patients who had been subjected to this line of treatment. It can, therefore, be seen readily enough that if I were to tabulate only hospital cases and those seen for the first time during the past year the percentage of positive reactions would be very much higher. It is also worthy of note that all the female tabic patients, as well as all the female general paretics, gave a positive reaction. A reaction which was positive in a number of tabic patients before treatment was begun gave a negative reaction after a course of several weeks' treatment had been persisted in.

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[3] Professor Kopp (München med. Wchnschr., May 11, 1909) has endeavored (I think, in vain) to minimize the universal enthusiasm regarding the clinical value of this method. Since writing the above, Neisser has spoken frankly of its tremendous importance.

[4] Since writing the above, corroboration of this view has come to me in the article of Hoehne (Berl. klin. Wchnschr., May 10, 1909) entitled: Die Wassermann'sche Reaktion und ihre Beeinflussung durch die Therapie.

TABLE SHOWING THE RESULTS OF THE WASSERMANN TEST IN TABES AND GENERAL PARESIS

Tabes Dorsalis.	Reaction.	General Paresis.	Reaction.	General Paresis.	Reaction.
2	—	7	+	36	—
3	—	8	+	37	—
4	—	9	+	77	—
17	+	10	+	105	—
18	—	12	+	135	—
24	+	14	+	161	+
27	+	15	+	206	weak
30	—	21	—		
33	—	22	+		
35	+	23	—		
38	+	42	—		
47	+	51	+		
55	+	71	—		
64	—	76	+		
87	+	78	+		
100	+	82	+		
101	—	83	—		
107	+	94	+		
110	+	95	+		
119	—	103	+		
136	+	104	+		
142	+	108	—		
145	+	117	+		
146	+	132	—		
164	+	133	—		
193	+	134	—		
194	+	151	—		
208	—	152	+		
		153	—		
		154	+		
		198*	—		

* Juvenile general paralysis

In spite of these high percentages we can not expect much help from the reaction in those cases of spinal or cerebrospinal lues in which the tabic type predominates, for in both these groups of cases a positive reaction might be obtained and yet no light whatever will be thrown on the spinal character of the morbid changes underlying the symptoms. In every case in which a positive reaction was obtained, specific treatment was pushed with much more energy than would otherwise have been the case.

Among these cases of tabes I wish to single out two for special mention. They have both been under observation for many years, the one during a period of four, the other during a period of ten years at least, and both of these were puzzling for a long period because they presented no other symptom than a dissociation of sensation within the distribution of the fifth nerve, the affection in one case becoming bilateral, in the other remaining unilateral. Both these patients—the one a man of 35, the other of 38 years, the one a merchant and the other a machinist—presented positive reactions. The one patient was observed for years before any other symptoms of tabes were in evidence, but to the dissociated sensation of the trigeminal distribution has now been added a loss of knee-jerks and an ataxic gait, whereas the other still presents no other symptom except a difference in the knee-jerks and some vague and occasional lightning pains. After finding a positive reaction in these two cases, strenuous mercurial treatment was given, always by hypodermatic injections, and strangely enough in both these cases the trigeminal symptoms have been distinctly diminished since the hypodermatic injections were begun, and in both the tabic process seems for the present to have come to a standstill.

Of the 31 cases of general paresis, 32.3 per cent. gave a negative reaction and in 67.7 per cent. the reaction was positive. It will be seen that these percentages are almost identical with those obtained in tabes, whereas other observers have recorded higher percentages. The same explanation that I have given in the cases of tabes will hold to a certain degree for general paresis. All of the cases of general paresis were progressive in their symptoms in spite of the mercurial treatment to which the patients had been subjected. Among the list of cases are several that have lasted a period of two years or more, and all of these cases of old standing gave a negative reaction. Another possible explanation for the low percentages of positive reactions in my cases may be the fact that a number of these cases were in the psychopathic ward of Bellevue Hospital, where patients are retained only over a period of four or five days and where the diagnosis often has to be made hastily, so that there is a bare possibility that some of those which have been classed as cases of general paresis might possibly have belonged to the category of doubtful cases. I have placed in a separate series 7 cases which were unquestionably doubtful ones and of these 7, 5 gave a negative reaction and 2 a positive reaction, one of these 2 positive reactions being weak positive. The contrast between these doubtful cases and undoubtedly genuine cases is striking enough to make us appreciate the value of a positive reaction when it is found, but in the case of general paresis again the finding of a positive reaction does not help us materially in making a differential diagnosis between typical general paresis and syphilitic pseudoparesis. A most interesting example of this character was that of a patient (No. 24) who had had tabes for many years and in addition to these symptoms of tabes had passed through attacks which would ordinarily be classified as manic or manic-depressive attacks, with occasional speech disturbances that were a little like those of general paresis and with occasional delusions of an expansive character. The diagnosis of general paresis was made offhand by a number of men who had seen the patient and his early death has been freely predicted in each one of the attacks; but, confident of the luetic character of his symptoms and being willing to make a diagnosis of pseudoparesis only and not of the genuine kind, I had predicted his recovery, and he is at present enjoying excellent health, his tabic symptoms being stationary and his mental symptoms for the present being absolutely in abeyance. In this patient the blood examination taken early in January of this year was most positive, and very soon thereafter a violent outbreak occurred. We have not been able to take another reaction since, but the improvement set in as soon as he had been brought under the influence of mercurial treatment. Incidentally it is well to note that there are psychic conditions in tabic patients, and surely in those who have had constitutional syphilis which need not necessarily take the form of general paresis, and this seems to me to be a fact which is often overlooked.

The Wassermann reaction in tabes and in general paresis is of special use only in so far as it tends to corroborate the theory of the specific origin of the two diseases, and also in so far as it gives one good reason to adopt rigid antisyphilitic measures until the character of the reaction has been altered as a result of treatment.

But to pass from tabes and general paresis to other forms of central nervous disease, I will detail briefly some of the experiences of the past year. And here I will refer first to cases in which the diagnosis between disseminated sclerosis and multiple cerebrospinal syphilis was difficult to establish and to another in which it was a question whether the patient was suffering from spinal lues or from amyotrophic lateral sclerosis.

MULTIPLE SCLEROSIS AND MULTIPLE CEREBROSPINAL SYPHILIS

Two patients, both women, one in private practice and the other at the hospital, were under my care. One patient (No. 49) was a woman, 28 years of age, who had been under my treatment a few years ago for a spastic paraplegia with very slight disturbance of the bladder and rectum and slight sensory disturbances involving both lower extremities. There was no involvement of the cranial nerves, her speech was occasionally a little halting, and on extreme moving of the eyes there was a slight nystagmus. There was also a slight ataxic tremor of the upper extremities which might have been interpreted as an intention tremor. At that time a differential diagnosis between multiple sclerosis and multiple cerebrospinal syphilis was not definitely made, although I was inclined to adhere to the suspicion of syphilis in spite of the pupils, which were entirely normal in their reactions. After treatment for a number of months by mercurials chiefly, and some iodids, the patient made a good recovery, and about one year after her dismissal from treatment gave birth to a normal child. In December, 1908, she visited me again complaining of a gradually developing stiffness of the legs; she was able, however, to walk to and from my office and otherwise presented no symptoms. The Wassermann test was made and the reaction was a very positive one. A week later the lower extremities were not only stiff, but distinctly weakened, and from this time on for the following four weeks she experienced great difficulty in getting around. It was not practicable to have her return regularly for injections; she was given large doses of mercury by inunction. After two months distinct improvement set in, she was able to get about again, both the rigidity and the paralysis disappearing. The only thing that was left was a slight unsteadiness in her walk and easy fatigue on exertion. She also complained of numbness in the left hand.

While the recurrence of attacks would have favored the diagnosis of spinal syphilis, it is well known that even in multiple sclerosis such remissions occur, and in this case a positive Wassermann reaction was a great aid in diagnosis.

The other patient (No. 29) is the wife of a physician, whom I have had under treatment off and on for a number of years. She has at various times had transitory attacks of paraplegia, with marked scanning speech and with great increase of the deep reflexes and marked rigidities. The husband is entirely ignorant of any specific infection and was much more inclined to the belief of a disseminated sclerosis than of a specific spinal disease. This patient had been sent to the hospital last year when she had an attack of spastic paraplegia, and after twenty-three injections there was marked improvement, so that she had practically been feeling well during the greater period of the winter. On December 3 of last year, at a time when she had ceased all treatment for a number of months, the Wassermann test was made and the reaction was found to be positive. Following this she was subjected to another course of injections and remained in a tolerable state of health until about a month ago, when she again suddenly became paraplegic, with considerable pains radiating down the limbs, and had again to be sent to the hospital for another course of treatment. Of the specific character of her trouble there can be no doubt.

As a companion-piece to these two patients I might mention another, a young woman, 25 years of age (No. 41), who had while in the hospital a transitory attack of hemiplegia, who presents marked nystagmus, slow, hardly scanning speech; ataxia of the upper extremities, and occasional weakness of the lower extremities, although never so marked that she is compelled to remain in bed or on a chair; but her disease, which I have been able to follow for at least six years, has been characterized by most marked remissions, and, inasmuch as she was a young married woman who had never given birth to children, the differential diagnosis between multiple sclerosis and multiple syphilis was not an easy one to establish. In her case the several tests which were made at varying periods have been negative, and I feel certain that the case will prove to be one of multiple sclerosis and not of syphilis.

The difficulties in diagnosis were quickly cleared up in a hospital case of a woman about 40 years of age who presented marked atrophy of the thenar and hypothenar muscles of both hands, with increase of the reflexes both in the upper and lower extremities, and with some slight involvement of the sphincters and a complete spastic paraplegia of the lower extremities. The disease came on much more suddenly than we are accustomed to see it come on in amyotrophic lateral sclerosis, so that there was some doubt as to whether the case was one of this character or whether it might possibly be a form of cerebrospinal lues. In this case the blood reaction was found positive and the cerebrospinal fluid sent to Dr. Noguchi for examination was reported by him very strongly positive. On the strength of these findings the patient was subjected to marked antiluetic treatment, but she became completely paraplegic, lost control over her bladder and rectum, developed a huge bed-sore and died of the disease within a few weeks. The autopsy revealed a most marked cerebrospinal meningomyelitis specifica. As this was the first one of my series of cases to be examined, it can readily be seen that I was much impressed with the Wassermann test as an aid to diagnosis in doubtful cases.

In addition to these cases, there have been a number of ordinary spastic paraplegias (Nos. 13, 19 and 109). In the first two the reaction was negative and there was no special reason to think that there was any specific element in the case. In the third (No. 109) there were all the ear-marks of syphilitic disease, and an infection years ago was conceded. In this case the blood reaction was positive, and the cerebrospinal fluid also gave a very positive reaction. I make mention of this positive reaction of the cerebrospinal fluid as Nonne and others have failed to get a positive reaction in many of these conditions. Several tests were made of this man; all of them were positive, so that there can hardly be a doubt as to the correctness of the observation. It is well worth adding that in this case lumbar puncture was done at least five times, three times while in the hospital under our own observation, and twice while the patient was at another institution. He experienced so much relief—whether it was subjective or not—from the withdrawal of about 15 c.c. that he asked for repeated lumbar puncture. As no ill effects were observed from this, his wish was granted and he left the hospital very much improved and was ready to resume his work as a motorman.

Let me refer here also to another very remarkable case of cerebrospinal lues (No. 32) that had been under my own care in private practice as well as in the private pavilion in the hospital, with several attacks of hemiplegia and of paraplegia, from each of which the patient—now a man about 33 years of age—had recovered. Last summer this patient was sent to Aix-la-Chapelle and was subjected there to a thorough course of mercurial treatment. He reported to me on October 5, after his return from Aix, when I found him practically well, but for safety's sake continued him on small doses of protiodid of mercury—a drug, by the way, in which my confidence is steadily diminishing. On November 20 of last year he reported at my office, stating that the vision of the right eye appeared blurred. On examination I found a distinct swelling of the nerve and some atrophy. I referred him to Dr. Wiener, who reported that the patient exhibited a distinct specific retinitis and evidences of a retrobulbar neuritis. It was not practicable to give him injections, so he was put on inunctions of mercury. The blood was taken for examination and the reaction was found most positive. After twenty inunctions another test was taken and the reaction was weak positive. After thirty inunctions the reaction was negative and has remained negative since.

There was a further interest in this case, inasmuch as with the improvement in the Wassermann reaction there was also a marked improvement in vision, so that on March 9 I could enter on my records the statement that the patient "reads perfectly with the right eye and all trouble with vision seems to have disappeared." On April 12, however, he developed a weakness in the right leg, reminding him of the condition of the leg during his attack of hemiplegia some years ago. He was at once given another course of treatment, and on May 19 of this year, when he was again seen at my office, he had recovered from the attack of transitory paralysis of the leg, his vision was good, he was able to attend to his work and had practically recovered from this renewed attack of paralysis.

Of all the cases of central syphilitic disease that I have seen this has been the most stubborn, at least of those that showed any tendency to recovery. The Wassermann reaction has been of much aid in the treatment of this patient, and I am so much impressed with its value as an indication of active or inactive lues that I have advised the patient to present himself at least twice a year for a blood examination so as to determine whether or not he needs active antisyphilitic treatment even in the absence of all clinical phenomena.

A case somewhat similar to this (No. 116) was under observation during the winter at the hospital. The patient's chief symptom was a blindness which was suddenly developed, and it was a question whether the blindness was due to a specific disease or possibly to poisoning by wood alcohol. In this case both the blood and the cerebrospinal fluid gave a positive reaction. Under mercurial injections the patient was improved and was finally discharged from the hospital, although his vision had not been completely restored, but he had regained sufficient vision to return to his home. In this case we were well aware that wood alcohol might possibly have caused the condition in a man who had previously been infected with syphilis, but without the positive reaction we would not have had the courage to persist as we did in a prolonged course of mercurial treatment.

IN TUMOR OF THE BRAIN, HEMIPLEGIA AND EPILEPSY

I have no desire to multiply details, but I must refer to the aid rendered by the Wassermann reaction in cases of tumor of the brain or of cerebral conditions in which tumor was suspected. An interesting observation was that on a hospital patient (No. 73) who had had considerable nasal trouble, had been treated by a number of nose specialists in an operative way, and shortly after such a course of treatment developed intense frontal headaches, exquisite tenderness over the frontal bone, slight optic neuritis, without running any considerable fever, except such as might have been accounted for by a slight intercurrent complication. In view of the previous history of nasal trouble and operative interference, it was natural to think of abscess or of a possible intracranial neoplasm or else cerebral lues—a condition which one should never overlook. The patient was under treatment at the time when we were most interested in the Wassermann reaction. The test of blood was taken after he had been in the hospital for a number of weeks, but without specific treatment and a positive reaction was recorded. In view of this—and this was an important matter—every thought of operative interference was abandoned; the man was put on sublimate injections. All his symptoms cleared up and he was discharged, cured, from the hospital after a further stay of about four weeks.

It has become a matter of routine treatment in my service at the hospital to take the Wassermann reaction in all cases of brain tumor before operation is decided on, with a view of eliminating specific cases. I have a record of five such tumor cases in all of which the reactions were negative, and in one of them the reaction of the cerebrospinal fluid was also negative. In a sixth case a positive Wassermann reaction helped us out of a serious diagnostic dilemma. The patient is still in my hospital wards. He is a young man about 25 years of age whose chief symptoms were of a bulbar character; typical bulbar speech, constant drooling from the mouth, rigidity of the neck, intense vertigo, so that the patient had to hold his head inclined to the right, and on any attempt to move it forcibly to the left suffered from intense vertigo. He also exhibited, on looking to the left, a most marked lateral and vertical nystagmus. There was strong suspicion of a tumor either of the cerebellum or in the vicinity of the medulla oblongata, but the only fact that was not in concurrence with this view was the entire absence of optic neuritis; and yet we have all known of the occurrence of cerebellar tumors and of tumors in the vicinity of the foramen magnum, where this growth would have had to be, which are not attended by optic neuritis. The man's condition was becoming rather desperate; he could be fed only by the stomach-tube and seemed to be in great danger of respiratory paralysis, and as a last resort—although I did not think a specific condition probable—a blood test was made which gave a distinctly positive reaction. In view of its proximity to the cerebellum I did not venture to withdraw spinal fluid. As soon as the positive reaction was made out, sublimate injections were given to the patient, and within a week a most astonishing improvement occurred; the patient began to swallow food, the nystagmus was lessened, the vertigo diminished, and he seems now to be on a fair road to recovery; another case in which the Wassermann reaction has proved to be of incalculable value.

In the hemiplegias much assistance was given by the Wassermann test. We neurologists know how much at sea we often have been regarding the nature of an apoplectic attack, and if the onset was such as to give rise to the suspicion of thrombosis, unless the patient were well advanced in years, we have always had to fall back on the theory of a specific endarteritis. I feel that we can depend on the Wassermann reaction to corroborate such a suspicion or to diminish its probability. In the paper which I read before the Association of American Physicians, together with Dr. Collins, on "The Value of the Wassermann Reaction in Cardiac Disease" I reported the case of a hospital patient whose condition was most puzzling. He had a distinct endocarditis affecting both the aortic and the mitral valves. Shortly before entering the hospital he sustained an attack of hemiplegia which was very slow in its mode of onset, entirely without loss of consciousness, and in which the arm and leg were not simultaneously paralyzed. The onset of this did not at all correspond with the theory of embolism due to heart disease. A Wassermann reaction was positive in this patient, and I inferred from this that, although the patient had heart disease, he also had specific endarteritis, and that his attack of hemiplegia was due to thrombosis and not to embolism; another instance, it seems to me, in which the evidence furnished by the Wassermann reaction may be of great diagnostic value.

The Wassermann reaction has been of the greatest help to me in a number of cases of epilepsy in which syphilis was suspected as the only possible cause. Case 128 was one of hereditary lues with epilepsy in which the reaction was positive; and in one case (No. 89), a young man who had acquired syphilis a number of years ago and who gave a positive reaction, had also developed epileptic attacks, the meaning of which was supposed to be in doubt, but with the positive Wassermann reaction I think we need not hesitate to ascribe these spells to brain syphilis.

I have mentioned the cases in which positive reactions have been of great help, but a negative reaction has often been just as instructive, particularly in the case of tumor of the brain, in cases of headaches, and in conditions of disease of the peripheral arteries, more or less resembling Raynaud's disease and erythromelalgia, in which a negative reaction has led me to believe that the suspicion which I once entertained, that these conditions might be of specific origin, can not be defended.

In view of such experiences as I have recorded, I do not hesitate to speak enthusiastically of the value of the Wassermann reaction in neurologic diagnosis. I am certain that within recent years no aid to diagnosis has been given us which can at all equal it in value and in its importance. It should, however, be interpreted merely as a finding corroborating or disproving the suspicion of syphilis, and I would urge that every neurologist acquaint himself personally with the method so that he may learn to employ it and may help to determine by further investigations what the limitations to its usefulness may be, for limitations will surely be found.

I was soon convinced that the Wassermann test was valuable in determining our therapeutic procedures. As a result of my own experiences I would urge that a positive Wassermann reaction is an indication for antisyphilitic treatment; and as regards diseases of the central nervous system, I mean treatment by mercury and preferably by mercurial injections, I have placed reliance on the soluble salts, but I will not differ from those who have a predilection for the insoluble mercurial salts, or who still pin their faith to the iodids. It may be as well, however, to state my conviction that, while I have seen specific headaches and milder specific conditions improve under the administration of iodids, specific myelitis or any serious specific invasion of the cord or brain has, in my opinion, been benefited only by systematic mercurial treatment. These views, which I have held for some time, are, it seems to me, corroborated in the recent interesting statistics of Hoehne, who shows that calomel and sublimate injections appear to be the most efficient. This writer finds that the Wassermann reaction is changed from positive to negative more often after the administration of these two mercurial preparations than after other forms of treatment. If we remember in what haphazard and vague way antisyphilitic treatment has been given for years, both in nervous and in other diseases supposed to be of syphilitic origin, we must welcome a method which gives us some sort of rational basis for our therapeutic procedures. I maintain, therefore, that the Wassermann reaction has a positive value not only as an aid to diagnosis, but also as an aid to treatment.

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THE SERODIAGNOSIS OF SYPHILIS *

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It is my essential purpose to present the results of the analysis of 2,406 blood serums by the complement fixation test, using either Wassermann's or my own method of doing the test. Herewith are given six tables, giving in detail the results of the analysis and of a comparative study of 244 cases of known syphilitic or parasyphilitic conditions in which the Wassermann method and mine are contrasted. I shall also point out briefly the main differences between the Wassermann method and my own, referring to the various other modifica-

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

tions in passing. For further details consult my article read before the Section on Pathology and Physiology of this Association.

It is important to bear in mind that the main difference between my system and the Wassermann system lies in my use of a known quantity of amboceptor, while in the Wassermann system we meet a difficulty in the fact that human serum may contain anywhere from 0 to 20 units of natural hemolysin (amboceptor) capable of inducing hemolysin of sheep's corpuscles. This introduces an uncertain factor into the interpretation of the results, inasmuch as an excess of anti-sheep amboceptor leads to hemolysis even in the presence of syphilitic antibody. Any system using foreign corpuscles, such as that of Bauer, Hecht, Stern, and Detre, is equally apt to give fallacious results.

Minor differences often of great importance to the individual doing the test are: (1) in my system it is possible to preserve the various reagents, such as antigen, amboceptor, and, if necessary complement, in stable form, dried on filter-paper and then titrated, ready for use; (2) in my system the quantity of blood necessary for the test is very small, only a few drops; inactivation is not necessary and the blood need not be fresh; (3) the ease with which certain of the reagents can be procured is a factor; in my system human corpuscles are used, and the patient's own cells can be utilized. In all the other methods it is necessary to have a fresh supply of corpuscles, sheep's, horse's, etc., always on hand; (4) all the other methods require a complete laboratory, while any laboratory worker can do my test with a very small equipment.

Table 1 contains a summary of the results obtained by my method. The percentage of positive reactions in these cases of syphilis, manifest or latent, compares favorably with the results obtained by different investigators using the Wassermann system.

TABLE 1.—THE RESULTS OBTAINED BY NOGUCHI'S METHOD IN SYPHILIS, PARASYPHILIS, HEREDITARY SYPHILIS AND SUSPECTS

	Number of Cases.	+	%	—	±
Primary Syphilis	70	65=	92.8	4	1
Secondary Syphilis	197	190=	96	5	2
Tertiary Syphilis	177	159=	89.9	16	2
Early Latent Syphilis	115	87=	75.6	24	4
Late Latent Syphilis	150	119=	79.3	27	4
Under Prolonged Treatment	39	4=	10.2	32	3
Cerebral Syphilis	5	3=	60	1	1
Tabes	125	85=	68	27	13
General Paralysis	15	13=	86.6	2	0
Hereditary Syphilis	17	17=	100	0	0
Suspected Syphilis	172	60=	34.8	96	16
	1082	802		234	46

TABLE 2.—RESULTS OBTAINED BY NOGUCHI'S METHOD IN CASES IN WHICH SYPHILIS IS AN ETIOLOGIC FACTOR OR CAN NOT BE EXCLUDED AS A POSSIBLE CAUSE OF THE CONDITION

	Number of Cases.	+	—	±
Cirrhosis of Liver	7	5	1	1
Ascitic Fluids	21	11	9	0
Aortic Insufficiency	1	1	0	0
Chronic Arthritis	10	2	6	2
Eye Cases	29	14	15	0
Diabetes	5	1	4	0
Eczema	32	1†	31	0
Scleroderma	4	1‡	3	0
Brain Tumor?	8	4	4	0
Central Gliosis?	2	1	1	0
Hemiplegia	8	3	5	0
Spastic Paraplegia	3	2	0	1
	130	46	81	3

† This serum was sent to me by Dr. Howard Fox, who failed to obtain another specimen from the same case.

‡ This serum was sent to me by Dr. Schuyler Clark, who made a report on the same case elsewhere.

Table 2 is made up of cases in which syphilis could not be excluded as an etiologic factor. In many cases in which the diagnosis clinically was syphilis, a positive reaction was obtained, and *vice versa*. In the one case of eczema a second specimen was not obtainable; and in this case the patient could not be further interrogated to obtain, if possible, a history of lues. The possibility of hereditary syphilis in the one case of scleroderma could not be excluded; the mother gave a weak reaction to the test.

The material for Table 3 was supplied by Dr. Martin Cohen. In every case in which a positive reaction was obtained, with exception of the one case of acromegaly, the clinical diagnosis made by Dr. Cohen was syphilis.

TABLE 3.—RESULTS OBTAINED BY NOGUCHI'S METHOD IN EYE CASES

	Number of Cases.	+	—	±
Keratitis Interstitialis	12	8	4	0
Iritis (acute)	6	4	2	0
Scleritis	1	0	1	0
Paralysis Exter. Rectus	1	0	1	0
Neuritis Optic	1	1	0	0
Chorioditis Exudative	1	0	1	0
Atrophy Optic	5	0	5	0
Acromegaly with Ocular Symptoms	2	1	1	0
	29	14	15	0

In Table 4 I have reported a number of miscellaneous diseases in which syphilis was probably not a factor. Among these were certain cases of leprosy, malignant neoplasms, tuberculosis, scarlet fever and other exanthemata, in all which diseases positive reactions have been occasionally reported by those using the Wassermann method. It can not be denied that complement is fixed in a large percentage of cases of leprosy; the reasons for this result are as yet unknown. With carcinoma and scarlet fever a positive reaction is rarely obtained. The results here agree closely with those obtained by the Wassermann method.

TABLE 4.—RESULTS OBTAINED BY NOGUCHI'S METHOD IN CASES IN WHICH SYPHILIS CAN BE EXCLUDED WITH A FAIR DEGREE OF CERTAINTY

	Number of Cases.	+	—	±
Leprosy	10	7(!)	2	1
Carcinoma	51	1	48	2
Sarcoma	3	0	3	0
Adenosarcoma	1	0	1	0
Endothelioma	1	1	0	0
Scarlatina	63	1	60	2
Varicella	1	0	1	0
Measles	2	0	2	0
Tuberculosis	52	0	52	0
Lupus	2	0	2	0
Raynaud's Disease	2	0	2	0
Banti's Disease	1	1	0	0
Hodgkin's Disease	2	0	2	0
Muscular Dystrophy	5	1	3	1
Neurasthenia	2	0	1	1
Dementia Præcox	5	0	5	0
Various Skin Diseases	58	0	57	1
Miscellaneous	74	0	74	0
	335	12	315	8

Table 5 presents a study of 615 cases by the regular Wassermann method; and the results obtained agree closely with those of other investigators.

TABLE 5.—RESULTS OBTAINED BY THE WASSERMANN METHOD

	Number of Cases.	+	%	—	±
Primary Syphilis	33	22=	66.6	8	3
Secondary Syphilis	120	104=	86.6	14	2
Tertiary Syphilis	91	66=	72.5	22	3
Early Latent Syphilis	81	39=	48.1	41	1
Late Latent Syphilis	74	33=	44.7	37	4
Hereditary Syphilis	4	4=	100	0	0
Cerebrospinal Syphilis	2	1=	50	1	0
Tabes	22	9=	40.9	13	0
Cerebral Endarteritis	2	2=	100	0	0
Suspected Syphills	80	33=	41.2	39	8
Other Diseases	106	4*		102	0
	615	317		277	21

* 1 Carcinoma, 1 Epithelioma, 1 Malaria, 1 Leprosy.

In Table 6 I present the results of the simultaneous examination of 244 cases of known syphilitic conditions by my own and by the Wassermann system. In my opinion, they prove conclusively the greater delicacy of my test over the other method in cases of syphilis. This greater percentage of positive reactions is not due to an undue sensitiveness of the method employed by me, but to the elimination in my system of the error introduced by using too great a quantity of amboceptor, as pointed out above.

TABLE 6.—Comparison of the Results

		Wassermann Method.		Noguchi's Method.	
	No. of Cases.	+ %	—	+ %	—
Primary Syphilis	23	17=73.9	6	20=86.9	3
Secondary Syphilis	79	69=87.3	10	76=96.2	3
Tertiary Syphilis	65	52=80	13	57=87.6	8
Early Latent Syphilis	27	13=48	14	18=66.6	9
Late Latent Syphilis......	32	24=75	8	27=84.3	5
Tabes	18	8=44	10	13=72.2	5
	244	183	61	211	33

In conjunction with Dr. J. W. Moore, of the Manhattan State Hospital for the Insane, Ward's Island, New York, I have examined the cerebrospinal fluids of 200 cases of parasyphilitic and other nervous conditions; the results will appear in the July number of the *Journal of Experimental Medicine.*

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THE WASSERMANN REACTION *

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The difference between a normal and a specific serum in the Wassermann reaction is only quantitative, the reaction being provoked by the presence in the blood serum and cerebrospinal fluid of colloidal elements of histogenic and not bacteriogenic origin.

The researches made on the syphilitic serums have proved that the substances to which the syphilitic serums owe their specific property are equally soluble in diluted alcohol. In fact, the alcoholic extracts of the serums contain salts and lipoid substances which either alone or in presence of the extract of liver prevent hemolysis and give a positive reaction. That would prove that the Wassermann reaction is due to the action of lipoid and salts contained in the liver extract on the lipoid and salts contained in the syphilitic serums.

I suppose that if it were possible to make the Wassermann reaction so sensitive that we could thereby detect any trace of colloidal substance contained in the serums to be examined we would have positive reactions in many cases besides the specific ones. When the blood crasis has undergone temporary or permanent modifications, the main necessity, from the clinical standpoint, in the performance of the reaction is to be able to detect the point, above which every positive reaction can be considered specific. To perform, interpret and understand the Wassermann reaction, we must not forget the laws regulating the fixation of complement. The most important is this: If a serum is used containing albuminoid substances in excess, we can have a mechanical fixation of complement. So in the practice of the Wassermann reaction we must remain within the limit of doses in which we are sure no false complement fixation will occur, and in the meantime remain within the dose limit of the hemolytic action, because if we add to the mixture antigen-antibody too strong a dose of complement the complement will not be entirely fixed and the hemolysis of the red sheep corpuscles will take place also if the mixture antigen-antibody has fixed the proper quantity of complement.

Professor Wassermann, in establishing the routine to follow in his method, has been guided entirely by the above-mentioned principle, and his method is of mathematical precision. As I have said, we are in the presence of a quantitative reaction; so admitting and acknowledging the precision of his method, we must come to the conclusion that the only possible fault to be found in his method would be in establishing the basic point of departure for every positive reaction at a level higher than it ought to be, or better not to have made the reaction sensitive enough.

From the clinical standpoint such a feature has no real practical value. The clinician must not forget that no pathologic process ever remains at a standstill. If a specific infection is affecting the blood, and if the Wassermann reaction is efficient enough to detect such a condition, it will detect it some time during its course.

It really does no harm if the condition is detected at the very beginning or shortly after. The Wassermann reaction and quantity of syphilitic antibodies in the serum run along two lines, a coordinate and an abscissa. These two lines must inevitably meet. The crossing point of the abscissa on the coordinate may not coincide exactly with the biologic changes taking place in the blood on account of the infection, but it will certainly occur at a determined moment, during the phase of the infection. When the route and the method followed by the investigator are always the same, the appearance of a positive reaction will represent the saturation of the organism with the same quantity, x, of syphilitic antibodies or colloidal substances, and from that point on every serum examined will always give a positive reaction. From the clinical as well as from the therapeutic standpoint, the reaction meets the exigencies of the clinic almost to perfection. Why should we then modify the method?

Dr. Noguchi, one of the most active Wassermann critics, is entitled to our praise for having spread the knowledge of the Wassermann reaction among many physicians in New York, but I fear he forgot during his pedagogic undertakings that he was training general practitioners and not scientists.

The majority of these physicians learned and applied the Wassermann method after a few days' experience in his laboratory, the majority of them lacking absolutely the elementary scientific foundations necessary to undertaking a work of the importance and delicacy of the Wassermann test; the strict rules established by Wassermann about the dosing, temperature and preparatory operations preceding the test being absolutely neglected. Noguchi's intention of reducing the Wassermann test to the simplicity of a urine analysis for the detection of albumin is very commendable; but can it be realized?

What a difference between his views and those manifested by Fournet before the Paris Board of Health asking that on account of the extreme difficulty and delicacy of the Wassermann test and its invaluable utility to humanity at large, the government should establish laboratories supervised and conducted by competent biologists to do nothing else but the Wassermann test, and to open them free for the practitioners.

The new Noguchi method, the so-called antihuman method, is theoretically rational, though clinically it has sometimes aroused doubt about its efficiency as a substitute for the original Wassermann test. While it is simpler than the original Wassermann, it needs the same amount of care and knowledge in those using it in order to be efficient; so the same criterion and criticism of the original Wassermann prevail for the antihuman method. The Wassermann reaction as it is now has proved to respond perfectly to the demand of the clinic. Noguchi has not proved his to be better; so let us keep what wears better and has the prestige of tradition besides.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

CEREBROSPINAL FLUID

The real contradictory results have been obtained in the examination and interpretation of the cerebrospinal fluid findings.

I am glad of it, and I think that the time has come for the real understanding of the reaction of the cerebrospinal fluid.

We must understand that there is not always parallelism between blood condition and condition of the spinal fluid in regard to syphilis. In the same way there is no parallelism between the Wassermann reaction and lymphocytosis of the cerebrospinal fluid. Sometimes we have been led astray by considering these two conditions parallel. The reaction of one fluid may be equivalent to the reaction of the other, but not necessarily.

A positive cytodiagnosis of the cerebrospinal fluid and a positive Wassermann reaction of the blood serum can coexist in the same patient as equivalent formulas of the same condition, or can be absolutely independent. Lymphocytosis of the cerebrospinal fluid represents a reaction of defense of the meninges against an invading toxic product. Lymphocytosis is a specific element in meningeal tuberculosis, as it is in meningo-encephalitis, and as it is in tabes and advanced paralysis. But an especially interesting fact from the clinical standpoint is that all skin eruptions have a tendency to produce meningeal reaction, and as a consequence lymphocytosis.

Professor Hutinel gives statistics of seventy-two cases examined, affected by different dermatites, in which the cerebrospinal fluid presented more or less intense lymphocytosis.

I do not doubt that the cerebrospinal fluid in some of these cases, on account of the amount of albuminoid substances contained in it, would have produced a complement fixation. It would have been a mechanical fixation of the complement, masking a real positive Wassermann reaction. This fact is the explanation of the discussion aroused among investigators of the Wassermann test when they have obtained a positive reaction of the spinal fluid in some cases of scarlet fever.

We can find the explanation of this fact, apparently paradoxical, in studying the embryogenesis of tissues and organs.

The meningeal sac and the skin originate from the same layer, "the ectoderm," and it is plausible that these two anatomic elements, physiologically as well as pathologically, are so connected that their clinical manifestations also bear relations of cause and effect. These facts are not uncommon in the clinical observation of clinical phenomena. The so-called polyorrhomenitis, observed first by Semmola, a pathologic condition in which the inflammation of one of the serous membranes of the body is followed by an actual polyserositis, is one of the pathologic symptoms that tend to demonstrate the intimate relation existing between all the endothelial tissues of the body. This is also a phenomenon of embryogenetic origin. Arteriosclerosis can be considered as diffuse fibromatosis invading all the circulatory system.

Admitting this relation between skin and meninges, we can with a very good reason be induced to discard the absolute reliability of the Wassermann test in the spinal fluid as compared to the reaction of the blood serum. I do not mean by that to exclude entirely the spinal fluid from the benefit of the Wassermann test, but I mean that we must restrict the field of value of a positive reaction and probably increase the value of a negative reaction of the cerebrospinal fluid.

GENERAL PARALYSIS

A special value has been attached to the Wassermann test of the spinal fluid as a means of early diagnosis of general paralysis. This conception does not respond to the reality; in fact, I may say that it is in antithesis with it. The number of cases of general paralysis in which the Wassermann reaction gives positive results varies with the different investigators from an average of 50 to 60 per cent. Levaditi says that only 58 per cent. of the cases of general paralysis give a positive Wassermann reaction, but they all establish the fact that the reaction is almost always constant in advanced cases.

So the Wassermann test has much less value than the usual cytodiagnosis of the cerebrospinal fluid for the detection of the early stages of general paralysis, while it is of great usefulness for the prognosis and therapeutics of general paralysis, viz., when in suspected cases of general paralysis the Wassermann reaction of the spinal fluid is negative, the prognosis is more favorable because the specific treatment may help the condition of the patient, either retarding the progress of the disease or bringing on the so-called clinical recovery, viz., a recovery of a few years' duration.

The literature of general paralysis is rich in cases of clinical recovery. Leroy mentions a case of general paralysis in which the process subsided for a period of twelve years.

But when the Wassermann reaction of the spinal fluid in cases of general paralysis is positive we must realize not only that the case is helpless, but that the antisyphilitic treatment is many times dangerous, and will always help a quicker breaking down of the nervous system. So the clinical conclusions to which this information leads are as follows:

1. Positive cytodiagnosis and negative Wassermann reaction of the cerebrospinal fluid constitute a positive sign for the diagnosis of early stages of general paralysis and tabes paralysis, providing that the clinical syndrome accompanying the reaction does not exclude entirely the suspicion of the two above-mentioned pathologic conditions in the organism. Specific treatment is advisable; prognosis hopeful.

2. Positive cytodiagnosis and positive Wassermann reaction of the cerebrospinal fluid constitute a positive sign of the advanced stages of general paralysis, or tabes paralysis, provided that the clinical syndrome confirms our diagnosis. Specific treatment is harmful and sometimes dangerous; prognosis is bad.

Positive cytodiagnosis and positive Wassermann reaction also, if not accompanied by a definite nervous syndrome, constitute an evident sign of the disintegration of the nervous centers.

The reason for these conclusions lies in the fact that we must conceive the genesis of the process producing a Wassermann reaction in the spinal fluid as different in nature from the genesis of the process producing the same in the blood.

One is the process of disintegration of the nervous system; the other shows a process of reaction of the blood. One is a late passive symptom, the other is an early active symptom. The positive reaction in one process is the result of a mechanical fixation of the complement and the other is a normal reaction.

All these statements need explanation, and I am going to give them according to my understanding.

In the early stages of general paralysis the meninges and the nervous centers have not yet entered the phase of reaction, or, better, of defense against the infection, so no presence of antibodies is detectable in the cerebrospinal fluid, while there is predominance of antibodies in the blood serum. In this period the Wassermann reaction will be positive for the blood serum and negative for the cerebrospinal fluid, and the specific treatment will be beneficial, because the encephalus is still in sufficient condition of resistance to stand medication.

In the cases of advanced general paralysis the blood does not produce any more antibodies, while the nervous centers begin to manifest their disintegration, showing the presence in the cerebrospinal fluid of lipoids derived from their albuminoid components. We have in this phase a real autodigestion of the elements of the brain and spinal cord.

During this final phase the specific treatment becomes dangerous because of the impaired resistance of the nervous system to stand medication, and the production of lipoids and albuminoids in the cerebrospinal fluid will be rapid and so much in excess that its examination by the Wassermann test will give positive reaction, because of a mechanical fixation of the complement. This very fact is, in my estimation, of great value, as it shows that general paralysis is not exactly due to syphilis or its toxins, but to the immunizing substances produced in our organism which becomes a victim of autointoxication.

This fact would also explain why the spinal fluid of nervous patients with no syphilitic history could give a positive reaction; these are cases of progressive disintegration of the nervous centers, disintegration equal in result to the one produced by syphilis.

This wider interpretation of the reaction increases its value to a very high degree, because it does not state that a syphilitic infection has taken place, but it constitutes an index of the resistance of the nervous system, with the difference that in cases of absence of syphilis the positive reaction will show the passive condition of the nervous tissues, which, exhausted by the reaction against an invading toxin, rapidly proceed to their complete disintegration.

So the clinical interpretation of the Wassermann test will show either active lues when detectable in the blood serum and passive progressive disintegration or the so-called *déchéance* of the nervous system when detected in the cerebrospinal fluid.

This conception of the reaction will change our clinical as well as our therapeutic views, as it will also make us understand why other conditions of the nervous system, like dementia præcox, senile dementia, idiocy, imbecility, etc., could give a positive reaction. That would confirm the idea already expressed by me in the paper read at the opening of the Neurological Society in New York, when I said that probably we would be compelled to give the Wassermann reaction a wider interpretation and consider it in many cases as a grave disturbance of the metabolism of the nervous system, while syphilis would be considered as one of the most important etiologic factors in causing such a condition.

CASES EXAMINED

The statistics of approximately 250 cases examined by me in association with Dr. Sachs show the presence of a positive Wassermann reaction, even in cases in which the syphilitic origin of the disease could not be traced; this indicates the value of the Wassermann reaction in the study of cardiac and vascular diseases.

I shall first mention some of these special cases, inasmuch as the fact of their being apparently non-luetic might, in some way, affect the belief of the Wassermann students in the reliability of the reaction. I shall mention later the results obtained in the examination of patients affected with vascular and cardiac diseases.

The cases apparently non-specific in which the Wassermann reaction was positive are: (1) spontaneous myxedema, (2) scleroderma, (3) lupus, (4) leprosy.

MYXEDEMA

The finding of a positive reaction in a case of spontaneous myxedema may be considered an explanation of the etiology of the disease.

As explained by Hübschman, it is a well-known fact that, in cases of hereditary syphilis, hypertrophy of the thyroid gland is found, with sclerosis of its epithelial tissues and diminution of the colloidal substance. We know that the thyroid gland is a closed gland and that the ductus thyreoglossus, whose exit is in the foramen cecum situated at the base of the tongue, is already obliterated during embryonic life. Thus, a toxic product affecting the gland during embryonic life will remain encapsulated in the thyroid gland and bring within the tissues the degenerative changes of which it is capable. A process of sclerosis, once initiated in the gland, will spread by degrees over all its histologic frame and create a condition of diffuse fibromatosis, because of the tendency of any pathologic process to spread over the surface of tissues of the same type.

The beginning of sclerosis in the epithelial tissue of the gland will create a condition of diffused sclerosis of its epithelial tissue. In the same way, a process of sclerosis beginning in the aorta will gradually bring a condition of fibromatosis of the blood vessels. The effect of the sclerosis of the epithelial tissues on the process of secretion of the thyroid gland will result in a gradual hyposecretion of the colloidal substance due to the changes taking place in the epithelial cubical cells deputed to the secretion of this substance. As soon as the hyposecretion reaches such a degree as to affect the metabolic processes connected with the functions of the thyroid gland the first symptoms of myxedema will appear. Hereditary syphilis might well be considered one of the factors in the production of spontaneous myxedema, without clashing with the clinical conception of the obscure etiology of the disease until recently entertained.

SCLERODERMA

I obtained a positive Wassermann reaction in two cases of scleroderma examined and the same results are reported by other investigators. I am inclined to think that ordinary scleroderma, like scleroderma neonatorum and all forms of athrepsia and cachexia, is many times a manifestation of hereditary syphilis. Further investigations of the relation between Wassermann reaction and the different cachexias will probably make clear the obscure etiology of these diseases.

LUPUS

Acquired as well as hereditary syphilis plays a very important rôle in the etiology of tuberculosis. The association of the two diseases in the same subject can assume two forms or types—anatomico-pathologically distinct, but identical from a practical standpoint. In one type we have association of lesions and in the other association of soil.

Association of Lesions.—This is the fusion of two lesions in the same region, and lupus constitutes one of the important characteristic forms of this tuberculoluetic hybridism.

Association of Soil.—This is the result of the simultaneous evolution of the two diseases on the same subject with reciprocity of influence of one disease over the clinical course of the other. We have one of the characteristic types of this association of soil in pulmonary tuberculosis affecting a syphilitic subject. The fact of a positive Wassermann reaction having been found in a case of lupus can be accepted only as a proof of the existence of these forms of syphilo-tuberculous hybridism.

LEPROSY

The positive Wassermann reaction obtained in a case of leprosy finds a plausible explanation in the theory that the case was one of tuberculous leprosy implanted on a syphilitic soil. It would be advisable to make further investigations of associations of this nature to establish whether this form of hybridism could constitute a new factor in the pathology of syphilis.

CARDIAC AND VALVULAR DISEASES

In five cases of aneurism examined—four of the cardiac aorta and one of the innominate—the Wassermann reaction was positive in each. Two of these patients admitted having had syphilis, two denied it, and one had chancroid.

In thirteen cases of the incompetency of the aortic valve, only one gave a negative reaction and two a weak positive. If we consider the weak positive doubtful, 77 per cent. of aortic insufficiency gave a positive reaction. Of these thirteen cases, eight acknowledged a previous syphilitic infection; the other five denied.

In five cases in which both aortic and mitral disease existed, there was one positive, two weakly positive and two negative. In eleven cases of mitral disease only, the Wassermann test was positive and in two cases negative, and in all these cases syphilis was either unknown or denied.

Owing to the fact that a cardiac lesion of syphilitic origin is not to be clinically differentiated from a lesion of another nature, we can easily understand the importance of the Wassermann test in the study of cardiac and vascular diseases.

TREATMENT OF SYPHILIS

My views on treatment in relation to the Wassermann reaction are in accordance with those of others, and are already mentioned in a preceding paper of mine.

The Wassermann reaction, from the point of view of treatment of nervous diseases, has almost inverted our usual therapeutic formulas. All the nervous manifestaions of syphilis have been until now observed as postnfectious manifestations; so our intervention with acive therapeutic measures has been a postinfection inervention. To-day, now that we have the possibility of detecting the infection during the intrainfectious period, our therapeutics will be intrainfectious and the possibility of avoiding or better preventing the manifestations of syphilis have been achieved to a great extent. So for a repressive therapeusis we have substituted a preventive one; though we must realize that we have only conquered the possibility of a preventive therapeusis, but not its methods.

We are to-day in the condition of the owner of a claim in a gold region before the soil has been exploited and the mine put in working condition.

Everything concerning the therapeutics of syphilis has been restricted to the use of two therapeutic agents, viz., mercury and iodid. Admitting that these two elements act on the system either as antiseptics or as alteratives, it is absurd to think that no other therapeutic elements answering the same purposes exist in the entire Pharmacopeia.

Does mercury act as a specific agent or does it act as a general antiseptic? If the action of mercury on the system should be purely antiseptic, are we not entitled to consider the action on the system of other antiseptics probably less deleterious than mercury? And if its action is an alterative one, are we not entitled to the same privilege?

It is undoubtedly true that a substance capable of producing in people working in mercury mines the classic syndrome of hydrargyrism—principally tremors, paralysis, hysteria, cachexia, etc.—can not help but constitute also a deleterious factor for the organism if given in small repeated doses.

The organic condition produced by a slow but prolonged action on the system of any toxic element is the establishment of pathologic lesions in the organism, functional at first, then anatomic. And we must remember that any pathologic symptom, when allowed to remain, even if purely functional, takes root in the system, and produces anatomic changes in the organs deputed to the manifestations of the symptom. Such an axiom prevails, especially in the pathology of the nervous system, and the consequences are much more serious because the effect spreads over a large surface and involves the organism as a whole. Allow a stimulation of the motor or sensory area to remain long enough, and one will notice that permanent degenerative changes of the morphologic elements situated in the affected area will take place. This continuous overlooking of the fact that a condition of intoxication of the system, when acting for a certain length of time, creates permanent pathologic conditions of the nervous system is one of our main clinical and physiologic misconceptions. Such a statement is proved, for example, by the so-called postoperative neurosis, affecting people that have undergone surgical operations. Many patients have been physical and nervous wrecks after going through operations and very successful ones; this condition is due principally to the absorption of the anesthetic, because of the fact that every chemical element entering the circulatory system acts on the nervous system first, and as a reflex on the entire organism after.

Is the beneficial action of mercury as a therapeutic agent offset by its deleterious action as a metallic poison? It is a question that can not help but puzzle the mind of the clinician. Have we ever tried to answer this question?

While in Munich six years ago I watched closely the experimental work done on the subject in the pathologic institute by a young physician whose name I do not recollect, and whose work never appeared in any of the publications of current medical literature.

He had injected into rabbits at different intervals solutions of bichlorid of mercury in varying strength during the period of four months. The spinal cord of these rabbits examined after the period of four months had elapsed showed sclerotic alterations of the posterior column and different in intensity in the different rabbits, but anatomically identical with those of tabes in man.

If this fact does not prove that tabes is caused by the action of a metallic poison, it certainly implies that once the anatomic lesions of tabes are established the advisability of treating a patient with mercury must be taken *cum grano salis*, and the question of using a therapeutic minimal must be the main consideration, if we have to use mercury, because its action in cumulative doses is apt to create anatomic lesions of the spinal cord and act on it as the syphilitic virus does. This also proves that the etiology of tabes is a neurotoxic one, and that other elements besides syphilis might perhaps show a predilection for the spinal cord, and produce a tabetic syndrome.

The question of therapeutics in general has always been neglected and many of us have assumed a rather cynical attitude toward any therapeutic method adopted, attempted or even suggested. I feel altogether differently on the subject, and my earnest belief is that through therapeutics only will medicine achieve the highest degree of evolution. I think that a misunderstanding, or rather a misconception, is at the bottom of our therapeutic failures. My viewpoint in the genesis of diseases is that blood is the bearer and transmitter of any infectious element, and that the localization of the infectious element in a special region or organ of the body is a simple process of metastasis. The microbes and toxins are transported by the blood current to such regions of the body as offer conditions most suitable for the accomplishment of their reactive processes, just as in a similar manner cancer cells are transported to those parts of the body wherein the malignant growths may be reproduced.

Such being the case, its logical consequence is that, if the therapeutic agent should follow the same route as that followed by the infective element, its action, general and local, would take effect as such points presented as are necessary for its action. The therapeutic agent must then be introduced directly into the blood in order to be carried to the place where the source of infection is—the blood must become the clinical recipient of therapeutic elements.

The main problem to solve, then, will be the one concerning the selection of the therapeutic agent in each pathologic condition and its dose. My attempts in this direction have been as many as were permitted by the clinical material occasionally at my disposal; and in order to remain on the subject I shall mention two of the attempts made by me in the treatment of syphilis. In both I was guided by the different clinical views that we could be allowed to assume in regard to the genesis of the infection without failing in logic and altering our conception of its pathogenesis.

If we consider syphilis as a chronic spirillosis in which the pathogenic agent enters the blood current and determines a general infection, we might also see a certain analogy between the *Treponema pallidum* and the plasmodium of malaria. Both enter the blood stream and both can produce severe anemias. This, I think, is the criterion that guided Dr. Benzman of the Diakonenkrankenhaus in Duisbourg in treating syphilis with intravenous injections of chlorohydrate of quinin. I adopted his views in three cases, one of malignant syphilis in which the patient proved to be mercury-immune, having been refractory to mercurial treatment, and in two cases of secondary syphilitic manifestations appearing in two patients that had been previously treated with mercury. All three answered promptly to the treatment. I injected about 4 gm. in the space of twenty days, injecting about 40 cg. each time every other day in the venæ medianæ. The examination of the blood serum by the Wassermann test was not made because the trial precedes the adoption of the Wassermann reaction as mean of diagnosis.

To a second attempt I was guided by considerations of altogether different nature. My earnest conviction, dating many years back, and proved by my paper on the treatment of appendicitis presented at the twelfth annual meeting of the Association of Military Surgeons of the United States in Boston, is that the therapeutic equation to be resolved in medicine is the same as that resolved by surgery, with the difference that for the term "local antisepsis" we must substitute the term "general antisepsis," or, in other words, disease is a closed wound in which the colonization of microbes and the action of toxins accomplish their destructive work far beyond our control. The main difficulty in adopting internal antisepsis is to use a therapeutic agent which is a powerful general antiseptic without being detrimental to the system. I have selected for the purpose, not only in syphilis but in many other infective conditions, a preparation of electric silver, in the colloidal state. The colloidal state of a metal represents a state of extreme division of the metal, an ultramicroscopic suspension of metallic parts in a menstruum. This extreme division corresponds to an immense surface of contact of the metallic substance, and, the substance being antiseptic, to an immense antiseptic area. It has been calculated that the total surface of 1 c.c. of electric gold in the colloid state corresponds to the surface of 600 square meters. This explains the immense antiseptic value of the electric metals in the colloidal state. The action of the electric silver in two cases of tertiary syphilis treated seems to benefit, though in a less degree than does hydrargyrum, the course of the manifestation.

The examination of the blood serum by the Wassermann test before beginning the experiment was strongly positive; the test made after five injections of 3 c.c. gave a weak positive reaction.

I shall follow the cases in order to see if the duration of the antiseptic action of the silver on the system will be such as to consider its action similar to the action of hydrargyrum on the syphilitic virus. If this should be the result, the natural deduction would be that mercury in syphilis does not act as a specific agent, but as an antiseptic one. All these attempts, if repeated on a large scale, would without doubt bring some useful and tangible results in the field of therapeutics. I think that the knowledge of serodiagnosis in different diseases will modify our views in therapeutics and will stimulate a new spirit of research in the different investigators.

CONCLUSIONS

Wassermann has initiated us in the conviction that the study of the chemical and biologic conditions of the blood can be used as methods of clinical diagnosis, and has opened a new era to medicine. It is by working on the development of this new idea that medicine will achieve the results never obtained before, and it is with this fact in view that the minds of the young generation of medical students must be occupied. The evolution of medicine has been relatively slow, because of the irrational methods adopted in clinical studies. A normal condition of the blood implies a normal equilibrium, while an abnormal condition implies a lack of equilibrium of all our systemic functions.

It is rational to think that each pathologic condition must reflect itself in the condition of the blood. It is a pathologic axiom that rationalism confirms, although science has not completely proved it, and to the student of nervous diseases this knowledge must be of more value than to any one else, because it is the nervous system that is the first affected by a condition of dyscrasia.

The nervous system and the circulatory system preside over the harmonization of all individual lives. One harmonizes the functions of the various organs, the other harmonizes their processes of nutrition. These two systems are in direct relation, physiologically and pathologically, and so much so that we can say that the etiology of nervous diseases must principally be found in the pathology of blood, and that the diseases of the circulatory system can find their principal etiologic factors in the conditions of the nervous system.

The Berlin Faculty of Medicine was the first to establish a chair for the teaching of serodiagnosis. It is only a beginning, but, remaining as it is, it will not be the bearer of the many useful results of which it could be capable.

In my opinion, the study of serodiagnosis in particular and of hematology in general must leave the fields of pure biology and enter entirely the field of the clinic.

The utility of the laboratory scientist ceases the moment at which the work of the clinician begins. The scientist will become a real prominent and substantial factor in the progress of medicine when his work goes *pari passu* with the work of the clinician. The medical scientist is always a poor observer of clinical facts, and his clinical deductions are general paradoxes from the practical clinical standpoint; so we can not allow him to draw conclusions of clinical value. We must take his knowledge, his experience and apply it at the bedside. Hundreds of times we shall be compelled to modify and rectify not only his views, but his very method of research in order to harmonize them with our clinical needs, and principally with the views of logical therapeutics.

If every pathologic condition of the organism is the expression of chemical, morphologic or bacteriologic blood formulas and if the principal genesis of disease is found in the changing of the blood conditions, our therapeutic methods also must change entirely, and the therapeutic equation to be solved for each pathologic condition will be to find the therapeutic agent which, introduced directly into the blood, will neutralize that heterogeneous toxic element in circulation which causes the disease.

Hypodermoclysis, venoclysis, seroclysis, etc., will entirely supersede every other therapeutic means.

What is the value of any scientific clinical investigation if in the field of therapeutics we are almost on the same level with Galenus? Do we expect the Rockefeller and Pasteur institutes or any other institution for biologic research to investigate for us the most appropriate method of therapeutics? Every one of our teaching institutions of our hospitals must undertake the colossal task imposed on us by modern exigencies.

We have in Washington squads of healthy human beings used once in a while by the Board of Agriculture in order to investigate the effects on the system of certain chemical ingredients used as food preservers. Many times these squads of white slaves are taken sick or after a certain period of time the functions of metabolism are sufficiently altered to prove that a certain chemical element used in the preservation of food material is of prejudice to health.

Why should we not in all of our institutions with more vital reason do a much more useful and humane thing by having a ward well conducted and equipped with sick patients reserved for therapeutic research?

The division of labor is a principle of economy applicable to medical work as well as to any branch of human activity. Thousands of institutions devoting time and work to the same object, viz., research on rational therapeutics, would bring in a short time the results that thousand of years of ill-conducted, ill-divided and unproperly understood work have been unable to produce. We certainly have no reason to be proud of ourselves to-day. It is enough to watch the throngs of uncultured, unscrupulously absurd and daring healers infecting and infesting public opinion to understand that we are deficient in value and professional prestige. We must work and work intelligently in order to rescue ourselves and our mission.

It is following this order of ideas and ideals that the modern evolution of medicine will achieve its climax; and those who enjoy life in this country, which is a leader of civilization, should show to the entire world that in the fields of medical science we are also striving for a well-earned supremacy.

175 West Seventy-second Street.

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. SACHS, NONNE,* NOGUCHI, AND CASTELLI

DR. WILLIAM J. BUTLER, Chicago: I am afraid if we were unacquainted with the literature of this subject we would consider that we were dealing with a new reaction in the Noguchi modification. But, of course, we are still dealing with the Wassermann reaction, founded on the complement-binding principle of Bordet, and we are also dealing with a modification by Noguchi along lines already published by Tschernogubow, who was the first to suggest the use of the anti-human amboceptor, and a simplified system for performing the reaction. But we certainly owe a distinct debt to Noguchi for demonstrating, as he has, that the materials dried on filter paper will retain their properties indefinitely, because we know the great difficulties attendant on the performance of this reaction by virtue of the inconstancy of some of the materials, viz., the antigen and likewise the amboceptor, which may vary decidedly from time to time. If these materials do hold indefinitely in the dried state, it will be a distinct aid to all those who have performed or are performing this reaction, and will undoubtedly extend its application or performance by a number of laboratory workers. I doubt, however, if the general practitioner will ever be able to utilize this test to any advantage, because no one who has not had some training in serological technic could be expected to use any reaction based on this principle and rely on his results, because there are so many possible sources of error irrespective of what modification may be used, and this modification will not be of any great service to such practitioners.

It is generally conceded, I think, that the Wassermann reaction offers a certain diagnosis for syphilis, and I believe that it is likewise found in a few other infections—sleeping sickness, leprosy, and some cases of scarlet fever. I found it in four out of twenty of the latter, and also found it in two cases of noma, also in isolated instances in the presence of other infections, but that is only to be expected, because in the many cases that are examined it is certainly reasonable to conclude that the isloated instances of cancer or tuberculosis in which the Wassermann reaction is found, the patients have had syphilis. The evidence seems to show conclusively that the Wassermann reaction means active syphilis, which point has been reiterated by Dr. Sachs, and it is to be looked upon not as a reaction for tabes exactly, nor for paresis, when we are dealing with such cases, but as a reaction for active syphilis.

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* The paper by Dr. Nonne appeared in THE JOURNAL July 24.

Now, as to why we do not find a positive reaction in all cases of tabes, or, at least, in the vast majority, like we do in paresis, we may theorize from various standpoints. It is conceivable, for instance, that in a condition so chronic as tabes, caused undoubtedly by syphilis in at least the vast majority of cases, and I believe in all, the primary specific infection may have periods of quiescence, when the reaction for syphilis will not be positive. Moreover, such patients are so frequently subjected to specific treatment which has such a powerful influence on the Wassermann reaction, that it is evident we may expect to find frequently negative reactions in tabes. Likewise, with reference to the results with spinal fluid, which have been unusually low in Dr. Nonne's experiments, in comparison to the results with serum, I think that we would also indulge in fantastical excursions into the theoretical side of the question if we attempt to explain it. Dr. Castelli has shown us what ideas one may formulate on the subject. The fact remains, however, that the most practical side of the question is to examine the blood serum, and in a majority of the cases of paresis, and in a large percentage of the cases of tabes, we get a positive reaction with the Wassermann test, thus clinching the etiologic relation to syphilis. I have not had the opportunity to investigate Nonne's butyric acid reaction, but have Noguchi's ammonium sulphate, and I find it, in inflammatory conditions of the meninges, positive; for instance, in the epidemic form of cerebrospinal meningitis; while it is theoretically interesting and possibly might be regarded as an addition to our resources in a diagnostic way, it can not be regarded of specific value.

Dr. **Frank E. Fox**, Fulton, N. Y.: I agree that Dr. Noguchi's test is not suitable for the general practitioner, but I do not think that Dr. Noguchi really intends this test to be used by the general practitioner, but intends it to be used by men in clinical laboratories and not by men who do two or three tests only, but by men who do a considerable number of tests. I recently read a paper on the comparison of the Wassermann and Noguchi tests in 200 cases, mostly of syphilis in various stages, and the practical results that I have obtained show a larger proportion of positive results from the Noguchi test than from the Wassermann, although at the same time I should say that the two tests run roughly parallel. Of the eight different methods that have been suggested for serodiagnosis of syphilis depending on the principle of complement fixation, all except the method of Noguchi have more or less serious objections.

With regard to one or two difficulties experienced in the practical working of the Wassermann test, I certainly think that the chief difficulty to be encountered is in the preparation of a suitable antigen. If we could have a uniform and standard antigen a great advance would be made. Dr. Sachs has suggested that certain mixtures called A and B, respectively, be used; and it is claimed that the results with the use of these mixtures are practically the same as obtained when the alcoholic extract of syphilitic fetus is used; although they admit that a less number of positive reactions is obtained by these mixtures. Facini states that with mixture B he obtained practically no good results at all and that with mixture A he obtained 66 per cent. + as against 84 per cent. + by using the alcoholic extract of syphilitic fetus.

The one important thing in making a test from a diagnostic standpoint is to repeat the test possibly for two or three weeks in succession, and it is absolutely important to use two or three different kinds of antigen. I think the experience of most observers is that with some extracts positive results are obtained and with others negative; and this should teach us that in an important case for diagnosis two or three different extracts should be used in addition to repeating the dose.

Dr. **Alexander S. Wolf**, St. Louis: I am a dermatologist and come as a visitor to this symposium. I am especially interested in the importance of the Wassermann reaction for syphilis in cases of obscure nervous diseases. I think something should be said from the standpoint of the dermatologist, when the question of importance and reliability of Wassermann reaction is being discussed. I had an opportunity to review the recent literature on this subject from the point of view of a dermatologist in a paper which I read in St. Louis some time ago. I am satisfied that many things which are not clearly understood in the statistics of nervous diseases may be better understood if we consider the parallel statistics of the Wassermann reaction in cases of syphilis.

The first reports on the Wassermann reaction brought very interesting divergencies in the findings. While Neisser found the reaction positive in 70 per cent. of recent, clinically well-established cases of syphilis, Wassermann found it positive in 90 per cent. If two founders of a method, working on the same principle, come to such enormous difference—I do not mention the varying statistics of other and later investigators—while using entirely fresh syphilitic material, is it any wonder that one finds such divergence in the results of the sero reaction in cases of nervous diseases, where a supposedly acquired luetic infection occurred years and years ago, if at all, and the ways and means of establishing an eventual syphilitic origin of the disease, either clinically or by any other method, is very difficult?

In Professor Reilly's recent publication from the Leipsic clinic for internal diseases, it is stated that in the course of investigations in connection with syphilis, the seroreaction, eight cases of tuberculosis were examined as to the complement binding of their serum, which is the principle of Wassermann reaction. The results even in these few cases were striking: 3 gave a strong positive Wassermann, *i. e.*, hemolysis did not take place at all; 3 others gave a reaction of medium degree and the remaining 2 a weak reaction. In other words, over 35 per cent. of cases yielded a strong positive reaction. Salomon, chief of von Noorden's clinic for internal diseases in Vienna, reported at the Congress for Internal Medicine, held in Vienna in May, 1908, that he found a positive Wassermann reaction in 5 out of 23 cases of tuberculosis, which is a considerable percentage. If you consider for a moment the prevalence of consumption in the large cities in this country, as well as in Europe, especially in those strata of population which provide the clinics for venereal diseases with their material for investigation, you can imagine how the statistics of positive Wassermann reaction might be influenced, if in every case of syphilis it would be stated whether tuberculosis were present or absent. Therefore, so long as the statistics of the Wassermann reaction lack one important feature, viz., the statements regarding the general condition of the patients as to exclusion of any other disease which has already been found or may be found in the future as giving the reaction in a rather large number of cases, they must be considered with less enthusiasm than the ardent followers of Wassermann would like to see. The seroreaction has already lost the scientific foundation which Wassermann originally claimed for it and is an empirical method that promises to become a valuable aid to clinical diagnosis. But its specificity for syphilis is more than doubtful. A voice of warning must therefore be sounded, because boundless enthusiasm is apt to discredit a method which at present is only in its inception and which through a judicious criticism will gain more than through a criticless admiration.

Dr. **Maximilian Herzog**, Chicago: I have had some experience with the Wassermann test, having tried it in about 100 cases of which I have more or less complete clinical histories. I want to go on record with the statement that Noguchi's modification, commendable as it is from a purely scientific standpoint, is a very dangerous thing because it tends to place in the hands of the general practitioner a test which is exceedingly difficult, a test which involves some very delicate principles and which can never be made a simple test, as has been pointed out. I have had some experience with one modification, that of Bauer, and while I can not go into the details here of the defects I found in that modification in comparison with the original Wassermann test, I can state that from what I have seen, none of those modifications ought to be used, and we ought to stick to the original Wassermann test, which has already been tried in many thousands of cases. We have from four European clinics alone the reports of 10,000 cases.

Now, so far as my material is concerned, from the standpoint which interests you, it has been rather scanty. Most of my cases were of the ordinary cutaneous type and they came from the hands of the dermatologist; but I have examined 8 cases of tabes of which 6 were positive and 2 negative; the 2 cases which were negative were patients who had been treated with mercury and the iodids. I had 3 cases of early paresis. All of those reactions were positive. The other cases examined were of doubtful types and they were all negative, but all of those were proved finally not to be cases of syphilis. So, on the whole, I can confirm on a very small number of cases of tabes and paresis those larger statistics on these parasyphilitic affections given here to-day.

In conclusion I want to urge you to stick for a while at least to the original Wassermann test. Let it be made by men competent to make it and let us not take any statistics from men who say that they find that 25 per cent. of their cases of tuberculosis give a positive reaction. A positive reaction by the Wassermann test means syphilis and nothing else, except, of course, an occasional case of scarlatina, leprosy, etc. A man who gets 25 per cent. positive reactions in tuberculosis doesn't know how to make the test.

Dr. B. Sachs, New York: I have very little to add except that the remark which the last speaker made, I think, has a great deal of truth in it; that if any one were to claim that he had found 25 per cent. of tuberculosis cases giving a positive reaction under the Wassermann test, personally I should be very much inclined to doubt the accuracy of his test. The only safe position for all of us to assume is that this entire question is in its earliest stage; and the one reason why I was very glad to help bring this subject before the meeting to-day was to encourage as many men as possible to take up the line of investigation; and I think we shall only arrive at the truth of the matter after we shall have had statistics upon thousands and thousands of cases. It will be much the same, I think, as it was at the time of the agitation in favor of the adoption of the Widal method in the diagnosis of typhoid. Everyone now knows about how much importance to attach to a positive or negative reaction in typhoid.

In order that my own view may not be misunderstood, I would like to say that I agree with those who favor retaining the Wassermann method, and I hope that everyone who works in this field will take the trouble to acquire the original method. But I also want to say, as one who has personally worked in this field and who has tried to do conscientious work in it, that I hail with delight Dr. Noguchi's attempt at a modification of the method, and chiefly for the reason that everyone who works with the Wassermann method knows how difficult it is at various times to obtain satisfactory material for reagents. I think the suggestion made is perfectly correct. The method should be designated as the Wassermann test in deference to Wassermann, who did the great original work in this field, while the method described by Dr. Noguchi should be called the "Noguchi Modification of the Wassermann test." Dr. Noguchi's idea of trying to dry these various reagents, preserve and have them handy for use at all times is one that I can only admire. I would suggest that everyone who works with the Noguchi modification should for the next year or two use it and control it by a parallel series of tests according to the original Wassermann reaction. In that way, and by making comparison between the two methods, we will in time learn whether the Noguchi method can be accepted as a full substitute for the Wassermann reaction. In a parallel series of my own of a large number of cases, the agreement between Noguchi's modification and the original Wassermann test was very remarkable indeed. The differences were confined to three or four instances and such differences can readily be explained. They were so slight that I want to go on record as much impressed by Noguchi's modifications. But I plead in favor of running the two tests side by side for a considerable period.

Dr. H. Noguchi: I regret very much that Dr. Castelli appears so far to misunderstand my attitude toward the original Wasserman method as to speak of me as a bitter critic. My attitude is simply this: I recognized certain defects inherent in the Wassermann method, and what I have done is to improve that method by eliminating these defects. My criticism is a criticism of the principles involved in the technic and not of the persons employing it; and hence there is no bitterness in my criticism. Dr. Castelli has also referred to the work of those whom he refers to as my pupils. In the usual sense of the word, I can not be said to have had pupils. Dr. Castelli himself, however, did some tests in my laboratory before I completed my new method. The Wassermann reactions reported by him have been done, I believe, largely with the titrated amboceptor and antigen which I furnished. A number of other physicians, who have worked with me over a period of several months, have learned not merely the procedure employed in doing the Wassermann and my own method of the fixation test, but also the principles of hemolysis, and the method of preparing the antigen, amboceptor, and complement, but are, I feel justified in considering, capable of carrying out the serodiagnosis of syphilis in a reliable manner.

In my opinion forty cases are hardly enough to base any final conclusion on. Besides, the slight discrepancy between the results obtained by Dr. Castelli and those by me may also be ascribed to the individual differences. I doubt whether Dr. Sachs would have obtained a better agreement of the results if he had sent these specimens to two different persons employing the same method. That my system is more sensitive than the Wassermann is, however, clear from my own comparative study on 244 cases, but there is no undue sensitiveness in the system.

I had perfected my system before Tschernogubow's article appeared, and I may point out that Tschernogubow's method is fundamentally incorrect in its principles. Not one case has been reported by him and he has now another method in which he proposes to use guinea-pigs' washed corpuscles.

Concerning Dr. Herzog's warning of the danger of abuse of the reaction on account of simplification, there can be no more danger in this than in the difficult Wassermann test, so long as both are to be carried out by trained workers only. The simplification removes the difficulties for these qualified workers, and offers a better opportunity to untrained men to become qualified within a shorter period. There is no guarantee that the difficulties in the Wassermann method will necessarily bar unqualified workers.

Clinical Notes

TWO CASES OF TUBERCULOUS INFECTION OF THE PERITONEUM

W. H. ALLPORT, M.D.
CHICAGO

These cases illustrate unusual phases of intraperitoneal tuberculosis, and serve also to draw attention to certain points in the natural history of this disease which do not appear to have received sufficient notice at the hands of systematic writers.

HYPERTROPHIC APPENDICITIS OF TUBERCULOUS ORIGIN

Case 1.—*History.*—S. R., boy aged 10, had had numerous previous attacks of appendicular colic, and a history of "not feeling well" for one month, with the present acute attack of three days' duration.

Examination.—Patient was rather pale and emaciated; pain, vomiting, constipation, tense rectus, indistinct tumor at McBurney's point. Afternoon temperature, 102 F.; leucocytosis, 20,000.

Operation.—Incision over tumor revealed an old chronic appendix of such enormous thickness that it was taken at first for a loop of small intestine. The abdomen contained some clear fluid. The appendix was surrounded by dense adhesions protecting several perforations, and on removal measured irregularly 3.5 cm. (1½ in.) in diameter by 12 cm. (5 in.) in length. At its point of origin from the bowel it was of normal caliber. Section showed it to be composed of dense fibrous tissue, surrounding numerous cheesy foci and tubercular granulations. The perforations were apparently not due to pressure necrosis, but to a slow extension of the tuberculous process entirely through the wall of the tube. The raw surfaces left after removing the appendix oozed so freely that gauze drainage was introduced.

Subsequent History.—This represents a slow, but complete and natural recovery from a tuberculous infection, after surgical removal of the major focus. The patient remained under daily observation for twelve weeks; during this time there was a temperature range from 98 F. in the morning to 102 F. in the afternoon, with night sweats. The urine showed constantly a large amount of indican, but no sugar or albumin. The leucocyte count varied for many weeks from 27,000 to 48,000, but the percentage of polymorphonuclear leucocytes was never far from normal. After eight weeks the wound closed, but the temperature and blood count remained so high and the obstructive symptoms were so suggestive that in the tenth week the incision was reopened in the expectation of finding a subphrenic or mesenteric abscess. Nothing was found beyond numerous adhesions and ropes of knotted omentum, which were partially resected and broken up; otherwise, the intraabdominal conditions were very satisfactory, and the wound was closed after freshening all muscular edges to insure protection against subsequent incisional hernia. The second operation had little effect on the progress of the case, except to relieve the partial obstruction; the temperature slowly subsided; the appetite, strength and flesh returned; and for over four years the patient has been to all appearances in the best of health.

COMMENT

This very unusual appendix was the product of an effort to accomplish the inclusion of certain tuberculous foci within a zone of resistance and protection. Undoubtedly the process was over-developed, and resulted in a general fibrous hypertrophy of the entire organ.[1] Hypertrophic appendicitis is of two varieties: (1) a form based on obstruction, in which the muscle fiber is increased through the stimulus of resistance to peristaltic action at the point of obstruction; and (2) a form in which diseased foci are surrounded by protective zones —more or less coalescent—of granulation and fibrous tissue. More commonly the diseased focus originates in a foreign body, but in rare instances, like the present, the irritating material from which exclusion is sought is represented by colonies of the *Bacillus tuberculosis.*

The important clinical points to be noted are: (a) That in spite of the chronic process the onset was apparently sudden, so far as the call for medical aid was concerned; (b) that the case prior to operation gave little hint of the tuberculous source of the trouble; (c) the long-continued postoperative temperature and phenomenally high leucocytosis were incorrectly inferred to represent further mixed infection with abscess formation. In reality they represented a virile and eventually successful resistance to such of the tuberculous material as remained active within the peritoneum after the removal of the principal deposit.

Safe general rules to deduce from this case are: (1) A sharp rise in temperature and leucocyte count, after operations for tuberculous conditions, indicates vigorous resistance, and, other things being equal, should influence a favorable prognosis. (2) Secondary operations, in tubercular cases, unless for well-defined obstruction, are not indicated on the sole basis of fever or high leucocytosis.

TUBERCULOUS PERITONITIS WITH LARGE PSEUDOCYST, AND CHRONIC OBSTRUCTION

Case 2.—Illustrating, (a) ascitic form of tuberculous peritonitis with adhesions; recovery after exploratory incisions, followed by (b) encysted deposit communicating with bowel, "tubercular pseudo-cyst."

History.—In 1906, Dr. W. H. Sands of Fairmount, W. Va., made a laparotomy on R. J., an otherwise apparently healthy young woman, aged 22, unmarried and undoubtedly a virgin. He found a miliary tuberculous peritonitis, extensive in character, moderate ascites, and dense fibrous adhesions between intestines and all the pelvic organs. He removed nothing, dusted well with iodoform and closed without drainage. She left the hospital in three weeks. A mucopurulent discharge from the bowel developed and in eight months she was again operated on, this time for obstruction. Prior to Dr. Sands' second operation she was seen by the writer, who can vouch for her apparently desperate condition. She was of a waxy pallor; the bowels were distended and the abdomen very tender; the evening temperature was high; the bowel movements were scanty or mucopurulent, and the patient was allowed to go to her home on the theory that she was fatally ill with peritoneal and intestinal tuberculosis. On reaching home Dr. Sands broke up many of the adhesions, found no evidence of the former miliary tuberculosis, dusted with iodoform and closed. Recovery again was uneventful. In six months Dr. Sands again saw her with several large joints involved in an apparently tuberculous arthritis. At this time there appeared to be some involvement of the lung. No operation. Weight, 105 pounds. On the subsidence of the arthritis she was sent to the mountains where she remained one year. She then returned to Chicago and came to my office to get work as a nurse. She was a picture of exuberant health—plump, ruddy and vigorous. Weight, 130. Within a month she was again taken with symptoms of acute obstruction and her subsequent history is as follows: Temperature, from 100 to 103 F.; tongue clear; nausea and vomiting frequent; constipation obstinate, but not unyielding; abdomen distended, but rigid and tender only below the line of navel; urine dark brown with strong reaction for indican, no albumin; movements contained some mucopus. In lower left quadrant in the region of the sigmoid there was a swelling, round and tender, about the size of an infant's head at term. Blood count: 18,000.

Diagnosis.—Infected cyst; obstruction from combined effect of chronic adhesions and enlarging cyst.

Treatment.—Under hot applications and a starvation diet the symptoms improved for a few days, and there was some reduction in the size of the tumor, coincident with free evacuations from the bowel, containing pus. But presently the temperature again mounted and the patient was taken to the hospital for operation. A median incision through the old scar —which was hernial—opened a smooth non-tuberculous peritoneal sac, containing a little clear fluid, and traversed by numerous bands and layers of old adhesions, obliterating effectually all organs and landmarks. During the subsequent manipulations neither uterus nor ovaries were recognized as such. The excised mass seemed to be an ordinary infected cyst of the right ovary or broad ligament, which had developed in the usual manner but had assumed rather peculiar relations toward the sigmoid colon in consequence of previous tuberculous infection. The tumor was completely wrapped in the sigmoid flexure; the omentum was not encountered during the operation. With great difficulty a line of cleavage was secured along the anterior aspect of the tumor, and the growth was literally dug out of the pelvis. Several small thin-walled cysts, containing clear fluid and lying apparently close against the uterus were also enucleated; these had no connection with the larger tumor except by contiguity. While separating the tumor from the upper part of the rectum, the adhesions were so close that the cyst wall gave way, allowing a quantity of brownish fluid of fecal odor to escape. The raw rectal wall was at once carefully examined, but no bowel opening could be detected, and after closing the opening in the cyst with forceps, the enucleation was completed. There was no hemorrhage from any single large vessel, although the oozing from torn surfaces was profuse. The tumor had been contained in a sort of globular cavity made up of pelvic wall, sigmoid and rectum, bladder and uterus, and there was not the least suggestion of pedicle. The adjacent bowels were then cleaned and examined for perforations, but, although the surfaces were unhealthy and denuded, they presented no macroscopic tubercular nodules and no perforation could be discovered. Three cigarette drains were introduced, two to the depths of the cavity and one to the most suspicious bowel surface, and the abdomen was closed after excising the hernial sac and renewing the normal relations of all the parietal structures to the median line. The operation was followed by great vascular shock and considerable vomiting and distention, but in five days improvement was coincident with the appearance of a fecal fistula, through which escaped, at first, all of the evacuations and large quantities of flatus. Presently, however, the rectum resumed its function, the temperature became continuously normal, the appetite and strength improved, the fecal discharge ceased, and at the present writing conditions point toward a speedy permanent wound healing under occasional treatment of the fistulous tract with Beck's paste. Weight, 124, and increasing.

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[1] A similar case is reported by Murphy in the Am. Jour. Obstet., 1904, xlix.

Examination of Specimen.—Smaller cysts (2 or 3) not preserved, but filled with clear contents; walls unthickened. Contents of large cyst not preserved, but of fecal odor, gray-brown color, not bloody, and about the consistency of buttermilk. Size, prior to rupture, that of an ordinary cocoanut; after removal, that of a baseball. Outline, irregularly globular; no pedicle; surface rough and fibrous, with no peritoneal surface in evidence. Thickened areas in the wall were later recognized microscopically as tube and ovary. Sac wall, irregularly thickened, fibrous and varying from .5 to 5 cms. (1/5 to 2 in.) in thickness; some soft spots containing blood and pus; a fistulous tract 4 cm. (1½ in.) long, lined with grayish-green membrane and terminating abruptly on inner and outer faces of sac. The interior of the cyst is rough, irregular and gangrenous, and the wall in places peels rather readily into layers.

COMMENT

The original pathologic diagnosis made by the laboratory in this case was pyosalpinx and pelvic abscess. Later Dr. E. R. LeCount, without knowledge of the clinical history, became suspicious of the specimen and took up the microscopic examination himself. After repeated section cutting, he was able to demonstrate:

(a) Many microscopically typical foci of tuberculosis were present with no gross tuberculous degeneration.

(b) The cyst was neither covered nor lined with epithelium or endothelium, and that its wall was made up of layers of organized fibrin and inflammatory cells.

(c) The tube and ovary were incidentally included in the cyst wall, but that they did not form any integral part of the cyst.

(d) The tube and ovary were not themselves tuberculous.

The findings at the first operation were those of the ordinary form of tuberculous peritonitis, probably secondary to intestinal tuberculosis. At the second operation the gross tuberculosis had disappeared, leaving the usual scar-tissue adhesions. At the third operation the pathologic finding was an extremely rare one: a pseudocyst composed of tuberculous inflammatory tissue, probably originating from an encapsulated perforating ulcer of the sigmoid, and fed from time to time with septic material from the bowel.

Such pseudocysts are mere sacculated receptacles for morbid products, and are to be differentiated from true cysts of the genital tract by their lack of true lining and covering membranes, by the thickness and inelasticity of their walls, and by the wall itself being composed entirely of inflammatory material. Their origin is usually tuberculous. Clinically, these deposits are commonly taken for ordinary pelvic cysts, or for tubo-ovarian abscesses, and there is no possible way to identify them prior to operation, except through inferences drawn from the history.[2]

85 Rush Street.

CRURAL AND AXILLARY RINGWORM IN THE CANAL ZONE

ALFRED G. FARMER, M.D.
Physician, Gatun Dispensary, Isthmian Canal Commission
GATUN, CANAL ZONE

Mention in The Journal of June 26, 1909, of the prevalence of tinea cruris in the temperate zone would seem to make some description of this annoying disease, as seen so commonly in the tropics, of interest. Tinea cruris et axillaris is seen with great frequency among the laborers and lower class of natives in the Canal Zone, and it is by no means uncommon among the natives of the North resident here. The disease flourishes best among those of uncleanly habits and improper and careless personal hygiene. The practice of this class of persons of washing their clothing in streams and pools and of spreading it on the usually moist ground and grass to dry seems to provide a ready means of infection. The infrequency of change of clothing and of bathing may also be mentioned as predisposing factors.

The disease usually appears first, as the name implies, on the inner side of the groin next the body and in the armpits, rapidly spreading, if neglected, over the scrotum, thighs and trunks. Patients frequently present themselves for treatment who have two-thirds of the body surface affected. There first appears a small reddish area of inflammation with slightly raised edges, these spots gradually spread peripherally till they reach the size of a silver dollar or of the palm of the hand. The inflammation in the center of the "circle" recedes as the periphery enlarges. In neglected cases new areas of infection soon appear in the near vicinity and as they enlarge the rings coalesce, forming one large infected area of joining rings. The intense itching, especially at night, makes this disease most annoying and often causes badly infected sores and ulcers as a result of lacerations by the finger nails in an effort to find relief. The tinea cruris et axillaris as seen here does not usually destroy the hair follicles.

The treatment is prophylactic and active. Bathing and changing the underclothing should be practiced at frequent intervals, and all clothing should be thoroughly boiled in the laundry and hung on lines to dry. Effective active treatment will be obtained by cleaning the parts thoroughly with the tincture of green soap and water and applying with some friction the ointments of sulphur or salicylic acid or iodin, this procedure to be repeated once or twice daily for several days, or when comparatively small areas are involved and the individual is of sufficient hardihood to stand the few moments of severe burning, a thorough painting with the tincture of iodin or a solution of salicylic acid in alcohol and ether will very promptly eradicate the fungus. The latter measures sometimes give rise to a troublesome irritative inflammation that will require for a few days the application of one of the mild ointments, as boric acid or 1 per cent. carbolic acid in petrolatum.

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[2] Koenig: Spec. Chir., II, 155, 1889.

CASE OF LYMPHATIC LEUKEMIA

H. H. HAZEN, M.D.
WASHINGTON, D. C.

On account of the marked blood picture the following case of lymphatic leukemia seems worth reporting:

Patient.—M. D., aged 60, Irish, a watchman. The family and past history are both unimportant. The patient denied any venereal disease and had never used alcohol. He had always been a strong, healthy, hard-working man.

Present Illness.—During the summer of 1903 he noticed enlarged glands in the neck, axillæ and groins, together with slight weakness. He had been unsuccessfully treated by several physicians. He first came under observation Oct. 28, 1904, complaining of general weakness, epistaxis and enlarged glands. He was put on potassium iodid, and in two weeks the glands had become smaller and softer; they soon regained their usual large size, however. The probable diagnosis of leukemia was made and the patient was put on Fowler's solution, which did not help him.

Examination.—Late in November I saw the patient. He was a well-nourished man, with skin a trifle bronzed, lips and mucous membrane extremely pale. Lungs and heart were normal; abdomen was distended with fluid; the liver was not palpable, but the spleen extended a full hand's breadth below the costal margin. In the anterior triangles of the neck there were enlarged glands, some being as much as 6 cm. long. They were discrete and very hard; the axillary and inguinal glands were also markedly enlarged. From neither the history nor examination was there any evidence of involvement of the mediastinal glands. The legs were slightly edematous; the urine was absolutely normal. One month later a blood examination was made, with the following results: Hemoglobin, 20 per cent.; red cells, 960,000; white cells, 250,000. A smear showed the red cells to be normal in appearance; no nucleated reds and no megaloblasts were seen. The predominating white blood cells were small mononuclear non-granular cells, typical lymphocytes. Only two polymorphonuclears were seen. There were no eosinophiles, no mast-cells, no large mononuclears, and no myelocytes.

Course of Disease.—While I did not see the patient again, I am informed by his physician that he grew steadily weaker, that he had severe attacks of epistaxis and that his liver became enlarged. Death took place on Feb. 12, 1905. No autopsy was permitted.

1204 Eighteenth Street.

TUBERCULOSIS EXHIBIT AND CABINET

FRANK B. WYNN, M.D.
INDIANAPOLIS

This descriptive article is published as a means of answering numerous inquiries concerning the tuberculosis exhibit shown at the recent American Medical Association session in the name of the Indianapolis Medical Society. As will be seen from the picture, the exhibit is housed in a handsome and substantial cabinet, consisting of an upper show case in which are placed models of pavilions, shacks, tents and devices used in the treatment of tuberculosis. Appended to each of the models are brief data as to materials and cost of construction. At one end of the cabinet is a flashlight transparency, which announces that with the lapse of every three seconds another victim has been claimed by tuberculosis.

The lower half of the case consists of two drawers, 10 by 14 by 22 inches in size, opening on opposite sides of the case. This enables several persons to be examining the contents of the drawers at the same time. In these drawers are anchored (similar to any index file) a hundred or more heavy cards on which are photographs, cartoons and diagrams with appropriate descriptions, statistical data, mottoes, sanitary dicta, etc., relating to the whole problem of tuberculosis.

Signs in the glass case call attention to the drawers below where the observer is invited to learn the story of the great white plague. A smaller cabinet embodying the same principles can be manufactured for at least half the price of the larger one.

Marvelous strides have been made in preventive medicine during the past two decades through the usual health board propaganda—bulletins, circulars, popular lectures and the like. More recently these means are being supplemented by exhibits relating to public health problems—notably tuberculosis. While they represent the most efficient means thus far employed to enlighten the public on sanitary questions, they are open to the serious objection of cumbersomeness and expense in maintenance. They are presented for a few days in the community and perhaps never again. Such spasmodic efforts can not bear the good fruit that would arise from means which could keep the question constantly before the people.

DISADVANTAGES OF PAST METHODS

As a concrete example take the exhibit of the New York Charities Organization. It is the most complete and comprehensive that has been devised in this country. Installed for a few days now in one part and now in another part of New York City, it has been of incalculable value in teaching, especially the lower classes, the story of tuberculosis in all its aspects. But however excellent, a fair criticism of the practicability of this exhibit (and similar ones) may be made on the following grounds:

1. Its primary cost, which must have been from $1,200 to $1,500.
2. The cost of housing—a large room being necessary.
3. Expense of moving, installing and proper supervision. (The cost of its presentation at the Atlantic City meeting of the American Medical Association was over a hundred dollars.)
4. The short period of time during which it is maintained in any given place.

ADVANTAGES OF THIS EXHIBIT

To overcome such objections as the foregoing the Scientific Exhibit Committee of the American Medical Association has for the past two years been endeavoring to interest sanitarians in developing a compact but comprehensive tuberculosis exhibit. Five were offered at the last meeting, each having distinct points of merit. The one herein described does not fulfill all requirements, but I believe has much to commend it. The advantages may be summarized as follows:

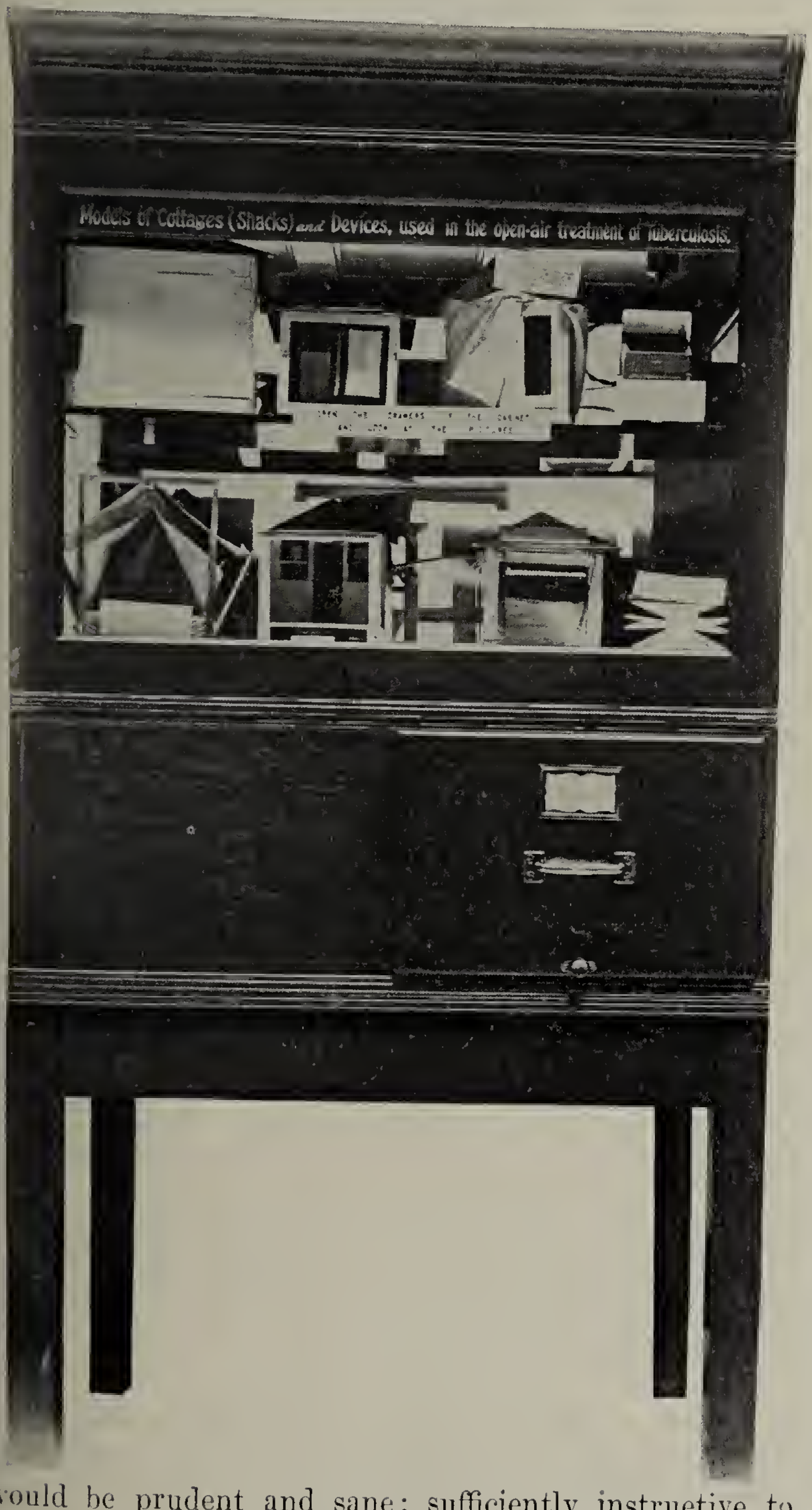
1. Compactness, neatness and stability: The cabinet takes up but little room and can stand with safety in any public building where crowds congregate.
2. Completeness: Although compact, it can be made to contain as much as the large exhibits—all that is necessary for the instruction of the public.
3. It requires no supervision, but tells its own story graphically.
4. Cost: If manufactured in large numbers, they could be sold at a figure sufficiently low to enable health boards to place them in railway stations, court-houses, public libraries and like places.
5. The continuity of effort would bring home to the people the lessons of the tuberculosis problem every day of the year.
6. The same cabinet might be used as occasion required for instruction on other sanitary **matters.**

PROBLEM OF PRODUCTION

To the many inquiries which have been made as to the cost of these cabinets and where they may be obtained, no satisfactory answer can be made. Two large concerns have made overtures looking to their manufacture. In order to secure the widest possible educational effect, it is desirable that the exhibits be sold almost at cost to insure their general use. Is it practicable to attain this end? Why should not the Board of Trustees of the Association, the Scientific Exhibit Committee or other regularly constituted representative undertake the supervision of this undertaking? Let them ascertain through experts the lowest figure at which these cabinets, equipped, can be made. Then secure an agreement from some reputable firm to market them at this price.

The Association's endorsement would insure large sale. Let the manufacturer pay the Association a royalty to cover the expense of proper supervision of the data that go into the cabinets. These would need to be varied to suit localities and states. Such supervision would insure the introduction of such matter only as would be prudent and sane; sufficiently instructive to the lay mind on tuberculosis and other sanitary questions, but so tempered as not to excite ridicule or unnecessarily alarm the people on such matters. It would offer the Association an opportunity to render most effective cooperative aid to health authorities and, therefore, would prove of great service in the march of preventive medicine—a field in which the Association, as an organization, has as yet done but little.

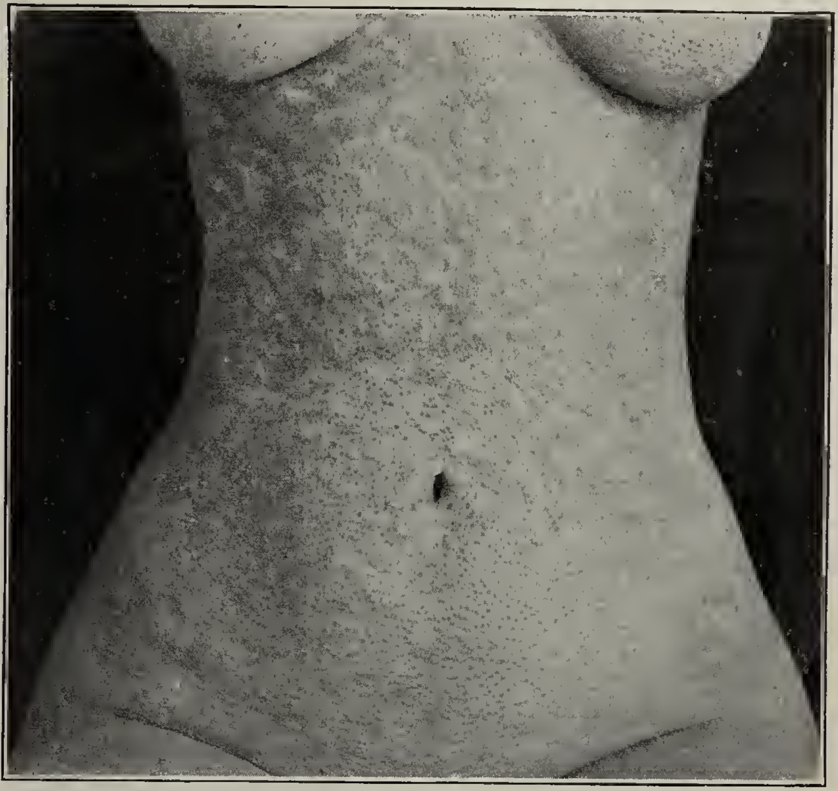
311 Newton Claypool Building.


Models of Cottages (Shacks) and Devices, used in the open-air treatment of Tuberculosis.

A CASE OF SYPHILIS RESEMBLING PITYRIASIS RUBRA PILARIS

HOWARD FOX, M.D.
NEW YORK CITY

The following case of miliary papular syphilis is of interest on account of its very close resemblance to the papular stage of pityriasis rubra pilaris. When seen in August, 1908, at the Vanderbilt Clinic, the patient, a widow of 30, presented a general eruption of the face, trunk and extremities. This consisted, for the most part, of small, conical, pin-head papules, capped with horny scales. There was no tendency for the lesions to become confluent and there were no signs of itching. On the face there were erythematous and scaly lesions that might have occurred with either of the diseases in question. There was no history of any genital sore, no glandular enlargement and no lesions of the mouth. The palms were thickened and scaly, but did not present the appearance characteristic of the early palmar syphilide. While the eruption simulated a pityriasis rubra pilaris very closely, it was noticed that there was a slight tendency of the papules to follicular grouping so characteristic of miliary papular syphilide. Further, the appearance of the backs of the phalanges generally noted in pityriasis rubra pilaris was absent.


A case of miliary papular syphilis in which the eruption simulated pityriasis rubra pilaris.

When the case was first seen I had not begun to work with the Wassermann test, and a clinical diagnosis alone was possible. To show the great difficulty in diagnosis it may be said that a distinguished dermatologist of the city pronounced the case to be unquestionably one of pityriasis rubra pilaris. The patient was kept under observation for two weeks, at the end of which time the lesions began to show a tendency to become papulosquamous, and she was then put on antisyphilitic treatment; within a month the greater part of the eruption had disappeared. The patient then became somewhat irregular in attendance at the clinic, and a few weeks later developed a rather severe iritis. For the privilege of reporting this case I am indebted to Dr. George T. Jackson.

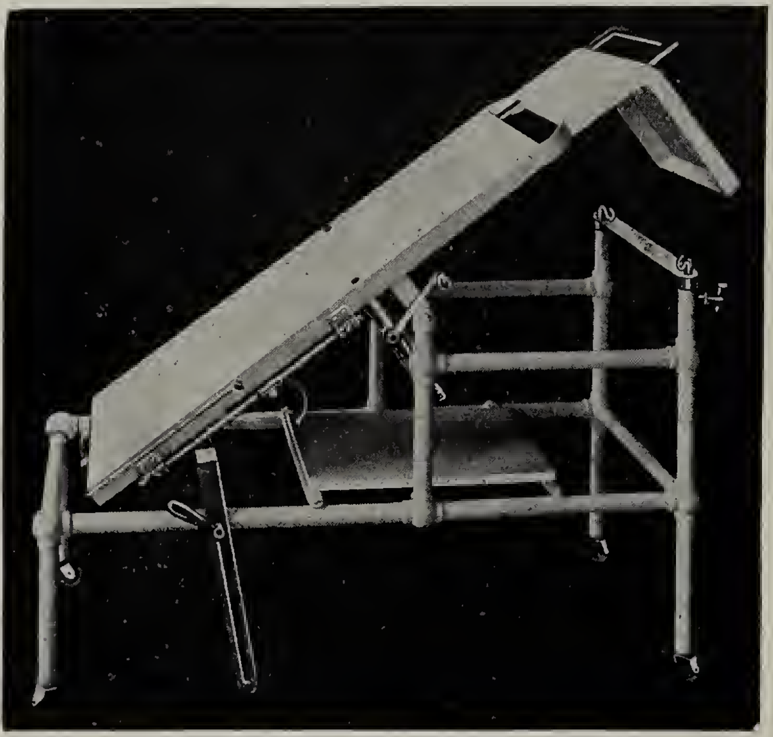
616 Madison Avenue

AN OPERATING-TABLE

D. TOD GILLIAM, M.D.
COLUMBUS, O.

The special features of this table are:

1. An extension rod which slides in and out at the foot of the table.
2. The leg-holders, which fit into the posts and which can be set at any height by means of a set-screw.
3. A revolving instrument tray which is attached to the leg-holder can be raised or lowered at will.
4. The body-lift, plain, or provided with movable side brackets to fix the kidney during operation and to keep the patient from rolling.
5. The shoulder-supports, small, neat and movable. They are hinged at the sides of the table and can be adjusted immediately for use or turned under the table out of the way.
6. A support for rectal treatment or for maintaining the knee-chest posture. This is effected by a strap extending from one leg-holder to the other at a proper height; the patient kneels on the shelf eovered by a blanket, his body thrown forward over the strap.



An improved operating-table.

7. The shield between the anesthetist and operator, which fits snugly around the end of the table when not in use, and which can be raised to the vertical or any desired angle and fixed by a set-serew when needed.

The extension rod at the end of the table has many uses:

1. In vaginal or rectal operation a towel thrown over it protects the sutures from contact with the drop.
2. Drawn out a little further it makes a foot-rest for the patient in examination or treatment.
3. It holds a douche-pan in vaginal or rectal operations.
4. Pulled out so as to allow the legs to be lowered through it and strapped to the drop, the same douche-pan, placed between the end of the extension rod and the patient's knees, acts as a receptacle for soiled sponges in abdominal operations.
5. By placing the shelf from under the table on it and adjusting the extension rod to the length of the patient, a full-length table is obtained exactly fitted to his stature.

Every attachment is an integral part of the table and always at hand, there being no pieces to lay aside and gather up when needed. Also there are no hinged leaves or other unstable parts to the table.

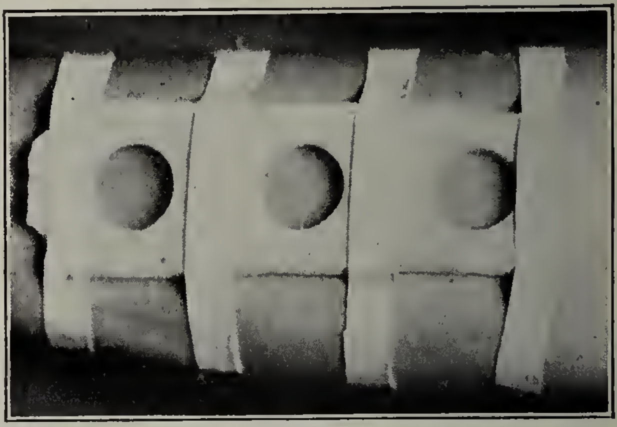
50 North Fourth Street.

A PROTECTOR FOR USE IN THE CUTANEOUS TEST FOR TUBERCULOSIS

R. L. SUTTON, M.D.
KANSAS CITY, MO.

In applying the cutaneous test for tuberculosis, the scarified surfaces, unless covered, are subjected to irritation and possible infection from without.

Protection usually is secured by the use of a soft, smooth dressing, as a linen or silk handkerchief, applied as a bandage directly over the wound. While this method serves very well in many instances, it is open to some objections. The cloth comes closely in contact with the excoriated surfaces and is liable to irritate, causing misleading inflammation; the dressing is difficult to keep in place, especially on the forearm (the part commonly selected); and the progress of the reaction can not be observed without removing the bandage.



Protector for use in the cutaneous tuberculosis test.

I have found an oblong felt protector, like the one shown in the accompanying illustration, of considerable value. It is made on the same principle as the widely used vaccination pads, and the openings are covered with thin, transparent celluloid. The dressing is firmly held by four short, transverse strips of adhesive plaster.

518 Commerce Building.

Special Article

SEVENTH ANNUAL SUMMARY OF FOURTH OF JULY INJURIES

For the seventh consecutive year we are presenting statistics of injuries received during the celebration of the Fourth of July, with particular reference to tetanus resulting from these injuries. Considerable effort has been made to secure reliable data, and all serious cases have been carefully investigated, so that, so far as the figures go, dependence may be placed on them. We have received thousands of letters from physicians in all parts of the country, reporting cases which otherwise could not have been included in the statistics. There are doubtless thousands of other cases not reported, although chiefly minor injuries. Our thanks are due for the many careful reports which have made these statistics more complete and the figures more reliable. The data are presented in the same manner as heretofore, in order that comparison may be made.

MORE CASES OF TETANUS

There were 150 tetanus cases this year, almost double the record of last year, when 76 cases were reported. This is the largest number since 1903, when there were 415 cases. It is significant to note that the number of blank cartridge wounds correspondingly increased from 816 last year to 1,095 this year, and that the states having the largest numbers of blank cartridge injuries have also the largest numbers of tetanus cases (Table 5). It is interesting also to state that from blank cartridge wounds there was a higher percentage of deaths (10.2) than from gunshot wounds (6.1 per cent.).

The most common cause of the wound is the blank cartridge, and the usual site is the hand. The duration given is the number of days between the injury and death or recovery. Following the injury it required from 5 to 15 days before the symptoms of tetanus appeared, the average of all fatal cases being about 7 days. The longer

Table 1.—Cases of Tetanus

Name.	Sex.	Age.	Cause of Wound.	Site of Wound.	Duration in Days.	Result.
CALIFORNIA						
Benbow	M	16	Bl. ctg	Hand	10	D.
Gardner	M	45	Firecracker	Hand	11	D.
DELAWARE						
Corbin	M	13	Bl. ctg	Hand	(6) 8	D.
Smith	M	17	Bl. ctg	Hand	7	D.
FLORIDA						
Padgett	M	12	Bl. ctg	Hand	..	
IDAHO						
Hendricks	M	27	Gunshot	Ankle	10	D,
ILLINOIS						
Allen	M	11	Bl. ctg	Finger	(4)13	D.
Brown	M	14	Bl. ctg	Hand	9	D.
Bingaman	M	8	Bl. ctg	Hand	..	D.
Cook	M	13	Bl. ctg	Hand	9	D.
Ebright	M	14	Bl. ctg		7	D-
Ford	M	11	Bl. ctg	Hand	19	D.
German	M	8	Bl. ctg	Hand	12	D.
Gestel	M	13	Bl. ctg	Hand	7	D.
Granat	M	10	Bl. ctg	Thigh	(10)22	R.
Haffey	M	15	Bl. ctg	Hand	30	R.
Menson	M	9	Bl. ctg	Finger	7	D.
Morris	M	Boy.	Bl. ctg	Hand	..	..
Muelford	M	11	Bl. ctg	Hand,	(7) 9	D.
Neff	M	19	Bl. ctg	Hand	10	D.
Quinn	F	14	Bl ctg	Hand	25	R.
Reed	M	13	Bl. ctg	Hand	..	..
Remillard	M	17	Bl. ctg	Hand	9	D.
Simmons	M	Boy.	Bl. ctg	Hand	13	D.
Stoffel	M	12	Bl. ctg	Thigh	(7) 9	D.
Verbelia	M	12	Bl. ctg	Hand	15	D.
INDIANA						
Callahan	M	11	Bl. ctg	Hand	..	D.
Czerwinski	M	12	Bl. ctg		18	D.
Dolson	M	13	Bl. ctg	Hand	9	D.
Kennedy	M	12	Bl. ctg		7	D.
Lacey	M	13	Bl. ctg	Hand	7	D.
Lurok	M	15	Firecracker	Thumb	7	D.
McCoy	M	..	Bl. ctg		8	D.
Thompson	M	16	Bl. ctg	Leg	20	D.
Webster	M	13	Bl. ctg	Hand	8	D.
IOWA						
Parks	M	11	Bl. ctg	Hand	9	D.
KANSAS						
Allen	F	6	Bl. ctg	Hand	14	D.
Clark	M	16	Bl. ctg	Hand	11	D
Miller	M	16	Gunshot	Knee	7	D.
Van Meter	M	Boy.	Bl. ctg		..	D.
Williams	M	8	Bl. ctg	Penis	(7)10	D.
Yocum	M	9	Bl. ctg	Hand	9	D.
KENTUCKY						
Gill	M	8	Bl. ctg	Hand	..	..
MAINE						
Pitts	M	13	Bl. ctg	Hand,	11	D.
MARYLAND						
Behrman	M	18	Bl. ctg	Finger	(10)48	R.
Cavey	M	14	Bl. ctg	Hand	14	D.
MASSACHUSETTS						
Blanchette, C.	M	15	Bl. ctg	Hand	(5)11	D.
Bouchard, A.	M	14	Bl. ctg	Hand	17	D
Brown	F	24	Bl. ctg	Thigh	(15)20	D.
Joseph	M	20	Bl. ctg	Hand	(6) 9	D.
Killeen	M	29	Bl. ctg	Hand	7	D.
Nagen	M	14	Firecracker	Hand	(8)14	D.
Norton	M	11	Bl. ctg	Hand	(7)50	R.
Silva	M	23	Bl. ctg	Hand	15	R.
MICHIGAN						
Ashlund	M	12	Bl. ctg	Hand	9	D.
Barnett	M	13	Bl. ctg	Hand	(7)12	D.
Cole	M	10	Bl. ctg	Hand	7	D.
Damm	M	15	Firecracker		16	D.
Lawler	M	11	Bl. ctg	Hand	..	..
McRorie	M	12	Bl. ctg	Hand		D.
Morrison	M	13	Bl. ctg		9	D.
Schaff	M	10	Bl. ctg	Hand	7	D
Sheridan	M	12	Bl. ctg		..	.
Stewart	M	15	Bl. ctg	Hand	..	D.
Straffon	M	16	Bl. ctg	Hand	18	D.
MISSOURI						
Adair	M	Boy.	Powder expl.	Arm	18	D.
Cooper	M	16	Bl. ctg	Hand	10	D.
Enloe	M	13	Bl. ctg	Hand	9	D.
Hogan	F	26	Bl. ctg	Hand	..	D.
Judson	M	10	Bl. ctg	Hand	7	D.
Neland	M	10	Bl. ctg	Hand	(5)11	D.
Solomon	M	10	Bl. ctg	Hand	11	D.
Taylor	M	11	Bl. ctg	Hand	11	D.
MONTANA						
Kelly	M	23	Bl. ctg	Hand	10	D
Mulholland	M	16	Bl. ctg	Hand	..	D.
Staten	M	7	Bl. ctg	Hand	10	D.
NEBRASKA						
Dlargy	M	12	Rocket	Hand	..	D.
Pop	M	Adult.	Bl. ctg	Hand	10	D.
Watkins	M	13	Bl. ctg	Hand	9	D.
NEW HAMPSHIRE						
Boyle	M	17	Bl. ctg	Hand	(7) 9	D.
NEW JERSEY						
Campbell	M	12	Bl. ctg	Hand	(6)14	D.
Da Costa	M	..	Gunshot	Finger	10	D.
Fischer	M	14	Bl. ctg	Hand	7	D.
Francke	M	13	Cannon	Thigh	10	D.
Frisco	M	13	Fireworks		..	..
Goldstein	M	8	Bl. ctg		9	D.
Guthrie	M	9	Bl. ctg	Hand	(6) 8	D.
Hunt	M	14	Bl. ctg	Hand	8	D.
Jasperino	M	14	Bl. ctg	Hand	18	R.
Keley	M	13	Bl. ctg	Hand	7	D.
Long	M	12	Bl. ctg	Hand	8	D.
McIntyre	M	14	Bl. ctg	Finger	10	D.
Martin	M	..	Firecracker	Hand	..	..
Miner	M	14	Bl. ctg	Hand	(8)10	D.
Penn	M	13	Bl. ctg	Hand	8	D.
Riccio	M	12	Bl. ctg	Hand	(8)11	D.
Walters	M	12	Bl ctg	Hand	7	D.
Weigel	M	11	Bl. ctg	Hand	30	R.
Wilson	M	12	Bl. ctg	Hand	(12)..	R.
NEW YORK						
Brightman	M	13	Bl. ctg	Hand	12	D.
Jeriorski	M	11	Bl. ctg	Hand	20	D.
Last	M	10	Bl. ctg	Hand	7	D.
Mafredonia	M	10	Bl. ctg	Hand	..	D.
Ohlowald	M	14	Bl. ctg	Hand	9	D.
Otis	M	8	Bl ctg	Hand	6	D.
Schroeder	M	15	Bl. ctg	Hand	11	D.
Schultz	M	31	Gunshot	Thigh	(7) 9	D.
Stanway	M	18	Bl. ctg	Finger	14	D.
Tatar	M	12	Firecracker	Hand	(8)10	D.
Wiegland	M	11	Bl. ctg	Hand	..	D.
OHIO						
Combow	M	14	Powder expl.	Hand	16	R.
Getroast	M	12	Bl. ctg	Hand	10	D.
Lewe	M	11	Bl. ctg	Hand	(7)10	D.
Manuel	M	12	Bl. ctg	Hand	8	D.
Marcum	M	12	Bl. ctg	Hand	..	D.
Parkos	M	13	Bl. ctg	Finger	(5)14	D.
Seaman	M	13	Fireworks		18	D.
Sells	M	10	Bl. ctg	Hand	10	D.
Sliman	M	15	Bl. ctg	Hand	..	
Stokely	M	10	Bl. ctg	Hand	9	D.
Tindall	M	14	Bl. ctg		12	D.
Underwood	M	Boy.	Bl. ctg	Hand	16	D.
PENNSYLVANIA						
Breich	M	16	Bl. ctg	Hand	8	D.
Coles	M	15	Bl. ctg	Leg	6	D.
Donovan	M	13	Bl. ctg		15	D.
Farber	M	18	Bl. ctg	Finger	22	D.
Houpt	M	15	Bl. ctg	Groin	6	D.
Koslovski	M	11	Bl. ctg	Hand	11	D.
Kowalick	M	6	Bl. ctg	Hand	..	..
Maxwell	M	13	Bl. ctg	Finger	12	D.
Scott	M	Boy.	Firecracker	Leg	..	..
Werts	M	13	Bl. ctg	Finger	10	D.
SOUTH DAKOTA						
Phebus	M	11	Bl. ctg	Finger	9	D.
WASHINGTON						
Brown	M	11	Bl. ctg	Hand	..	..
Nelson	M	13	Bl. ctg	Hand	7	D.
Perry	M	14	Bl. ctg	Hand	..	..
Roth	M	10	Bl. ctg	Hand	6	D.
WEST VIRGINIA						
Comedy	M	13	Bl. ctg	Hand	..	D.
Llewellyn	M	9	Bl. ctg	Hand	16	D.
Parshall	F	15	Firecracker	Hand	..	..
Robinson	M	10	Bl. ctg	Hand	6	D.
WISCONSIN						
Briscoe	M	12	Bl. ctg	Finger	(6) 8	D
Darling	M	11	Bl. ctg	Hand	11	D.
Dakonich	M	15	Bl. ctg	Hand	9	D.
Golden	M	11	Bl. ctg	Hand	8	D.
Micka	M	13	Firecracker	Hand	(8)13	D.
Peterson	M	16	Bl. ctg	Hand	8	D.
Rhein	F	11	Bl. ctg	Hand	9	D.
Rutz	F	30	Bl. ctg		8	D.
Zettman	M	..	Powder expl		18	D.

Figures in parentheses show incubation period.

incubation period doubtless indicates a less virulent germ and, therefore, a better chance for recovery by treatment. In one case the symptoms began on the fourth day, while in another case they appeared on the fifteenth. Following the appearance of the symptoms death resulted in from 2 to 9 days, the average of all cases reported this year being about 3½ days. In 4 cases the entire duration of time between inoculation and death was six days or less. The average duration for all fatal cases reported was 10½ days. The list of tetanus cases is given in Table 1.

Tetanus cases occurred in 25 different states, or in 5 more than last year, and the same as in 1906. For the fifth consecutive year Illinois reports the largest number, having 20 cases this year, 12 each in 1908 and 1907, 16 in 1906 and 20 in 1905. In 1903 and 1904 Pennsylvania reported the highest numbers. For the fourth consecutive year New Jersey reports the next highest number, having 19 cases this year, 10 last year, 8 in 1907 and 10 in 1906. Ohio reports 12 cases this year. Michigan and New York each had 11 cases and Pennsylvania 10. Table 2 gives a comparison of the number of cases in each state for the seven years.

TABLE 2.—Comparison with Previous Years

	1903	1904	1905	1906	1907	1908	1909
Alabama	..	..	1	..	..	..	..
Arizona	..	..	..	..	1	..	..
California ...	2	4	4	3	1	..	2
Colorado	4	..	1	..	..	..	..
Connecticut .	3	..	3	..	4	1	..
Delaware	..	..	1	1	1	..	2
Dist. Columbia	1	..	..	..	..	.	..
Florida	..	..	..	..	..	..	1
Georgia	..	..	..	..	1	..	..
Idaho	1	..	..	..	..	..	1
Illinois	49	15	20	16	12	12	20
Indiana	11	6	3	8	2	..	9
Iowa	14	2	3	4	4	1	1
Kansas	11	1	..	..	2	1	6
Kentucky	4	2	..	1	..	1	1
Louisiana ...	..	..	..	..	..	..	..
Maine	2	4	1	1	..	1	1
Maryland ...	1	..	1	1	..	..	2
Massachusetts.	16	5	7	3	2	5	8
Michigan ...	29	7	9	4	4	2	11
Minnesota ...	15	2	2	2	2	..	..
Missouri	29	1	3	3	1	5	8
Montana	2	1	1	..	1	..	3
Nebraska	4	3	3	1	..	1	3
New Hampshire	2	..	..	1	..	..	1
New Jersey ..	8	9	3	10	8	10	19
New York ...	36	9	6	8	4	9	11
North Dakota	..	..	..	..	..	..	..
Ohio	67	9	5	7	6	7	12
Oklahoma ...	1	..	1	1	..	1	..
Oregon	2	..	..	1	1	1	..
Pennsylvania.	82	17	12	5	7	7	10
Rhode Island.	3	..	..	1	..	..	..
South Carolina	..	..	..	..	..	..	..
South Dakota.	..	..	..	..	..	1	1
Tennessee ...	..	..	..	..	..	..	..
Texas	..	..	..	..	2	..	..
Utah	..	1	1	..	..	..	..
Vermont	3	2	..	2	2	..	..
Washington .	2	1	..	..	2	4	4
West Virginia	3	..	..	2	..	1	4
Wisconsin ...	10	4	13	2	3	5	9
Wyoming ...	..	..	..	1	..	..	..
Total ...	415	105	104	89	73	76	150
States having cases	30	21	23	25	23	20	25

TABLE 3.—Causes of Tetanus Cases.

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Firearms.	Powder, etc.	Total
1903............	363	17	5	3	27	415
1904............	74	18	5	1	7	105
1905............	65	17	4	5	13	104
1906............	54	17	1	7	10	89
1907............	52	8	6	4	3	73
1908............	58	5	4	3	6	76
1909............	130	9	1	4	6	150

TABLE 4.—Causes of Deaths Aside From Tetanus

Year.	Gunshot.	Fire from Fireworks.	Powder, Torpedoes, etc.	Giant Crackers.	Cannon.	Other Causes.	Total.
1905....	37	23	6	5	7	17	95
1906....	38	18	18	3	3	3	83
1907....	20	31	13	13	3	22	102
1908....	30	22	19	23	7	7	108
1909....	17	37	16	7	7	6	90

Blank cartridges still continue to be responsible for the great majority of tetanus cases, 130, or 86.5 per cent. of all cases this year, being due to that cause, as compared with 73.3 per cent. last year and 71 per cent. in 1907 and 60 per cent. in 1906. Nine cases this year resulted from giant firecracker injuries, 4 cases from gunshot wounds, 1 case from toy cannon injury and 6 from other forms of fireworks.

Of the 150 cases of tetanus due to Fourth of July injuries this year, 125, or 84 per cent., were reported to have ended fatally, as compared with 72 per cent. of deaths last year, 85 per cent. in 1907 and 84 per cent. in 1906.

TABLE 6.—Total Deaths and Accidents by States During Seven Years

	1903	1904	1905	1906	1907	1908	1909
Alabama	2	7	1	2	1	1	1
Arizona	1	..	4	5	2	5	3
Arkansas	..	..	3	4	..	5	1
California	100	138	142	96	121	136	89
Colorado	39	44	26	23	25	13	18
Connecticut ...	162	133	132	169	63	105	86
Delaware	1	5	14	8	16	12	13
Dist. Columbia.	2	10	24	5	12	21	..
Florida	1	2	2	..	..	..	1
Georgia	..	..	..	4	2	4	..
Idaho	4	4	3	3	4	4	2
Illinois	366	423	542	598	468	558	546
Indiana	160	211	217	250	..	255	164
Iowa	168	137	328	255	231	174	91
Kansas	63	88	56	61	64	72	86
Kentucky	30	72	17	21	18	33	17
Louisiana	..	2	3	7	8	4	..
Maine	31	32	29	15	11	16	22
Maryland	21	22	13	10	23	21	10
Massachusetts..	637	193	467	329	168	430	430
Michigan	144	157	288	193	163	203	177
Minnesota	157	102	174	95	95	65	69
Mississippi ...	..	..	..	2	2	1	..
Missouri	147	84	218	325	299	375	352
Montana	5	17	40	3	6	11	9
Nebraska	46	63	43	47	58	46	42
Nevada	..	1	2	..	1	4	..
New Hampshire	37	23	9	29	13	13	23
New Jersey ...	228	204	350	398	402	472	488
New Mexico...	..	4	5	1	6	..	1
New York.....	522	549	566	681	752	647	897
North Carolina	..	..	1	1	..	..	..
North Dakota..	10	8	29	11	8	13	4
Ohio	443	327	329	490	375	543	323
Oklahoma	1	3	7	14	194	9	12
Oregon	16	13	9	11	5	9	21
Pennsylvania ..	533	744	721	969	491	987	986
Rhode Island..	64	30	11	21	39	39	42
South Carolina	..	..	..	1	..	..	4
South Dakota..	4	10	15	5	8	10	9
Tennessee	4	1	5	6	4	5	4
Texas	2	2	4	11	7	11	4
Utah	23	22	25	18	30	12	18
Vermont	45	14	10	14	18	19	12
Virginia	..	11	5	8	..	5	4
Washington ...	21	25	15	25	23	38	32
West Virginia..	19	16	34	64	27	29	35
Wisconsin	190	215	230	155	150	187	157
Wyoming	1	2	8	3	..	1	1

TETANUS FROM OTHER THAN FOURTH OF JULY INJURIES

Besides the cases of lockjaw due directly to Fourth of July injuries, many other cases were reported this year which occurred during the Fourth of July season, but which were due to penetrating injuries from nails or splinters, to crushing injuries or other causes. There were 128 such cases reported this year, as compared with 166 last year and 94 in 1907. The report of these cases emphasizes the fact that in the treatment of all penetrating wounds the possibility of tetanus should be borne in mind and prophylactic measures employed.

Of the 128 cases of tetanus due to other than Fourth of July injuries, Pennsylvania reported 21, Illinois 18, Ohio 13 and New York 12. Altogether 25 states reported cases, as compared with 28 last year. Table 8 on page 953 shows these cases by states and will be interesting in comparison with Table 2.

DEATHS FROM FIREWORKS, ASIDE FROM TETANUS

Besides the 125 deaths due to tetanus, 90 persons were killed by various forms of fireworks, making a total of

215 deaths, an increase of 52 over last year and 57 more than in 1906. Seventeen were killed outright this year by firearms, 16 were killed by explosions of powder, 7 by giant firecrackers, 7 by toy cannon and 7 by various causes, such as blood poisoning, by sky-rockets, chemicals, etc., while 37 were literally burned to death by fire from fireworks, many of which were caused by the so-called "harmless" varieties of fireworks. As heretofore, all accidents not directly due to the discharge or handling of fireworks or other means of noise production on or about the Fourth of July have been omitted. Table 4 shows a comparison of the causes of death other than from tetanus for the past five years.

In Table 5 will be found a summary of all injuries, including tetanus, and of all causes, arranged by states. Beneath the totals at the bottom of the table are given the totals for the six previous years in order that comparisons may be made. The grand totals are also given. Table 6 is arranged to show a more ready comparison by states of the total deaths and accidents for the six years.

Pennsylvania holds the blackest record with 986 casualties, New York coming second with 898, followed by Illinois with 547, New Jersey with 488 and Massachusetts with 430. Altogether there were 5,307 accidents this year, or 316 less than last year.

NON-FATAL INJURIES

There were 5,092 non-fatal injuries this year, or 368 less than last year. There were 16 people totally blinded this year, being 5 more than last year, but 9 less than the highest number in 1905. There were 36 who lost one eye each, 41 who lost legs, arms or hands, while 176 persons lost one or more fingers. The giant firecracker holds the first rank as a cause of mutilating wounds and is responsible for the majority of losses of eyes, hands and fingers during the annual celebration of the Fourth. In the awfulness of its destruction, the giant firecracker is equaled in a few instances only by the explosions of home-made cannon. The fact that the wounds made by the giant firecracker are so lacerated and laid open is probably the reason it does not

TABLE 5.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

	Deaths.			Injuries.							Causes of tetanus cases.		Causes of all cases aside from tetanus.				
States.	From tetanus.	From other causes.	Total deaths.	Loss of sight.	Loss of one eye.	Loss of legs, arms or hands.	Loss of fingers, one or more.	Other injuries.	Total non-fatal injuries.	Total persons dead or injured.	Blank cartridge.	All other causes.	Blank cartridge	Firecrackers.	Cannon.	Firearms.	Powder and fireworks.
Alabama	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
Arizona	..	..	..	..	..	..	1	2	3	3	..	..	..	1	1	..	1
Arkansas	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
California	2	1	3	..	2	..	1	83	86	89	1	1	11	33	20	1	22
Colorado	..	1	1	..	..	..	1	16	17	18	..	..	2	4	1	3	8
Connecticut	..	3	3	..	..	..	4	79	83	86	..	..	28	24	14	11	9
Delaware	2	1	3	..	..	..	..	10	10	13	2	..	..	5	..	2	4
Dist. of Columbia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	..	1	1	1	1	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Idaho	1	..	1	..	..	..	..	1	1	2	..	1	..	1	..	..	..
Illinois	15	3	18	2	7	2	14	504	529	547	20	..	168	163	39	44	113
Indiana	9	2	11	..	..	7	2	143	152	163	8	1	35	57	10	10	42
Iowa	1	..	1	..	3	2	2	83	90	91	1	..	7	52	9	1	21
Kansas	6	..	6	..	..	..	1	79	80	86	5	1	30	22	5	4	19
Kentucky	..	1	1	..	..	1	..	15	16	17	1	..	..	3	6	3	4
Louisiana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maine	1	..	1	..	..	..	1	20	21	22	1	..	2	6	8	1	4
Maryland	1	..	1	..	..	..	..	9	9	10	2	..	1	2	2	1	2
Massachusetts	5	11	16	..	3	1	16	394	414	430	7	1	113	139	24	18	128
Michigan	9	5	14	3	3	3	8	146	163	177	10	1	34	64	16	9	43
Minnesota	..	3	3	..	..	..	..	66	66	69	..	..	3	23	2	3	38
Mississippi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	8	6	14	..	..	..	2	336	338	352	7	1	146	69	30	40	59
Montana	3	..	3	..	..	..	1	5	6	9	3	..	4	2	..	..	..
Nebraska	3	1	4	..	2	1	1	34	38	42	2	1	9	9	1	1	19
Nevada	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Hampshire	1	..	1	..	..	..	..	22	22	23	1	..	3	7	7	1	4
New Jersey	14	7	21	2	3	6	24	432	467	488	15	4	126	131	60	32	120
New Mexico	..	..	..	..	..	..	..	1	1	1	..	..	1	..	..	..	..
New York	11	10	20	2	4	6	41	824	877	898	9	2	139	244	62	88	354
North Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Dakota	..	..	..	..	..	..	..	4	4	4	..	..	..	..	1	..	3
Ohio	10	3	13	..	3	4	11	292	310	323	10	2	65	139	36	16	55
Oklahoma	..	..	..	..	1	..	..	11	12	12	..	..	5	7	..	..	..
Oregon	..	..	..	..	..	..	..	21	21	21	..	..	2	15	3	..	1
Pennsylvania	8	19	27	6	3	5	42	903	959	986	9	1	114	258	49	35	520
Rhode Island	..	3	3	..	..	1	..	38	39	42	..	..	11	8	4	3	16
South Carolina	..	..	..	..	..	..	..	4	4	4	..	..	..	1	..	..	3
South Dakota	1	..	1	..	..	..	..	8	8	9	1	..	3	2	..	1	2
Tennessee	..	..	..	..	..	..	..	4	4	4	..	..	1	1	..	..	2
Texas	..	..	..	..	..	..	..	4	4	4	..	..	1	..	..	2	1
Utah	..	2	2	..	..	..	..	16	16	18	..	..	2	10	..	..	6
Vermont	..	..	..	..	..	..	..	12	12	12	..	..	4	6	1	..	1
Virginia	..	1	1	..	..	..	..	3	3	4	..	..	..	..	..	..	4
Washington	2	1	3	1	1	..	1	26	29	32	4	..	5	17	2	..	4
West Virginia	3	2	5	..	..	2	1	27	30	35	3	1	2	17	6	1	5
Wisconsin	9	4	13	..	1	.	1	142	144	157	7	2	18	70	8	9	43
Wyoming	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	1	..
1909 totals	125	90	215	16	36	41	176	4,823	5,093	5,307	130	20	1,095	1,614	427	341	1,680
1908 totals	55	108	163	11	93	57	184	5,115	5,460	5,623	58	18	816	1,793	399	481	2,058
1907 totals	62	102	164	12	75	57	237	3,868	4,249	4,413	52	21	554	1,489	267	502	1,528
1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	54	35	925	1,690	408	532	1,822
1905 totals	87	95	182	25	106	80	221	4,562	4,994	5,176	65	39	744	1,775	474	404	1,675
1904 totals	91	92	183	19	61	61	208	3,637	3,986	4,169	74	25	931	1,268	508	406	1,056
1903 totals	406	60	466	10	75	54	174	3,670	3.983	4,449	363	29	1,309	1,152	397	236	731
Grand totals	901	630	1,531	115	518	406	1,427	30.606	33,073	34 603	796	187	6.374	10,781	2,880	2,902	10,550

cause more lockjaw. Then, also, these cases are taken to the physician, while the supposedly insignificant wounds made by blank cartridges are neglected. This year 1,614 accidents, including 7 deaths and 9 cases of lockjaw, were due to the giant firecracker.

Firearms caused 341 accidents, including 17 killed and 4 cases of lockjaw. The percentage of deaths was 6.1. Of the total number thus injured, 132 were struck by stray bullets from the reckless shooting of firearms by others and 5 deaths resulted. Toy cannons caused 427 injuries, including 7 killed and one case of tetanus.

TOTALS IN CHIEF CITIES

Table 7 shows the number reported killed and injured in the largest cities during the past three years. The population figures were taken from the U. S. Census Bureau's estimate of 1906. This table will be of special interest from year to year, since it will show the results of the adoption and enforcement of ordinances prohibiting or restricting the use of fireworks. Philadelphia had 9 deaths this year, the largest number reported for any one city, New York had 7 deaths, Boston, Pittsburg and

TABLE 7.—NUMBER REPORTED KILLED AND INJURED IN OUR LARGEST CITIES IN THREE YEARS

City.	Population, Census Bureau Est. 1906.	1907 Killed.	1907 Injured.	1908 Killed.	1908 Injured.	1909 Killed.	1909 Injured.	Totals. Killed.	Totals. Injured.
New York, N. Y.	4,113,043	22	422	11	316	7	559	40	1.297
Chicago, Ill.	2,049,185	16	151	12	202	..	118	28	471
Philadelphia, Pa.	1,441,735	7	248	6	426	9	508	22	1.182
St. Louis, Mo	649,320	3	189	4	229	4	163	11	581
Boston, Mass.	602,278	3	59	6	190	5	167	14	416
Baltimore, Md.	553,669	..	5	1	10	..	5	1	19
Cleveland, O.	460,327	3	63	12	93	..	4	15	160
Buffalo, N. Y.	381,819	..	18	3	11	..	33	3	62
Pittsburg, Pa.	375,082	10	88	..	30	5	48	15	166
San Francisco, Cal	364,667	..	..	..	11	..	12	..	23
Detroit, Mich.	353,563	2	46	..	10	2	46	4	102
Cincinnati, O.	345,230	2	89	1	112	3	86	6	287
Milwaukee, Wis.	317,903	2	93	..	70	..	78	2	241
New Orleans, La	314,146	..	8	..	4	..	..	..	12
Washington, D. C.	307,716	..	12	..	21	..	..	..	33
Newark, N. J.	289,634	1	129	2	81	1	150	4	360
Minneapolis, Minn.	273,825	..	13	..	10	1	24	1	47
Jersey City, N. J	237,952	..	31	5	34	1	14	6	79
Louisville, Ky.	226,129	..	13	..	10	1	10	1	33
Indianapolis, Ind.	219,154	1	31	1	14	1	35	3	80
St. Paul, Minn	203,815	..	20	..	13	..	18	..	51
Providence, R. I.	203,243	..	20	1	21	..	13	1	54
Rochester, N. Y.	185,703	..	12	..	10	..	5	..	27
Kansas Cty, Mo	182,367	1	46	..	55	4	67	5	168
Toledo, O.	159,980	1	5	..	8	2	3	3	16
Denver, Colo.	151,920	..	8	..	13	..	12	..	33
Columbus, O.	145,414	5	36	..	5	1	19	6	60
Alleghany, Pa.	145,240	..	..	..	..	..	..	..	..
Worcester, Mass.	130,078	1	6	2	20	1	42	4	68
Memphis, Tenn.	125,018	..	1	..	3	..	4	..	8
Omaha, Nebr.	124,167	..	25	..	10	1	17	1	52
New Haven, Conn	121,227	..	2	..	..	..	15	..	17
Syracuse, N. Y.	118,880	..	20	..	14	..	13	..	47
Scranton, Pa.	118,692	..	5	1	17	1	29	2	51
St. Joseph, Mo.	118,004	1	23	1	41	1	24	3	88
Paterson, N. J	112,801	1	29	2	31	1	45	4	105
Portland, Ore.	109,884	..	2	..	3	..	16	..	21
Fall River, Mass.	105,942	..	..	..	12	..	19	..	31
Atlanta, Ga.	104,984	1	4	..	3	..	..	1	7
Seattle, Wash.	104,169	1	3	..	1	3	10	4	14
Los Angeles, Cal.	102,479	..	35	..	40	..	26	..	101
Dayton, O.	100,799	..	11	..	14	..	4	..	29
Grand Rapids, Mich	99,794	..	20	1	30	..	3	1	53
Cambridge, Mass.	98,544	..	..	..	17	..	..	..	17
Albany, N. Y.	98,537	1	24	..	37	..	31	1	92
Hartford, Conn.	95,882	..	18	..	18	..	11	..	47
Lowell, Mass.	95,173	..	23	..	..	..	18	..	41
Reading, Pa.	91,141	..	17	..	13	..	17	..	47
Richmond, Va.	87,246	..	..	..	..	1	1	1	1
Trenton, N. J.	86,355	..	38	1	17	1	58	2	113
Wilmington, Del.	85,140	1	14	..	13	3	9	4	36
Camden, N. J.	84,849	..	16	..	29	4	14	4	59
Nashville, Tenn.	84,703	..	2	..	..	..	..	..	2
Bridgeport, Conn.	84,274	..	1	..	27	..	21	..	49
Lynn, Mass.	78,748	..	3	..	11	3	16	3	30
Des Moines, Ia	78,323	1	31	..	41	..	13	1	85
Kansas City, Kan	77,912	1	10	..	17	..	33	1	60
New Bedford, Mass	76,746	..	..	..	3	..	..	..	3
Troy, N. Y.	76,513	..	..	2	18	..	16	2	34
Springfield, Mass.	75,836	..	21	1	36	1	9	2	66
Oakland, Cal.	73,812	..	9	..	..	..	8	..	17
Lawrence, Mass.	71,548	..	11	1	..	5	22	6	33
Somerville, Mass.	70,798	..	..	..	..	..	1	..	1
Savannah, Ga.	68,596	..	..	..	..	..	..	..	..
Duluth, Minn.	67,337	..	13	..	9	2	10	2	32
Norfolk, Va.	66,931	..	..	..	..	..	..	..	..
Hoboken, N. J.	66,689	..	1	1	24	..	7	1	32
Peoria, Ill.	66,365	..	8	..	27	1	22	1	57
Utica, N. Y.	65,099	..	18	..	10	..	5	..	33
Manchester, N. H.	64,703	..	3	..	1	1	5	1	9
Yonkers, N. Y.	64,110	..	32	..	5	..	8	..	45
Evansville, Ind.	63,957	..	5	..	12	..	6	..	23
San Antonio, Tex.	62,711	..	..	..	1	..	..	..	1
Elizabeth, N. J.	62,185	..	43	..	72	..	37	..	152
Schenectady, N. Y.	61,919	..	4	..	20	..	8	..	32
Waterbury, Conn.	61,903	2	8	..	14	..	5	2	27
Salt Lake City, Utah	61,202	..	15	..	6	2	14	2	35
Wilkesbarre, Pa.	60,121	1	..	3	38	1	15	5	53
Erie, Pa.	59,993	..	..	..	1	..	4	..	5
Houston, Tex.	58,132	..	..	..	1	..	1	..	2
Charleston, S. C.	56,317	..	..	..	..	..	..	..	..
Harrisburg, Pa.	55,735	..	23	1	71	..	22	1	116
Tacoma, Wash.	55,392	2	4	1	3	..	3	3	10
Portland, Me.	55,167	1	2	..	..	..	2	1	4
Totals		94	2,458	83	2,860	80	2,935	257	8.253
Totals Elsewhere		70	1,791	80	2.600	135	2,156	285	6.547
Grand Totals		164	4,249	163	5,460	215	5,091	542	14.800

Lawrence, Mass., each had 5, while 4 each were reported for St. Louis, Kansas City, Mo., and Camden, N. J.

Of non-fatal accidents this year, New York leads with 559, followed by Philadelphia with 508, Boston with 167, St. Louis with 163, Newark with 150, and Chicago with 118.

RESULTS OF RESTRICTIVE LEGISLATION

For several years Baltimore has practically prohibited all forms of fireworks, and the small number of casualties shown in Table 7 are the result. In fact, it has been stated that, even of the few accidents reported, most came from suburbs and outlying districts which were not directly under the city ordinances.

Immediately following last year's celebration, when 12 persons were killed by fireworks, Cleveland passed a prohibitive ordinance, in spite of the protests of fireworks dealers. The wisdom of that legislation is shown by the fact that no deaths were reported this year and only four minor injuries.

Washington, our national capital, has set a splendid example by enforcing a prohibitory ordinance, with the result that this year not a single accident was reported.

Instead of prohibiting all fireworks, Chicago passed a restrictive ordinance limiting the sale of fireworks to a few days preceding July 5 and limited the size of firecrackers. The use of blank cartridge pistols was strictly forbidden. Comparatively few licenses to sell fireworks were issued, and, according to reports, the ordinance was well enforced. No deaths were reported this year as compared with 12 last year and 16 in 1907. The number of injuries still remains high, although it is a splendid showing compared with Philadelphia, New York and other cities, where very little, if any, restrictive efforts were made. Restrictive ordinances were reported for other cities, but no such marked results were apparent.

WHERE THE RESPONSIBILITY RESTS

The responsibility for the vast majority of deaths and injuries clearly rests with city governments, and this annual carnage could doubtless be prevented without extreme difficulty. Prohibitory ordinances are most effective and permanent, as shown by the results in Baltimore, Washington, San Francisco and Cleveland, and even restrictive ordinances, if strictly enforced, are rather effective, as shown by the results in Toledo, Chicago and other cities. But the enforcement of restrictive measures is more difficult and requires more constant vigilance on the part of the police. By the sound, it is difficult to know whether an explosion is due to a firecracker 3 inches long or to one 5 inches long, or whether it is due to some other forbidden form of fireworks. Under the prohibitory ordinance any explosion would be recognized at once as a violation of the law. Again, the smaller sized firecrackers which have been considered so harmless caused the clothing to catch fire in many of the 37 instances where persons, mostly girls and young children, were burned to death. Even the "harmless" sparkler caused three of these deaths, which were far more agonizing than if caused by gunshot wounds.

The police commissioner of one or our large eastern cities is reported to have openly declared himself in sympathy with the noise, the tumult and the shooting of firecrackers in the celebration of the Fourth of July. When the results of the celebration in that city were known, it was found that 5 lives had been destroyed and 167 persons were injured, some of whom had eyes blown out, hands, fingers and ears torn off, or were otherwise marred for life. Of the 5 who were killed, 2 were shot down and 3 became human torches, burned in order that the people in that city might "warm up and let the world know they were alive!"

With what relief, therefore, we turn to another but somewhat smaller eastern city, Springfield, Mass., which has set a glorious example in the proper celebration of our national birthday and has taken advantage of America's greatest opportunity to develop true patriotism and to bring closer together the various nationalities which make up so large a portion of its population. The Springfield celebration, which meanwhile cost the committee only $3,500 in contributions, has already been so well described[1] that detailed mention is unnecessary.

ANNUAL PREPARATION FOR CASUALTIES

Thousands of dollars are being spent each year in preparation for the casualties of July 4. So extensive has become this preparation that, as some one has pointedly remarked, it resembles the preparation for a great battle. How much more enjoyment would result as well as uplift and profit if the same energy were expended in preparation for more modern methods of celebration!

TABLE 8.—CASES OF TETANUS FROM OTHER CAUSES

	1908.	1909.		1908.	1909.
Alabama	..	..	Nevada	..	..
Arizona	..	..	New Hampshire	..	..
Arkansas	2	..	New Jersey	7	8
California	4	4	New Mexico	..	1
Colorado	3	..	New York	17	12
Connecticut	2	2	North Carolina	1	..
Delaware	2	1	North Dakota	1	..
Dist. of Columbia	..	..	Ohio	23	13
Florida	2	..	Oklahoma	..	..
Georgia	..	1	Oregon	..	1
Idaho	..	..	Pennsylvania	21	21
Illinois	17	18	Rhode Island	..	1
Indiana	6	4	South Carolina	..	..
Iowa	2	7	South Dakota	2	2
Kansas	4	..	Tennessee	3	..
Kentucky	5	5	Texas	4	1
Louisiana	1	..	Utah	..	..
Maine	..	..	Vermont	..	..
Maryland	3	..	Virginia	4	1
Massachusetts	3	5	Washington	2	..
Michigan	4	5	West Virginia	..	1
Minnesota	4	2	Wisconsin	5	4
Mississippi	..	..	Wyoming	..	..
Missouri	12	5			
Montana	..	..	Total	166	128
Nebraska	..	3	States reporting cases	29	25

RADICAL ACTION NEEDED

Our annual sacrifice in the celebration of the Fourth may be compared to the facts related about the Minotaur of old to whom the Greeks were required to sacrifice periodically large numbers of the fair youths and maidens of Athens. America suffers by the comparison, however, since our sacrifice is annual, whereas that of the Athenians was only once in nine years! Radical measures were used then when Theseus slew the Minotaur. Radical measures are needed now and the barbarous Fourth should go. The sentiment favoring the enlightened celebration is rapidly on the increase, but hoodlums require more than coaxing—they must be handled by the police. More restrictions were placed on the use of fireworks this year than ever before. The celebration in many cities was limited to the one day and the sale of fireworks was limited to 2 or 3 days. Many forms of fireworks were prohibited in many cities and zones of quiet were provided for hospitals. And results were obtained, since from all parts of the country come reports that there was never a more quiet and orderly celebration. Although the deaths and injuries are as many as ever, there is nevertheless much to encourage those who are working for truly patriotic methods of celebrating our national independence. They should persevere in their efforts.

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[1] Atlantic Monthly, June, 1909.

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THE ANNUAL FOURTH OF JULY RECORD

In this issue of The Journal appears the seventh annual compilation of deaths and injuries resulting from the celebration of the Fourth of July. The fact that the celebration was spread over three days this year, since the Fourth came on Sunday, may be partly responsible for the increased number of tetanus cases, the total being nearly double that of last year. Except in a few progressive cities which passed prohibitory or restrictive ordinances, however, there seems to have been a relaxation of authority regarding the use of fireworks, chiefly in Illinois, Massachusetts, New Jersey, New York and Pennsylvania. More serious has been the absence or non-enforcement of restrictions on the use of blank cartridges, which, of course, accounts for the increase of tetanus cases.

Tetanus antitoxin, although extensively used, was still not employed as much as it should have been, either as a preventive measure or after active symptoms began. In several instances, according to report, doctors still resorted to the old methods of treatment long known to be of little value. Several instances were reported also in which doctors did not lay open the wounds until after tetanus had developed, and, therefore, too late to be effective. In some instances the later operation revealed imbedded in the wound the wad which should have been removed at the first treatment. The following simple rules have already had wide circulation, but should be carefully followed in the treatment of every blank cartridge or puncture wound:

TO PREVENT LOCKJAW

1. Freely incise every wound.
2. Carefully and thoroughly remove from the wound every particle of foreign matter.
3. Cauterize the wound thoroughly with a 25 per cent. solution of phenol (carbolic acid).
4. Apply a loose wet boric acid pack.
5. Inject subcutaneously 1500 units of antitetanic serum.
6. In no case should the wound be closed. It should be allowed to heal by granulation. The dressing and packing should be removed every day.

Although the numbers of dead and of injured are larger than or as large as last year, there is, nevertheless, abundant evidence of an increasing public sentiment in favor of more rational methods of celebration. Two more cities, Washington and Cleveland, passed and enforced prohibitory ordinances, and Chicago enforced a restrictive ordinance, with the result that no casualties were reported for Washington, only four slight injuries for Cleveland, and less than half the usual number of accidents and no deaths for Chicago. These results show that prohibitive measures are more effective than mere restrictive ordinances, although restrictive measures are much better than doing nothing.

Efforts to provide safe amusements have been more extensive this year than ever before. Worthy of special mention is the plan adopted by Springfield, Mass., which shows the great opportunity offered by the annual celebration of the Fourth of July to instill in the minds of the youth of our land a spirit of genuine patriotism. The parades, the floats representing historical incidents, the picnics, and, last but not least, the annual chorus drill under skilled leaders in preparation for the mass singing of national airs and popular songs—all these methods, if more extensively employed, would add greatly to the value of the Fourth-of-July celebration in our national life, and help to do away with the present death-dealing methods of celebration. Those who are working toward better methods have reason for encouragement and should persevere. City authorities should assist by prohibiting fireworks. The only objections seem to come from the "business interests" involved. By the combination, therefore, of substitution and restriction, a more enlightened celebration of our national Independence Day will be assured.

STILL TEMPORIZING WITH THE BLANK CARTRIDGE PISTOL

Blank cartridge wounds cause more deaths in the annual celebration of the Fourth of July than all other factors combined. In seven years, 794 deaths have been caused by this one factor! Most of the victims were bright active boys, aged from 6 to 18 years, and they were doomed to die the most awful death known to medical science, a death the agony of which is probably not paralleled even by the tortures of the Inquisition. If this annual sacrifice were really necessary, it would be far more merciful to pick out the hundred or more youths each year and deliberately shoot them. But this annual outrage is not necessary; it is entirely preventable, and the prevention rests with our city governments.

For seven years The Journal has heralded these facts to the world. They have been given even wider publicity by some of our public-spirited newspapers. During the past two or three years the public press generally has taken up the cry, and now no one can plead ignorance of the awful facts. Nevertheless, the average city government still views with the blind eye of callous indifference the fatalities for which it is morally responsible. Some cities have, indeed, passed prohibitory ordinances, but have not enforced them vigorously. To permit the use of blank cartridges and blank cartridge pistols in the celebration of the Fourth of July is abso lutely criminal. The city council which fails to pass and to enforce ordinances prohibiting the use of these instruments of torture will hereafter be open to the charge of criminal negligence. The plea of ignorance is no longer good; to temporize further regarding the sale and use of blank cartridges and blank cartridge pistols is to aid and abet torture and murder.

These are strong words; but to use mild ones would be to trifle with the anguish and horror in scores of homes—a horror and anguish but faintly reflected in the appalling statistics on the subject. The only effective way to deal with the murderous blank cartridge pistol is to pass and to enforce an absolutely prohibitive ordinance in each city. No more temporizing should be tolerated. The agonizing deaths from this cause should cease.

THE VALUE OF TETANUS ANTITOXIN

Among the reports of the cases of tetanus that we have received we have frequently found the statement that tetanus antitoxin was not used because "the doctor said" that it "was useless," or "of doubtful value," or "in an experimental stage." Therefore, although we have been to some pains at several times to set forth the exact status of tetanus antitoxin according to the best available evidence, it would seem worth while again to discuss the subject while it is so acutely before us as it now is. To put the matter in a nutshell, it may be stated dogmatically that the value of tetanus antitoxin as a prophylactic agent is very great, and its efficiency nearly absolute; as a curative agent it is by no means worthless, and undoubtedly it saves not a few lives when properly used. Apparently, to judge from the reports at hand, many physicians have not yet learned to distinguish between the results obtained by the prophylactic use and by the curative use of tetanus antitoxin; the usual futility of the latter has been incorrectly assumed to apply to the former.

The example of using tetanus antitoxin for preventive purposes was first furnished by the veterinarians, who have to contend with tetanus much more commonly than we. Knowing that in certain stables the horses which received wounds were very likely to develop tetanus, they found it desirable to try to prevent this serious complication by injecting antitoxin into all horses that had received wounds. The results that they obtained were from the first so striking that now antitoxin prophylaxis is invariably used to prevent endemic and epidemic outbreaks of tetanus in horses. For example, in one stable in which from six to eight cases of tetanus developed yearly, it was decided to give every horse with wounds about the feet a prophylactic dose of antitoxin; during the following five years three hundred horses were so treated without a single case of tetanus, although one horse which received no antitoxin developed the disease.[1] Vaillard[2] says that in a series of 13,124 prophylactic injections in horses not one contracted tetanus. In man it is not so easy to estimate the results of tetanus prophylaxis, for, outside of Fourth-of-July tetanus, we do not often get a chance to observe this disease in epidemic proportions, but such evidence as we have is almost equally favorable. Suter[3] has collected 700 cases in which but one light attack of tetanus was observed among all the patients given antitoxin. In France, where this practice seems to have been especially general, there have been a few cases of tetanus in spite of prophylactic injection, but the entire evidence is emphatically in favor of the value of this procedure; indeed, Vaillard claims that in only five cases in the literature to 1908 can the antitoxin prophylaxis be considered a complete failure. The Society of Surgery of Paris recently reported that in a group of Paris hospitals there had occurred in the last seven years but eleven cases of tetanus, all of which were in persons who by some mischance had not received the customary preventive dose of antitetanus serum, which is the routine practice there after a street accident. Kocher went so far as to say before the German Surgical Society that he would consider any physician entitled to reproof who failed to use this measure in a case of injury with contamination of the wound by street dirt.

In this country, the prophylactic treatment of Fourth-of-July injuries has been, so far as we can learn, invariably successful, and our annual mortality list from "patriotic" tetanus has occurred because of the lack of this measure in the cases of the victims. It is to be expected that a few cases may occur in spite of antitoxin, especially when it is given several days after the injury is received, because by this time the disease may be well advanced and the blood loaded with tetanus toxins, even several days before the appearance of symptoms.[4] But even in these cases the prognosis will be much better if the antitoxin is given before rather than after the symptoms have developed.

To neglect to use antitoxin as a curative agent is also unwarranted in the light of our present knowledge, even although the results are by no means so striking as with diphtheria antitoxin. There is no question that more of these patients recover with antitoxin than without, even if the number is not great. Especially efficacious seems to be the intraspinal route of administration, for by this means the antitoxin is brought into close contact with the place where it is most needed, and it is well known that antibodies injected subcutaneously or into the blood directly do not find their way into the cerebrospinal fluid in large amounts. Clinical results support this theorization, and Hoffmann[5] reports a series of thirteen cases with 58 per cent. mortality in which the antitoxin was given subcutaneously, whereas of sixteen patients given intradural injections only two died, and these from complications. Undoubtedly some of the earlier disappointments with antitoxin prophylaxis and treatment were the result of the uncertain activity of the antitoxin preparations then on the market, a defect which has been remedied in this country by the system of standardization developed by the Hygienic Laboratory of the Public Health and Marine-Hospital Service.

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[1] Wells, H. G.: Medical News, June 1, 1901.
[2] Bull. Acad. Méd., Paris, 1908, lxxii, 581.
[3] Arch. klin. Chir., 1904, lxxv, 113; Beitr. klin. Chir., 1907, lii, 671.
[4] Madsen: Centralbl. f. Bakteriol., 1908, xl, No. 3.
[5] Beitr. klin. Chir., 1907, lv.

TUBERCLE BACILLI IN THE BLOOD

Not long ago Rosenberger of Philadelphia came forward with the startling claim that tubercle bacilli are present in the circulating blood even in cases of chronic and localized tuberculosis. The claim was based on the actual demonstration of acid-proof bacilli, which Rosenberger interpreted to be tubercle bacilli, in smears made of centrifugally sedimented blood corpuscles in suspensions of blood in citrate solution. The blood was drawn from a vein at the elbow. Thick smears were used, and after drying the red corpuscles were laked with water.

In view of the practically uniform failure of previous efforts, whether by staining methods or by inoculation in guinea-pigs, to demonstrate tubercle bacilli in the blood in cases of acute and severe febrile tuberculosis, Rosenberger's results were not accepted without reservation. What would the results of other observers, using the same methods as Rosenberger, show? The matter is not settled, but the results already at hand indicate that there are great difficulties in the way of a general acceptance of Rosenberger's "discovery," "the most important and far-reaching discovery as to tuberculosis since Koch's own discovery of the bacillus 27 years ago," according to an enthusiastic writer. In the first place competent observers, notably Ravenel and Smith, record entirely negative results of their study of the blood in cases of tuberculosis according to Rosenberger's method. Burnham and Lyons also failed.[1] Here may be mentioned, too, that Schroeder and Cotton[2] failed to find any bacilli in the blood in 42 tuberculous cattle, and the negative outcome of their microscopic work is strengthened by the failure of tuberculosis to develop in any of the guinea-pigs inoculated with the blood they examined.

In the second place, Brem, by a painstaking investigation reported with much detail,[3] shows that the occurrence of acid- and alcohol-resistant rods in water may lead to the gravest error in such examinations as the one now under discussion unless particular care is taken to exclude contamination of the specimens from the water and the solutions used. Inasmuch as adequate regard probably has not been paid to this point in the past, Brem's advice to exercise great care in all examinations for tubercle bacilli is eminently timely. The failure of observers to corroborate Rosenberger's findings, on the one hand, and, on the other, the possibility that bacilli regarded as tubercle bacilli may have been introduced accidentally, warrant the conclusion that as yet we have no decisive proof of the frequent and continued presence of tubercle bacilli in the blood in ordinary cases of tuberculosis.

INJUSTICE TO THE TUBERCULOUS BY SENDING THEM WEST

We have many times commented on the heartlessness shown in sending to the West and Southwest patients who are in the terminal stage of tuberculosis or even curable patients who are without adequate means. The National Association for the Study and Prevention of Tuberculosis has looked into this practice and has reached the conclusion that over 7,000 persons hopelessly ill with consumption go or are sent annually to the states of California, Arizona, New Mexico, Texas and Colorado. The association asserts, further, that "at least 50 per cent. of those who go to the Southwest every year for their health are so far advanced in their disease that they can not hope for a cure in any climate, under any circumstances." The financial condition of these incurables is such that 60 per cent. of them "have not sufficient means to provide for the proper necessaries of life." This means that over four thousand consumptives either have death hastened by lack of good food and medical attention or else that they are forced to accept charitable relief. Various municipalities and organizations in the West and Southwest have protested; and we think that their protests have been exceedingly moderate under the circumstances. It behooves physicians, nurses, officials, and the public in general to understand the situation and to use every influence to prevent this gross abuse.

Medical News

ILLINOIS

Personal.—Dr. Spencer S. Fuller, Paxton, has returned from Europe.——Dr. James L. Greene, formerly superintendent of the Kankakee State Hospital for the Insane, has taken the oath of office as alienist of the State Board of Control of State Institutions, and will reside in Springfield.——Dr. Elva A. Wright, Lake Forest, is at present in Edinburgh and will return to the United States late in October.

Medical Colleges Not Recognized.—At the semi-annual meeting, June 29, the State Board of Health declared the St. Louis College of Physicians and Surgeons a medical institution not in "good standing," to date from July 1, 1909, conditioned Barnes University, St. Louis, and declined to restore recognition to the National Medical University of Chicago, which had been declared not in "good standing" a few months before.

INDIANA

Personal.—Dr. Omer H. Stewart has been appointed pension examining surgeon at Huntington, vice Dr. L. B. Johnson, resigned.——Dr. W. Marshall Varble has been given a license for the establishment of a maternity branch of the Jeffersonville Hospital.

Licenses Cancelled.—The licenses of Drs. Willis Farrel, Lee M. Farney, Burnhard J. Kowenstrot, Fort Wayne, are said to have been revoked, August 11, by the State Board of Medical Examination and Registration, on the ground that the holders advertised to defraud the public.

Sanitary Convention.—On September 7 and 8, the State Board of Health held at the State House, Indianapolis, its second annual convention of market milk men, butter makers, wholesale dealers in milk, milk inspectors, health officers, and all others interested in the production and distribution of sanitary milk. Among the chief questions considered were the production of clean and wholesome milk; manufacture of butter to meet state and federal requirements; state laws affecting dairy interests, and city ordinances regulating the sale of milk;

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[1] THE JOURNAL, Aug. 28, 1909, p. 731.
[2] Arch. Int. Med., 1909, iv, 133.
[3] This issue of THE JOURNAL.

bovine tuberculosis; the tuberculin test; proper construction of dairy barns; methods of refrigeration, relative cost of production of clean and unclean milk, and the necessity for cooperation between health officers, milk inspectors, etc.

KENTUCKY

Antituberculosis Conference.—The State Antituberculosis Conference will be held in Lexington, September 29 and 30. At this conference it is expected that a state organization will be formed, and that arrangements will be made for concerted action in combating the disease throughout the state.

School Inspection.—Medical inspection of the children of all public schools of Louisville has been inaugurated. Drs. Florence Brandeis, Henry H. Duke and Siegel C. Frankel are the inspectors appointed by the city health officer. Examinations are made of school buildings and premises, heating and ventilation, drinking-water, toilet rooms, cellars and playgrounds. In case of contagious diseases, the patients will be sent home immediately, the schools dismissed and the rooms fumigated. After scarlet fever, not less than 28 days may elapse before the pupil may return to school; after diphtheria, ten days must elapse after the membrane has disappeared, and those exposed to diphtheria are excluded for one week after the time of the last exposure. Patients with whooping cough are not allowed to return to school until after the spasmodic stage has passed. A limit of ten days is placed in chickenpox and two weeks in cases of roetheln. Clinical evidence alone is sufficient to exclude for tonsillitis, and children with pediculosis, ringworm, scabies and impetigo contagiosa are excluded from school until cured.

LOUISIANA

Tulane Alumni at Mississippi Valley Meeting.—Tulane University has arranged for a meeting of its alumni at the time of the meeting of the Mississippi Valley Medical Association, in St. Louis, October 12-14. A committee of resident alumni, composed of Drs. Henry J. Scherck, Harry McC. Johnson, Robert C. Atkinson and R. C. Finley have arranged to conduct a central registration bureau where alumni may register, giving home address and stopping place in St. Louis. A banquet is also to be arranged. The committee offers to furnish information regarding hotels, clinics and other matters.

Personal.—Dr. Stephen W. Stafford, New Orleans, has returned from abroad.——Dr. Henry L. Lazar, Kentwood, was obliged in self-defense to kill a negro who resisted arrest, August 22.—Dr. Cyriac J. Gremillion has been elected president of the board of health of Alexandria.——Dr. A. A. Forsythe, mayor of Monroe, was shot in the leg by an insane negro, August 24.——Dr. Louis M. Thomason has been made president of the board of health of Mandeville.——Dr. Thomas A. Roy, Mansura, has been appointed a member of the State Board of Health, vice Dr. Sidney D. Porter, Moreauville, elected chief medical inspector to succeed Dr. C. Milo Brady, New Orleans.

MARYLAND

Medical Men Candidates.—The following members of the medical profession of the state are announced as candidates for office: For the senate, Dr. Leonard E. Beach, Baltimore, and Dr. W. C. R. Miller, Mason and Dixon, and for the house of delegates, Dr. Thomas A. Ashby, Baltimore.

Address on Tuberculosis.—Brigadier General George M. Sternberg, U. S. Army, retired, delivered an address on "Tuberculosis" before the annual institute of public school teachers of Montgomery county, at Rockville, September 8, in the interest of the Social Service League. In the address, he strongly endorsed the proposal to establish on the almshouse farm, near Rockville, a tent sanatorium for indigent tuberculosis patients.

Baltimore

Personal.—Drs. Thomas S. Cullen and Harry Friedenwald have returned from Europe.——Dr. Benjamin Frayser has been appointed resident physician of the Pottsville (Pa.) Hospital.

Not Pellagra, Rheumatism.—Announcement has been made that the supposed case of pellagra at Johns Hopkins Hospital was not pellagra, but rheumatism. It was considered suspicious, as the patient had just returned from Costa Rica.

Steamer Has Clean Bill of Health.—The steamer *Andyk* from Rotterdam, over whose expected arrival there was so much apprehension as regards cholera, arrived in Baltimore, September 8, after detention of one day in quarantine. She presented a clean bill of health.

Failed to Report.—The assistant health commissioner has ascertained that hospitals have been failing to report many cases of typhoid fever, and on calling attention to this matter 135 cases were reported last week. These, however included many cases treated, but not previously reported for the preceding four months. He also finds that less than one-half of the births of the city are reported. The law requires such reports on penalty of a fine of $10 for each violation.

MISSOURI

Outdoor Lectures on Tuberculosis.—During August, there were delivered under the auspices of the Municipal Commission on Tuberculosis, St. Louis, twelve outdoor lectures in various parts of the city.

Personal.—Dr. George C. Willson, superintendent of State Hospital No. 3, Nevada, has resigned.——Dr. Robert L. Mount, Polo, has been appointed examining physician for Caldwell county for the State Tuberculosis Sanatorium.——Dr. Frank B. Hiller, secretary of the State Board of Health, has opened official headquarters at Jefferson City.——Dr. H. Hays Bullard, of the University of Missouri, has been made instructor in anatomy in Tulane University, New Orleans.

NEW YORK

State Hospitals.—The State Lunacy Commission, which directs the administration of thirteen state hospitals for the insane, with about 35,500 patients and employés, is receiving requisitions for supplies for the next three months. The purchases will aggregate 12,000,000 pounds of foodstuffs, with an approximate cost of $450,000.

Vital Statistics.—There were 11,199 deaths reported in July, or 675 fewer than for July, 1908, equivalent to a death rate of 15.4 per 1,000. During the same period 17,530 births were reported. The mortality from diarrhea and enteritis was 1,470, or 707 fewer than for July, 1908; the deaths from typhoid fever were 112, or 27 fewer than for July, 1908, but the mortality from measles was 126, as compared with 67 in the corresponding month of last year. Chief among death causes were tuberculosis, 1,126; violence, 913, of which 145 were suicides; nephritis, 682; cancer, 598; and pneumonia, 340.

New York City

Off for Europe.—Dr. and Mrs. Alfred W. Pollok and Dr. Henry A. Cassebeer sailed for Europe September 11.

Osteopaths Cannot Issue Death Certificates.—Justice Crane of the Supreme Court holds that osteopaths cannot issue death certificates, and has denied an injunction to compel the city authorities to grant such a privilege.

Campaign Against Tuberculosis.—Exhibits and phonograph lectures on tuberculosis are being continued in different parts of this city. The attendance has been large. At Seventh avenue and Forty-third street the daily attendance is about 4,000, a splendid showing for this neighborhood. For the week ending September 4, there were 536 cases of tuberculosis, with 142 deaths.

Typhoid Increasing.—For the week ended September 4, there were 181 cases of typhoid fever reported, with 11 deaths, a rather larger number than usual so early in the fall. Most of these cases have occurred in the congested tenement districts. Whatever contamination there is in our water comes from the watersheds. For the week ended August 28, there were 158 cases, with 14 deaths; for the week ended August 21, there were but 74 cases, with 15 deaths.

Buffalo

New Hospital Needed.—Plans for the repair of buildings of Erie County Hospital have been submitted to the supervisors, and the cost of the proposed repairs is $179,650. It is believed that the supervisors will see the uselessness of attempting to repair the old buildings at such a cost, and will provide new buildings to accommodate 500 patients.

Temporary Isolation Hospital.—On September 2 there were still 24 cases of scarlet fever in the temporary isolation hospital. Since the opening of the hospital in February, 300 patients have been treated. In connection with the board of health, a committee from the Buffalo Academy of Medicine and the Erie County Medical Society urged the authorities to hasten the selection of a site on which to erect the Municipal Hospital for Acute Contagious Diseases. The present structure is an old schoolhouse which was condemned for school purposes because of insanitary conditions.

OHIO

Physicians and Veterinarians Meet.—The Ohio Society of Comparative Medicine held its annual meeting in Upper Sandusky, August 24 and 25, and elected the following officers: President, Dr. G. W. Cliffe, Upper Sandusky; vice-president, Dr. W. A. Axby, Cincinnati; and secretary, Dr. F. F. Sheets, Van Wert.

Personal.—Dr. Harry R. Beery, superintendent of the Custodial Farm Institution for Feeble-Minded, Morgan Station, has resigned to enter the Medical Corps of the Army.——Dr. Charles F. Clark, Columbus, has sailed from England for India.——Dr. William W. Glenn, Hillsboro, spent the summer abroad.——Dr. Edson B. Morrison, formerly assistant superintendent of the State Epileptic Hospital, Gallipolis, has gone to the Isle of Pines, and expects to locate there.——Dr. Susan Platter, Chillicothe, has been appointed physician to the State Girls' Industrial Home, near Delaware.

Cincinnati

Faculty Increased.—The board of trustees of the University of Cincinnati have made the following appointments for the new Ohio-Miami Medical College: Dr. Paul G. Woolley, professor of pathology; Dr. William B. Wherry, assistant professor of pathology and bacteriology, and Drs. Oscar Berghousen and C. E. Iliff, clinical instructors in medicine.

Personal.—Dr. Robert D. Maddox, responding to a call for aid, September 4, shot and killed a negro burglar.——Dr. Adam E. Schlanser has succeeded Dr. Adolphus W. Foertmeyer as receiving physician at the city hospital. A handsome gold watch and fob was presented to Dr. Foertmeyer by the employés and officers of the hospital, August 30.——Dr. John M. Withrow, president of the Board of Education, has returned from abroad.——Dr. Robert B. Mussey has succeeded Dr. Schlanser as resident physician in the city hospital.

PENNSYLVANIA

McCormack at Greensburg.—Dr. J. N. McCormack of Bowling Green, Ky., is to give a lecture in Greensburg, September 25.

Dispensary Evil.—At the recent meeting of the Northwestern Medical Society, resolutions were passed advocating a dispensary law making it a misdemeanor for a person able to pay for medical treatment to present himself for free care at any hospital or dispensary.

District Society Meeting.—The sixth annual meeting of the Seventeenth District Medical Society was held in Sunbury, September 3. Dr. William T. Graham, Sunbury, was elected president, and Dr. Luther B. Kline, Catawissa, secretary. It was decided to hold the next meeting at Bloomsburg.

State Society Meeting.—The Medical Society of the State of Pennsylvania will hold its fifty-ninth annual session in Philadelphia, September 27-30, and elaborate provisions are being made for the event by the Philadelphia County Medical Society, which will be the host of the occasion. One of the important matters to be discussed at this meeting is that of the state appropriations to hospitals. The system in Pennsylvania has been severely criticized, claims being made that appropriations are made to hospitals either for maintenance or equipment without any provision for the proper and economical use of the money, and that many hospitals not in need of state aid obtain large appropriations even when their wards are used for pay patients. It is claimed that several appropriations made by the last legislature were unconstitutional, and it is stated that the methods employed by certain institutions to obtain state aid will be inspected. A public conference on tuberculosis is to be held at a joint meeting with the Pennsylvania Society for the Prevention of Tuberculosis, September 29.

Philadelphia

Personal.—Dr. Frederick Warren Smith, medical inspector of the bureau of health, left last week for Vienna.——Dr. Elizabeth C. Spencer has been elected resident physician of the female department of the State Hospital for the Insane, Norristown, vice Dr. Mary Wolf, resigned.

Degeneracy Due to Tenement Evils.—A definite movement to provide sanitary conditions for inhabitants in the tenement districts in Philadelphia was made recently by the director of health and charities. An arraignment of the city's neglect of its poor was made by the secretary of the Children's Aid Society, who stated that these overcrowded, badly ventilated and undrained districts are breeding degeneracy and producing a race of subnormal, defective children. The central idea of the conference was to focus attention on the crying need of improvement to determine the chief sources of squalor and disease and to direct attention to the need of legislation to correct these conditions, which increase the death rate by producing tuberculosis, pneumonia and bronchitis. A comparison was made between old, densely populated sections in which the element of bad drainage and poor ventilation largely enters, and the newer sections where model houses have been erected with proper light, ventilation and drainage. It was found that in the former the total death rate during 1908 per 1,000 was 21.53, of which 8.50 were caused by diseases attributed to bad housing conditions, while in the latter the death rate per 1,000 was 8.24, of which 2.50 were from these same causes. In the former, infant mortality was 400 per cent. greater. In outlining a plan of action to overcome these evils, it was suggested that a commission be established, the work of which includes the appointment of committees to examine existing laws and conditions and seek the cooperation of all social organizations in bringing about the enactment of the following laws: An act requiring all premises to be underdrained and making all privy vaults a nuisance; an act extending the provisions of tenement-house laws to lodging houses and rear dwellings; an act requiring the removal of insanitary dwellings and the abandonment for dwelling purposes of insufficiently lighted and ventilated buildings; an ordinance requiring all garbage to be placed in metal-covered receptacles.

WASHINGTON

Malpractice Suit Settled.—In the malpractice suit against Dr. Charles P. Thomas, Spokane, brought by Mr. and Mrs. Leslie Lamb, in which $889 damages were awarded by the jury, an adjustment has been made and the case dismissed.

Appeal to the Courts.—Nearly one hundred appeals have been filed in the superior court from the action of the State Board of Medical Examiners in refusing licenses to osteopaths, magnetic healers, chiropractics, neuropractics, mental healers, naturopaths and other peculiar varieties of applicants for license to practice medicine.

Medical School Inspection.—Regular medical inspection of the public schools of Spokane was commenced September 4, by the board of education. The work is carried on by the following five inspectors: Dr. Carroll L. Smith, chief inspector, and Drs. George G. Belden, Carl H. Weisman, W. S. Frost and C. S. Eikenbary, assistants.

WYOMING

Society Organized.—The Big Horn County Medical Society has been organized at Basin, with the following officers: President, Dr. Herman C. Homer, Grayball; vice-president, Dr. George W. Walker, Hyattsville, and secretary, Dr. George A. Harris, Basin.

Hospital Notes.—The State Board of Charities and Reforms has given its consent to have the state hospital at Casper placed under the management of the Franciscan sisters.——The Cheyenne Private Hospital has been incorporated under the direction of Dr. George P. Johnston, Dr. William A. Burgess and Robert B. Hopkins.——After the investigation of the report that the state hospital at Rock Springs was settling to a dangerous degree by reason of the removal of coal underlying the building, State Coal-Mine Inspector Bird reports that the building is in no danger and has a strong foundation.

State Society Meeting.—The eleventh annual meeting of the Wyoming State Medical Society was held in Cheyenne, September 2, under the presidency of Dr. George L. Strader, Cheyenne. The following officers were elected: President, Dr. Neil D. Nelson, Shoshoni; vice-presidents, Drs. C. E. McCollum, Laramie, and S. W. Johnson, New Castle; secretary, Dr. John D. Fossler, Sheridan; treasurer, Dr. William A. Wyman, Cheyenne; delegate to the American Medical Association, Dr. James J. Monahan, Encampment, and alternate, Dr. Marcus A. Newell, Sheridan. Casper was selected as meeting place for 1910.

GENERAL NEWS AND COMMENT

Obstetricians and Gynecologists Meet.—The annual meeting of the American Association of Obstetricians and Gynecologists will be held at Fort Wayne, Ind., September 21-23. By an error the wrong date of the meeting has been appearing in The Journal in the list of national societies, which appears monthly. Evidently no officer or member of the association noticed the error, as we were not notified of the mistake till a few days ago. As we are dependent on officers of societies for information concerning names of officers and dates of meetings, we respectfully request that they look over the list of national and state societies in the advertising pages of The Journal and notify us promptly of any errors.

Cumberland Valley Physicians Meet.—The seventh annual meeting of the Cumberland Valley Medical Association was held in Chambersburg, Pa., September 2, the president, Dr. Theodore H. Weagley, Marion, Pa., in the chair. The following officers were elected: President, Dr. De Witt C. R. Miller, Mason and Dixon, Pa.; vice-presidents, Drs. Peregrine Wroth, Jr., Hagerstown, Md., Philip R. Koons, Mechanicsburg, Pa., and P. Brough, Montgomery, Chambersburg, Pa.; secretary, Dr. John J. Coffman, Scotland, Pa. (re-elected); assistant secretaries, Drs. John R. Laughlin, Hagerstown, Md., E. Roberts Plank, Carlisle, Pa., and Henry C. DeVillbiss, Chambersburg, Pa., and treasurer, Dr. John J. Koser, Shippensburg, Pa. The next annual meeting will be held in Washington county, Md., probably at Pen Mar.

Fresh-Air Schools.—Open-air schools are growing in favor. In a pamphlet issued by the Boston Association for the Relief and Control of Tuberculosis, the Providence Fresh-Air School and Boston's outdor school are described and the work they are accomplishing is detailed. In the former school it is stated that throughout the first winter, which was a severe one, no pupil in the fresh-air school had even a cold in the head, while during the stormy weather the attendance at this school was better than at the regular schools. Boston's "out-door school," which, it is claimed, is the first school of its kind in this country, has accomplished much good. Each child in the school is furnished with a reclining chair and blankets, a long warm overcoat, overshoes, bag made of paraffined canvas to keep out rain and wind, and with a detachable blanket lining, to sit in, woollen cap or hood, mittens, drinking cup and toothbrush. The number of children in the school at one time is limited to twenty. A principal of one of the Boston schools conceived and executed the idea of relieving certain overcrowded grades in his school by taking about twenty of the most anemic pupils and seating them at portable desks in a cozy corner of the school yard, during pleasant weather. The regular teachers of these children remarked on the sudden appearance of unsuspected mental alertness shown since the fresh-air règime was started.

FOREIGN

Austregesilo Made Professor of Clinical Medicine at Rio.—The university at Rio de Janeiro has called to the chair of clinical medicine the local clinician and alienist, A. Austregesilo, a translation of whose work on "Mental Disorders in Ankylostomiasis" was published in the February *Alienist and Neurologist.* After the ceremony of installation the young professor found an automobile awaiting him outside, a present from his clients and other friends.

British Association for the Advancement of Science.—The seventy-ninth annual meeting of the British Association for the Advancement of Science met at Winnipeg, August 25-September 1, under the presidency of Sir J. J. Thompson, professor of experimental physics in the University of Cambridge. This makes the fourth time that this association has held its annual meeting outside of the British Isles; it met in Montreal in 1884, in Toronto in 1897, and in South Africa in 1905. At the opening meeting, Major McMahon read a letter from the retiring president, Francis Darwin, who was unable to be present. The association was welcomed to Winnipeg by the mayor of the city. The president-elect, Sir Joseph J. Thompson, delivered his inaugural address, which dealt with educational matters. The section meetings began on August 26. Saturday, August 28, was devoted to excursions and sightseeing. A special feature of the meeting was the establishment of a subsection devoted to agriculture. The total number attending was about 1,400, only about half the maximum number; yet this is a larger number than attended the Toronto meeting. The next annual meeting will be in Sheffield, England, Aug. 31 to Sept. 7, 1910, under the presidency of Rev. T. G. Bonney, D.Sc., LL.D., F.R.S., emeritus professor of geology, University College, London. According to custom, the officers of the sections will be appointed by the council about Christmas. Prof. John Perry, F.R.S., the general treasurer, and Major P. A. MacMahon, F.R.S., and Prof. W. A. Herdman, F.R.S., the general secretaries, were re-elected.

Death of Dr. Haffter of Switzerland.—The medical profession in Switzerland has sustained a severe loss in the death of Dr. Elias Haffter, editor-in-chief of the *Correspondenz-Blatt für Schweizer Aerzte*, president of the commission that accomplished the reorganization of the profession in Switzerland, and leader in the campaign against tuberculosis and in other branches of social medicine. He held a prominent position in the army, but resigned when his town, Frauenfeld, built a hospital and placed it in his charge. Besides a number of scientific literary contributions, his record of a trip around the world ran into several editions, and he organized and was president of an oratorio society. In commenting on Haffter's well-rounded life, the present editor of the *Correspondenz-Blatt* remarks: "No one can realize what it means to be the editor of a medical journal unless he has been one. All kinds of pleas and demands come to him; he has to restrain the impatience of contributors who want to see their works hurried into print and tranquilize others whose works have to be rejected for lack of space or other reason; he has to read all the manuscripts sent in and go over them with the blue pencil, verify corrections, etc., and, last but not least, he has to be a sort of universal information bureau, responding to inquiries in regard to assistants, etc., the best place to buy instruments, the solution of perplexing questions of professional ethics, etc." Haffter undertook this task for the *Correspondenz-Blatt* when Garré laid it down to remove to Germany, and carried it on for twenty years, notwithstanding that his health was undermined by three severe attacks of pyemia, professionally acquired, the last proving fatal at the age of 58. He is cited as the embodiment of the ideal conception of the medical profession and of the happiness it brings when thus conceived. "Nothing more beautiful, nothing nobler," he used to say, "than our profession! The true physician is the exponent in the highest degree of the Golden Rule, but Sympathy alone is blind; Conscience and Science supply the eyes."

LONDON LETTER

(From Our Regular Correspondent)

London, Sept. 4, 1909.

Entomologic Research in Africa

In view of the intimate relations between certain insects and the propagation of diseases in man and animals in tropical Africa and of the similar relations between insects and plants having an economic value which is becoming more evident as settlement in that continent progresses, the secretary for the colonies, Lord Crewe, has appointed a scientific committee to study economic entomology with special reference to Africa. This body will be known as the African Entomological Research Committee and includes most of those who are eminent in tropical medical and allied science—Mr. E. Austen of the Natural History Museum, Dr. A. G. Bagshawe, director of the Sleeping Sickness Bureau, Col. Sir David Bruce, Dr. S. F. Harmer, keeper of zoology of the British Museum, Dr. R. S. Macdougall, entomologic adviser of the board of agriculture, Sir John Macfadyean of the Royal Veterinary College, Sir Patrick Manson, Professor Nuttall, and Dr. A. E. Shipley. Arrangements are being made to despatch a trained entomologist to the east side of tropical Africa and another to the west, in order to stimulate official and other residents to collect and observe noxious insects and to instruct them in scientific methods. By this means it is hoped to obtain throughout these territories an organized body of investigators who will send their collections and observations to the committee. These collections will be classified by a number of British and, in some instances, continental entomologists, and named specimens will be distributed to such institutions as may require them for purposes of instruction, both at home and in Africa. The committee also will keep in touch with the work which is being done in this branch in Egypt, the Sudan and South Africa, and the results will be published from time to time in a journal or bulletin.

Vaccine Therapy and Immunization

Vaccine therapy has now assumed great importance in the eyes not only of the profession but of the public. Two hospitals, St. Mary's and the Mount Vernon Hospital for Consumption, have issued appeals for special funds for its study and practice. These funds will be devoted to the maintenance of laboratories and laboratory workers and also to the support of wards in which the treatment will be conducted under the most favorable conditions. At St. Mary's Hospital the new department for therapeutic inoculation has been established in a special wing under the direction of Sir Almroth Wright, the pioneer of the modern development of the method. Here it has been most extensively used in the treatment of localized tuberculosis and the results have been excellent.

At the Mount Vernon Hospital the department is under the direction of Dr. R. W. Allen whose attention has been principally directed to affording protection against catarrh and influenza. He is applying the method to the forms of tuberculosis of the lung which are confined to a limited area. At St. Mary's Hospital the new department is controlled and financed by a special committee which is independent of that of the hospital and which contains many philanthropists who have guaranteed large subscriptions for a period of seven years. Thus Sir Ernest Cassel gives $5,000 a year, Mr. William Bonn $2.500, and Lord Justice Moulton $1,250.

Physical Exercises in Elementary Schools

Only recently have the education authorities recognized that physical health lies at the basis of education and that the object should be to develop a sound mind in a sound body. Formerly simply mental instruction was provided and no attention was paid to the health and very little to the physical development of the child. An important memorandum has just been issued by the board of education which shows that the authorities are now fully alive to the whole problem. It is pointed out that even proper nourishment, effective medical inspection, and hygienic surroundings will not of themselves produce a sound physique. A further requirement is exercise. This may, no doubt, be promoted, especially in country children, by a variety of means; but none of these is such that special systematic physical exercises should be entirely dispensed with. For town children such exercises are regarded as indispensable for the development of the body and for the correction of defects or evil habits induced by unhealthful physical environment. There should be a direct relation between the three factors of nutrition, general health and physical training. In their endeavors to establish such a relation the board have been deeply impressed with the inadequacy of the existing means. They issued for the first time in 1904 an official syllabus of exercises based on the Swedish system; this has now, as the result of the experience gained, been extensively revised. The exercises are arranged with a view to the harmonious development of all parts of the body and may be carried out without any special apparatus. Exercises likely to prove injurious to children of weak physique have been excluded.

Paupers Object to a Hindu Doctor

In the Butterworth Union of Leicestershire fifteen paupers signed a petition to the local government board (which controls the poor-law administration) protesting against the action of the local guardians in appointing Dr. J. C. Bhukerchargi, a native of India, as medical officer. The guardians replied by a unanimous vote of confidence in their officer.

PARIS LETTER

(From Our Regular Correspondent)

Paris, August 26, 1909.

Institute of Colonial Medicine

In 1902 an Institute of Colonial Medicine, affiliated with the Paris medical school, was founded to give instruction in tropical medicine to physicians. The course of instruction lasts about two and one-half months, the session beginning about October 15 and terminating toward the end of December. At the end of the session the pupils who pass the final examination successfully receive from the University of Paris the diploma of colonial physician. Since its foundation the Institute of Colonial Medicine has given about 200 of these diplomas. Properly qualified French and foreign physicians are admitted.

First Aid to the Injured in the Streets

For a long time there has been complaint about the deplorable custom of prescribing by pharmacists. Oddly enough, the police are the instigators of this illegal practice. When an accident occurs in the streets the police take the injured person to the nearest drug-store, and the druggist renders first aid. The local medical society (*Syndicat médical de Paris*) at its last session passed the following resolution: (1) Injured persons should not hereafter be taken to the nearest drug-store by administrative orders; (2) first-aid stations should be erected in the streets; (3) physicians who consent to take part in the medical service of these stations should serve in rotation.

French Congress of Surgery

The Twenty-second French Surgical Congress (*Association française de chirurgie*) will be held at the medical department of the University of Paris from Oct. 4 to 9, 1909, under the presidency of Dr. G. Richelot, member of the Academy of Medicine, and professor *agrégé*. The following subjects will be considered: (1) Surgery of arteries, essayists, Drs. Monod of Paris and Vanderts of Lille; (2) preoperative and postoperative treatment in abdominal surgery, essayists, Drs. Tuffier of Paris and C. Girard of Geneva; (3) surgical treatment in traumatisms of the spine and spinal cord, essayists, Drs. Auvray of Paris and Sencert of Nancy.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Aug. 25, 1909.

A Convalescent Home for Officers in Taunus

The well-known lung sanatorium of Dettweiler in Taunus, one of the first private sanatoriums in Germany, was sold after the death of its founder as the business was no longer profitable, and it has been converted into a convalescent home for sick officers, the Offizierheim Taunus. The entire institution is a philanthropic foundation by a number of well-to-do manufacturers; the idea was originated by the general staff surgeon (*Generalstabsarzt*) of the Prussian army, Professor Schjerning. A few days ago the dedication of the home occurred in the presence of the emperor and empress. On this occasion Schjerning was advanced to the rank of a hereditary noble, a distinction which has been also granted to some previous incumbents of his post. The sanatorium is intended for sick and convalescing officers and sanitary officers, and is under the supervision of the minister of war. All forms of hygienic and dietetic curative methods are provided. The home furnishes accommodations for 52 patients and is to be in operation the entire year. The length of treatment up to six weeks is determined by the head physician. The consent of the minister of war is requisite to continue a treatment beyond this period. The institution does not admit patients with external diseases, tumors, tuberculosis or other infectious diseases, or requiring a capital operation. The expenses for care vary according to the respective grade of officers in the service (3 to 6 marks).

XVI International Medical Congress at Budapest

A large number of participants from Germany are to be expected in the Budapest congress which begins in a few days. This is very gratifying with reference to the principal purpose which these congresses fulfill, namely, to secure a good understanding among the representatives of the science and to bring the physicians of all nations into personal relation with one another. There can be no doubt of the great influence for international peace which is thus exerted. The various congresses in which the French and Germans have met together have undoubtedly contributed to the gradual subsidence of the irreconcilable public feeling of the two nations, and it likewise may be hoped that the Budapest congress may also have a favorable effect on the reconciliation of various nations. To be sure in some directions it has worked in opposition to this purpose. The Roumanian physicians have as a body refused to attend the congress, because the Hungarian government has treated the Roumanians badly, and for similar reasons the Bulgarian physicians will stay away. While these political considerations which have nothing to do with a medical congress are a misconstruction of the functions of an international medical congress, certain chauvinistic publications which have recently appeared from an anonymous correspondent in the *Münchener medizinische Wochenschrift* are actually belittling and shameful. There the objection was made against the Hungarian management of the congress that in the enumeration of the official languages, French is placed before German, and the like. It need hardly be feared that intelligent physicians will be affected by such publications, but there may be cranks, who express their patriotism especially by belittling other nations, to whom such remarks will prove infectious. The congress promises to be both a scientific and a social success.

Those who have entered the competition for the international prize offered by the Hungarian government for the best article published in recent years on the etiology of trachoma, are doomed to disappointment. As I understand, this prize will not be given because the jury (Professor Pfeiffer of Breslau, Professor Kolle of Bern, Professor v. Grósz of Budapest) have reached the conclusion that none of the articles offered fulfills the condition of being a notable advance on our present knowledge. This at the same time puts an end to the unedifying strife as to priority regarding the discovery of the trachoma corpuscles, between Professors Greeff and Halberstädter and v. Prowazek. Seven articles were offered in competition for the prize: three from Germany, two from Russia, one from Bulgaria, and one from Egypt.

Fifth International Dental Congress

The international dental congress is holding its session in Berlin according to the resolution adopted at St. Louis in 1904. The invitation was given at that time by Professor Miller, a native American who has had a prominent part in the development of dentistry on both the scientific and practical side. A special reason for holding this year's congress within the walls of Berlin is furnished by the circumstance that the central association of German dentists is now celebrating its semicentennial jubilee. The congress is well attended by dentists of all nations; Professor Waldeyer is honorary president, with Professor Walkhoff of Munich as acting president, and there are many delegates representing various governments. The proceedings of the section for hygiene of the mouth and teeth offer general interest. The question of the establishment of municipal school dental clinics was discussed. It was emphasized that the establishment of such clinics constitutes an important measure for the prevention and suppression of the diseases of the people, especially of tuberculosis. This resolution was passed: The establishment of school dental clinics is an international hygienic demand of our time. In addition the value of dental care in the army and navy was insisted on. As usual an exhibition of dentistry is associated with the congress, which furnished interesting and abundant material. At the jubilee of the central association of German dentists a large number of distinguished foreign dentists were elected as honorary members. It was further announced that the executive committee had decided to bestow three great medals for distinguished achievements in dentistry. One of these was received by Professor Dieck, who had performed valuable service for the congress.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Aug. 28, 1909.

Postgraduate Instruction and Other Inducements Offered to Army Doctors

A few months ago in this country, when all preparations for war had to be made in haste, it was found that in the Austro-Hungarian army, the number of military surgeons of sufficient experience and the general standard of knowledge of modern sanitation were inadequate. Several inducements to enter the army are now offered to young practitioners. A sum of $1,200 is guaranteed to every able-bodied medical student of the last term of the curriculum, payable in two instalments, at graduation and on entering the army. Provision has been made to enable army surgeons to take, after three years of service, a series of postgraduate classes at the expense of the ministry of war; the classes will be conducted by clinical professors, and hereafter the surgeon will be able to do work at various clinics for two years. Quicker promotion to the rank of regimental surgeon (equal to captain) is obtained by dispensing with a series of theoretical examinations; this grade will now be reached within five years from entering the army. The rank of staff surgeon (equal to the major of the regular army) will be accessible to every regimental surgeon within twelve years from entering the army without any further examination, hitherto a difficulty of first rank. Special stress is laid on practical instruction, for which purpose a ten-week-class will be held for regimental surgeons eligible to the post of staff surgeon; these classes are to comprise instruction and practical work on sanitation of fortresses, evacuation of field hospitals, inspection of the sanitary arrangements of brigades and corps. The regular pay for the medical officer of the army is still low, beginning with $40 a month, $60 for the regimental surgeon, and $100 for the staff surgeon, but there are several other emoluments. One is the expectation of a pension after ten years' service, amounting to about $400 a year at that time, and rising by 10 per cent. for each further year to a maximum of about $1,000. On the other hand, each doctor entering the army must pledge himself to serve at least ten years, unless he should be earlier retired, in which case a pension may also be obtained. It is expected that these advantages will not only serve to complete the required number of military medical officers, but will also have the desirable effect of lessening the number of those men who take up general practice in the towns

BERGEN LETTER

(From Our Special Correspondent)

Bergen, Norway, August 21, 1909.

The Second International Leprosy Congress

The second International Leprosy Congress was held in this city, August 16-19. It was opened by King Haakon and among the distinguished persons in attendance were Hansen, Kitasato and Hutchinson. Excellent opportunities were given for clinical study at the hospitals, one of which, the St. Joergans, was founded in 1410, and is the only remaining medieval lazaretto in western Europe. Physicians only are allowed to visit these institutions. Numerous microscopic specimens were shown, Dr. Hansen exhibiting a slide from the noted Early case of New York. Dr. Hansen is well and favorably known in the United States, where he visited in 1888 in behalf of the lepers of Minnesota. Since 1865 leprosy has decreased in Norway from 2.870 cases to about 400. This is generally attributed to segregation.

Dr. Currie, U. S. M.-H. S., Honolulu, presented an article on "The Status of Leprosy in the United States," and the measures taken for the study and prevention of the disease. In Hawaii there are about 900 cases, 764 of the patients being natives. The government has an investigating station on the island of Molokai.

In the United States 278 cases have been reported, and statistics show a marked increase. There are probably many unrecognized and concealed cases. Dr. Shively, New York, reported three cases in the Presbyterian Hospital and knew of two wealthy patients sojourning at a fashionable hotel. Dr. Ravogli, Cincinnati, reported a patient at large in that city. Dr. Wise, medical director, U. S. N., Washington, recommended thorough investigation of the hygienic conditions where leprosy was found and rigorous segregation to prevent the establishment of new foci. This would not necessarily involve any hardship but rather the reverse; the common affliction creating a bond of sympathy rendering mutual assistance in these institutions very marked.

Professor Ehlers, Copenhagen, gave an account of his experiments to ascertain if the disease could be transmitted by insects (gnats and bedbugs), a hypothesis advanced by Goodhue of Hawaii and Noe of New Caledonia; but he was unable to verify it. Last January he was sent to the Danish West Indies to investigate leprosy on the island of Vera Cruz. On his return he visited the United States, where he confirmed the diagnosis already made by Drs. Woodward and Kenyon in the Early case. [See The Journal, Sept. 11, page 906.—Ed.]

Professor Duering, Dresden, spoke on the question of heredity. In his early experiences he considered leprosy to be hereditary, but later observations have led him to believe it to be only infectious; that children of leprous parents, if segregated before infection, will not have it.

Professor MacLeod of the London School of Tropical Medicine gave an exhaustive treatise on recent microscopic study of leprosy. By special methods of staining it is now possible to distinguish the young, old and dead bacilli and it is now known that most of the bacilli found in the tissues are dead. The *Bacillus lepræ* has a cladothrix arrangement, branching forms like actinomyces, suggesting that it belongs to the streptothrix class. No medium has been found on which it will grow and no lower animal is susceptible to it. Treatment is still in the experimental stage; various remedies are being tried, good results being reported by some and failures by others. The best result I saw was in a patient shown by Professor Boeck, Christiania, who was kept under favorable hygienic conditions only.

Many other valuable papers were read by distinguished authors. A full report of the proceedings will be published by Johann Ambrosius Barth, Leipsic.

If all medical students would learn one common language it would add greatly to the value of meetings of this kind and allow much valuable time to be employed in medical research that is now used in studying various foreign languages. Esperanto has been adopted as the official language of the International Red Cross, and members after five weeks' study, with two lessons a week, are able to carry on ordinary conversation in any part of the world. With its universal rules and simple construction it is said to be to language what algebra is to mathematics. Certainly the time has arrived when an international language is demanded.

[Editor's Note: A further report will be given in The Journal next week.]

Pharmacology

SERUMS AND VACCINES

Report to the Council on Pharmacy and Chemistry of the Committee on Serums and Vaccines

The Council having decided to consider serums and vaccines for inclusion with New and Nonofficial Remedies, it appointed a committee of the Council to consider these products and to report thereon. The committee submitted a preliminary report and recommended its publication; the recommendation was adopted and in accordance therewith the preliminary report is published below.

W. A. Puckner, Secretary.

REPORT OF THE COMMITTEE ON SERUMS AND VACCINES

The committee on serums and vaccines submits the report given below and recommends its publication:

If the term drug is used in the broad sense it will be admitted that the vaccines, viruses and serums constitute one of the most important groups of drugs with which the physician has to deal. Some preparations of this group are specific cures for certain diseases; others are invaluable in prophylaxis and diagnosis. The great importance of exercising some degree of governmental control over these products was recognized by the passage by Congress in 1902, of a law entitled "An Act to Regulate the Sale of Viruses, Serums, Toxins and Analogous Products in the District of Columbia, to Regulate Interstate Traffic in Said Articles, and for Other Purposes." This law antedated by several years the law controlling the substances more usually called drugs.

In order that the physician may obtain information in a concise form concerning this important group of remedies, the Council on Pharmacy and Chemistry voted to include in "New and Nonofficial Remedies" a description of the preparations which may be legally sold in interstate commerce in the United States and which are not in conflict with the rules of the Council. To this end those firms which have licenses to manufacture and sell in interstate commerce remedies of this class have been invited to submit descriptions of their products to the Council. These descriptions will appear later.

It has been deemed advisable to publish at the present time a complete list of the manufacturers, both foreign and American, who have secured licenses. In order to obtain such a license it is necessary for an establishment desiring it to request the Surgeon-General of the U. S. Public Health and Marine-Hospital Service to have an inspection made of its laboratories, methods, products, etc. This inspection is made by an officer of that service, and consists in a careful examination of the stables, laboratory facilities, methods, animals, collection of the serum, standardization, and tests for potency, purity and amount of preservatives. Samples of the products from licensed manufacturers are bought on the open market and examined at frequent intervals in the Hygienic Laboratory of the Public Health and Marine-Hospital Service. The inspection of the laboratories is repeated at least once a year and if insanitary conditions are found, or if the products are not what they are claimed, the license is suspended.

Antidiphtheritic and antitetanic serums are required to conform strictly to the standards which have been established by the United States Government. There being no established standard for the various other products, they are not examined for their therapeutic value in the laboratory, but are tested for the amount of preservative and freedom from bacterial and toxic contaminations. Vaccine virus is examined particularly for its freedom from pathogenic bacteria, especially tetanus, and also for its potency. The list of manufacturers follows:

LIST OF ESTABLISHMENTS MANUFACTURING SERUMS, ETC., LICENSED PRIOR TO JULY 15, 1908

License No.	Establishment.	Products.
1	Parke, Davis & Co., Detroit, Mich.	Antidiphtheritic serum, antitetanic serum, antitstreptococcic serum, antigonococcic serum, erysipelas and prodigiosus toxins (Coley), tuberculins, bacterial vaccines and vaccine virus.
2	H. K. Mulford Co., Philadelphia, Pa.	Antidiphtheritic serum, antitetanic serum, antistreptococcic serum, antipneumonic serum, antigonococcic serum, antidysenteric serum, tuberculins, bacterial vaccines and vaccine virus.
3	Dr. H. M. Alexander & Co., Marietta, Pa.	Antidiphtheritic serum, antirabic virus, vaccine virus and tuberculins.
5	Fluid Vaccine Co., Milwaukee, Wis.	Vaccine virus.
8	Cutter Analytic Laboratory, Berkeley, Cal.	Antidiphtheritic serum, antistreptococcic serum, antityphoid serum, tuberculin and vaccine virus.
9	Frederick Stearns & Co., Detroit, Mich.	Antidiphtheritic serum, streptolytic serum, pneumolytic serum.
11	Pasteur Institute of Paris, France.	Antidiphtheritic serum, antistreptococcic serum, antiplague serum, antidysenteric serum, antimeningococcic serum and serum antivenimeux.
12	Chemische Fabrik auf Actien (vorm. E. Schering), Berlin, Germany.	Antidiphtheritic serum and antistreptococcic serum.
14	Health Department of the City of New York.	Antidiphtheritic serum.
15	W. R. Hubbert Serum Laboratory, Detroit, Mich.	Antidiphtheritic serum.
16	National Vaccine and Antitoxin Institute, Washington, D. C.	Antidiphtheritic serum, antigonococcic vaccine, vaccine virus and normal horse serum.
17	Lederle Antitoxin Laboratories, New York City.	Antidiphtheritic serum, antitetanic serum, tuberculins, bacterial vaccines, vaccine virus, antistreptococcic serum, and suspension of lactic acid bacilli.
18	Burroughs, Wellcome & Co., London, England.	Antidiphtheritic serum, antistreptococcic serum, antityphoid serum, antistreptococcic vaccine, antistaphylococcic vaccine, antigonococcic vaccine and antityphoid vaccine.
19	Memorial Institute for Infectious Diseases, Chicago, Ill.	Antidiphtheritic serum.
21	Swiss Serum and Vaccine Institute, Berne, Switzerland.	Antidysenteric serum, antipneumococcic serum, antimeningococcic serum, antiplague serum, antistreptococcic serum, anticholera vaccine, antiplague vaccine, antityphoid vaccine and tuberculins.
22	Institute Bacteriologique de Lyon, Lyons, France.	Antidiphtheritic serum and normal goat serum.
24	Farbwerke, vormals. Meister Lucius & Bruning, Hoechst-on-Main, Germany.	Antidiphtheritic serum, antistreptococcic serum, antidysenteric serum and tuberculins.
25	Tuberculin Society of St. Petersburg, St. Petersburg, Russia.	Tuberculinum purum.
26	Institut de Vaccine Animale, Paris, France.	Vaccine virus.
27	Institut Pasteur de Lille, Lille, France.	Serum antivenimeux.
28	Bacteriologisches Inst. Linger, Dresden, Germany.	Pyocyanase.

Correspondence

Preservation of Historical Data—An Appeal

To the Editor:—Up to the present time there has been no concerted effort made to collect and preserve historical data in regard to the origin, evolution and personnel of our profession in this part of the country. The result of this delinquency has been the total loss of much material that should have been preserved, especially pertaining to medical schools and societies, and biographical matter in connection with the practitioners and teachers of medicine of by-gone days. A good deal of material of this character is still obtainable if a systematic effort is made to locate and preserve it. It is in the possession of individuals, families and private libraries and will eventually be lost. The Western Association for the Preservation of Medical Records was organized in May, 1909, for the purpose of collecting the historical and biographical records of the profession of the west and south. We wish to preserve anything and everything pertaining to western medicine and medical men and are anxious to enlist the active help and support of every member of the profession who is in sympathy with our aims. We want every one to become associated and identified with the work of our association. There are no fees or obligations of any kind. We have made arrangements with the Lloyd library, Cincinnati, Ohio, for the proper housing of the material collected. The latter will be systematically arranged, catalogued and properly preserved so that it can be made available for research work. We are particularly anxious to obtain:

1. Medical journals published in the west prior to 1880.
2. Medical books and pamphlets written or published in the west.
3. Manuscripts and autographs of early western physicians.
4. Old diplomas and other documents of a medical character.
5. Proceedings of medical societies.
6. Reports of hospitals and other medical institutions.
7. Catalogues and announcements of western medical colleges of all "schools."
8. Biographies and portraits of western physicians.
9. Information and material of any kind pertaining to medicine and medical men and affairs in the west.
10. Curios of a medico-historical character.

All contributions should be sent in care of the librarian. In view of the fact that we are performing a labor of love and have no funds, our friends and associates will readily understand why all contributions sent by express or freight should be prepaid so that no expense may accrue to the association. The necessary expenses of the association are at present being met by voluntary contributions of its organizers.

May we not count on your active help and support? We would like to hear from every member of the profession who is interested in the proposed work.

CHARLES A. L. REED, M.D., Chairman.
OTTO JUETTNER, M.D., Secretary.
A. G. DRURY, M.D., Librarian, 710 West Eighth Street, Cincinnati, Ohio.

COMMENT: The importance and value of the work which this new association has undertaken was discussed editorially in THE JOURNAL, April 14, 1909, p. 561.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

IMMUNIFACIENT — A NEW WORD

To the Editor:—Some years ago, while writing a paper I wished to speak of diseases which give immunity from a second attack, that is, which render the organism refractory to a repetition. I could find no such word in the medical dictionaries. In order to escape circumlocution the word "semelincident," meaning "happening but once," occurred to me. This word, a useful one, has been used much, but has not been included in any medical dictionary to my knowledge. It would seem to be an addition to medical nomenclature.

T. L. HAZZARD, Pittsburg, Pa.

ANSWER.—May we be so impolite as to suggest a word which seems to us far better? "Immunifacient," from the Latin *immunis,* immune, and *faciens,* making, is a word that hardly requires explanation, being formed on the analogy of "rubefacient." Similarly may be made the word "immunifaction." "Immunifacient" and "immunifaction," so far as we know, are new.

LITERATURE ON DELAYED CHLOROFORM POISONING

To the Editor:—Please give me a list of articles which have appeared in the last year or two on delayed chloroform poisoning.

A I. LAWBAUGH, Calumet, Mich.

ANSWER.—The following articles on delayed chloroform poisoning have appeared since the beginning of 1907:

"Delayed Chloroform Poisoning" by R. Ramsey, in *Brit. Med. Jour.,* May 25, 1907.

"Delayed Chloroform Poisoning" by J. C. Renton, in *Brit. Med. Jour.,* March 16, 1906; abstr. in THE JOURNAL, April 13, 1907, p. 1301.

"Influence of Oxygen on the After-Effects of Chloroform" by P. Lengemann, in *Mitt. a. d. Grenzgeb. d. Med. u. Chir.* (the Mikulicz Memorial Number); abstr. in THE JOURNAL, March 23, 1907, p. 1070.

"Acidosis (Delayed Chloroform Poisoning)," by A. N. McArthur, in *Intercolonial Med. Jour.,* August, 1907; abstr. in THE JOURNAL, Nov. 2, 1907, p. 1561.

"Acute Yellow Atrophy of Liver Following Chloroform Anesthesia", by N. Guleke, in *Arch. f. klin. Chir.,* lxxxiii, No. 2; abstr. in THE JOURNAL, Oct. 12, 1907, p. 1316.

"Treatment of Delayed Chloroform Poisoning" by A. P. Beddard, in *Lancet,* London, March 14, 1908; abstr. in THE JOURNAL, April 11, 1908, p. 1224.

"Fatal Case of Delayed Chloroform Poisoning" by H. C. Wilson, in *Lancet,* London, Feb. 29, 1908.

"Three Cases of Delayed Chloroform Poisoning" by E. D. Telford, in *Lancet,* London, Feb. 29, 1908.

"Case of Acid Intoxication Following Administration of Chloroform" by H. Thorp, in *Lancet,* London, Feb. 29, 1908.

"Chloroform Necrosis of the Liver" by H. G. Wells, in *Arch. Int. Med.,* July, 1908; abstr. in THE JOURNAL, Oct. 24, 1908, p. 1462.

"Chemistry of the Liver in Chloroform Narcosis (Delayed Chloroform Poisoning)," by H. G. Wells, in *Jour. Biol. Chem.,* October, 1908.

"Chloroform Poisoning," by J. V. Shoemaker, in *Monthly Cycl. and Med. Bull.,* September, 1908.

"Acute Degeneration of Liver Following Chloroform Narcosis," by F. Corbett, in *Jour. Minn. Med. Assn.,* Oct. 4, 1908.

"Fatal Toxemia After Administration of Chloroform," by M. F. Taylor, in *Lancet,* London, Sept. 12, 1908.

"Experimental Study of the Metabolism and Pathology of Delayed Chloroform Poisoning," by J. Howland and A. N. Richards, in the *Jour. Exper. Med.,* March, 1909; abstr. in THE JOURNAL, April 3, 1909, p. 1144.

"The Syndrome in Fatal Tardy Chloroform Poisoning," by A. Sippel, in *Arch. f. Gynäk.,* lxxxviii, No. 1; abstr. in THE JOURNAL, May 22, 1909, p. 1725.

"Internal Chloroform Intoxication and Its Treatment," by K. Wirth, in *Wien. klin. Wchnschr.,* Jan. 14, 1909; abstr. in THE JOURNAL, Feb. 20, 1909, p. 672.

"Acute Toxemia After Chloroform Anesthesia," by F. W. Heysett, Freesoil, Mich.; paper read at meeting of Michigan State Medical Society, abstr. published in THE JOURNAL, Aug. 29, 1909, p. 785. The entire article appeared in the *Jour. Mich. Med. Soc.,* April, 1909.

"Necrosis of the Liver After Chloroform Anesthesia," by J. R. Williams and W. D. Becker, in THE JOURNAL, May 8, 1909, p. 1489.

"Chloroform Lesions of Liver," by E. Weill, P. Vignard, and G. Mourequand, in *Lyon Chir.,* December, 1908; abstr. in THE JOURNAL, Feb. 6, 1909, p. 513.

"Chloroform Poisoning; Liver Necrosis and Repair," by G. H. Whipple and J. A. Sperry, in *Bull. Johns Hopkins Hosp.,* September, 1909.

CARROT SOUP IN INFANT-FEEDING

A correspondent asks for clearer directions in regard to making carrot soup, mentioned in abstract 76 on page 153 of THE JOURNAL, July 10, 1909. Beck says that he makes the carrot soup according to Moro's directions, peeling and chopping one pound of carrots and boiling them in water for an hour or two, then passing them through the finest wire sieve and mixing with one liter of bouillon made from one pound of beef and one liter of water, put on cold, and one teaspoonful of salt. Moro's article was summarized in THE JOURNAL, Sept. 12, 1908, page 955. The original states more definitely that 375 gm. of peeled carrots are chopped and boiled down in water till the total mass forms about 200 c.c., which requires from 30 to 45 minutes. The mass is then forced through the finest wire sieve into one liter of bouillon, and 6 gm. of salt is added. The beef broth is made, as usual, from 500 gm. beef and bone, put on cold. (The article says "50 gm.," but this is corrected in the following issue as a proof error.)

ESTIMATION OF PROTEIDS IN MILK

To the Editor:—Please publish description of method for the estimation of proteids in milk by the phosphotungstic and hydrochloric acid precipitation in Esbach tube.

J. T. THORNTON, Wheeling, W. Va.

ANSWER.—The method referred to is given by T. R. Boggs (*Bull. Johns Hopkins Hosp.,* October, 1906, No. 187) as follows: Twenty-five gm. phosphotungstic acid are dissolved in 125 c.c. of distilled water, and when solution is complete an equal quantity of dilute hydrochloric acid is added. The solution is stable, and keeps for months in a dark bottle. The method of procedure is as follows: The diluted milk is poured into an ordinary Esbach albuminometer tube (reading from 1 to 7 gm. per liter) up to the mark U; the phosphotungstic acid solution is then added up to the mark R; the tube is corked and slowly inverted twelve times, shaking being avoided. The tube is then placed in a rack for twenty-four hours, and the percentage read off at the level of the top of the precipitate. The optimum dilution for human milk is 1 in 10, for cow's milk, 1 in 20; if the proteid content is low a less dilution may be employed. Controlled by Kjeldahl nitrogen determinations the mean error was 0.3 per cent., the extreme 0.7 per cent. Temperatures of from 15 to 25 C. and the presence or absence of cream make no difference in the volume of the precipitate, which attains a minimum after standing twenty-four hours, and does not alter on further standing.

The Public Service

Medical Department of the Army

Changes for the week ended Sept. 11, 1909:

Fisk, Owen C., 1st lieut., M. R. C., granted 15 days' leave of absence.

Morse, Arthur W., major, granted 30 days' leave of absence.

Gilchrist, Harry L., major, ordered to proceed from Fort Omaha, Nebr., to Fort Meade, S. D., for temporary duty.

Knox, Howard A., 1st lieut., M. R. C., granted leave of absence for 10 days, to take effect about Sept. 20, 1909.

Truby, Albert E., major, relieved from duty as commanding officer, Co. A, Hospital Corps, and ordered to proceed to San Francisco, in time to take the transport sailing for Manila, P. I., about Nov. 5, 1909, for duty in the Philippines Division.

Bastion, Joseph E., M. R. C., relieved from duty at Fort D. A. Russell, Wyo., and ordered to report on Oct. 1, 1909, to Col. Valery Havard, President, Army Medical School, for a course of instruction.

Whinnery, Jean C., dental surgeon, relieved from duty at Vancouver Barracks, Wash., and will proceed to San Francisco, in time to take the transport sailing for Manila, P. I., about Oct. 5, 1909, for duty in the Philippines Division.

Hogg, Cassius C., Med. Corps, Va. Nat. Guard, Chittick, Archibald G., Med. Corps, Ind. Nat. Guard, McMaster, John G., Med. Corps, S. C. Nat. Guard, Stanley, J. M., asst.-surgeon, Miss. Nat. Guard, ordered to report on Oct. 1, 1909, to Col. Valery Havard, President, Army Medical School, for a course of instruction in that School.

Shepard, John L., capt., relieved from duty at Fort Sam Houston, Tex., and ordered to Fort Logan, Colo., for duty.

Heath, George D., Jr., 1st lieut., relieved from duty at the Army General Hospital, San Francisco, and ordered to Fort Logan, Colo., for duty.

Schmitter, Ferdinand, 1st lieut., relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Logan, Colo., for duty.

Guittard, Alwin M., 1st lieut., M. R. C., relieved from duty at Fort Logan, Colo., and ordered to sail from San Francisco, Cal., on the transport sailing for Manila, P. I., about Nov. 5, 1909, for duty in Philippines Division.

Hull, Alva R., 1st lieut., M. R. C., relieved from duty at Fort Logan, Colo., at the expiration of his leave of absence and ordered to report to the Commanding General, Department of Texas, for duty in that department.

Archer, William M., Jr., 1st lieut., M. R. C., granted leave of absence for 2 months, about Sept. 8, 1909.

Lynch, Charles, major, Reynolds, Charles R., major, Baily, Howard H., capt., detailed as judges in the inter-company competition in the application of first aid to the injured, Oct. 2, 1909, at Wilkes-Barre, Pa.

Pillsbury, Henry C., 1st lieut., relieved from duty as surgeon of the transport *Logan,* and ordered to the United States, with permission to return by the eastern route.

Raymond, Thomas U., major, granted leave of absence for 25 days, about Sept. 1, 1909.

Ashburn, James K., Burket, John A., Demmer, Charles C., Fisk, Owen C., Foster, George B., Jr., Fox, James S., Haley, James C., Johnson, Thomas H., Jones, Glenn I., King, Charles T., McCornack, Condon C., Napier, Edward L., Austin, Thomas C., 1st lieuts., M. R. C., ordered to report on Oct. 1, 1909, to Col. Valery Havard, President, Army Medical School, for a course of instruction in that School.

Fuller, Leigh A., major, having arrived at San Francisco, will proceed to Fort Adams, R. I., for duty.

Nichols, Henry J., Hanson, Louis H., Hopwood, Lucius L., Freeman, Charles E., Schmitter, Ferdinand, McIntyre, Henry B., 1st lieuts., promoted from 1st lieutenant to captain in the Medical Corps, to rank from June 30, 1909.

Cooper, Alexander T., Gentry, Ernest R., Aydelotte, John T., Kremers, Edward D., De Voe, Ralph G., Klotz, Solomon P., Allen, William H., Cornwall. Delos E., Darby, Taylor E., Shugerman, Harry P., Carr, William B., Holmberg, Carl E., Edwards, George M., Weed. Mark D., Haverkampf, Charles W., Kramer, Floyd, Beery, Harry R., Davis, Arthur O., Sheep William L., Michie, Henry C., Jr.. Herlebower, Roy C., Ferenbaugh, Thomas L., Reynolds, Royal, Casper Joseph, Schlanser, Adam E., McAfee, Larry B., Gillespie, Julian M., Beeuwkes, Henry, Bowen, Albert S., Woodson, Thomas D., Hill, Felix R., Cooper, Wibb B., Davis, William C., Thearle, William H., Welles, Edward M., Jr., Etter, Harry B., McClelland, Everett S., Lamb, William P., appointed 1st lieutenants in the Medical Reserve Corps, with rank from Sept. 1, 1909.

Carpenter, Alden, dental surgeon, relieved from temporary duty at Fort Wadsworth, N. Y., and ordered to Madison Barracks, N. Y., for temporary duty.

Medical Corps of the Navy

Changes for the week ended Sept. 11, 1909:

Hoyt, R. E., P. A. surgeon, discharged from treatment at the Naval Hospital, Mare Island, Cal., and ordered to duty at that Hospital.

Smith, C. G., surgeon, ordered to duty at the Naval Hospital, Newport, R. I.

Hull, H. F., P. A. surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to the *Des Moines*.

Tolfree, H. M., P. A. surgeon, detached from the *Des Moines* and ordered home to wait orders.

Morris, L., surgeon, ordered to the *Georgia*.

Crandall, R. P., surgeon, detached from the *Georgia* and ordered home to wait orders.

Raison, T. W., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., and directed to wait orders.

Health Reports

The following have been reported to the Marine-Hospital Service, during the week ended Sept. 10, 1909:

SMALLPOX—UNITED STATES

Iowa: Cedar Rapids, Aug. 1-31, 1 case.
Louisiana: New Orleans, Aug. 21-28, 1 case.
Minnesota: Duluth, Aug. 20-27, 1 case.
Montana: Butte, Aug. 12-26, 6 cases.
Ohio: Dayton, Aug. 21-28, 7 cases; Toledo, July 31-Aug. 7, 1 case.
Oregon: (4 counties), May 1-31, 31 cases.
Utah: (11 counties), July 1-31, 110 cases, 1 death.

SMALLPOX—FOREIGN

Algeria: Bona, July 1-31, 19 cases, 10 deaths.
Brazil: Pernambuco, June 1-15, 11 deaths; Rio de Janeiro, July 25-Aug. 1, 3 cases, 1 death.
Ceylon: Colombo, May 8-15, 1 case.
Chile: Valparaiso, June 26-Aug.7, present.
China: Tientsin, June 26-July 3, 1 case, 2 deaths.
Egypt: Cairo, July 10-29, 1 case, 1 death.
India: Bombay, July 20-Aug. 3, 10 deaths; Madras, July 16-23, 1 death; Rangoon, July 17-24, 3 deaths.
Italy: Genoa, Aug. 1-15, 1 case; Naples, Aug. 8-15, 22 cases, 6 deaths.
Java: Batavia, July 18-24, 2 cases.
Mexico: Chihuahua, Aug. 15-22, 1 case; Guadalajara, Aug. 12-19, 1 case; Veracruz, Aug. 15-22, 2 cases, imported.
Persia: Shiraz, June 7, present.
Russia: Moscow, July 24-31, 14 deaths, Aug. 7-14, 8 cases, 2 deaths; Odessa, Aug. 1-7, 2 cases; Riga, Aug. 7-14, 8 cases; St. Petersburg, July 24-Aug. 6, 28 cases, 10 deaths; Warsaw, June 19-July 3, 3 deaths.
Spain: Barcelona, Aug. 9-21, 11 deaths; Valencia, July 31-Aug. 14, 7 cases; Vigo, Aug. 7-14, 2 deaths.
Tripoli: Tripoli, Aug. 1-7, 8 cases, 2 deaths.

YELLOW FEVER

Venezuela: Maiquetia, Aug. 14-21, 1 case, in suburbs.

CHOLERA—INSULAR

Philippine Islands: Manila, July 10-17, 1 case, 1 death; Provinces, July 3-10, 580 cases, 386 deaths.

CHOLERA—FOREIGN

China: Hankow, July 10-17, 1 case, 1 death.
India: Bombay, July 20-Aug. 3, 37 deaths; Calcutta, July 18-24, 17 deaths.
Indo-China: Saigon, July 10-17, 1 case, 1 death.
Russia, General, Aug. 13-20, 664 cases, 289 deaths; St. Petersburg, 201 cases, 71 deaths.

PLAGUE

Chile: Iquique, July 28, 7 cases, in lazaretto.
China: Hongkong, July 10-24, 10 cases, 7 deaths.
India: Bombay, July 20-Aug. 3, 53 deaths; Calcutta, July 17-24, 17 deaths.
Indo-China: Saigon, July 10-17, 16 cases, 14 deaths.
Peru: General, July 31-Aug. 7, 21 cases, 5 deaths; Callao, Aug. 4-7, 1 case, 1 death.
Russia: Ural District, Aug. 5-13, 19 cases, 19 deaths.
Venezuela: Caracas, Aug. 7-16, 4 cases, 2 deaths.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Sept. 8, 1909:

Eager, J. M., surgeon, granted 1 day's leave of absence, Sept. 7, 1909.

King, W. W., P. A. surgeon, granted 30 days' leave of absence from Sept. 8, 1909.

Currie, D. H., P. A. surgeon, granted 21 days' leave of absence en route to station.

Bahrenburg, L. P. H., P. A. surgeon, granted 13 days' leave of absence from Aug. 17, 1909, on account of sickness.

de Valin, Hugh, asst.-surgeon, granted 3 days' leave of absence en route to station.

Lyon, R. H., asst.-surgeon, granted 1 day's leave of absence in August, 1909, under paragraph 191, Service Regulations.

Deerhake, Wm. A., acting asst.-surgeon, granted 1 day's leave of absence in August, 1909, under paragraph 210, Service Regulations.

Houghton, M. W., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 4, 1909.

Kennedy, S. R. M., acting asst.-surgeon, granted 30 days' leave of absence from Sept. 1, 1909.

MacCaffry, W. B., acting asst.-surgeon, granted 2 days' leave of absence in August, 1909, under paragraph 210, Service Regulations.

Mason, Wm. C., acting asst.-surgeon, granted 6 days' leave of absence from Sept. 19, 1909.

Onuf, B., acting asst.-surgeon, granted 1 day's leave of absence, Aug. 14, 1909, under paragraph 210, Service Regulations.

Simonson, G. T., acting asst.-surgeon, granted 2 days' leave of absence from Sept. 7, 1909.

Tuttle, Jay, acting asst.-surgeon, granted 30 days' leave of absence from Sept. 14, 1909.

RESIGNATION

Surgeon Milton J. Rosenau, resignation accepted by the President, to take effect January 31, 1910.

Society Proceedings

COMING MEETINGS

Amer. Academy of Ophth. and Oto-Laryngology, New York, Oct. 4-6.
Amer. Assn. Obstet. and Gynecologists, Ft. Wayne, Ind., Sept. 21-23.
Amer. Association of Railway Surgeons, Chicago, October 20-22.
Delaware State Medical Association, Dover, October 8.
Indiana State Medical Association, Terre Haute, October 7-8.
Kentucky State Medical Association, Louisville, October 19-21.
Minnesota State Medical Association, Winona, October 13-14.
Mississippi Valley Medical Association, St. Louis, October 12-14.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
South Dakota State Medical Association, Aberdeen, October 6-8.
Utah State Medical Association, Ogden, September 21-22.
Vermont State Medical Assn., White River Junction, Oct. 14-15.
Virginia, Medical Society of, Roanoke, October 5-8.
West Virginia State Medical Association, Elkins, October 6-8.

SIXTEENTH INTERNATIONAL MEDICAL CONGRESS

Held at Budapest, Aug. 29-Sept. 4, 1909

The Sixteenth International Medical Congress held its formal opening meeting on Sunday, August 29, at 11 a. m., in the banqueting hall of the Municipal Festival Hall.

On August 30, the city officials gave a banquet and reception in honor of the delegates attending the congress.

Opening Ceremony and Addresses of Welcome

The congress was opened by Archduke Joseph, who delivered a brief address in French. The Hungarian minister of public education and public worship then made an address devoted chiefly to hygiene and preventive medicine.

M. Calman de Fulepp, prefect of Budapest, welcomed the congress to the city.

Presidential Address: Progress in Medicine

Dr. Kalman Müller, the president of the congress, was prevented by illness from attending, but his address was read by another officer. It dealt chiefly with the recent developments in medicine. Firm ground in pathologic anatomy having been reached, the developments of bacteriology and parasitology followed, to be reinforced in their turn by the immense masses of work being done in the investigation of the problems of immunity. Cytology has developed, he said, *pari passu*, and everywhere vague methods of inquiry have been replaced by investigation into the life of the cell, making us acquainted with its complicated biochemical and biomechanical relations—and so we have a new hematology. The latest discoveries in physics and theories as to radioactivity have been pressed into the service of medicine, not as auxiliary sciences, but as integral parts of a great whole, while at every step forward a new perspective opens and a view of fresh fields is offered. After enumerating proofs of the scientific progress which has been made on indisputable grounds by modern therapy, the address closed with the following peroration: "Medicine is a science of expediency; it originated the necessity to relieve human suffering and as pure rough empiricism. To-day we work on the strictest scientific methods which are at the disposal of the exact physical sciences, and we have successes to point to, to which undeniable statistics bear witness, showing with what weapons medicine can safeguard the life and health of the individual and how fortified she is to protect whole continents against the ravages of epidemics. With full right our breasts are filled with the noble consciousness that no science stands up so wholly in the service of Altruism as medicine."

Report of Secretary

M. Em. de Grósz, general secretary, made his report, which showed that the national committee which abroad assisted in preparing for the congress comprised in all 800 members. With their help the congress is thoroughly international. The latest figures are: America, United States, 202; Argentine Republic, 37; Austria, 235; Belgium, 47; Bosnia, Herzegovina, 9; Brazil, 25; Bulgaria, 18; Chili, 4; Cuba, 6; Denmark, 10; Egypt, 21; France, 281; Germany, 288; Great Britain and Ireland with colonies, 97; Greece. 19; Italy, 170; Japan, 48; Mexico, 3; Monaco, 2; Norway, 2; Netherland, 33; Portugal, 32; Roumania, 10; Russia, 228; Servia, 7; Spain, 67; Sweden, 5; Switzerland, 29; Turkey, 22; Uruguay, 3. Adding the 1,436 Hungarian members, our congress numbers 3,432 adherents, accompanied by 900 members of their families. Governments are represented by 274, universities by 149, municipal and other authorities by 149, medical and other societies by 327, diverse institutions by seven delegates to our scientific assembly.

Recalling the words of Pasteur that "the realm of science embraces the whole of humanity," Dr. Grósz congratulated the congress on its international character.

Addresses of Official Delegates

Addresses were made by the official delegates of the following nations; because of the poor acoustic properties of the hall the speakers were almost inaudible:

The various nations were listed according to the French alphabet; therefore Germany, i. e., Allemagne, began in the person of Professor Uhthoff. Austria, which came next, was represented by Ritter von Huberler. Dr. Victor Desguin spoke for Belgium; Dr. Ivanoff for Bulgaria; Prof. Alejandro del Rio for Chili; Professor Agramonte for Cuba; Professor Salamonsen for Denmark; Prof. A. de Simonena for Spain; Professor Laudouzy for France; Dr. F. W. Pavy for Great Britain; Professor Killionzis for Greece; Prof. G. Baccelli for Italy; Professor Kitasato for Japan; Dr. Guevedo y Zubieta for Mexico; Dr. Gaillard for Monaco; Prof. Louis H. Debayle for Nicaraugua; Prof. V. C. Achermann for The Netherlands; Dr. José Domywer de Olivier for Portugal; Professor de Ott for Russia; Prof. S. E. Henschen for Sweden; Dr. Feurer for Switzerland; Prof. Zoëros Pacha for Turkey, and Prof. A. C. Maggiolo for Uruguay. Prof. Lucas Championnère, the newly elected president of the International Association of the Medical Press, spoke on behalf of that body.

The General Sessions

At the general sessions addresses were delivered in plenary congress by Professor Baccelli, Rome; Dr. E. F. Bashford, London, Cancer; Prof. M. Rubner, Berlin; Professor Laveran, Paris, La Pathologie Exotique; Prof. J. Loeb, Berkeley, Cal., Artificial Parthogenesis and Its Bearing on the Physiology and Pathology of the Cell.

Dr. Bashford's address on cancer appeared in the *Medical Record*, New York, September 4, and an abstract appears in this issue of The Journal, p. 968.

The Islands of Langerhans of the Pancreas

Dr. E. Laguesse, Lille, France, described his investigations made on the body of an adult man who had been executed. He laid particular stress on the presence of a large amount of secretory material in the cells with the appearance of small, closely packed vacuoles and also of little granules, and maintained that these appearances gave the islands all the characters of a gland with an internal secretion, or "endocrine," and strictly comparable with the appearances of the parathyroids. He considered all the facts that seemed to substantiate his theory of balance (between the internal and external secretions of the pancreas), as against the theory of the perpetual independence and stability of function of the islands of Langerhans, submitting that: 1. In adults there is a demonstrable continuity between some of the islands and the acini, and more directly between the islands and the excretory ducts of the gland. 2. In certain places the mixture of the "exocrine" and "endocrine" gland elements is such as to suggest a transitory state. 3. There is to be found, on the one hand, a whole series of transition forms between the acinar and insular elements, and, on the other hand, an inverse series demonstrating the reconstruction of the acini from the islands. 4. An increase in the insular substance can be provoked experimentally at the expense of the "exocrine" parenchyma of the gland, and pathologic processes can effect the same result. 5. Recently the theory of balance in the pancreas (that is to say, the complete evolutionary cycle of the island with its return to the acinar form) has received experimental proof. In conclusion, there is an intimate connection between the two glandular elements of the pancreas, and a continual balance maintained between them by their mutual metamorphosis during the whole of life.

The Methods of Studying the Diet of the Various Classes of Society

Dr. P. Albertoni and Dr. P. Tullio, Bologna, Italy, presented a joint paper on this subject. In support of the plea of Dr. Atwater of the United States asking physiologists to adopt a uniform plan of research into the dietetic food values of the various social classes, they described the methods they themselves had employed and which they had been led to adopt in the course of a prolonged investigation into the food of the Italian peasant. They determine by direct methods the food values of a certain number of families typical of the class under investigation. During the observations the individual members of the families continue their ordinary occupations under the usual conditions. The dietetic factors are always considered in relation to the physical, moral and economic conditions of the subjects of investigation. To determine the physiologic value of any foodstuff the subjects are given their ordinary diet with the food in question added, and all the food used by them is submitted to a preliminary chemical analysis. It is important that the methods of analysis and of deduction employed by all physiologists investigating this problem should be the same.

The Preventive Treatment of Anaphylaxis

Dr. Besredka, Paris, submitted the following points: (1) Anaphylactic sequelæ can be modified but not entirely prevented by the heating of therapeutic serums to 56 C. for an hour on four days running; (2) ether, or better, alcohol narcosis (however the latter be induced, by the mouth or by hypodermic, peritoneal or rectal injection), confers a complete but transitory immunity; (3) the prophylactic injection of serum that has been heated to 80 C. confers a sure and lasting immunity which is established by slow degrees after a slight reaction; (4) the best way to prevent anaphylactic complications consists in the prophylactic rectal injection of serum, or, better still, the injection of a very small dose of the same serum under the skin, to induce the formation of an antianaphylactic substance.

The Physiologic and Therapeutic Importance of the Alkalies and the Alkaline Earths

Dr. A. Curci, Catania, Sicily, discussed the physiologic action of potassium, rubidium, cerium, thallium, sodium, lithium, calcium, strontium, barium, magnesium and beryllium. He contradicted the commonly held view that potassium is a cardiac depressant, maintaining that it stimulates the muscular elements of the heart and the vessels and strengthens its action. It has a similar action on the splanchnic muscles, as have rubidium, cerium, thallium, calcium, strontium and barium, which are all cardiovascular stimulants. Dr. Curci held that lithium was a nervous stimulant, but had no action on the muscular tissues. He stated that the alkaline earths all depressed the functions of the nervous system, but magnesium and beryllium had no action on the muscles. Dr. Curci advanced a theory of the action of these substances on the various systems in the animal and vegetable organisms. The second part of the paper was devoted to a consideration of the mineral salts in the tissues in health and disease. The interesting observation was made that tissues heated by an inflammatory process absorb salts and other substances more readily than when in the normal state, and this applies to substances such as sodium, which do not normally occur in the tissues. In the third section of his paper Dr. Curci considered the biologic rôle of the metals potassium, calcium and magnesium. While sodium and ammonium increase excitability in the nervous tissues, calcium and magnesium in combination with those tissues control the currents of nervous energy and offer a certain amount of resistance to the conductive power of the nerves. They are accordingly true tonics. He holds that magnesium increases the dynamic power of the nucleus, the vital center of the cell. Finally, he described the influence of the mineral salts on the nutrition and the secretions.

(*To be continued*)

Marriages

Irvin S. Koll, M.D., to Miss Melanie Alice Weil, both of Chicago, September 8.

Giuseppe Pasceri, M.D., to Miss Florence L. Smith, both of Philadelphia, September 1.

Aria Louis Derdiger, M.D., to Miss Ella Jane Spicker, both of Chicago, September 4.

Joseph B. Bywater, M.D., Mount Morris, Ill., to Miss Ethel Dunham, of Manchester, Iowa, recently.

Wilfred E. Blatherwick, M.D., Nashua, Iowa, to Miss Anna Evans, at Sheldon, Iowa, August 24.

Henry S. Newhart, M.D., Bangor, Pa., to Miss Helen Stockton Bennett of Trenton, N. J., August 28.

Francis A. Mantz, M.D., Philadelphia, Pa., to Miss Mabel Yule of Owen Sound, Ont., September 9.

Alexander Martin Heron, M.D., Lakewood, N. J., to Miss Caroline Madeline Bruening of Brooklyn, N. Y., recently.

Otto Worthington Ladwig, M.D., Lost Creek, W. Va., to Miss Calora Beatrice Hardway, at Lost Creek, September 1.

John Van Reed Lyman, M.D., Eau Claire, Wis., to Miss Mary Sylvester of Minneapolis, Minn., at Chicago, August 21.

George W. Newsome, M.D., Indianola, Iowa, to Miss Amanda Strickland of St. Louis, at Des Moines, Iowa, August 31.

Deaths

Stephen Holmes Weeks, M.D. University of Pennsylvania, Philadelphia, 1864; of Portland, Maine; a member of the American Medical Association; formerly president of the Maine Medical Association; a member of the American Surgical Association; emeritus professor of surgery, and formerly professor of anatomy in the Medical School of Maine, Brunswick; said to have been the first to make and use absorbable drainage tubes; one of the founders of the Maine Sanatorinm for Pulmonary Diseases, Hebron, and president of the Maine Association for the Study and Prevention of Tuberculosis; from 1874-1898 surgeon to the Maine General Hospital, Portland, and since that time consulting surgeon to the institution; died in the Maine General Hospital, September 1, four days after an operation for carcinoma of the intestines, aged 73.

John Campbell Sheridan, M.D. Rush Medical College, Chicago, 1879; a member of the American Medical Association and a charter member of the Cambria County (Pa.) Medical Society; director of the Radford Street Emergency Hospital at the time of the Johnstown flood; a member of the National Association of Railway Surgeons and Baltimore and Ohio Association of Railway Surgeons; one of the incorporators of the Conemaugh Valley Memorial Hospital, and a member of its board of managers; died at his home in Johnstown, September 2, from uremia, aged 55. The Cambria County Medical Society, at a special meeting, determined as a fitting mark of respect and honor, to attend the funeral service in a body and accompany the remains to the grave.

Henry Cadwalader Chapman, M.D. University of Pennsylvania, Philadelphia, 1867; Jefferson Medical College, Philadelphia, 1878; emeritus professor of institutes of medicine and medical jurisprudence in Jefferson Medical College; fellow of the College of Physicians of Philadelphia; a member of the American Physiological Society and the American Philosophical Society; chairman of the board of curators of the Academy of Natural Sciences, Philadelphia, since 1875, and prosector of the Zoological Society of Philadelphia; author of standard textbooks on physiology and medical jurisprudence; died suddenly at his summer home near Bar Harbor, Maine, September 8, from hemorrhage of the stomach, aged 64.

Washington Akin, M.D. Albany (N. Y.) Medical College, 1858; a member of the Medical Society of the State of New York; one of the oldest and most esteemed practitioners of Troy, N. Y.; assistant surgeon of the One Hundred and Twenty-fifth New York Volunteer Infantry during the Civil War; formerly city physician of Troy, jail physician and police surgeon for several years; a member of the local board of U. S. pension examining surgeons; attending physician to the Marshall Sanitarium and Sisters' Hospital, Troy; formerly president and secretary of the Rensselaer County Medical Society; died at his home in Troy, August 29, from angina pectoris, aged 74.

Albert B. Henderson, M.D. Detroit (Mich.) Medical College, 1899; a member of the American Medical Association; a veteran of the Spanish-American War; who was commissioned as first lieutenant and assistant surgeon, U. S. Army, in 1901, and was retired on account of disability not incident to the service, June 30, 1904; for several years a resident of Albuquerque, N. M.; died in St. Joseph's Hospital, Denver, August 28, from pulmonary hemorrhage, aged 32.

George Daniel Munger, M.D. St. Louis College of Physicians and Surgeons, 1897; a member of the American Medical Association and National Association of U. S. Pension Examining Surgeons; a veteran of the Civil War; secretary of the local pension board; physician of the Oklahoma County Board of Health; and for more than twenty years a practitioner of Oklahoma City; died in Eureka Springs, Ark., September 4, from kidney disease, aged 78.

James Grier Stanton, M.D. Jefferson Medical College, Philadelphia, 1881; a member of the Delaware State Medical Society; and one of the most prominent physicians of the state; coroner of Camden county, N. J., in 1888; died at his home in Milford, Del., September 4, from the effects of gelsemium taken by mistake for gentian, aged 49.

Charles Winegar Crispell, M.D. University of Vermont, Burlington, 1883; of Kingston, N. Y.; a member of the American Medical Association; for many years assistant surgeon of the Tenth Infantry, N. G. N. Y.; bacteriologic expert for the State Board of Health; died suddenly at his summer home in Shelter Island Heights, Long Island, August 30, aged 49.

Jacob Moyer Hagey, M.D. Rush Medical College, Chicago, 1862; for many years a member of the American Medical Association; once president of the Livingston County (Ill.) Medical Society; a member of the American Public Health Association; died at his home in Mount Morris, N. Y., August 3, from cerebral hemorrhage, aged 76.

James Bordley, M.D. University of Maryland, Baltimore, 1868; president of the Maryland State Board of Medical Examiners from 1893-1896; health officer of Queen Anne County; president of the county medical society and of the Centreville National Bank; died at his home in Centreville, August 30, from arteriosclerosis, aged 63.

Markwell Seward Purdy, M.D. Chicago Homeopathic Medical College, 1884; in 1893 and 1902 health officer of Corning, N. Y.; formerly attending physician to Corning Hospital and for many years proprietor of the Highland Pines Sanitarium; died at his home in Ithaca, N. Y., July 25, from paralysis, aged 50.

James H. McCall, M.D. University of Nashville, Tenn., 1860; a leading citizen of Quitman, Ga., and for many years president of the Merchants and Farmers' Bank of that place; surgeon in the Confederate service throughout the Civil War; died at his home in West Quitman, February 15, aged 70.

Robert Jemison Hargrove, M.D. University of Alabama, Mobile, 1901; of Tuscaloosa, Ala.; a member of the Medical Association of the State of Alabama; died on his plantation near Northport, August 31, from the effects of morphin believed to have been self-administered with suicidal intent, aged 35.

Thrond S. Egge, M.D. University of Minnesota, Minneapolis, 1893; a member of the American Medical Association and a prominent practitioner of Moorhead, Minn.; was beaten to death in that city while returning from a professional call, September 6, aged 50.

Rudolph Gmelin, M.D. University of Tübingen, Germany, 1854; a volunteer surgeon during the Franco-Prussian War, and later a practitioner of Chicago, Milwaukee, and Elkader, Iowa: died at his home in the latter city, August 3, from heart disease, aged 78.

Thomas E. James, M.D. Medical College of Virginia, Richmond, 1853; a Confederate veteran; for many years a practitioner of St. Petersburg, Fla.; died at the home of his son in Tampa Heights, Fla., August 28, from cerebral hemorrhage, aged 79.

George S. Harkness, M.D. College of Physicians and Surgeons, Chicago, 1884; for several years superintendent of the San Joaquin County Hospital, Stockton, Cal.; died at his home in Stockton, September 2, from heart disease, aged 52.

James P. Davis, M.D. Missouri Medical College, St. Louis, 1875; formerly a member of the American Medical Association; a member of the Minnesota State Medical Association; died at his home in Hammond, Minn., August 29, aged 67.

William T. Griffith (license, Ill., years of practice, 1887); for forty-six years a practitioner of Washington, Ill., and formerly coroner of Tazewell county; died at his home in Washington, September 2, from heart disease, aged 76.

Nicholas Thomas Glenn, M.D. Jefferson Medical College, Philadelphia, 1907; a member of the staff of the Philadelphia Polyclinic Hospital; died suddenly at his home in Philadelphia, September 1, from nervous breakdown, aged 27.

Albert Beach Whitney, M.D. Penn Medical University, Philadelphia, 1863; a member of the state and national eclectic medical societies and the New York Medicolegal Society; died at his home in New York City, August 30, aged 72.

Arthur A. Parker, M.D. Medical College of Ohio, Cincinnati, 1867; a veteran of the Civil War; for twenty years a practitioner of Omaha, Neb.; died at his home in Hollywood, Cal., September 1, from paralysis, aged 68.

Thomas Van Valzah Parker, M.D. Cooper Medical College, San Francisco, 1897; for twelve years surgeon of the Home for Disabled Volunteer Soldiers, Soldiers' Home, Cal.; died in that institution, August 31, aged 37.

Charles Martin Luther Wolf, M.D. Eclectic Medical Institute, Cincinnati, 1905; a member of the State Medical Association of Texas; died in his apartments in Galveston, August 30, from septicemia, aged 28.

James R. MacGuire, M.D. Chicago College of Medicine and Surgery, 1887; of West Rutland, Vt.; died in the Proctor Hospital, Rutland, August 24, after an operation for carcinoma of the stomach, aged 53.

James Howard Woodard, M.D. Eclectic Medical Institute, Cincinnati, 1886; for several terms physician of Jasper county, Mo.; died at his home in Webb City, August 16, from heat exhaustion, aged 57.

Cleveland B. Floyd, M.D. Atlanta (Ga.) Medical College, 1895; of Fairburn, Ga.; died in the Presbyterian Hospital, Atlanta, September 3, from septicemia, due to an operation wound.

Carl Ernest Kurtz, M.D. University of Pennsylvania, 1869; a member of the American Medical Association; died at his home in Chicago, September 6, from heart disease, aged 68.

S. N. Earp (registration, Okla., 1908); of Foss, Okla.; died in Oklahoma City, March 8, from the effects of carbolic acid believed to have been self-administered with suicidal intent, aged 39.

John Thomas Williamson (license, Calhoun county, Ala., 1881); an honorary member of the Medical Association of the State of Alabama; died at his home in Peek's Hill, August 31, aged 70.

John Hanly, M.D. Victoria College, Coburg, Ont., 1869; a member of the Ontario Medical Association; died at his home in Midland, Ont., August 16, 1908, from heart disease, aged 71.

James Surber Jones, M.D. University of Tennessee, Nashville, 1893; was instantly killed by a lightning stroke on his farm in Obion county, Tenn., near Rives, June 30, aged 38.

William Francis Caffrey, M.D. University of Vermont, Burlington, 1897; a member of the American Medical Association; died at his home in Westfield, Mass., September 22, aged 35.

George Christian Haller, M.D. Hahnemann Medical College, Philadelphia, 1897; of Germantown, Philadelphia; died in the Hahnemann Hospital, Philadelphia, September 5, after an operation for appendicitis, aged 37.

Joseph A. Creighton, M.D. Medical College of Ohio, Cincinnati, 1897; of Manitou, Colo.; died at the home of his brother in that city, September 2, from tuberculosis, aged 35.

Emanuel Harrison, M.D. Howard University, Washington, D. C., 1888; a colored practitioner of Wichita, Kan.; died at his home, August 26, from typhoid fever, aged 43.

George Manton Angell, M.D. Harvard Medical School, Boston, 1847; died recently at his home in Atlanta, Ill., from senile debility and was buried September 1, aged 89.

Franklin Allen Gauntt, M.D. Jefferson Medical College, Philadelphia, 1886; of Burlington, N. J.; died at the home of his brother in that city, September 3, aged 51.

Jacob Henry Smith, M.D. Jefferson Medical College, Philadelphia, 1880; died at his home in Mount Holly Springs, Pa., May 22, from meningitis, aged 54.

Anton Samuel Dahlstrom, M.D. John A. Creighton Medical College, Omaha, 1900; of Omaha; died at the Omaha General Hospital, August 27, aged 42.

Edwin R. Thomas, M.D. Louisville (Ky.) Medical College, 1893; of Perkins, Okla.; died at his old home in Thomasville, Miss., August 19, aged 49.

Henry Morrin, M.D. Toledo (Ohio) Medical College, 1890; a veteran of the Civil War; died at his home in Toledo, September 2, aged 64.

Arthur Burleigh Smith, M.D. Dartmouth Medical School, Hanover, N. H., 1875; died at his home in Chelsea, Vt., May 17, aged 57.

Homer M. Hamilton, M.D. Medical College of Ohio, Cincinnati, 1889; died at his home in Columbus, Ohio, September 2, aged 39.

John Huber Swanson, M.D. University of Michigan, 1886; died at his home in Weston, Iowa, August 30, aged 50.

Howard Lattin Wood, M.D. Albany (N. Y.) Medical College, 1899; died at his home in Gorton, Conn., in May, aged 40.

Henry Radcliffe Crocker, M.D. London, 1875; F.R.C.P., London, 1887; M.R.C.S., England, 1873; formerly vice-president and honorary treasurer of the British Medical Association; a member of many foreign dermatological societies; pupil of, and successor to Tilbury Fox as physician to the Skin Department of University College Hospital, London; author of a text-book on "Diseases of the Skin," which is one of the most complete and accurate works on dermatology in the English language, and of an "Atlas of Skin Diseases," also a standard work, in which all principal diseases of the skin are portrayed by beautifully executed illustrations; died suddenly in Engelberg, Switzerland, August 22, aged 64.

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Year—First Month, Third Weekly Meeting

Surgery of Pleura

Empyema: Etiology, primary or secondary. Pathological changes in pleural membranes, character of exudate. Prognosis, effect of age, different micro-organisms. Treatment, indications for aspiration, incision, resection of rib, Bryant's aspiration drainage. Delayed operation, indications for Fowler's operation, "exploratory resection" of Beck, Estlander or Schede operation.

Hemothorax and Hydrothorax: Indications for surgical treatment in each.

Pneumothorax: Diagnosis and surgical treatment.

Surgery of Lungs

Abscess of Lungs: Diagnosis, value of x-ray. Treatment. Technic of incision and drainage.

Gangrene of the Lung: Symptoms and diagnosis. Indications for surgical treatment.

Pulmonary Tuberculosis: Present status of the surgical treatment.

Bronchiectasis: Indications for surgical treatment.

Medicolegal

Death From Angina Pectoris After Injury—Expert Testimony and Framing Questions From Medical Works

The Supreme Court of Missouri, Division No. 1, says, in the case of MacDonald vs. Metropolitan Street Railway Co., that the tendency of the expert testimony on behalf of the plaintiff was to show that the party for whose death it was sought to recover damages suffered from angina pectoris. The plaintiff put in proof from competent physicians tending to show that angina pectoris, or the diseased condition of the heart and its appurtenant arteries and valves to which the pain so named attaches, in at least some of its phases, could naturally be caused by shock and injury and that it might be reasonably expected to gradually develop from small beginnings until it finally progressed far enough to carry its victim off. It was argued, however, that there was no evidence that the death was directly or proximately caused by the injuries sustained in the accident to which it was attributed, the argument being built up, for example, on the views that the deceased went about his labors after his injury, that physicians were unable for several months to determine the existence of heart trouble, that angina pectoris can arise from so many and different independent causes (even from undiscoverable ones) that to predicate it of his injury was mere conjecture, furnishing no legal basis for the judgment. But counsel argued ill, the court thinks, in that behalf.

Evidently the fact that the man returned, in a crippled way, to his avocation could not be conclusive. It was a circumstance, but one for the jury. The heroism of facing one's fate in civil life, like a soldier does his in war, and performing one's duty as best he can until the end comes, is not inseparable from a prior injury eventually ending one's life. Labor, under such conditions, is referable to grit and courage, or the lack of these, to temperament, duty. If he had done no work at all after his injury, that fact alone would not have made a case for the plaintiff, nor did his doing it destroy her case.

Nor does the court have to go to physicians to find that medical science has not developed to the point where a physician, however wise, can tell to a certainty whether a disease exists in the heart for one, two, three, or four months after an injury, or that such insidious diseases not uncommonly quite baffle diagnosis. It must be borne in mind, too, that physicians' theories under oath on the witness stand are merely advisory in character. Juries can take or leave that advice on the condition only that it seems reasonable or not to them; and, because physicians disagree, it is not valid reasoning to say that juries should also disagree, or should take the advice of one set as against that of another, or should throw to the winds their common sense, and, with minds littered up with conflicting medical advice, be unable to come to any agreement whatever, even as sailors, tossed to and fro by contrary winds, reach no harbor.

In this case there was substantial testimony that the party in question came to old age hale and hearty. On a certain day in October he was thrown by a derailment against the framework of a stove in a car and struck a tremendous blow. The mere visible sign of his injury at the time was not great, but it would be dealing only with the surface of things to stop with that visible sign. The controlling fact in the case (deducible from its history) was that, traceable to that injury, he was never again a well man, and that, traceable to that same injury, after a rally at the start, he went steadily down hill to his grave. A blow such as he received was shown to be a probable cause of angina pectoris. As the court sees it, there was no link out in the chain of the evidence on which the jury could rationally base their conclusion that the injury caused his death. Independent causes were suggested and conflicting theories were developed before the jury. It was for them to say which theory was the most reasonable.

In framing questions on the cross-examination of experts, counsel held in hand medical books and formulated questions from their language. The books were not read to the jury, but the jury could see that the examined read from them. This method of cross-examination was objected to, but counsel was permitted to adopt the scientific terminology of the author and put propositions to the witnesses obviously asserted by him, the jury being repeatedly cautioned that what was read from the book was not evidence and the jury should pay no attention to it; that the only thing they could consider was the evidence that fell from the lips of the witness along the line of verifying the propositions put by the examiner. It is held that there was no error in this.

It has been said in a Missouri case that it is within the discretion of the court to permit medical books to be read to the jury, but undoubtedly the better and generally accepted doctrine is that the contents of such books are not admissible as independent evidence. The grounds of exclusion have been put on, first, such evidence is not delivered under oath; second, there is no chance of cross-examining the author; third, medicine is not an exact science; physicians disagree; medical theories are subject to frequent modification and change.

But while not independent evidence—and the question is a vexed one—yet there is a legitimate use of such books, at least, on cross-examination, where the testimony has taken wide range and where skilled witnesses, testifying as experts, base their testimony on their knowledge derived from books as well as experience, as in this case. Here the defendant's counsel had notified some of his witnesses that he was appealing to, and asking his physicians to draw from, their medical knowledge running back, say 2,000 years, and which could only be preserved, if at all, in book form from the days when Socrates ordered a cock sacrificed to Esculapius, the god of medicine, and Hippocrates and Galen practiced physic in Greece and Italy. Under such circumstances the court sees no reason why counsel could not frame a proposition in medical science in the exact language of the author, and ask the witness whether he agreed to it, so long as this was done under the due guard of the cautionary instructions given by the court.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

September 4

1 *Cancer in Man and Animals. E. F. Bashford, London.
2 Yellow Fever Prophylaxis in Cuba. A. Agramonte, Havana, Cuba.
3 Intestinal Dyspepsia. M. Einhorn, New York.
4 Forensic and Clinical Aspects of Transitory Frenzy. H. C. B. Alexander, Chicago.

1. **Cancer in Man and Animals.**—Bashford, in this article read at the International Medical Congress, gives an account of the work of the Imperial Cancer Research Fund, of which he is director. The liability of all races of mankind and of all vertebrates to cancer has been established, and the experimental reproduction of carcinoma and sarcoma has become a routine laboratory procedure. This has put the investigation of cancer on a sound biologic and experimental basis, and rapid progress has been made in defining the nature of the disease. It is found that cancer is as frequent in India as in England. The Hindoos are vegetarians but the disease occurs irrespective of vegetarian diet. It also occurs in savage as well as in civilized races; yet there is no indication of any epidemic character of the disease among savage races. The commission has shown that cancer may be reproduced experimentally by inoculation. All the clinical and pathologic features of cancer were produced in animals by cell proliferation from a few cells introduced. It is now agreed that infection plays no part in the experimental transference of cancer; that it is a true transplantation of living cells. In animals, as well as man, cancer is associated with certain periods of life, being frequent as age advances. In studying the increase of cancer, Bashford states that it is found that savage nations are not suited for this investigation because of the absence of reliable vital statistics. The increase in the number of deaths from cancer in any country is not actual, but is parallel with increased accuracy in vital statistics. Statistics from hospital and from cancer censuses are fallacious, Bashford asserts, owing to inaccurate diagnosis

and other causes. There is an increase in the number of recorded cases, but this is probably not a real increase, but only an increase of records. The relative incidence of cancer on different parts of the body shows a large number invading the stomach; among females the generative and mammary organs are involved in two-fifths of fatal cases, and another two-fifths involve stomach, liver, intestines and rectum. In man they are more frequent in throat, mouth, stomach and rectum. This may be due to chronic irritation of these sites from difference in habits. The sites of predilection show the existence of endogenous factors aside from irritation, that is, innate peculiarities of the organs involved. The incidence of cancer at certain sites in different races is due to habit, and determined by external irritation. Any part of the normal covering of the body may acquire cancerous properties. This has an indirect significance only. The question of heredity is not yet settled, and many facts are opposed to the congenital origin of cancers. The cancer cells are not of embryonic nature, but highly specialized. Cancer has no analogy with any form of infective disease. In the laboratory where thousands of mice have cancer neither they nor the laboratory workers, says Bashford, have ever been known to take it. In animals there is no evidence of production by cancer of toxic products. Death is not due to these, but to the growth of the tumor and its nutrition. Cystic changes in the growth of the cancer are shown. Exacerbations of growth occur, alternating with periods of slow growth. Some parts grow slowly, others rapidly. The nature of immunity in cancer is not yet fully known.

Boston Medical and Surgical Journal

September 2

5 Surgery of the Stomach. J. B. Deaver, Philadelphia.
6 Importance of Distinguishing Simple Round Ulcers of the Duodenum from those Ulcers which Involve the Pylorus or are Above It. E. A. Codman, Boston.
7 *Presence of Tubercle Bacilli in the Blood in Tuberculosis. M. A. Dalley, Boston.
8 Desirability of Further Extension of Undergraduate Nursing Service. F. W. Patch, Farmington, Mass.
9 *Results of Mayo's Modification of Gilliam's Operation for Shortening the Round Ligaments. H. W. Baker, Rochester, Minn.
10 Studies in Psychotherapy (continued). B. Sidis, Boston.

7. **Tubercle Bacilli in the Blood.**—Bailey endeavored to confirm Rosenberger's findings. Blood from 17 patients with tuberculosis (2 with miliary and 15 with advanced tuberculosis) inoculated into guinea-pigs failed in every instance to produce the slightest evidence of the disease. Stained smears of the blood from the 17 individuals showed occasionally bodies resembling tubercle bacilli. Bailey therefore concludes (1) that the only reliable test for demonstrating tubercle bacilli is animal inoculation and the production of the characteristic tuberculous lesions with the bacilli in them; (2) that virulent tubercle bacilli are not ordinarily demonstrable in the circulating blood of tuberculous patients. Staining tests (on which Rosenberger based his arguments and conclusions) are not reliable. The results he obtains may be explained in at least three ways: (a) as attenuated tubercle bacilli; (b) as artefacts; or (c) as acid-fast bacilli of some sort introduced as a contamination in some one of the steps employed in staining, or deposited on the slide by the fingers in the process of cleaning or manipulation.

9. **Mayo's Modification of Gilliam's Operation.**—This operation is described by Baker as follows: After making a median incision, the uterus is brought up into view and the round ligaments grasped at the elective point, generally about one and one-half inch on either side of the uterus, then a pair of curved (Kelly) clamps are passed with the curved surface next to the fascia above the rectus muscle to the internal ring; here the clamps are turned, the point now being down, passed through the ring and out along the round ligament, underneath the peritoneum, to the place of election marked. Here the peritoneum is broken through and the round ligament grasped, the snap removed and the clamp pulled back, inverting the ligament on itself to the abdominal incision. After this has been repeated on the other side, the two ligaments are sutured together and the incision closed, having replaced the uterus in its normal position, being held there by its normal supports.

New York Medical Journal

September 4

11 *Value of the Test Meal in Gastric Diagnosis. C. Graham and D. Guthrie, Rochester, Minn.
12 Tuberculosis and Congestion. S. A. Knopf, New York.
13 *True versus Pseudo-Opotherapy. C. E. de M. Sajous, Philadelphia.
14 Contagious Theory of Tuberculosis. J. B. White, New York.
15 The So-Called Thymus Death. J. P. C. Griffith, Philadelphia.
16 *Prolapse of Uterus, Vagina, and Rectum. J. M. Lynch, New York.
17 Primary Tuberculosis of the Mammary Gland. W. Fuller, Chicago.
18 *Astasia-Abasia. H. Stern, New York.
19 Necessity for Routine Examination of the Rectum in Intestinal Diseases. D. H. Murray, Syracuse, N. Y.
20 Esophagoscopy in the Removal of Foreign Bodies. R. H. Johnson, Baltimore.
21 *Simple Method for Treatment of Suppurating Bubo. J. A. Murtagh, Fort McKinley, Rizal, P. I.

11. **Test Meal in Diagnosis.**—Graham and Guthrie regard the test meal as having a place in gastric diagnosis, but caution against its too liberal interpretation independent of the clinical history. They have analyzed carefully the gastric findings in 250 cases of ulcer of the stomach and duodenum and 150 cases of carcinoma, which have all come to operation and the correctness of the diagnosis established. Attention is directed to the fact that three-fourths of the patients with ulcer who come to the operating table do not show the high acids as commonly thought to be the case. Age and chronicity tend to reduce the acidity. Young subjects with developing ulcers have high acid tests. Decided food remnants in the test meal are regarded as a surgical indication. The authors insist that a large number of cases of gastric cancer must be diagnosticated independently of the test meal findings; yet, on the other hand, there are a few cases in which the subjective symptoms are indefinite, and where the test meal throws the first light on the real pathologic condition present. The latest statistics from the authors' laboratory show that 71 per cent. of the cancers of the stomach developed on an old ulcer, so that they now frequently send a patient to the operating table with a diagnosis of cancer on old ulcer, based solely on the history of chronic ulcer with recent exacerbation, loss of weight, weakness, etc. One should not wait for a palpable tumor, cachexia, and the typical text-book test meal.

13. Abstracted in The Journal, June 5, 1909, p. 1866.

16. **Prolapse of Uterus.**—The points of special interest in connection with Lynch's case were the existence of a complete prolapse of the uterus and vagina, with multiple adenoma and multiple diverticula in one patient, a rather rare anatomic and surgical curiosity, and an uneventful recovery after many operations in the case of a woman, 71 years of age, with a subsequent gain in weight.

18. **Astasia-Abasia.**—Stern considers his case one of astasia-abasia of the third, the lightest degree. When it resembled somewhat certain early types of locomotor ataxia, however, the characteristic features of tabes, including the syphilitic history, were missing, and there were no fulgurant pains, and no Argyll-Robertson pupil; the deep reflexes were present, there were no defects of speech and there was absence of Romberg's sign. And again, all muscular incoordination vanished as soon as the patient was on his back.

21. **Treatment of Suppurative Bubo.**—Murtagh reports a method of treatment devised by Capt. William L. Keller, Medical Corps, U. S. A., which materially hastens the period of healing in this condition and insures rapid recovery without a noticeable scar or other cosmetic defect. The practice of Captain Keller has been for the past seven years to destroy the source of infection in the chancroidal ulcer with the actual cautery, thus converting a specific infectious ulcer into a simple granulating surface. This he does by a thorough application of the Paquelin cautery to the several chancroidal ulcers. His next step is to incise the healthy skin in an area 1 to 1½ inches below the bubo, passing the knife through the healthy tissue, and reaching the bubo, which is incised subcutaneously. If pus is present it is evacuated by pressure, and by means of a curette every portion of the diseased gland is removed through the same incision. This curettage should

include all portions of the gland and adjacent glands in close proximity to the infected gland. The thorough irrigation of this subcutaneous glandular cavity with a 1 in 2,000 bichlorid solution completes the operation as far as the removal of the diseased glandular tissue is concerned. More or less hemorrhagic oozing may be present after this, but it is almost completely checked by the injection into the cavity of a small quantity of hydrogen peroxid, which is not allowed to remain and distend the cavity, but is promptly removed by thorough irrigation with sterile water.

After repeated expression by pressure of bloody liquid that may appear at the lips of the wound, the operation is completed by the filling of the cavity by injection of a 10 per cent. iodoform emulsion in petrolatum. A firm compress with a generous dressing is then applied and retained by a spica bandage; the patient is returned to bed where he remains for at least three days, when he may be allowed to move about. The dressing is renewed in about the same interval, and as often as may be required later on account of the slight discharge which may appear for several days after the operation. At subsequent dressings it may be required that the cavity be refilled by the iodoform petrolatum emulsion.

The average length of time required by this treatment for restoration to duty has been about twelve and one-half days. These figures are based on a series of 150 patients treated by Captain Keller during his service at Fort William McKinley, Rizal, P. I., and over 50 patients treated by Murtagh in a period of four months succeeding Captain Keller's departure from this station.

Lancet-Clinic, Cincinnati

August 28

22 Surgery of Harelip and Cleft Palate. B. M. Ricketts, Cincinnati.
23 Intestinal Obstruction. H. H. Hines, Cincinnati.

Northwestern Lancet, Minneapolis

August 1

24 Abdominal Emergencies. H. B. Sweetser, Minneapolis.
25 Physician's Investments: Farm Mortgages. A. E. Dickey, Minneapolis.
26 Medical Edinburgh. S. P. Rees, Minneapolis.
27 An Apparently New Disease. W. E. Clark, Frederick, S. D.
28 The Kelly Pad as an Adjuvant in the Treatment of Gastrointestinal Disorders. J. T. Leland, Herman, Minn.

August 15

29 *Plea for the Systematic and Universal Examination of School Children's Eyes, Ears, Noses and Throats. F. Allport, Chicago.
30 Physicians' Investments: Bonds and Mortgages. M. W. Matteson, St. Paul.
31 Indications for Removal of the Middle Turbinate. J. G. Parsons, Sioux Falls, S. D.
32 *Advance in Anesthetic Technic, as Practiced at the Sisters Hospital, Hot Springs. W. J. McRoberts, Hot Springs, S. D.
33 Frostbite and its Treatment. A. Kuhlmann, Melrose, Minn.
34 Undescended Testicle Complicated with Appendicitis. C. J. Holman, Mankato, Minn.

29. Published in *Hygiene and Physical Education*, May, 1909.

32. **Advance in Anesthetic Technic.**—In the operating-room of the Sisters' Hospital at Hot Springs, S. D., there has been developed a method and technic which, according to McRoberts, is radically different from that in use elsewhere. The mask is of the Allis type and dimensions, improvised from sulphite fiber covered with zinc oxid plaster, and has the Allis face-piece of rubber, a floor of wire on which are placed some layers of gauze. At its narrow end is inserted an electric-light socket, with an extension cord to the electric-light current. Within the mask is placed a 16 candle-power incandescent globe covered with several layers of gauze. The top of the mask is covered with dentists' rubber-dam tissue, in which is cut an opening about the size of a silver quarter.

The anesthesia is begun with chloroform. The current is turned on with the mask about three inches from the patient's face. The drop method is used and continued until the patient acknowledges sleepiness, which is usually in from three to five minutes; then ether is substituted for the chloroform. The ether can is not opened in the usual manner; it is merely punctured with the point of a needle and from this comparatively infinitesimal aperture the ether is forced out by the heat of the hand, and sprayed on the gauze over the light, whose heat so rapidly volatilizes the ether that in from three to seven minutes more operative anesthesia is secured without any struggling sense of suffocation, or hypersecretion of saliva or bronchial mucus. The advantages of this method of anesthesia are said to be (1) lessened amount of anesthetic; (2) absence of the danger of ether pneumonia, due to the chilling of the lung tissue; (3) absence of kidney complications because of the very small quantity of anesthetic to be eliminated through this channel; (4) almost total absence of postoperative nausea and vomiting; (5) total absence of a hypersecretion of saliva and bronchial mucus; (6) freedom from excitement.

Buffalo Medical Journal

August

35 The Poise of Scholarship. H. R. Hopkins, New York.
36 Two Cases of Brain Tumor. H. P. Frost, Buffalo.
37 Chronic Cholecystitis. H. M. Spofford, Batavia, N. Y.

Surgery, Gynecology and Obstetrics, Chicago

August

38 *Surgical Treatment of a Most Frequent Cause of Dysmenorrhea and Sterility in Women. S. Pozzi, Paris, France.
39 *Habitual Dislocation of Patella. F. E. Bunts, Cleveland, Ohio.
40 *Case of Kraurosis. J. Frank, Chicago.
41 Primary Ovarian Pregnancy; Report of Case Combined with Extrauterine Pregnancy. C. C. Norris, Philadelphia.
42 Obstruction of the Intestines. T. C. Witherspoon, Butte, Mont.
43 Principles of Intestinal Suturing. F. G. Connell, Oshkosh, Wis.
44 *Colics of the Appendix. W. Van Hook, Chicago.
45 *Treatment of Tetanus. W. Hessert, Chicago.
46 Diaphragmatic Hernia. E. H. Beckman, Rochester, Minn.
47 *Submucous Lipoma of Gastrointestinal Tract. D. Stetten, New York.
48 *Modern Operative Treatment of Fractures of Patella. A. P. Heineck, Chicago.
49 *Two Umbilical Tumors of Probable Uterine Origin. S. W. Goddard, Brockton, Mass.
50 *Plastic Tuberculous Peritonitis. C. H. Parkes, Chicago.
51 Practical Points in Application of the Bismuth Paste in Chronic Suppurative Diseases. E. G. Beck, Chicago.
52 Diffuse Suppurative Appendicitis versus General Peritonitis. C. E. Humiston, Chicago.

38. Abstracted in The Journal, May 15, 1909, p. 1615.

39. **Habitual Dislocation of Patella.**—Bunts' case was an extremely aggravated one, and rendered the patient practically helpless without crutches and only able to follow such occupations as might be performed in the sitting posture. The operation performed consisted of: (1) A linear incision of 6 inches on the inner side of the knee, through the skin and subcutaneous tissue down to the capsule of the joint; (2) a curved incision through the capsule; (3) overlapping of the cut edges of the capsule by pulling the inferior margin under the superior margin by mattress sutures while the patella was shoved forcibly inward; (4) suturing of the free edges of the capsule to the lower portion of capsule; (5) closure of wound without drainage; (6) sterile dressings and plaster bandage, which were allowed to remain on for four weeks. Both knees were operated on at the same time and repair without infection followed in both. In general, the method was the same as that in the Mayo operation for umbilical hernia. The final results have been only partly satisfactory. The patient is able to walk without crutches. The left knee has remained cured up to this time, but she has had several attacks of pain in her right knee.

40. **Kraurosis.**—In Frank's case complete excision of the diseased skin was productive of complete relief from all symptoms.

44. **Colics of the Appendix.**—The causes of colics of the appendix are always due to some form of obstruction. When a diagnosis of colic of the appendix has been made it is wise to remove the obstruction inasmuch as recurring attacks are likely, sooner or later, to be associated with infection, when, of course, true appendicitis is to be diagnosticated. Indeed, many cases of appendicitis can, by a little inquiry, be found to have been long preceded by recurring attacks of slight colic. In these cases of colic, it is never safe to diagnosticate the presence of a stone or of adhesions. It is wise to recognize that a slight obstruction is always present; furthermore, that this obstruction in many instances will not be found by inspecting the appendix. But the most important thing is that the removal of the appendix does away with the disease and leaves the patient again in health.

45. **Treatment of Tetanus.**—Hessert reports 15 cases: acute cases, 10; mortality, 90 per cent.; chronic cases, 5; mortality, 20 per cent.; total cases, 15; mortality, 55 per cent. The series includes cases in which the patients were treated med-

ically, with antitoxin subcutaneously, with antitoxin intraneurally, and with spinal injections of magnesium sulphate. He concludes that prophylactic injections of antitetanic serum in cases of suspicious wounds are unquestionably of great value in preventing the development of tetanus. After the onset of the disease the local treatment of the wound, aside from the usual antiseptic measures, should include the use of balsam of Peru, a remedy which has been shown to possess some antagonistic action on the tetanus toxin. None of the many special methods of injecting the antitoxin has proved of value, and some of them are too dangerous for general use. Subcutaneous injections of serum in massive doses will yield equally good, if not better results. Spinal injections of magnesium sulphate solution, by eliminating the spasms, will tide many a patient on to recovery who would die under any form of serotherapy alone. This form of treatment, Hessert thinks, is destined to lower the death rate from tetanus more appreciably than anything which has been advanced heretofore, including the discovery of the specific serum. Great care should be exercised in deciding the dosage.

47. **Submucous Lipoma of Gastrointestinal Tract.**—Stetten reports two personal cases in which a successful operation was done, and reviews 75 additional cases recorded in the literature. One of his cases was a large, lobulated, polypoid, submucous lipoma of the ileum producing chronic ileocecal intussusception and intermittently protruding at the anus. Laparotomy, Maunsell resection and anastomosis, was followed by recovery. The second case was one of sessile, submucous lipoma of the transverse colon. Resection and end-to-end anastomosis were followed by recovery.

48. **Fractures of Patella.**—Heineck's paper is a most exhaustive exposition of the entire subject of fracture of the patella, presenting in the main an analytic review of over 1,100 recorded cases treated during the last ten years by the open operative method. He also considers congenital dislocation of the patella, traumatic rupture of the quadriceps extensor tendon, and of the ligamentum patellæ. The length and nature of the article prohibit abstracting.

49. **Umbilical Tumors of Uterine Origin.**—A year previously, during a catamenial period, the patient noted some redness and tenderness about the umbilicus; two months later at a similar time a small tumor appeared in the abdominal wall close to the umbilicus. This tumor increased in size but slightly and most of the increase came in the two weeks just preceding her admission to the hospital. The tenderness and pain which at first were evident only during the menstrual periods had been constant for some months though most marked just before, during, and for a week after menstruation. About and including the umbilicus was a rather deep-seated spherical, slightly tender, fixed mass of rather firm consistency and about 2 cm. in diameter. In the navel itself was a thin, yellowish crust; a sinus could not be demonstrated; the skin over the tumor was not red. Examination of the abdomen was otherwise negative. Examination *per vaginam* showed only vaginismus and a moderately retroverted uterus. The growth was excised (including the navel) with a portion of the adjacent peritoneum and sheath of the rectus muscle. The former was not involved in the growth; to the latter the growth was adherent. The convalescence was without note and the patient was free from recurrence one year after operation. The second patient had a slight bloody discharge from the navel without pain or tenderness with each menstruation. Independent of the umbilical disorder she had had in the past three years attacks of sharp pain beneath the right costal border accompanied by vomiting, chills and jaundice. At the umbilicus was a small, irregularly shaped papillomatous tumor, 2 cm. in diameter, with three distinct projections covered with normal appearing skin. At the top of the largest projection was a pin-hole opening capped with dried blood. The tumor was soft, freely movable, not tender and apparently superficial. The tumor was confined to the skin and fat outside the aponeurosis. The peritoneal cavity was opened, and the gall-bladder and stomach regions were explored; these were found normal. Convalescence was uneventful except for the development of malaria. One and a half years later there was no recurrence.

So far as can be detected by the microscope the same histologic structure appears in both tumors. Furthermore, the clinical picture of one closely resembles that of the other, and though there is no way of proving absolutely their precise nature and origin, both clinical and histologic facts point strongly to misplaced uterine tissue as their common starting point. The type of gland formation, the tall columnar ciliated epithelium, supported by a cellular submucous layer, in which are numerous clusters of red blood cells, and the presence of blood in the lumina of the alveoli, are all very suggestive of uterine tissue. Although the tumors in either case did not manifest themselves till middle life, the author believes it is safe to assume that they are the recent development of embryonic remains.

50. **Plastic Tuberculous Peritonitis.**—While dissecting a cadaver, Parkes found a mass in the left side of the abdomen extending up under the diaphragm to about the level of the tenth rib above, and below to the level of the anterior superior spine of the ilium, on the left side to the abdominal wall and on the right to the bodies of the vertebræ. By inspection the mass was found to be about the size of an ordinary stomach and, in fact, at first seemed to be the stomach in an abnormal location. The surface was glistening, smooth, and, to the naked eye, entirely free from tubercles. There were irregularities over all, and these appeared like coils of intestines within a large, thin hernial sac. The mass was somewhat movable, but on closer examination was found to be adherent to the left and the posterior abdominal wall. Above, it seemed to lose itself in the transverse mesocolon, entirely obliterating the fossæ around the duodenojejunal junction; below it was free and intact, except at a point where the inferior mesenteric artery presented itself. At this point there was a foramen about three-fourths of an inch in diameter, through which escaped the ileum. From this point to the ileocecal junction there remained about one foot of the ileum, free in the abdominal cavity. Above the mass, and resting on it, part of the jejunum was plainly seen, and later, on careful dissection, this portion of the intestine was found to enter the mass from above.

On incising the sac it was found to consist of three distinct layers, easily separable and joined together by fine friable filaments of connective tissue, as if the layers had been glued together by exudate, the serum having become absorbed. Inside of the sac were found all the small intestines, except the duodenum and the upper three inches of the jejunum and about the last twelve inches of the ileum. The intestinal loops within the sac were free from adhesions and also microscopically free from tubercles or nodules of any kind; the mesentery was entirely intact and normal, except that at one or two points there were a few miliary tubercles. Under the peritoneum could be palpated small gland-like nodules about the size of a pea. These nodules on section and microscopic examination proved to be retroperitoneal lymph glands which showed a marked round-cell infiltration, abundant leucocytes and many distinct tubercles with giant-cell formation. A piece of the sac itself was sectioned and the slide under the microscope showed well-organized connective tissue with scattered leucocytes, and endothelial cells coating both inner and outer sides.

Illinois Medical Journal, Springfield

August

53 *Diagnosis and Differential Diagnosis of Gastric Ulcer. C. Graham, Rochester, Minn.
54 *Surgical Treatment of Non-Perforative Gastric Ulcers. A. J. Ochsner, Chicago.
55 *Surgical Treatment of Perforating Gastric and Duodenal Ulcer. Report of Case. Recovery. J. E. Allaben, Rockford, Ill.
56 Prognosis of Valvular Heart Lesions. E. K. Kerr, Chicago.
57 Muscular Power in Tenotomy and Tenoplasty. A. Steindler, Chicago.
58 Immunity. W. C. Bouton, Waukegan.
59 *Directions Given the Patient after Tonsil Operation, Including Treatment of Postoperative Hemorrhage. E. Pynchon, Chicago.
60 *Early Immunization, Essential Function of the Tonsil. R. H. Good, Chicago.
61 Treatment of Gonorrhea in Young Girls. R. Vail and M. C. Lincoln, Chicago.
62 Diagnosis of Syphilitic Eye Lesions by Means of *Spirochæta pallida* and the Seroreaction of Wassermann. B. C. Corbus, Chicago.

53, 54, 55. Abstracted in The Journal, June 12, 1909, p. 1952.

59. Published in the *Virginia Medical Semi-Monthly*, May 21, 1909, and in the *Laryngoscope*, June, 1909.

60. Published in the *Laryngoscope*, June, 1909.

Mississippi Medical Monthly, Vicksburg

August

63 Etiology and Prophylaxis of Malaria in the Mississippi Delta. J. T. Longino, Jonestown.
64 Our State Medical Laws. H. X. Richardson, Gulfport.

Journal Tennessee State Medical Association, Nashville

August

65 *Some Inoperable Tumors Successfully Treated by the *X*-Ray. W. S. Lawrence, Memphis.
66 *Surgical Types of Abdominal Tuberculosis. W. D. Haggard, Nashville.
67 Acute Glaucoma from the Standpoint of Those Other than Ophthalmologists. E. C. Ellett, Memphis.
68 *Comparison of the Various Tuberculin Tests in the Early Diagnosis of Tuberculosis. W. Litterer, Nashville.

65, 66, 68. Abstracted in The Journal, May 1, 1909, pp. 1451, 1452.

St. Paul Medical Journal

August

69 Telling the Truth to Patients with Serious or Hopeless Disease. M. H. Richardson, Boston.
70 Prostatic Enlargement. E. L. Kannary, St. Paul.
71 Invagination of Bowel Due to Inflammation at Base of Appendix. J. T. Rogers, St. Paul.

Ohio State Medical Journal, Columbus

August

72 Pitfalls in Urinary Diagnosis. B. Lewis, St. Louis.
73 *Radical Operations for Cancer of Uterus. J. H. Jacobsen, Toledo.
74 Rôle of Myocardium in Chronic Valvular Disease. G. A. Fackler, Cincinnati.
75 Value of Leucocyte and Differential Counts in Acute Surgical Conditions. F. Fletcher, Columbus.
76 *Blindness in Hamilton County with Special Reference to Ophthalmia Neonatorum. L. Stricker, Cincinnati.
77 Progress in Proctology. G. B. Evans, Dayton.

73. Abstracted in The Journal, June 5, 1909, p. 1873.

76. **Ophthalmia Neonatorum.**—Some of the particularly interesting points brought out by Stricker as the result of his investigation are the following: Blindness due to the infectious diseases sums up a total of 62 cases, or 20 per cent. due to scarlet fever, measles, mumps, cerebrospinal meningitis, typhoid, smallpox and trachoma. School inspection is the greatest safeguard against all of these. No civilized community ought to expose its school children to the ravages of the infections when regular and systematic examination of all children at school by competent physicians will lead to the early detection of a contagious disease in a child. When isolation of a child with scarlet fever or measles follows at once, when all the other children in that family, or even those living under the same roof, are isolated and not allowed to return to school until the danger of contagion is past, when fumigation of the schoolroom follows every time infection is detected, just to that degree are the dangers of an epidemic averted. Twelve cases (4.02 per cent.) were due to nearsightedness, high degrees of myopia. This condition can likewise be ameliorated by the proper lighting of school rooms, seeing that the light falls from the proper direction; the character of the type used in school books and the proper adjustment of desks and chairs. Methyl or wood alcohol has been the cause of blindness in 3 (possibly 4 cases), as the result of inhalation. Hundreds have died from drinking it. Its sale should be made a felony, since denatured alcohol (which contains but 2 per cent. of wood alcohol) can be used for everything for which wood alcohol is now used, and the dangers are greatly minimized. Lead poison caused 4 cases of blindness. These 2 causes are responsible for 2.62 per cent. of cases of blindness. In a total of 175 cases, equal to 58.90 per cent., the causes could justly be considered as preventable.

Journal Kansas Medical Society, Kansas City

August

78 Cholelithiasis from a Surgical Standpoint. H. G. Welsh, Hutchinson.
79 The Ideal Relation between Doctor and Druggist. W. A. Klingberg, Elmo.
80 The Exploratory Incision as an Aid in Diagnosis. R. A. Stewart and J. W. Young, Hutchinson.
81 What the Douglas County Medical Society Means to Me. S. T. Gillespie, Lawrence.
82 Rabies and its Diagnosis. A. B. Jeffrey, Topeka.

Long Island Medical Journal, Brooklyn

August

83 *Perithelioma of Brain. W. L. Duffield, Brooklyn.
84 Case of Tuberculous Mastitis. W. Lintz, Brooklyn.
85 Congenital Vaginal Atresia. C. Jewett, Brooklyn.
86 Renal Varix. P. M. Pilcher, Brooklyn.
87 Hygienic and Dietetic Treatment of Summer Diarrhea. Le G. Kerr, Brooklyn.

83. **Perithelioma of Brain.**—Though the symptoms of tumors of the frontal lobe are reasonably well defined, Duffield's case was misleading, due to the pain and tenderness over the mastoid region, the irregular temperature and the rather high leucocytosis. The patient, a woman of 40, was assisting in running a boarding-house, and was possibly under a slightly greater mental strain than she had been accustomed to. She retired one evening and slept continuously until the following evening, when she was aroused. Prior to this time she had complained of feeling tired and had behaved in a slightly absent-minded way. On being aroused from her sleep she walked to her home, a distance of several blocks, but continued in a very somnolent condition, would sleep all day, but on being aroused for her meals would complain bitterly of pain in her head. This pain lasted for about five days, and then her condition became one of lethargy. She knew her friends and family, but was slow to understand and slow to answer questions. Intellect was sluggish. There was no delirium, tremor, paralysis, vomiting, headache or complaint of pain. Bowels were regular and appetite was good. She was apparently in normal health, except for the mental condition. There was tenderness over the lower portion of the left mastoid; no discharge was apparent from ear.

Four days later the patient was in bed and in heavy sleep from which she was aroused with some difficulty, and then only in a condition of lethargy. Temperature and pulse were the same as before, respiration was 27, easy and rather shallow. Heart, lungs and abdomen were apparently normal. She had a cough with profuse expectoration, but this was said to be no worse than usual. Pupils were the same as before. Sensations in arms and legs were slightly delayed to pin prick. Lethargy was deeper; she was fairly bright in the morning, answering questions and speaking at times, but became very heavy and drowsy later in the day. There was increasing tendency to incontinence of both bladder and rectum. Tenderness over mastoid was not so great as before. No discharge from the ear could be detected, but on the introduction of a cotton carrier a slight moisture could be made out with a very foul odor. The patellar reflex was normal. There was slight tenderness over the left jugular, and she complained several times of pain in ear. On the following day the general condition was about as before, she seemed to understand all questions, but answered, if at all, by movements of the head, only speaking at rare intervals. There was equal tenderness over both mastoid regions; the left tympanic membrane was absent, and the entire cavity was covered with epithelium. The right tympanic membrane was perforated and retracted. Hearing in both ears was moderately good. The left eye was apparently normal; there was slight cloudiness on the nasal side of the right retina. A partial mind blindness was apparent, she could promptly call by name some familiar objects, but was unable to attach a name to others.

Her condition failed gradually, and after five months a slight tremor of the right arm and leg made its appearance. Although the coma was very much deeper and the woman could not be aroused, slight pressure over the left mastoid would cause her to try to draw her head away. At the postmortem a moderately hard, grayish-white tumor, 2¾ inches long, 2½ inches broad and 1¾ inches high, was found occupying the anterior upper portion of the left frontal lobe. The upper surface of this tumor was covered by a thin layer of brain tissue, and that side of the tumor toward the median line crossed the longitudinal fissure and pressed lightly on the right frontal lobe. The tumor was smooth, without any capsule, but its limits were sharply defined and it shelled out of the brain substance without any difficulty.

Denver Medical Times and Utah Medical Journal

August

88 *Free Suppurative Perforative Peritonitis. F. M. McCartney, Denver.
89 Tetany Complicating Gastric Dilatation with Hyperchlorhydria, Gastric Ulcer and Hour-Glass Contraction. W. Senger, Pueblo.
90 Work Done by a Country Physician in Hawaii. E. S. Goodhue, Hawaii, H. T.
91 Pharyngeal, Laryngeal and Tracheal Diphtheria; Mastoiditis. F. F. Waxham, Denver.
92 Prophylactic Medicine: Its Practical Application in Everyday Affairs. E. J. Scannell, Trinidad.
93 Physostigmin. W. C. Abbott, Chicago.
94 Infant Feeding: Heubner School. F. P. Gengenbach, Denver.
95 Prolapse of Iris. G. E. Robinson, Provo, Utah.
96 The Social Evil—Its Penalties: Ostracism, Disease, Death. F. Clift, Provo, Utah.

88. **Suppurative Perforative Peritonitis.**—McCartney reports twelve cases in which the patients were treated by the Murphy method, both at the time of the operation and after the operation, without any mortality.

Journal of Nervous and Mental Disease, Lancaster, Pa.

August

97 *Surgical Treatment of Athetosis and Spasticities by Muscle Group Isolation. S. I. Schwab, and N. Allison, St. Louis.
98 The Thalamic Syndrome. I. H. Coriat, Boston.

97. Abstracted in THE JOURNAL, July 31, 1909, p. 405.

Archives of Internal Medicine, Chicago

August

99 Systemic Blastomycosis. B. W. Fontaine, M. Haase, and R. H. Mitchell, Memphis, Tenn.
100 *Glandular Fever. J. E. Burns, Baltimore.
101 Administration of Tuberculin. E. C. L. Miller, Detroit.
102 *Tests for Tubercle Bacilli in the Circulating Blood. E. C. Schroeder, and W. E. Cotton, Bethesda, Md.
103 Relapsing Fever of Panama. S. T. Darling, Ancon, Canal Zone.
104 Stokes-Adams Disease. T. B. Barringer, New York.

100. **Glandular Fever.**—Burns reports 9 cases. The first 6 occurred in children from 2½ to 5 years of age. The last 3 occurred in the family of Patient 6 after she had left the hospital, and, though not seen in the acute stage, are reported because the clinical history corresponded. In this family epidemic only adults were affected. The cases reported occurred in February and March, and first appeared two months after the children's ward had been isolated on account of the measles, scarlet fever and diphtheria in the city. The first case began on February 15, the second on February 16, the next two on February 17, and the last two on February 18. The first case in the family of Patient 6 developed twenty-four hours after the child had reached home. Her mother was the first member of the family affected; none of the family had seen the child for two and a half months previously. From this one would conclude that the incubation period could be as short as 24 hours, although most writers think it is from 7 to 9 days. All the patients showed a leucocytosis of from 18,000 to 26,400 during the disease.

102. **Tubercle Bacilli in Circulating Blood.**—Schroeder and Cotton attempted to confirm Rosenberger's findings that tuberculosis is always a bacteriemia. Their tests were made entirely with the blood of tuberculous cattle. In every case the blood was drawn from the jugular vein of the tuberculous animal and injected in its fresh, naturally warm state into the peritoneal cavity of a guinea-pig. The total number of cattle from which the blood injections were made is 42, and these represent a considerable variety relative to the severity and extent of the tuberculous disease with which they are affected, from animals that would not have been suspected to be diseased without a tuberculin test to a cow so badly affected that a calf of which she became the mother, a little less than a year before her blood was used for guinea-pig injections, was born affected with tuberculosis contracted from antepartum exposure to her tuberculous body. The total number of guinea-pigs injected was 104. Of these 16 died within a few days after the injection and no doubt as a result of it, 3 died of intercurrent affections, but not until a sufficient period of time had passed for lesions of tuberculosis to become clearly manifest, and 85 guinea-pigs lived until they were killed after a lapse of from seven and one-half to eleven weeks, or an average for all of seventy days after they were injected. The 3 guinea-pigs that died of intercurrent affections showed no lesions of tuberculosis on postmortem examination, and 84 of the 85 guinea-pigs that lived until they were killed showed no lesions of any kind on autopsy. One guinea-pig of the 85 showed lesions very slightly resembling tuberculosis, but these were proved by microscopic examinations and guinea-pig inoculation tests to be free from tubercle bacilli.

The authors failed utterly to find tubercle bacilli in the blood of tuberculous cattle which were examined microscopically in accordance with the method described and used by Dr. Rosenberger. The negative results of the microscopic examinations are confirmed by the negative results obtained with 88 guinea-pigs, each of which received an intra-abdominal injection of blood from a tuberculous cow or bull. As the number of cattle from which blood was injected into the 88 guinea-pigs is 42, and as these cattle represented practically all stages of tuberculosis, from mildly affected, recent cases to old and completely generalized cases, the authors feel that the work shows beyond the remotest doubt that tuberculosis is not to be classified in any sense of the word as a bacteriemia. They criticize Rosenberger's method.

Ophthalmology, Seattle, Wash.

July

105 Amblyopia ex Anopsia—Its Nature and Treatment. A. A. Bradburne, Southport, Eng.
106 Restoration of Vision in Strabismus. A. A. Bradburne, Southport, Eng.
107 *Metastatic Carcinoma of the Chorioid. G. F. Suker, and L. N. Grosvenor, Chicago.
108 Industrial Eye Injuries. W. Johnston, Spokane, Wash.
109 Tuberculous Iridocyclitis with Organized Exudate in the Anterior Chamber. J. W. Stirling, Montreal, Can.
110 Metastatic Gonorrheal Conjunctivitis. Demonstration of Gonococcus in Smears and Culture. H. McKee, Montreal, Can.
111 *Clinical and Pathologic Study of Transferred Ophthalmitis. C. A. Oliver, Philadelphia.
112 Nodular Opacities of Cornea. W. Zentmayer, Philadelphia.
113 Eye Changes in Chronic Lead Poisoning; Report of a Case. E. W. Alexander, San Francisco.
114 Collapse of the Sclerotic During Cataract Extraction. R. P. O'Connor, U. S. Army.
115 Refraction for Men who Shoot. J. N. Reeve, Washington, D. C.
116 *Hyperchlorhydria and Amblyopia. D. J. Maloney, Waterbury, Conn.

107. **Carcinoma of Chorioid.**—The conclusions drawn by Suker and Grosvenor from a study of 64 cases of metastatic chorioidal carcinoma, are as follows: (1) It does not occur before the age of puberty, usually between 30 and 60, nor directly thereafter; (2) the invariable presence of a primary carcinoma in some other organ; (3) the great tendency for bilaterality; (4) exceedingly rapid loss of vision; (5) the uniformity in the lodgment of the embolus in the ciliary arteries; (6) the uniformity in its character of growth; (7) the short duration of life after its appearance in the eye; (8) the rapidity of its growth along paths of least resistance; (9) the rarity of perforation of the globe; (10) the rarity of epibulbar tumors; (11) the practical immunity of the papilla for its first appearance; (12) the extensive detachment of the retina; (13) the relatively large percentage of minus tension; (14) the great tendency of having the three types of carcinoma represented in the same individual tumor—scirrhus, medullary and adenomatous; (15) the proneness of direct involvement of the blood vessels; (16) the rarity of invasion of the retina and disc by the tumor cells, either by extension or tertiary metastasis; (17) the seeming regularity with which the tumor encircles the disc; (18) the numerous areas of necrosis and hemorrhages; (19) the characteristics in general being opposite to those of sarcoma.

111. **Transferred Ophthalmitis.**—The patient in Oliver's case was struck in the right eye with a piece of steel. There was a small jagged wound situated in the inferior temporal quadrant of the eyeball, through which some blood and vitreous humor were oozing. Vision was reduced to light perception throughout a large and well-shaped field. The fellow eye was normal in every respect. The parts were immediately cleansed, atropin was instilled and a foreign body removed (a minute piece of steel) from the interior of the organ, through the original wound of entrance, by the hand magnet of Parker. A compress bandage was applied and treatment was continued. One week later, the external wound was healed. In three weeks' time the injured eye was practically well, and the fellow eye seemed normal in every respect and functionated properly. Two months later the patient returned, com-

plaining of pain in the previously injured right eye, this having appeared without assignable cause.

The organ was extremely tender to touch. There was intense ciliary injection, with marked hyperemia. The lens was cataractous, and the rest of the media were so hazy that it was impossible to obtain any more than the faintest red reflex from the fundus. The left eye was irritable; vision was slightly lowered; accommodation was disturbed; the media were somewhat hazy, and the fundus was rather indistinct. There was no injection and the eyeball was not tender. The right eyeball was removed, giving instant relief to the gross symptoms, and allowing the fellow eye, under appropriate treatment, to return rapidly to its original normal condition and proper functioning. Oliver regards the case of interest for several reasons: The immediate removal of the foreign body; the primary non-involvement of the ciliary region in the accident; the very early recognition of the first appearance of the transfer of the disease process; the rapid disappearance of the transferred condition by the employment of appropriate medical therapy; the constantly sustained continuance of therapeutic measures to the very time of enucleation of the offending organ; the one coarse exacerbation which so happily proved to be the warning before the secondarily affected eye had passed the danger line; the immediate cessation of all of the coarse signs and symptoms after the enucleation; the quick and happy recovery from the slight, though fully recognized secondary condition by appropriate treatment, after the primarily affected eye had been removed; and the proof of the lesson that it is always best to remove an offending eyeball the moment that its good fellow is involved to the slightest degree.

116. **Hyperchlorhydria and Amblyopia.**—Maloney records a case in which hyperchlorhydria was primarily the cause of the amblyopia. The resultant decomposed foods and gases acting on the vasomotor system and through this affecting the visual center, were the secondary and direct cause.

American Journal of Physiology, Boston

August

117 Hydrolysis of Ox Muscle. T. B. Osborne and D. B. Jones, New Haven, Conn.
118 Rates of Digestion in Cold-Blooded Vertebrates.—The Influence of Season and Temperature. O. Riddle, Chicago.
119 Relation of Ions to Contractile Processes.—Influence of Various Electrolytes in Restoring Muscular Contractility after its Loss in Solutions of Sugar and of Magnesium Chlorid. R. S. Lillie, Woods Hole, Mass.
120 Absorption of Fats Stained with Sudan III. L. B. Mendel, New Haven, Conn.

American Journal of Surgery, New York

August

121 *Pruritus Ani. G. A. Humphreys, New York.
122 Accidents and Complications of Gynecologic Operations. S. M. Brickner, New York.
123 Utility of the Vaginal Douche. B. Robinson, Chicago.
124 Surgical Treatment of Retrodisplacements of the Uterus. C. A. Stewart, Duluth, Minn.
125 Fractures of the Radial Shaft. Rotation Deformity (Occurrence and Diagnosis) and Aluminum Plates. W. S. Thomas, New York.

121. **Pruritus Ani.**—Humphreys removes a portion of skin and mucous membrane when pruritus ani exists without piles, the remaining skin being elevated or separated from subjacent tissues, so as to destroy as much as possible the nerve supply. This operation takes away all the diseased skin, except two strips from three-eighths to one-half inch wide, selected where the tissue seemed to be least diseased. The outer limit of the incision begins from one to one and a half inches from the anus, but this is dissected up so as to include the columns or crypts of Morgagni when there is thickening or abnormality of these. This operation is a compromise between the procedures of Matthews and Ball. All the skin is not removed, so there need be no fear of stricture resulting. All the diseased skin not being left there is reason to believe that should the itching recur it would not be so troublesome as before. Another feature is that the remaining strips of skin are stretched and thinned out by cicatricial contraction at the site of the resected portion. When the sphincter is much hypertrophied a medium incision was made posteriorly, thus cutting the few transverse fibers and separating the longitudinal fibers of the external sphincter for one inch posterior to the anal margin. This incision does not extend so high as the internal sphincter. This is done with the idea of lessening the power of the sphincter and thus diminishing the interference with the return circulation from this area.

After the operation is completed, the denuded surfaces are covered with iodoform gauze and a Lynch modification of Pennington's tube of small diameter is inserted and retained in place by adhesive strips across the buttocks. The bowels are confined three days by small doses of deodorized tincture of opium. At the end of two or three days the tube is withdrawn after irrigating the rectum through the tube and introducing three ounces of olive oil; or cascara or compound licorice powder is given to secure a soft movement. The denuded surfaces heal by granulation in from two to four weeks. The parts are irrigated daily and dressed with a 5 to 10 per cent. mixture of balsam of Peru in castor oil. There is little or no pain after the tube is removed and the patient need not remain in bed longer than three days.

Journal of Inebriety, Boston

Summer

126 The Psychologic Basis of Inebriety. T. A. Williams, Washington, D. C.
127 Prohibition in the South. H. O. Marcy, Boston.
128 Suicide and Alcohol. A. W. Hoisholdt, Stockton, Cal.
129 Congenital Morphinism. O. Jennings, Paris, France.
130 Laboratory Study of Inebriates. A. MacDonald, Washington, D. C.
131 Inebriety and Moral Degeneracy Cured by Trephining. H. L. Northrup, Philadelphia.
132 Four Hundred and Six Cases of Alcoholism. J. F. Hultgen, Chicago.

Military Surgeon, Washington, D. C.

August

133 Hygiene of a Soldier. F. M. Bruner, 7th Inf., N. G. Cal.
134 The first-Aid Corps of the American Red Cross as an Auxiliary to the Army. G. M. Blech, Chicago.
135 Surgical Operations Performed at the U. S. Naval Station, Tutuila, Samoa, Jan. 1 to Dec. 31, 1908. P. S. Rossiter, U. S. Navy.
136 System of Venereal Prophylaxis and its Results. E. O. J. Eytinge, U. S. Navy.
137 Report of Bombay Medical Congress. H. J. Nichols, U. S. Army.

Dominion Medical Journal, Toronto

August

138 Our Profession and the Laity in Preventive Medicine. H. J. Hamilton, Toronto.
139 *Advantages and Disadvantages of Pasteurized Milk. J. A. Amyot, Toronto.
140 Craniotomy versus Cesarean Section in Slightly Contracted Pelves. S. M. Hay, Toronto.
141 Hyperthyroidism—Diagnosis and Treatment. A. McKinnon, Guelph, Ont.
142 *Lupus (?) of the Nose. G. Boyd, Toronto.

139. **Pasteurized Milk.**—Amyot advocates the pasteurization of milk, because there is no positive chemical or physical evidence to show that this alters the milk. The taste is not changed; there is no odor acquired; there is no change in appearance; the cream line is not altered. Nor has anyone brought forward, he asserts, any real reliable evidence that the nutritive value of the milk is altered. The milk is thus rendered harmless so far as bacteria are concerned.

142. **Lupus (?) of the Nose.**—In the case reported by Boyd, there seemed to be no doubt about the original diagnosis, viz., syphilitic gumma. The character, appearance, situation and fairly rapid growth of the lesion with the external signs, apparently admitted of no doubt on this score. And the subsidence under specific treatment, although taking much longer than usual (4 months), seemed to support the diagnosis. But the recurrence later, the absence of the characteristic odor when bony necrosis is present, and the failure of specific medication, faithfully taken and often in heroic doses, scarcely to influence the symptoms, caused much doubt to arise as to its real nature. The first microscopic examination again was puzzling. There was nothing suggestive of either syphilis or tuberculosis in the sections examined. Later the nodular mammilated appearance of the infiltration, with distinct nodules on the turbinals, seemed to point to lupus as the probable cause.

Interstate Medical Journal, St. Louis

August

143 Hebosteotomy versus Cesarean Section, when the Latter is only Relatively Indicated in Cases of Narrow Pelvis. E. G. Zinke, Cincinnati.
144 Hopeful Outlook of the Tuberculosis Problem in the United States. A. S. Knopf, New York.

Bulletin Johns Hopkins Hospital, Baltimore

August

145 *Tuberculin Treatment Among Dispensary Patients. L. Hamman, and S. Wolman, Baltimore.
146 Work in the Phipps Dispensary for Tuberculosis of the Johns Hopkins Hospital. L. Hamman, and S. Wolman, Baltimore.
147 Marmorek's Serum Treatment of Pulmonary Tuberculosis. S. Wolman, Baltimore.
148 *Employment of Patients with Arrested Tuberculosis. A. M. Forster, Towson, Md.

145. **Tuberculin Treatment Among Dispensary Patients.**—The total number of patients who received the tuberculin treatment is 112. But Hamman and Wolman report only those who were under treatment at least 90 days—a group of 71 cases. However, only 57 of the cases lend themselves to this classification, the remaining 14 being patients in whom the diagnosis of pulmonary tuberculosis can not be made with assurance, although they present very suggestive signs and symptoms. In these 14 probable cases the patients were treated in every way as if they were positively tuberculous, and they all improved as regards these symptoms, and in a fair number, the suggestive physical signs, too, vanished. The 57 cases comprise 13 incipients, 16 moderately advanced, 28 far advanced, of which 4 incipients, 6 moderately advanced, 25 far advanced, a total of 35, show tubercle bacilli in the sputum.

Of the 57 patients, 10 were apparently cured, in 16 the disease was arrested, 12 were improved, 18 were progressive, 1 died (a far-advanced case). Of the 18 progressive cases, 4 patients improved as regards symptoms, 10 were unchanged as regards symptoms, and only 4 were worse as regards symptoms (all 4 far-advanced cases). Of the 13 incipients, only 1 was progressive; of the 16 moderately advanced, 2 were progressive; of the 28 far advanced, 16 were progressive (1 died). The average gain in weight for the entire group is 6½ pounds. The maximum gain in weight is 41 pounds. Among those who lost weight are 3 apparently cured individuals. The average maximum dose of tuberculin per class, for the entire group was 0.005 gm. The early cases and those patients who do well take the largest dose. The largest dose administered was 1.0 gm. In the far-advanced and progressive cases, the patients reach the limit of tolerance early. That is, they soon attain a dose beyond which it is impossible to force them without unpleasant consequences. The duration of treatment is based rather on the progress of the case than on the condition at the beginning of treatment.

148. **Employment in Arrested Cases.**—Forster brings out the following points: Agriculture presents the best form of exercise for tuberculous patients from a therapeutic as well as an economic standpoint. The farm colony is not only the best possible means for the after-care of consumptives, but also, as it develops, will be the best agent for encouraging the much-wished-for movement toward the land. These colonies, if properly located and managed, can be made self-supporting. They present the only way for handling tuberculous families. They should be located in close conjunction with a sanatorium and a hospital for advanced cases, and should also be near large centers of population. No work should be undertaken without endeavoring to keep the entire program in sight. Forster does not claim that the farm colony will solve the tuberculosis problem, but that it is essential to have it in cooperation with all the other necessary forces.

Atlanta Journal-Record of Medicine

August

149 A Retrospect. J. H. McDuffie, Atlanta.
150 Glioma of the Retina. H. S. Persons, Montgomery, Ala.
151 Iritis. T. E. Mitchell, Columbus, Ga.
152 Extrauterine Pregnancy. H. S. Bruce, Opelika, Ala.
153 Pelvic Operations in the Female, *per Vaginam.* W. L. Cooke, Columbus, Ga.
154 Pathology—Human and Industrial. J. Burke, Manitowoc, Wis.
155 Modern Clinical Diagnosis. R. Lattimore, Savannah, Ga.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal

August 21

1 *Infection of Tuberculosis. C. T. Williams.
2 Congenital Malformations of Palate, Face, and Neck (concluded). A. Keith.
3 *Light, Pigmentation, and New Growth. W. Watkins-Pitchford.
4 Radium and Radiography in Skin Disease. L. Wickham.
5 Treatment of Nevus by Radium. H. L. Jones.
6 *Etiology and Treatment of Pruritus Ani. J. G. Tomkinson.
7 Cutaneous Actinomycosis. S. W. Allworthy.
8 Supposed Risks Attending *X*-Ray Treatment of Ringworm. R. H. Cooper.
9 Existence of an Idiosyncratic Susceptibility to Roentgen Rays. J. Hall-Edwards.
10 Practical Uses of Static Electricity. F. H. Humphris.
11 *X*-Rays in Gynecology. E. B. Hazleton.
12 Notification of Tuberculosis of the Lungs in Sheffield. H. Scurfield.
13 School Medical Inspection. E. Magennis.

1. **Infection of Tuberculosis.**—The various sources of infection in pulmonary tuberculosis and the extent to which they are elements in causation or spread of the disease are the topics discussed by Williams. Husband and wife infection, he says, is established beyond all doubt. Infection through the air passages by inhalation was, until recently, generally accepted as the common method of infection of human beings, but as to the precise material of infection authorities differed. He holds that though it is improbable that inhalation is the principal means of lung infection, there is every likelihood of some infection taking place through the upper air passages, and that the bacilli enter the lymphatics of the mouth and infect the lymph glands of this region and the tonsils, which are often the seat of tubercle. The frequent occurrence of strumous submaxillary and cervical glands may be due to this cause.

On the other hand, the possibility, and, indeed, probability, of the lungs and lymph system being infected through the intestines is proved without doubt. Infection through the skin and mucous membranes by wounds is not a common method of infection, but sundry cases are on record which prove its possibility and indicate the undoubted danger from that source. Hospital infection, or the infection of the resident staffs of hospitals from consumptive patients, he holds, occurs only with great rarity. However, there is something behind all these factors, in the individual strength of constitution, on which mainly depends the question of infection or non-infection. The healthy individual can defy the tubercle bacillus, the same person depressed by want, impure air, or recovering from acute disease cannot, and falls a victim to the attack. But under improved conditions his constitution may rally, and after a long struggle overcome and expel the invader. Finally, all infection from consumptive patients can be avoided if the well-recognized precautionary measures are adopted and carried out thoroughly.

3. **Light Pigmentation.**—Watkins-Pitchford contends that the external pigmentation of animals is, primarily, but one of several agencies serving to protect the enclosed tissues from excess of illumination; that the pigmentation of certain internal tissues assists in controlling and directing the multiplication of those cells which habitually undergo fission, and that the "intention" of the particular color selected for the blood of the higher vertebrates is similar to that with which we make use of ruby glass in the window of a photographic darkroom. The production of pigment in response to increase of illumination is a vital and not a physical process, and is probably an inherent reaction to provide against some consequences dangerous to the organism. The cells of the body possess peculiarities which Watkins-Pitchford calls psychic. They possess the "instinct" for orderly multiplication and behave "instinctively" as their ancestors behaved. The direction of multiplication of epithelial cells was originally and for many ages dictated by the presence of pigments. The author's main proposition is that cancer is the result of the loss by the cell of its "instinct" for orderliness in multiplication, and that this "psychosis" of the cell is usually consequent on undue stimulation. The liability of an organ or region to be affected by cancer is in proportion to its liability to irradiation. Organs and regions (such as the superficial portion of the parotid and the dorsum of the trunk) which have been, in past ages, continuously liable to irradiation have acquired a partial immunity to cancer. This partial immunity is usually signalized by "latent malignancy" and chronicity of the process. Those organs which are best protected from ir-

radiation are the least liable to cancer; those which were formerly well protected and are now exposed are the most liable. The cell's environment usually requires very prolonged illumination from natural sources before the stability of its "instinct" is threatened. Cancer may be prevented by efficient protection of the body from light. Natural protections, such as hair on the face, should be encouraged. The clothing should be absolutely light-proof. The ventral surface of the thorax and abdomen should be specially protected. The tobacco pipe should be discarded at 35.

6. **Pruritus Ani.**—The local drug applications which in Tomkinson's hands appear to have been the most useful are tar and lead lotion and mercurial ointments, while of the physical agents the high-frequency current has proved of conspicuous benefit.

Lancet, London

August 21

14 Bacteriology and Pathologic Anatomy of Leprosy. J. M. H. MacLeod.
15 Malformations of the Heart (concluded). A. Keith.
16 *Early Signs of Rheumatism of the Heart. A. M. Gossage.
17 *Tumor of the Large Intestine Simulating Disease of Uterus or Uterine Appendages. V. Bonney.
18 Henoch's Purpura Associated with Angioneurotic Edema. A. Don.
19 Antityphoid Vaccination with Attenuated Live Cultures. A. Castellani.
20 Fibrolysin in Cases of Fibrous Contraction. R. H. Strong.
21 *Unusual Type of Stomatitis in an Infant. A. H. Brehaut.
22 Suppression of Urine Simulating Calculus Anuria. P. King.
23 *Appendicitis Presenting Somewhat Unusual Features. D. Ligat.
24 Transient Ataxia Following Diphtheria. H. O. Butler.
25 Pulmonary Edema. C. E. Denning.

16. **Rheumatism of Heart.**—Gossage believes that the main factor in the production of mitral incompetence early in rheumatism is a loss of tone in the mitral sphincter. The pathologic reason for such loss of tone is the development, especially near the mitral ring and near the root of the aorta, of inflammatory nodules. In such nodules toxins would be elaborated (whether formic acid or others) and the lymph of the part would contain these toxins. Hence, the muscle fibers of the mitral sphincter would be bathed in toxins, the special action of which is to diminish tonicity, while the rest of the cardiac muscle would be much less severely poisoned since the toxins must be absorbed into the general circulation in order to reach any fibers that are not in close proximity to the nodules. Thus in any rheumatic myocarditis an early loss of tone in the sphincter of the mitral valve would be expected with the development of a regurgitant murmur. Nodules tend also to form near the root of the aorta; but the aorta has no sphincter and so no change is produced during an attack of rheumatic fever. There is also heard at the apex a murmur diastolic in time, soft and blowing in character, only temporary, which seems to have nothing to do with the development of a genuine stenosis of the valve. Death in a first attack of rheumatism is very uncommon, apart from hyperpyrexia, but a fresh attack may fatally affect the heart that is already damaged by valvular disease or pericardial adhesions, or the muscle of which has previously been injured by poisoning or inflammation. The lesions of rheumatic myocarditis are in themselves insufficient to lead to a fatal issue, and the main factor in the production of a fatal cardiac failure seems to be the action of the toxin on the muscle cells.

Affections of the myocardium in rheumatism may be divided into the inflammatory and the toxic. Inflammatory lesions cause a loss of tone in the muscle which surrounds the mitral valve, allowing of mitral regurgitation. Thus an apical systolic murmur is the sign of rheumatic myocarditis, and is, indeed, the only sign of inflammation of the heart apart from pericarditis. In the majority of cases the presence of such a systolic *bruit* is diagnostic of myocarditis, but in a small minority a regurgitant murmur may result from general dilatation without any inflammation. Poisoning of the heart muscle in rheumatism causes a general dilatation of the heart and sometimes a mitral diastolic murmur. Dilatation may or may not be associated with inflammation of the myocardium, but the diastolic murmur may be taken to imply an absence of myocarditis at the time it is heard. So far as the immediate welfare of the patient is concerned, the toxic action of rheumatism is more important than the inflammatory, since it is to the consequent failure of tonicity and contractility that death during an attack is due. Myocarditis is probably always associated with endocarditis, so that there is danger of permanent damage to a valve and the inflammation in the muscle itself may lead to such local damage that tone is never regained, leaving a permanent widening of the orifice. It is probable that the muscle may sometimes completely recover both from the poisoning and the inflammation, but in other cases the muscles never again become healthy.

17. **Tumor of Large Intestine Simulating Disease of Uterus.**—The cases reported by Bonney are the following: (1) Inflammatory tumor of cecum simulating a uterine myoma; (2) carcinoma of the transverse colon with a secondary growth in the sigmoid simulating a malignant ovarian tumor; (3) carcinoma of the sigmoid colon simulating an ovarian dermoid cyst; (4) carcinoma of the sigmoid simulating disease of the right uterine appendage; (5) carcinoma of the sigmoid with secondary growth in the anterior rectal wall simulating a malignant ovarian tumor.

21. **Unusual Case of Stomatitis.**—Brehaut's case presented every evidence of a threatening gangrenous stomatitis undergoing spontaneous cure. The particularly interesting features in the case are the following: Patient, male, was 4 months old. Primary dentition had not as yet set in; there was no history of any acute infectious disease or of mercurialism; the surroundings were not such as to call for censure. The case occurred on a farm, and there was no history of illness among the cattle. The child was bottle-fed and had no evidence of rickets or scurvy; he was anemic, but well-grown and sturdy. The acute onset and the great local reaction showed the infection, whatever its nature, to have been local and not constitutional in origin. The left cheek was very swollen and the skin was shiny; the swelling was not localized. The cheek was very hard and tense; no pitting could be obtained. It was extremely tender, and a slight touch produced a shriek. The inside of the cheek was dusky, and about half way back, on a level with the alveolar border of the lower jaw, there was a small patch of about the size of a No. 4 shot, dusky gray in color, which had the appearance of threatening gangrene. The glands in the neck on that side were enlarged and tender; any lateral movement of the head produced pain. The skin of the neck was edematous, as was also that of the scalp, especially over the occipital region. The temperature was 104.6 F. and the pulse was uncountable (probably 160). Under expectant treatment recovery ensued.

23. **Appendicitis.**—A man, aged 40, manifested symptoms diagnostic of a first attack of appendicitis. The appendix was removed. It was about 3½ inches in length, and ran vertically upward on the outer aspect of the ascending colon. It was straight. Its distal third was gangrenous. Pouting from the antimesenteric border of the gangrenous portion was an enterolith of oval shape and of the size of a bean, quite hard, and giving a metallic ring when allowed to fall on the plate. The mesoappendix was also gangrenous and its vessels were thrombosed. About a teaspoonful of offensive chocolate-colored pus escaped. There were no limiting adhesions. The appendix and its mesentery were removed and the cavity drained. The pulse and temperature did not fall after operation. There was no general peritonitis, the abdomen remaining flat and soft, and the bowels acting well to calomel on the third day. The appendix region drained well. The patient had no nausea nor did he vomit. The jaundice became more intense for the four days following operation, but was decidedly less during the next two days. The tongue remained dry and furred. There was some tenderness over the hepatic area. There were no rigors, but the patient was frequently drenched in sweat, the temperature then falling for a short time to 96 F. and the pulse remaining between 120 and 125. On the fifth day after operation the pulse was 135 and the temperature 103. The patient died on the following day, six days after operation, and the tenth day of the attack. Ligat thinks there can be little doubt that death was due to infective pylephlebitis.

Clinical Journal, London

August 11

26 Asthma. S. West.
27 Dysmenorrhea. T. G. Stevens.
28 Diseases of the Thyroid Gland. R. F. Fox.

August 18

29 Some Elements of the Theory of Immunity. E. von Ofenheim.
30 Abscess of the Liver. A. Don.
31 *Gastric Dilatation Associated with Extreme Cyanosis. G. Templeton.

31. **Gastric Dilatation with Extreme Cyanosis.**—A woman, aged 28, of a robust constitution, three weeks previous to this illness, had lost a near relative to whom she was much devoted and whom she had nursed through an illness of several months' duration. She always enjoyed her food, had only occasionally slight indigestion, and at intervals took a mild aperient. Two days before the onset of the attack she had performed a tedious railway journey, and partook of luncheon on the train, which she did not perfectly relish. The following day she was listless and disinclined to eat or to go out. She had some general abdominal discomfort but no sickness. A few days afterward her appearance was observed to change suddenly. Her naturally fresh complexion changed to a dusky blue, the lips became prune-juice colored, and the extremities cold. Consciousness was retained perfectly and there was no rigidity or twitching. She complained of sharp abdominal pain in the region of the umbilicus, and vomited material which was said to contain nothing suggestive of blood. The cyanosis increased till the face was almost black, the lids became so puffy that her eyes were obscured, the lips were turgid, and the nose assumed a flat, negro-like appearance, but as time progressed she complained of severe pain across the upper part of the abdomen. A tympanic note could be elicited over the area of distention; the liver dulness was reduced to two inches below the right nipple from this point. Tympanitis extended to a line two inches below the umbilicus. There was no stomach splash and flank dulness could not be detected. There was rigidity and some tenderness in the upper part of the abdomen: the pulse rate was steadily increasing with a temperature of 97.8 F. The abdomen was opened by a median epigastric incision, which bled profusely, and the tense anterior wall of the stomach presented. Coursing over its surface numerous engorged vessels were observed. Gas and free fluid were entirely absent from the peritoneal sac, and after withdrawing the stomach and systematically examining it from the fundus to pylorus, no solution of continuity could be detected, nor was any localized thickening encountered suggestive of ulceration. The duodenum was next investigated, with the same result—no perforation or ulcer. The stomach was not opened, but while outside the body the extreme congestion of its walls became considerably less, and the muscular tissue in virtue of the oxygenation of the blood and the alteration in tension, appeared to improve in tone, and the stomach became rapidly reduced in size and could without difficulty be returned within the abdomen. The wound was completely closed in layers. The patient had by this time lost much of her cyanosis and the pulse had fallen to 80 a minute. Examination of stomach by percussion at the end of a week demonstrated its return to normal dimensions. The bowels moved naturally the day following operation and no melena was detected. The patient has remained in good health since—two and one-half years.

Journal of Tropical Medicine and Hygiene, London

August 2

32 Blackwater Fever. A. W. May.
33 Chylous Ascites. K. S. Wise.

Glasgow Medical Journal

August

34 Presentation of a Memorial of Lord Lister at the Opening of the New Glasgow Royal Infirmary. R. J. Godlee.
35 The Schools for the Deaf and Dumb. J. K. Love.
36 Extrinsic and Intrinsic Conditions Affecting School Children; Study of Some Schools and School Children in Glasgow. D. McKail.

Quarterly Journal of Medicine, London

July

37 *Syncopal Attacks, Associated with Prolonged Arrest of the Whole Heart. E. E. Laslett.
38 Irregular Action of the Heart in Mitral Stenosis: Inception of Ventricular Rhythm, etc. T. Lewis.
39 *Pathology of Paroxysmal Hemoglobinuria. C. H. K. MacAlister.
40 The Frequent Failure of the Urine to Decompose in Cases of Pulmonary Tuberculosis. W. H. White and H. I. Janmahomed.
41 Peripheral Birth Palsy. E. F. Trevelyan.
42 *Effects of Certain Drugs in Diabetes Mellitus. A. J. Hall.
43 Study of Congenital Family Cholemia. R. Hutchinson and P. N. Panton.
44 Excretion in Urine of Sugars Other than Glucose. A. E. Garrod.

37. **Syncopal Attacks.**—The patient in Laslett's case was a bright, intelligent woman, somewhat anemic. She suffered from breathlessness on exertion, but otherwise was able to go about her ordinary household duties, except when the fainting attacks were very frequent and severe. There was a systolic murmur at the apex and pulmonary area, probably hemic in nature, but there was no enlargement of the heart. The other systems presented nothing abnormal. At the time when the syncopal attacks were occurring, the pulse was slow and irregular, the rate often sinking to from 32 to 40 a minute. This infrequency was largely due to the presence of long intermissions, which varied in length from two to five seconds, as a rule, but the intermediate beats were also slow, a common frequency being 60 a minute. A tracing of the jugular pulse taken simultaneously with the radial pulse showed that the auricles as well as the ventricles participated in the stop, and that the intermissions were due to an arrest of the whole heart, not a heart block. Laslett repeatedly listened to the heart when the pulse was irregular, and was never able to hear any sounds during the intermissions. The fainting attacks occurred only when the pulse was irregular, and so far as his observations go only when the heart ceased to beat for three seconds or more.

With regard to the condition of the pulse and the frequency of the faintings, there appeared to be a cycle of events of rather variable duration. Speaking generally, the pulse remained regular (rate about 70 a minute) for the most part for a period of three or four weeks, and then intermissions began to appear which at first were of short duration and comparatively infrequent. Frequency and duration of the stops gradually increased to a maximum, at which times intermissions of four and five seconds were frequent. After two or three days there was a gradual diminution in the severity of the condition until the pulse became normal again. The period of irregularity was usually about a week. There were, however, considerable variations in the duration of both irregular and regular periods, and the latter was, moreover, often broken by short periods of slighter irregularity. Apart from these temporary disturbances of the cycle, the waxing and waning of the condition was very characteristic. The frequency of the syncopal attacks varied absolutely with the frequency and length of the intermissions.

39. **Paroxysmal Hemoglobinuria.**—MacAlister concludes that paroxysmal hemoglobinuria is the result of intravascular hemolysis. This intravascular hemolysis occurs when the blood serum becomes autolytic. There is in the blood serum a potential toxin, composed of cytase and amboceptor, which becomes active under certain conditions. The most prominent of these conditions is the application of external cold. In experiments *in vitro* it appears that direct application of cold will activate the serum. *In vivo* it is most probable that the application of cold sends impulses to the vessels by the vasomotor arc—that the hemolytic reflex travels by the same path as the vasomotor reflex. Variations in the severity of the paroxysm may depend on variation in the excitability of the nerve centers. When these are unusually excitable, a paroxysm is more readily produced than when they are quiescent. This, perhaps, accounts for the fact that while the initial paroxysms in such patients are due to a very severe chilling, the subsequent paroxysms start from a much more trivial cause.

Paroxysmal hemoglobinuria and Raynaud's disease are closely related and the boundary line between the two conditions is indefinable. The vasomotor disturbances characteristic of the latter disease are frequent in paroxysmal hemoglobinuria, and 6 per cent. of patients who suffer from Raynaud's disease pass hemoglobin in the urine. A paroxysm is attended with great degeneration and destruction of the red corpuscles. The number of leucocytes is not greatly altered, but they participate actively in the process of hemolysis. After a paroxysm, the reconstitution of the blood is very rapid, and this, coupled with other observations which need not here be recapitulated, suggests that the products of cell destruction are largely retained to form the raw material for a new generation of erythrocytes. The ultimate source of the hemolysin is not known. There are no gross organic changes in the abdominal viscera. The liver is enlarged during a paroxysm. The spleen also, possibly from an accumulation of waste products, becomes bigger. There is possibly passive hyperemia of the kidneys, but no inflammatory change. There is no evidence, histologic or experimental, to support the view that a secretion is poured out by the endothelial cells, in response to secreto-motor stimuli.

42. **Effect of Certain Drugs in Diabetes Mellitus.**—The primary object of Hall's clinical observations was to ascertain the effects of opium, or its alkaloid codein, on various symptoms in diabetes mellitus; in what respect, if any, the crude drug differed from the alkaloid in action; and whether such effects varied with the dose given. For this purpose a series of nine cases of ordinary diabetes were placed, so far as possible, under similar conditions. Codein was given in seven cases, always in the form of a pill. As a rule, the initial dose was ¼ grain, thrice daily, which was gradually increased, at varying intervals, by ¼ grain to the dose, or by larger amounts, until as much as twelve grains was being taken daily. On the whole, the definite results obtained in these cases are disappointing. Possibly the doses given were altogether too small. This does not seem an adequate explanation, however, as in more than one case the results have appeared to become less favorable with increased doses. On the other hand, in a certain small number of cases the effects of gradually increased doses have been favorable even over several weeks. It may be said that inasmuch as codein will quickly lose its first sedative effect, it can only be of value for a short period.

Opium, either in the form of pilula opii or of pilula saponis comp., was given in six cases. In three of these it was tried before any other drug, while in three other cases it was given to patients who had previously taken codein, in order that the effects of the two alkaloids might be compared in the same individuals. The initial dose given varied from 1/5 to 1 grain, thrice daily, and was usually increased gradually, in one case up to 12 grains daily. In spite of the fact that one of the patients became worse and died while under treatment by opium, the general results obtained with it were, on the whole, rather more uniformly successful than those obtained with codein. In three cases codein had previously been tried, and comparing the results one sees that opium began to act effectively when codein in increasing doses had ceased to do so.

Annales de l'Institut Pasteur, Paris

July 25, XXIII, No. 7, pp. 513-583

45 Transmission of Leprosy. E. Marchoux and G. Bourret.
46 Similar Action of Potassium Iodid and Tuberculin. F. Sorel.
47 Chemical Composition of Bacterial Bodies and their Production on a Large Scale. (Production en grand des corps bactériens et leur composition chimique.) M. Nicolle and E. Alilaire.
48 Modifications in Leucocytes in Acquired Immunity. (Modifications des globules blancs dans l'immunité acquise.) A. T. Salimbeni.
49 Pathologic Anatomy of Inherited Syphilis of the Pancreas and Parotid Gland. G. Faroy.
50 Reduction in Excitability of Nerves in Animals Treated with Alien Serum. (Diminution de l'excitabilité des nerfs chez les animaux préparés avec le sérum d'une espèce étrangère.) Yamanouchi.

Archives des Maladies du Cœur, etc., Paris

July, II, No. 7, pp. 385-448

51 Laboratory Methods in Diagnosis of Mitral Insufficiency. Cardioesophageal Pulsation. C. Lian.
52 Case of Congenital Cyanosis. L. Babonneix and G. Paisseau.

Archives de Médecine des Enfants, Paris

August, XII, No. 8, pp. 561-640

53 *The Blood in Infectious Diseases in Children. (Examen du sang de l'enfant dans les maladies infectieuses.) M. and W. de Biehler.
54 *Differential Blood Count in Eruptive Diseases. (Diagnostic hématologique des fièvres éruptives et des érythèmes qui les simulent.) M. Pater.
55 *Typhoid and Paratyphoid Septicemia in Infants. (Septicémie à bacille d'Eberth et à bacille paratyphique chez le nourrisson.) H. Triboulet and others.

53. **Blood Formula in Infectious Diseases.**—De Biehler examined the blood of 55 children with various infectious diseases including 17 with measles, 6 with smallpox, 11 with diphtheria and 21 with scarlet fever. The findings were about the same in all, he reports. The specific gravity of the blood directly paralleled the fever. The state of the blood beforehand determined the number of red corpuscles and the proportion of hemoglobin, but the number of leucocytes increased when some complication was impending or established. Merely a slight increase indicates a mild case without secondary infection.

54. **Differentiation of Eruptive Fevers by Blood Count.**—Pater compares the findings in 10 cases of scarlet fever with those in 7 of typhoid, pneumonia, gonorrhea or gastroenteritis, his conclusions being that a typical polynucleosis accompanies the onset of the eruption in scarlet fever. It is pronounced and remains high during the first two or three days of the eruption, even in very young children. The number of mononuclears declines, especially the proportion of lymphocytes. The eosinophiles fluctuate, but are generally increased, especially by the end of a few days of the disease. Scarlatiniform erythemas are distinguished from true scarlet fever by the leucocyte formula. It is nearly or quite normal, but the mononucleosis is pronounced. Measles and rubeola have no distinctive blood picture in comparison with erythems liable to simulate them, but they can be readily distinguished from scarlet fever by the pronounced polynucleosis of the latter.

55. **Typhoid and Paratyphoid Septicemia in Infants.**—If there is intestinal localization of the typhoid or paratyphoid in infants it takes the form of enteritis limited to the small intestine. The infection may also induce a meningoencephalitis or bronchopneumonia. Triboulet reports a case of typhoid and another of paratyphoid in infants six and nineteen months old, and cites several from the literature. The mother of the first child had typhoid while she was still nursing it. In the paratyphoid case, diarrhea and cough with fever and fatal bronchopneumonia formed the clinical picture.

Lyon Chirurgical, Lyons

August, II, No. 3, pp. 261-404

56 Intraparietal Inguinal Hernia in Women. (La hernie inguino-interstitielle chez la femme.) L. Berard and J. Stefani.
57 *Practical Treatment of Fractures of the Forearm. (Les mouvements de pronation et de supination dans les fractures de l'avant-bras.) J. Bosquette.
58 *Orbital Puncture. (La ponction des espaces sous-arachnoidiens cérébraux par la fente sphénoidale.) L. Bériel.

57. **Practical Treatment of Fractures of the Forearm.**—Bosquette gives twenty-four illustrations of the different kinds of fracture that may be observed and urges the necessity for always bearing in mind the preservation of movements of pronation and supination in treatment. Immobilization is not necessary for fracture of the head of the radius, but extension and supination are required for fracture of the shaft of the ulna or of the olecranon. The forearm should be flexed on the arm and forced supination applied for fractures of the shaft of both bones or of the radius alone at any point. Fracture of the coronoid process requires forced flexion and supination. If there is concomitant fracture of the head of the radius, the indications are met by immobilization in flexion, permitting pronation and supination. In case of fracture of the lower end of the radius, forced pronation should be applied after reduction.

58. **Orbital Puncture.**—Bériel here gives an illustrated description of the technic for this wee sister of lumbar puncture. He has worked it out on the cadaver and has applied it in four clinical cases, and recommends it as a rational and interesting method of obtaining access to the subarachnoid space in the brain. Combined with lumbar puncture, it enables the entire mass of the cerebrospinal fluid to be medicated or substituted, and allows withdrawal of cerebrospinal fluid by lumbar puncture without danger of abrupt fluctuations in the pressure on the brain. As the procedure is dangerous, the original article should be consulted for the technic which it is impossible to give in an abstract. Bériel insists that the technic is comparatively simple after it has been learned on the cadaver.

Lyon Médical, Lyons

August 1, XLI, No. 31, pp. 177-224

59 *Chief Modes of Propagation of Epidemic Diseases. E. Grandclément.
60 *Etiology and Prophylaxis of Typhoid Fever in Regiments. H. Rondet.

August 8, No. 32, pp. 225-264

61 Case of Staphylococcus Meningitis in Scarlatina. F. Weill.

59-60. **Prophylaxis of Infectious Diseases.**—All those recovering from a contagious disease and those who have tended the patients may harbor the germs for weeks and months, and such persons should be especially careful in regard to cleanliness. They should wash their hands frequently so that any possible contamination from excreta may be avoided. Rondet even asserts that frequent washing of the hands of nurses and cooks is the only certain means of preventing contagion. He emphasizes the fact that epidemics are not spread by the severe cases, which are always supervised and isolated, but by the walking cases and bacilli-carriers, and these nullify the effect of the final official disinfection of the dwelling. Effectual prophylaxis of typhoid fever among troops requires that every man should wash his hands after defecation or urination, especially the men employed about the food. Each man should have his individual towel, and to have the method truly effectual, he says, a corporal should be detailed to supervise this cleansing of the hands. After convalescence from typhoid fever the men should not be allowed to work in the preparation or serving of food.

Presse Médicale, Paris

August 7, XVII, No. 63, pp. 561-568

62 Antibodies in Hydatid Cysts. (Etude sur les anticorps hydatiques.) Hector y Rossello.
63 Internal Transmigration of the Fecundated Ovum. E. Schwartz and Boyer.

August 11, No. 64, pp. 569-576

64 *The General Practitioner's Examination of Intestine Functioning. (L' A B C de l'examen fonctionnel de l'intestin.) R. S. Kolbé.
65 *Treatment of Exstrophy of the Bladder. (Cure chirurgicale de l'exstrophie de la vessie.) R. Proust.

64. **Practical Examination of Intestinal Functioning.**—Kolbé declares that the general practitioner should be able to determine the functional capacity of the bowels, and urges a rational test diet with analysis of the stools and practical application of the information derived from the findings, for regulating the diet and treating bowel disturbances. He advises the Schmidt and Strasburger technic as simple, rapid and requiring no paraphernalia. In his experience the patients soon became interested and collaborated with enthusiasm when they recognized the practical importance of the test. The macroscopic findings are sufficient, no chemical or microscopic examination being required. [The Schmidt test diet was described in THE JOURNAL, July 11, 1908, page 175.] Coprology has demonstrated that the so-called nervous diarrheas are in reality more or less masked catarrhal conditions, requiring astringents, preferably an astringent diet, rather than drugs. Catarrhal conditions require gruels and milk, while excessive fermentation indicates suppression of starch, but in every case the articles of food which the individual finds difficult to digest, as determined by the tests, should be substituted by others which he is able to take care of. In the sluggishness following a secretory disturbance, ingestion of some substance which is passed along without putrefying or being digested may prove useful. Agar-agar is used for this purpose in China and Japan as a cure for constipation. These simple means of obtaining an oversight of intestinal functioning do not take more than ten minutes, and they open the doors for rational and efficient treatment, dietetic and drug.

65. **Treatment of Exstrophy of the Bladder.**—Proust does not contribute anything new, but gives nine instructive illustrations of several technics for this purpose, comparing the facility of the various operations and the outcome. He is inclined to regard Buchanan's technic as the safest and simplest, while it promises the best results.

Revue de Médecine, Paris

August, XXIX, No. 8, pp. 593-672

66 The Bronchial Lesions of the Tuberculous Lung. P. Halbron.
67 *Contraction and Dilatation of Iris Synchronous with Pulse or Respiration. (Hippus circulatoire.) M. Roch. Id. (Coexistence de l'hippus respiratoire et du pouls dit paradoxal.) M. Roch and L. Campiche.
68 The Geographical Distribution of Diabetes. (Fréquence du diabète sucré dans differentes localités du globe et son augmentation.) R. Lépine.
69 The Parathyroids. L. Cotoni.

67. **"Circulatory" and "Respiratory" Hippus.**—Roch found in 50 persons examined that the fluctuations in the blood pressure were reflected in the pupil, a high pressure being accompanied with myosis and a low pressure with mydriasis. The iris may also contract and dilate with the respiration. In a recent case, signs of aortic insufficiency were accompanied by this circulatory hippus.

Semaine Médicale, Paris

August 11, XXIX, No. 32, pp. 373-384

70 The New Sanitary Regulations for the Army in the Field. (Le nouveau règlement du service de santé en campagne de l'armée française.) F. Moty.

August 18, No. 33, pp. 385-396

71 *Is there Danger in Exploratory, Disinfecting or Palliative Interventions in Uterine Cancer? R. de Bovis.
72 *Quantitative Renal Impermeability. V. Courtellemont.

71. **Is There Peril in Exploratory, Disinfecting and Palliative Interventions on Uterine Cancer?**—De Bovis refers in particular to the experience of Zacharias (mentioned in THE JOURNAL, July 24, 1909, page 332), who had seven fatalities follow palliative scraping of inoperable uterine carcinomas. He warns against preliminary curetting of cancer before removal as liable to open a passage into the blood for virulent germs in the cancer, but admits that it is necessary to discriminate between cancer of the cervix and of the fundus in this respect, the former being the more dangerous. He sifts the literature on the subject and his own experience, his conclusions being that the wise course is to steer between the two extremes, not curetting or disinfecting enough to perforate the cancer or to impose on the patient two serious operations, but sufficient to prepare the cancer better for removal. The technic followed by von Franqué seems to be admirable; after antiseptic douches or tamponing, with alcohol and iodin, he curettes slightly the evening before the operation or directly before it. This preliminary treatment may be continued a little longer in the dubious cases, supplemented by cauterization; Lomer, Mond and Rösling have even reported cases in which cauterization caused the subsidence of infiltration which proved to be merely inflammatory and not malignant, so that the cancer, deemed inoperable before, was then readily removed. Intrauterine curetting is contraindicated by a pronounced and persisting febrile condition, extreme friability of the uterine tissue, pyosalpinx, or great debility, even a palliative operation being unwise in these cases unless to avert danger of hemorrhage. In Zacharias' cases, rupture of a pyosalpinx was responsible for the fatality in one and peritonitis from perforation of the cancer in another.

72. **Importance of Quantitative Renal Impermeability.**—Courtellemont discusses the condition in which the kidneys are unable to eliminate above a certain proportion of the amount of fluid ingested; all over this amount is retained, inducing oppression and dyspnea. This quantitative retention is generally associated with the qualitative variety, but it is the former that determines the prognosis. The patient should be tested by allowing increasing amounts of fluids to determine the tolerance, comparing the amount ingested with the output and the development of dyspnea with a certain amount of retention. As a rule, it is wise for the patient not to ingest more than 100 or 300 gm. of fluids in drinks, soups, etc., in excess of what he eliminates in the form of urine. This principle should be applied when there is merely oppression or dyspnea, not waiting for the development of anasarca or ascites. He has found it necessary to reduce the total amount of fluids ingested to 800 or even to 700 gm. in certain cases, and would not hesitate to go even lower at need. After the storm is past he permits more fluids, but usually finds that trouble may be anticipated when the excess of intake over the output in urine reaches 400 or 500 gm. This restriction of fluids he always accompanies by restriction of salt, although generally permitting meats. No egg white is allowed. The patient is ordered to stay in bed in the acute phases with relative repose during the intervals of calm, and, if necessary, purging and local or general venesection. Reduction of the amount of fluid ingested is the main thing, however, and frequently proves alone all that is necessary. According to the classic conception of uremia—qualitative renal impermeability—the patient is urged to drink freely to aid in elimination of toxins, regardless of the increasing dyspnea as the amount of urine grows less in proportion to the fluids ingested. With the conception of quantitative impermeability, on the other

hand, the treatment should be just the reverse, as otherwise the patients are liable to succumb in pronounced uremia or from heart complications.

Archiv für klinische Chirurgie, Berlin

XC, No. 1, pp. 1-261. Last indexed Sept. 4, p. 822

73 *Surgical Treatment of Non-malignant Stomach Lesions and Ultimate Outcome. (Chirurgische Behandlung gutartiger Magenaffectionen, insbesondere des Magengeschwürs und seiner Folgezustände, mit bes. Berücksichtigung der Spätresultate.) M. Busch.
74 Treatment of Subcutaneous Rupture of the Liver and Later Expulsion of Sequester of Liver Tissue. (Subcutane Leberrupter mit späterer Ausstossung grösserer Lebersequester und deren Behandlung.) P. Biernath.
75 *Suction Apparatus as Aid in Surgery. (Verwendung der Ansaugung in der operativen Chirurgie.) F. Krause.
76 *Intravenous Adrenalin-Saline Infusion in Peritonitis. H. Heineke.
77 Fulguration and Radium Emanations in Cancer. (Gebrauch der Fulguration und der Kreuznacher Radiolpräparate bei der Behandlung der Krebse.) V. Czerny.
78 Partial Necrosis of Colon after Resection of the Stomach. C. Goebel.
79 Treatment of Surgical Lesions in Asia. (Behandlung chirurgischer Krankheiten in Asien.) P. Bockenheimer.
80 *Belt Constriction for Exarticulation of Hip and Part of Pelvis. (Ueber die Exarticulatio interileoabdominalis in Blutleere nach Momburg.) E. Pagenstecher.
81 Pathogenesis of Appendicitis. Heile.
82 Immunizing Action of Nucleinic Acid. (Immunisirende Wirkung der Nucleinsäure.) G. Parlavecchio.
83 Callus Formation after Injury of Knee, Simulating Fracture. (Eine typische periostale Callusbildung am Condylus internus femoris nach Kniedistorsionen.) G. Preiser.

73. **Surgical Treatment of Non-Malignant Gastric Disease.**—Busch reviews the ultimate outcome in 124 cases of benign stomach affections in which Körte has operated since 1900. The intervention was on account of gastric ulcer and its consequences in 87; duodenal ulcer in 7; stenosis of the pylorus from ptosis or other causes in 16, and from adhesions left by pericholecystitis in 7; caustic injury in 5, and acute dilatation of the stomach in 2. The age of the patients ranged from 14 to 68. The general conclusions are: (1) Nervous stomach affections should never be operated on except that an exploratory laparotomy may be necessary to exclude positively the presence of an ulcer; (2) stenosis from an ulcer and ulcers persisting in spite of systematic and prolonged internal measures indicate preferably retrocolic posterior gastroenterostomy with a circular suture in two tiers, as promising excellent results. If the stomach is extremely flabby and stretched an enteroanastomosis according to Braun's technic may be required as a prophylactic measure. Especially with open ulcer, after-treatment with means to reduce acidity is particularly necessary, possibly accompanied with lavage, and always careful selection of the articles of diet. Resection should be considered when there is the least suspicion of the malignant nature of the tumor, also for severe callous tumors, especially if they intrude on neighboring organs (liver, pancreas). The resection should always be circular, according to Riedel's technic. The conditions in individual cases must decide whether the more radical but more serious resection technic should be preferred to gastroenterostomy.

75. **Suction Apparatus as Aid in Operating on Brain Tumors.**—Krause has had unusual experience in the removal of brain tumors and has always felt the lack of some means of getting hold of the tumor to draw it out without the need of prying it up from behind. He has recently been using a suction apparatus for the purpose and has found it effective. He used at first something like a Bier cupping glass, with rubber bulb, but has since perfected the technic by connecting the glass cup with the hydrant to form an air pump worked by the vacuum from the running water. Eight large illustrations show the application of the suction apparatus and the advantages from its use. A soft friable tumor in the depths is revealed by the turning back of the bone flap, and the rounded edges of the long narrow glass cup are placed on the most accessible part of the tumor and suction applied. At once the tumor is sucked up into the cup and is held rigidly by the negative pressure, so that the tumor and glass form a solid whole which can be moved and manipulated as a single object, without the necessity for lifting the tumor from behind. When the tumor has been drawn out, its base can be severed like a pedicle. The brain is pushed back with small wads of cotton so that all danger of injury from instruments is avoided. He uses glass cylinders for the cups, from 10 to 55 mm. in diameter, the outer end tapering abruptly to a point, bent downward, and connected by a boiled rubber tube, about half a yard long, with another tube five or six yards long which runs along the floor to the hydrant. His illustrations show the apparatus as used for tumors in the frontal and cerebellar region. In order to keep control of the suction, there is a small round hole in the side of the cylinder, just where the index finger would naturally be applied in holding the cup; by raising the finger air streams in and suction stops at once. One illustration shows a tumor behind the cerebellum, an *Acusticustumor*, which he drew out with a small suction cylinder until the tumor was nearly as long and narrow as the cylinder. He was able to draw out and enucleate by this means a tumor in the hypophysis which was nearly as large as an egg, and to which he gained access through the forehead. He doubts if a tumor of this size could be removed through the small hole at the base of the sella turcica according to Schloffer's technic. He turned back a flap reaching from the longitudinal sinus to the middle of the temporal muscle, exposing to view the entire anterior cranial fossa and part of both temporal lobes and of the frontal lobe on the other side. The patient recovered from the operation and the acromegaly is subsiding, while the diabetes mellitus vanished almost at once. In conclusion, he suggests that the suction apparatus may possibly prove useful in surgery of the lungs and for removal of intrathoracal tumors, retrosternal struma, and also in the small pelvis. The suction cup allows as firm hold of the growth to be removed as the corkscrew which aids so materially in the removal of uterine myomas.

76. **Intravenous Adrenalin-Saline Infusion in Peritonitis.**—Heincke reports extensive experimental and clinical research, which demonstrates, he thinks, that the main effect of the infusion is due to the salt solution, and that this is more prominent in the cases in which the patient has just lost large amounts of fluid. The effect of the adrenalin is so transient that it can be of little use in peritonitis; its chief field is in collapse, transient in its nature, as in general anesthesia and spinal anesthesia; in shock after severe operations and injuries; in hemorrhage; and possibly also in intoxications and in threatening conditions during infectious diseases.

80. **Exarticulation of Hip with Half of Pelvis.**—Pagenstecher states that only 7 of the 24 patients on record requiring interileoabdominal exarticulation survived more than a short time after this severe and dangerous operation. Now, however, the application of the Momburg belt constriction has lessened the danger of hemorrhage, and he reports a case in which this technic permitted the operation to proceed as free from bleeding and with as little danger as an ordinary amputation of the thigh. Bier reported a similar case last year, the application of the constricting belt having aided in the success of the intervention. Pagenstecher's patient was a woman of 50 with a sarcoma in the iliac fossa and inside of the acetabulum. The disturbances from the operation were so comparatively mild that on the third day the patient asked to be allowed to get up, but there has been persisting paralysis of bladder and rectum ever since. He is unable to determine whether this paralysis is to be ascribed to the belting constriction or not. The patient otherwise is in good general health at present, four months since the operation. It is possible that the constriction injured the nutrient vessels of the conoid distal end of the spinal cord, but he thinks that this isolated mishap should not be allowed to discredit the Momburg technic which offers such advantages for this operation. He has applied it since in another case, for resection of the sacroiliac symphysis; in neither instance was there any disturbance from reactive hyperemia after removal of the constriction.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIII, No. 2, pp. 145-242

84 Behavior of Tubercle Bacilli in Different Organs after Intravenous Injection. W. Neumann and H. Wittgenstein.
85 *Isolation of the Tuberculous. (Welche Massnahmen sind zur Isolierung tuberkulöser Personen zu empfehlen?) A. Bielefeldt.
86 *Tuberculosis in Infants. (Säuglingstuberkulose.) O. Aronade.
87 *Frequency and Importance of Palpable Lymph Glands in the Supraclavicular Triangle with Pulmonary Tuberculosis. (Zur Frage der Häufigkeit und Bedeutung palpabler Lymphdrüsen in den supraklavikulären Halsdreiecken bei Lungentuberkulose.) A. Bauer.

85. **Preferable Measures for Isolation of the Incurable Tuberculous.**—Bielefeldt relates the experiences with the "homes" erected by seven different life-insurance companies in Germany for the incurable tuberculous. Some of these homes were equipped with every comfort, amid beautiful scenery, and everything was done to make the inmates contented, even to a little garden for each one. But it has been found that very few tuberculous individuals are willing to go to these homes and most leave again in a short time. He suggests that the desired purpose can be accomplished by withdrawal of the pension, partially or entirely, unless the insured are willing to submit to the sanitary regulations or to isolation. Compulsion will seldom be necessary, as the families will be more inclined to persuade the tuberculous individual to obey directions or to go to the asylum when they know that the pension depends on it. The pensioner will also be more inclined to comply with the sanitary directions if he knows that insubordination will be followed by removal to the asylum or loss of his pension.

86. **Tuberculosis in Infants.**—Aronade reports six typical cases to throw light on the possibilities of infection, influence of food on the course of tuberculosis, and the efficacy of tuberculin treatment. Among the practical points emphasized is the necessity for not allowing any nurse or attendant who has anything to do with tuberculous adults to care for infants. In one of his cases the night nurse attended sometimes to the service both in his infant ward and in a ward containing a few tuberculous adults. In another case there is a possibility that infection may have occurred as a healthy child nursed a woman who sometimes gave the breast to a tuberculous infant. The breast milk should be drawn for the tuberculous child in such cases. The cutaneous tuberculin test repeated from time to time is a valuable index to point out when an infant has acquired tuberculous infection. He has never discovered anything to suggest that breast-fed infants are more resistant than others to tuberculous infection—all being practically defenseless. His experiences with tuberculin were discouraging. In pulmonary tuberculosis the local reaction induced by the tuberculin might lead to a propagation of the tuberculous process. In one case the child died of asphyxia, possibly from acute swelling of the glands around the trachea, the result of the injections of tuberculin. In another case the catastrophe observed seemed to be the direct result of the injection of tuberculin.

87. **Palpable Glands in the Supraclavicular Triangle a Sign of Tuberculosis.**—Bauer calls attention to enlarged glands in the triangle in the neck formed by the clavicle, the trapezius and sternocleidomastoid muscles as a certain sign of disturbance in the deeper glands, and thus an index of pulmonary lesions. If his assumption that enlargement of the glands here is connected with pulmonary tuberculosis, this sign may aid in early diagnosis. He obtained positive findings in 30 out of 32 suspects and in 177 out of 225 certain tuberculous inmates of the Friedrichsheim sanatorium.

Berliner klinische Wochenschrift

August 9, XLVI, No. 32, pp. 1477-1516

88 Gout. (Zur Klärung der Gichtfrage.) Falkenstein.
89 *Polyserositis. v. Marenholtz.
90 *Congenital Torticollis. (Zur Aetiologie des angeborenen Schiefhalses.) M. Böhm.
91 Sources of Error in Determining the Opsonic Index. (Fehlerquellen bei der Bestimmung des opsonischen Index.) A. Strubell and W. Felber.
92 Report of the German Relief Expedition to the Italian Earthquake Region. (Mit der deutschen Hilfsexpedition im süditalienischen Erdbebengebiete.) H. Eckstein.

August 16, No. 33, pp. 1517-1556

93 *Differential Diagnosis of Tertiary Syphilis, Lupus, and Cancer. (Lupus oder tertiäre Lues? Sarkom oder primäre Lues?) A. Neisser.
94 Relations between Resisting Power of Transplanted Mouse Tumor and its Histologic Structure. (Beziehungen zwischen Geschwulstresistenz und histologischem Bau transplantierter Mäusetumoren.) J. A. Murray.
95 Cobra Venom Hemolytic Reaction. (Weitere Mitteilungen über die Hemmungsreaktion menschlicher Sera gegenüber Kobragift.) E. L. Brückner and H. Much.
96 Manifold Binding Properties of the Complement of Serum in Leprosy, etc. (Vielfache Bindungseigenschaften des Komplementes einiger Sera Leprakranker und ihre Bedeutung.) C. Frugoni and S. Pisani.
97 *Specific Substances in Diagnosis and Treatment of Tuberculosis. J. Mitulescu. Commenced in No. 32.
98 Ocular Disturbances in relation to Obstetrics. (Augenerkrankungen in ihren Beziehungen zur Geburtshilfe.) E. Runge.

89. **Polyserositis.**—In the case described, a laparotomy had been done on the assumption of tuberculous peritonitis, but no signs of tuberculosis had been discovered. The patient was a robust young man not addicted to liquor and with no family or personal history of tuberculosis or syphilis. A little dyspnea on exercise was noticed for a year before the polyserositis developed, and at autopsy three years later the liver was found in atrophic cirrhosis and the heart entirely adherent to the pericardium, which contained patches of calcification, although there had been nothing to suggest a heart affection during life, except the slight dyspnea at first. Both tuberculin and Wassermann tests were negative.

90. **Etiology of Congenital Torticollis.**—Böhm states that Roentgen examination has confirmed the findings in certain museum specimens demonstrating that congenital torticollis may in some cases be due to deformity in the skull and atlas instead of to a muscular defect.

93. **Cancer, Lupus or Syphilis?**—Neisser reports a case of supposed lupus in which the syphilitic nature of the affection was not discovered for two years. He warns that this may be a more common occurrence than is generally realized, and urges prompt and energetic mercurial and iodid treatment in every case of supposed lupus in which there can be the slightest suspicion of a possible syphilis. In the above case the woman's daughter was healthy until she too contracted the supposed lupus, and in the course of the two years great disfigurement and blindness had resulted from the destructive process. He states that a nasal affection developing in a woman as late as the age of 41 is much more likely to be syphilis than lupus, and the early perforation of the septum in this case should have suggested the true nature of the supposed lupus. A positive history of syphilis does not exclude a non-syphilitic affection, and a negative history—especially in women—does not exclude syphilis. The general practitioner should never hesitate to apply the subcutaneous tuberculin test in all cases of a superficial affection suspicious of tuberculosis; the cutaneous and ocular technics do not answer the purpose in these cases, as they merely indicate the presence of some tuberculous lesion somewhere in the body, but do not give information in regard to the tuberculous character of a known cutaneous affection. In a more recent case a red warty patch, three or four inches in diameter, had been observed for two years on a young man and the diagnosis of tuberculosis verrucosa seemed unmistakable, but there was no reaction to injection of tuberculin up to 5 mg., while the Wassermann test proved positive, and recovery promptly followed exhibition of mercury and iodid. In a third case a married woman had colic, a greenish vaginal discharge and hemorrhage, coming on rather suddenly, and examination ten days later, with microscopic findings suggesting a round-celled sarcoma, led to prompt hysterectomy on the assumption of cancer. A few months later extensive papulous syphilids developed, and it was learned that the husband had been infected with syphilis seventeen years before. The infection of the wife was evidently recent, possibly, Neisser suggests, from contamination from a speculum. The Wassermann test before the operation would have suggested the necessity for vigorous treatment with both mercury and iodid combined, trusting to neither entirely. If in the course of two weeks of such treatment, refraining from local measures, there is no evidence of a tendency toward healing, then the diagnosis of syphilis can be abandoned. It is not always easy to carry out this scheme in practice, as patients may be unable to tolerate it. It is important to bear in mind that the affection in question may be syphilis in the first, second or third stage, and that every year adds to the number of cases of primary sores in unusual localities. In the above case the woman bore the hysterectomy without injury, but in another case of which he knows the infection had evidently been acquired during local treatment of "tonsil stones," and the fresh syphilitic lesion in the tonsil was assumed to be a sarcoma. The possibility of syphilis was suggested, but only the tertiary form, and potassium iodid was administered, but without effect. This was supposed to exclude syphilis, and consequently excision of the lesion was determined, but the findings on tracheotomy excluded sarcoma and the operation was not completed. The patient suc-

cumbed, however, to "aspiration pneumonia" from the tracheotomy. Accumulations of round cells must not be accepted as a sure sign of cancer; nothing but typical carcinoma findings justify this.

97. **Specific Substances in Diagnosis and Treatment of Tuberculosis.**—Mitulescu here gives a summary of the various technics for application of tuberculin in diagnosis and treatment, comparing his own results with those of others and concluding by emphasizing the importance of tuberculin treatment in the early stages of tuberculosis. He calls on the general practitioners as the ones to apply it on a large scale. This is the only way to prevent chronic tuberculosis from becoming "open," and to have the prophylaxis of the disease truly effectual. Nothing can be really accomplished, in prophylaxis, he adds in conclusion, until general practitioners become convinced of the importance of specific treatment of tuberculosis and learn to apply it in the earliest stages of the disease.

Deutsche medizinische Wochenschrift, Berlin

August 12, XXXV, No. 32, pp. 1378-1416

99 *Summer Maximum of Infant Mortality. (Ueber den Sommergipfel der Säuglingssterblichkeit.) H. Finkelstein.
100 *Fatalities from Ileus and its Treatment. (Zur Frage des Ileustodes und der Ileustherapie.) W. Braun and H. Boruttau.
101 Mechanism Regulating Secretion of Intestinal Juice. (Zur Analyse des Erregungs- und Hemmungsmechanismus der Darmsaftsekretion.) B. Molnar.
102 Study of Wassermann Reaction. H. Schlimpert.
103 Satin Wood Dermatitis, an Anaphylaxis of the Skin. (Satinholzdermatitis, eine Anaphylaxie der Haut.) Wechselmann.
104 *Physical Measures in Treatment of Pulmonary Edema. (Zur physikalischen Therapie des Lungenödems.) T. Kulenkamp.
105 *Differentiation of Pernicious from Severe Secondary Anemia by Findings in Ocular Fundus. (Verwertung von Augenhintergrundsuntersuchungen zur Differentialdiagnose zwischen perniziösen Anämien und schweren sekundären Anämien.) F. Hesse.

99. **Causes of Increased Infantile Mortality in the Summer.**—Finkelstein gives curves showing the infant mortality and the temperature day by day, the peaks in each paralleling each other to a remarkable extent. An extremely hot day is almost inevitably followed by a number of extremely sick infants being brought to the hospital before the close of the twenty-four hours. This is too early for toxic or bacterial influences to make themselves felt so fatally, and he agrees with those who regard this immediate hot-weather infant mortality as due to actual heat stroke; the death should be reported as heat stroke. But these acute cases of heat stroke do not explain the steady increase as the hot weather continues. The subacute indigestion which begins in the hottest weather generally terminates fatally after the extreme heat has subsided, so that the highest mortality is found when the weather has returned to moderate. Extreme heat may lead to severe gastrointestinal disturbances in adults on a hearty diet, and the same must be assumed in regard to infants. As their tolerance for cow's milk under all circumstances is lower than for breast milk, the bottle-fed children will sicken earlier and more severely than breast-fed children. It is also possible that the breast-fed child is more resistant not only to alimentary disturbances, but to the effect of the heat. An important practical conclusion from his views is the necessity for treatment as for heat stroke in the hot-weather ailments of infants. In his experience he has witnessed symptoms suggesting heat stroke in infants during sweating procedures, even in winter. The effect of the high temperature is felt most severely when it is protracted and when the children are kept too warmly clothed and covered up. The latter factor may explain the greater prevalence of these disturbances in the lower classes.

100. **Treatment of Ileus.**—Braun has been experimenting with animals to determine the most decisive factors in the fatalities from ileus. The results show that autointoxication and reflex action are comparatively unimportant factors. The disturbances are the result of interference with the functioning of the intestines and with the circulation in the abdominal cavity. The heart is not primarily involved with ileus in the small intestine unless the clinical picture is complicated by infection. Otherwise in animals as in man the normal heart continues to work continually and powerfully to the very last. At first the intestine above the occlusion increases in size, fills up with intestinal juice in nine hours with an amount corresponding to the total quantity of blood in the animal. All the intestinal vessels are gorged with blood and the intestine above the obstruction is in extreme peristaltic excitement, accompanied by exaggerated secretion of pancreatic and intestinal juice and bile. These views emphasize the necessity in ileus for measures to tranquilize the intestine and regulate the circulation. Opium may accomplish the former and saline infusion the latter, possibly supplemented by a suprarenal preparation.

104. **Physical Measures in Edema of the Lungs.**—Kulenkamp reports a case in which edema of the lungs seemed to be controlled by measures as for artificial respiration. The effect was surprising and the patient was relieved at once. The dyspnea seemed to be most pronounced during expiration, and compression of the thorax at each expiration was kept up for an hour and a half until the patient was entirely at ease. When the disturbances come on more slowly, great benefit may be derived from application of a thermophore to the heart, inducing general sweating. This not only insures better circulation for the heart, but also improves conditions throughout the entire vascular system.

105. **Examination of the Fundus of the Eye for Differentiation of Anemia.**—Hesse states that hemorrhages in the fundus of the eye are an important symptom of pernicious anemia. He found hemorrhage in the retina in 47 out of 50 cases of pernicious anemia, but nothing of the kind was to be detected in 51 cases of severe secondary anemia from chlorosis, hemorrhages or cirrhosis of the liver, nor in 64 cases of cancer, including 29 gastric carcinomas. This absence of hemorrhages in the retina in the cancer cases suggests the importance of this sign for differentiation of anemia of different origins. Positive findings speak for the pernicious form, while negative sustain the assumption of some hidden malignant tumor, presumably in the intestines.

Medizinische Klinik, Berlin

August 1, V, No. 31, pp. 1145-1180

106 Operations on Nasal Septum in Children. (Operationen an der Nasenscheidewand in jugendlichem Alter.) L. Réthi.
107 *Operative Treatment of Congenital Dribbling of Urine. (Zur operativen Heilung des angeborenen Harnträufelns.) Hackenbruch.
108 *Organ Disturbances in Tapeworm Hosts. (Organstörungen bei Tänienträgern.) R. Latzel and A. Staniek.
109 Balneotherapy for Children. M. Hirsch.
110 *The Creeping Cure in Treatment of Scoliosis. (Kriechkur in der Skoliosenbehandlung.) G. Müller.
111 Double Stain for Distinguishing Live from Dead Lepra Bacilli. (Unterscheidung lebender und toter Leprabazillen durch Doppelfärbung.) P. G. Unna.

107. **Operative Treatment of Congenital Dribbling of Urine.**—Hackenbruch obtained very satisfactory results in a case of interior fissure of the bladder with epispadias of the urethra in a girl of 12 who had suffered from constant dribbling of urine since birth. He could not find any account of a successful technic in the literature, and devised one for himself, drawing up the neck of the bladder to make a narrow passage and then twisting the canal thus formed, from below (Gersuny), thus inducing compression of the urethra and of the newly formed neck of the bladder. He gives six illustrations of the technic followed, the neck being drawn up with three silk sutures tied separately, working through a suprapubic incision. After an interval intended to be six months, but for various reasons lasting nearly two years, the second part of the technic was applied, twisting the urethra like a corkscrew and fastening it in this position with a silk suture to the labium minus. Normal conditions were restored, even to the normal sensation of desire to urinate and ability to restrain it, and these normal conditions have persisted for four years to date.

108. **Organ Disturbances in Tapeworm Hosts.**—Latzel tabulates the findings in 50 cases. They show that the tenia is liable to have an injurious influence on various organs, both by its toxic products and by reflex action, the resulting disturbances simulating serious primary disease. √

110. **Creeping in Treatment of Scoliosis.**—Müller endorses the efficacy of Klapp's creeping method in the treatment of scoliosis, but urges that it should be supplemented by the other usual measures.

Münchener medizinische Wochenschrift

August 10, LVI, No. 32, pp. 1625-1672

112 *Neuroses of Internal Organs. (Neurosen innerer Organe und Erkrankungen der Organnerven.) A. Schmidt.
113 *Local Treatment of Slight Inflammatory Processes in Parturients. (Zur Wertschätzung einer örtlichen Behandlung der leichteren Wundentzündungen des Wochenbettes.) O. v. Herff.
114 *Treatment of Hematocele after Extrauterine Pregnancy. (Zur Behandlung der Haematozele nach ektopischer Schwangerschaft.) P. Esch.
115 *Suture of the Heart. (Zur Herznaht.) H. Flörcken.
116 *Gastric Ulcer in Bavaria. (Verbreitung des Ulcus ventriculi in München und im bayerischen Gebirge.) Crämer. Id. (Häufigkeit des Ulcus rotundum ventriculi in München.) Oberndorfer.
117 *Anemia in Infants and its Prevention. (Anämie des Säuglingsalters und ihre Verhütung.) J. Katzenstein.
118 Treatment of Circumscribed Skin Lesions with Carbon Dioxid Snow. (Behandlung von umschriebenen Hauterkrankungen mit Kohlensäureschnee.) L. Zweig.
119 Hyperkeratosis under the Nails as Roentgen Injury. (Hyperkeratosis subungualis Unna als Röntgenwirkung.) Wehrsig.
120 Roentgen Localization of Foreign Bodies. (Einfache Methode zur Bestimmung des Tiefensitzes von Fremdkörpern mittels Röntgenstrahlen.) C. Müller.
121 Formula for Computing Actual Size of Organs from Roentgen Shadows. (Bestimmung der wahren Grösse von Organen, etc., aus der Grösse des Schattens im Röntgenbild.) R. Geigel.
122 *Suckling and Cancer. (Mutterbrust und Karzinom.) A. Groth.

112. **Neuroses of Internal Organs.**—Schmidt thinks that the proper classification of these affections gives a clew for treatment, and suggests the following three groups: (1) Central (psychogenic) organ neuroses (all partial manifestations of psychoses), or psychoneuroses or, as organ neuroses, the apparently isolated manifestations of the same; (2) peripheral organ neuroses and affections of the nerves of the organs. These include: (a) disturbances originating in the nerves controlling the organ, the vagus and sympathetic, such as tabetic crises, the Adams-Stokes syndrome for which the vagus is responsible, and certain cases of paroxysmal tachycardia; (b) disturbances due to the nervous elements of the organs themselves, such as the Adams-Stokes syndrome due to some affection of the bundle of His, asthma and pylorus spasm; (3) toxoneuroses of the organs, such as lead colic, goiter heart, and the gastrointestinal disturbances of Addison's disease. We know that the toxoneuroses are frequently accompanied by symptoms of insufficiency of the organs involved. Examples of this are the weakness of the heart with goiter heart, myoma, and in the menopause, and the connection of nicotin with arteriosclerosis. It is evident that the parenchyma is injured as well as the nerves. This is also manifest in bronchial asthma (nervous catarrh). On the other hand, in Group 2a, the disturbance is mainly functional. Changes in the heart beat from an affection of the vagus, in case the heart muscle is sound, are not so readily followed by weakness of the heart. The central organ neuroses, Group 1, leave the organ absolutely intact, the whole suddenly vanishing without leaving a trace. The experienced practitioner intuitively draws the line for which research is now striving to supply exact data for differentiation and treatment. Digitalis may help in heart disturbances due to an affection of the vagus but it fails in those due to the bundle of His and with goiter heart. The central heart neuroses are not benefited by digitalis or carbonated baths any more than is psychogenic dyspepsia benefited with diet and lavage. They are helped only with psychotherapy and general tonic measures and sedatives. The peripheral organ affections for which the vagus is responsible respond effectually to atropin. Unfortunately, the means of combating the autotoxic neuroses are still far from satisfactory, but the growing knowledge of the action of the special organ extracts, such as suprarenal extract, justifies the hope that much good may yet be accomplished in this line.

113. **Local Treatment of Slight Inflammatory Processes in Parturients.**—The tabulated details of v. Herff's obstetric cases during the last twelve years demonstrates, he thinks, the superiority of his method of managing slight local inflammation during confinement. His aim is to stimulate the vagina and uterus to self-drainage. This he accomplishes with hot vaginal douches, ergot internally, and if necessary, a flexible metal drain introduced into the uterus.

114. **Treatment of Extrauterine Pregnancy.**—Esch reports a case in which the hematocele putrefied; vaginal incision with drainage had proved inadequate. In another case menacing after-hemorrhage occurred. He now operates at once to avert such complications and in nineteen cases of extrauterine pregnancy has had no mortality except with one moribund patient.

115. **Suture of the Heart.**—Flörcken reports another successful case and discusses the chances for surgical intervention in injury of the heart, the diagnosis, indications, technic and after-treatment with a historical review of the subject. The pericardium became adherent in some of the patients later, and on account of this danger of adherence he commends the advantages of definite resection of the rib to permit immobilization of the anterior wall of the chest.

116. **Frequency of Gastric Ulcer in Bavaria.**—Crämer has been collecting information in regard to the prevalence of gastric ulcer in Munich and in the country districts and states that an ulcer or an ulcer scar is found in from 5 to 8 per cent. of all the cadavers examined at Munich, while in 21 rural districts the proportion is very low in 9 and unusually high in 9 others. One practical conclusion of his investigations is that a vegetable diet does not by any means insure immunity against gastric ulcer.

117. **Prevention of Anemia in Infants.**—Katzenstein refers to the anemia without appreciable cause, and experience has convinced him that these anemic infants are suffering from lack of iron. This form of anemia is more common in families in which the infants are allowed nothing but milk while it is rare when the children early eat at the family table. He does not give iron directly but during or after the third month allows once a day a little meat broth with one-half and later the whole yolk of an egg. During the fourth and fifth months gruel is given once or twice a day, made of zwieback with butter, milk, salt and sugar to which the egg yolk is added. By the sixth or ninth month he gives spinach; by the tenth and eleventh month a little meat. When the child is a year old he reduces the milk to a pint or a pint and one-half a day and accustoms the child to a mixed diet. By this means, the anemia is prevented and always cured when developed. Infants seem to feel the need of iron mostly in the fourth month, and by giving them in this way a little food that contains iron it is possible to keep the hemoglobin at 100 per cent. The children take this diet without disturbance. Yolk of egg and spinach contain 22 and 35 mg. iron in 100 gm. of dry substance, while cow's milk contains only 2.3 mg. He thinks it is not a mere coincidence that none of the children given iron in this way has ever developed rachitis. Milk does not contain enough iron for the proper development of the infant, and sooner or later the child will suffer, especially about the fourth or sixth month, at which time a little mixed food containing iron is given whether the child is getting breast milk or is bottle-fed.

122. **Cancer and Suckling.**—Groth presents some tabulated statistics which demonstrate that women who nurse their infants seem to be protected in much larger measure against cancer of the breast and genital organs than other women. The proportion of cancers grows less with the longer duration of the suckling period.

Wiener klinische Wochenschrift, Vienna

August 12, XXII, No. 32, pp. 1119-1144

123 *Clinical Symptoms of Hypertrophy of the Left Ventricle. (Ueber mehrere klinische Symptome der Hypertrophie des linken Ventrikels.) L. Kurt.
124 *Connection of Scleroderma with Tuberculosis. S. Reines.
125 Improved Technic for the Wassermann Reaction. (Warum ist die Hechtsche Modifikation der Wassermannschen Luesreaktion dieser und der Sternschen Modifikation vorzuziehen?) König.
126 Incarceration of Appendix in Hernial Sac. (Kasuistischer Beitrag zur Kenntnis der Appendizitis und Appendixeinklemmung im Bruchsack.) A. v. Winiwarter.

123. **Clinical Symptoms of Hypertrophy of the Left Ventricle.**—Kurt calls attention to a symptom which he has been studying for five years, the increased loudness of the first sound over the left ventricle just above the apex. In normal conditions the second sound is weaker here than over the adjoining part of the right ventricle. The louder first sound over

the middle part of the left segment of the heart occurs, (1) in the so-called exercise hypertrophy of the heart; (2) in "pregnancy heart;" (3) in senile hypertrophy; (4) in the hypertrophy of the obese; (5) in certain valvular defects, especially with well compensated mitral insufficiency; (6) as an early symptom in arteriosclerosis; (7) in the hypertrophy accompanying nephritis. The frequent weakening of the first sound with the "lifting apex beat" is partially the result of conduction. The lifting apex beat prevents the shaking of the thorax during systole, as it is lifted with the apex. An artificial murmur is produced in the stethoscope with this lifting apex beat, which renders the perception of the first sound more difficult. The louder second sound with hypertrophy is probably due in part to the enlargement of the aorta. Bamberger was the first to emphasize the importance of the lifting apex beat with pronounced hypertrophy of the left ventricle, and also the importance of the louder second aortic sound for the diagnosis of the condition.

124. **Relations Between Scleroderma and Tuberculosis.**—Reines reports thirteen cases which confirm the connection between scleroderma and tuberculous infection. Energetic tuberculin treatment seems to have been responsible for the stationary phase into which the scleroderma entered in two cases. It is possible, he adds, that the sympathetic nervous system might be influenced by Roentgen-ray exposures, as Schwarz has found in diabetes and exophthalmic goiter. The tuberculin tests were positive in all his cases of generalized scleroderma, and the tendency of the tubercle bacillus to induce sclerotic processes is another argument in favor of this assumption. Inoculation of animals also gave positive results.

Zentralblatt für Gynäkologie, Leipsic

August 14, XXXIII, No. 33, pp. 1137-1176

127 Extraperitoneal Cesarean Section. (Der extraperitoneal Kaiserschnitt.) K. Reifferscheid. (Extraperitonealer Kaiserschnitt nach Latzko-Döderlein.) Jahreiss. (Ein extraperitonealer Kaiserschnitt, die Frucht in positio occipitalis sacralis.) Nacke. (Fall von extraperitonealem Kaiserschnitt nach Sellheim.) G. Heinricius. (Zwei extraperitoneale Kaiserschnitt nach Latzko.) J. Eversmann. M. Frank. (Ueber den extraperitonealen Kaiserschnitt.) W. Rubeska. (Peritonealer oder extraperitonealer Kaiserschnitt.) K. E. Laubenburg.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 12, XXX, No. 96, pp. 1009-1016

128 *Treatment of Chlorosis. (Terapia della clorosi.) R. Ferrario.

128. **Treatment of Chlorosis.**—Ferrario relates his experience with twelve cases of chlorosis in which he supplemented iron tonics with hot baths to induce sweating and thus stimulate the general metabolism and blood production. The sweating seems to mobilize the deposits of iron in the organism. The metabolic findings, as he tabulates them for each of his cases, confirm the efficacy of this method of treating chlorosis.

Riforma Medica, Naples

August 9, XXV, No. 32, pp. 870-890

129 *Polymorphous Septicemic Fevers. (Sulle febbri e febbricole setticemiche polimorfe.) G. Rummo.
130 Relations between Diabetes and Islands of Langerhans. (Contributo anatomo-clinico allo studio del rapporto tra diabete mellito ed isole del Langerhans.) G. Rubinato.
131 *Lip Tuberculin Test. (La reazione locale della tubercolina saggiata su talune mucose.) G. Pollaci.

129. **Septicemic Fevers.**—This is the first of a series of twelve lectures delivered by Rummo on the various septicemic fevers, typhoid, paratyphoid, Malta fever, etc.

131. **Local Tuberculin Reaction on the Mucosa Inside the Lip.**—Pollaci has applied the local tuberculin test to the mucosa of the mouth and states that in 10 cases the reaction was pronounced even when the ocular reaction and reaction with the test on the mucosa of the urethra gave dubious findings. The test applied to 20 persons, healthy or with other diseases, gave constantly negative findings. The instillation of the tuberculin on the absorbing mucous surface in the mouth is very simple; a single drop of tuberculin is placed on one side of the frenulum as the lower lip is drawn out. The drop of tuberculin is allowed to remain undisturbed until completely absorbed, which is soon accomplished. The saliva does not interfere with the reaction, as normally the saliva does not accumulate at this point. The reaction ranges from slight congestion with a little fibrinous exudate to pronounced hyperemia, edema and minute ulceration, the symptoms all subsiding in from six to twenty-four hours. He is convinced that the substitution of the lip test will be found an improvement as it is free from the possible dangers of the ocular test, while it is more sensitive and reliable than other technics.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

PHILADELPHIA GENERAL HOSPITAL REPORTS, Volume VII, 1908. Edited by Herman B. Allyn, M.D. Cloth. Pp. 272. Philadelphia, 1909.

THE PRINCIPLES AND PRACTICE OF MEDICINE. By William Osler, M.D., Fellow of the Royal Society. Seventh Edition. Cloth. Pp. 1143. Price, $5.50. New York: D. Appleton and Company, 1909.

PARENTHOOD AND RACE CULTURE: An Outline of Eugenics. By Caleb Williams Saleeby, M.D., Ch.B., F.Z.R., Edin., Fellow of the Royal Society of Edinburgh. Cloth. Pp. 389. Price, $2.50, net. New York: Moffat Yard and Company, 1909.

PRACTICAL DIETETICS, with Special Reference to Diet in Diseases. By W. Gilman Thompson, M.D., Professor in the Cornell University Medical College. Fourth Edition. Cloth. Pp. 928, with illustrations. Price, $5. New York: D. Appleton and Company, 1909.

MEDICAL SOCIOLOGY: A Series of Observations Touching on the Sociology of Health and the Relations of Medicine to Society. By James Peter Warbasse, M.D., Surgeon to the German Hospital. Cloth. Pp. 355. Price, $2. New York: D. Appleton and Company, 1909.

TUBERCULOSIS. A Treatise by American Authors on Its Etiology, Pathology, Frequency, Semeiology, Diagnosis, Prognosis, Prevention and Treatment. Edited by Arnold C. Klebs, M.D. Cloth. Pp. 939, with 3 colored plates and 243 text illustrations. Price, $6. New York: D. Appleton and Company, 1909.

New Patents

Recently granted patents of interest to physicians:

928356. Capsule filler. P. H. Brown, Temple, Tex.
928752. Invalid's table. M. A. Hawley, Elk Grove, Cal.
928539. Lotion. G. Pucciarelli, Jersey City, N. J.
928884. Inhaler. V. E. Randall, Battle Creek, Mich.
40158. Design., massaging-implement case. A. H. Apfel, Chicago.
929383. Maunfacture of a disinfectant. A. Brick, Vienna, Austria-Hungary.
929281. Muscle-testing machine. A. A. Brodeur, Worcester, Mass.
929199. Inhaling and heating device. H. C. Dreisvogt, Santa Clara County, Cal.
929307. Utensil sterilizer. G. Holden, Merchantville, N. J.
929610. Commercial package of medicine. J. K. Lilly, Indianapolis.
929166. Catamenial bandage. I. L. Plamondon, Provemont, Mich.
299112-3. Vacuum massaging machine. C. B. Rider, Ocean City, N. J.
929254. Vaporizer. Z. G. Sholes, New York.
929524. Crutch. C. A. Weaver, Roswell, Ga.
929357. Combined bed-sheet and shelter tent. F. Whitney, Cimarron, N. M.
93023. Sterilizing fluids. C. B. Bartley, Pittsburg, Pa.
930031. Supporter. H. Bierhoff, New York.
929,833. Surgical instrument. R. L. Combs, Kerrville, Tex.
13001. Reissue, making camphor. C. Glaser, Baltimore.
929947. Electric needle spray bath brush. H. Hertzberg, New York.
929677. Automatic liquid-dispensing cabinet. E. Lavens, New York.
930203. Electrical instrument for pyrogravure and surgical purposes. L. Mandarelli, Paris, France.
929963. Disinfecting composition. A. W. Lyda, W. W. Cubbison, New Castle, Pa., and E. C. Robinson, Lowellville, Ohio.
930312. Vaginal syringe. F. A. Neveu, Denver.
930002. Window tent. W. E. Walsh, Morris, Ill.
930009. Combined water bag and syringe. W. G. Williams, Vinita, Okla.
930528-9. Ice-cream-containing cabinet and soda fountain. W. Buttler, Indianapolis.
930841. Inhaler. H. P. Collins, East Orange, N. J.
930768. Obstetric appliance. F. E. Kelly, Kewanee, Ill.
930977. Vaporizer for disinfectants. G. Leininger, Chicago.
930686. Microtome. W. L. Patterson, Rochester, N. Y.
930619. Antiseptic card ticket, and package-delivering case. E. E. Russell, Los Angeles, Cal.
930439. Obstetric pad. M. H. Topping, Flat River, Mo.
930909. Making extracts. W. Wiegand, Merseburg, Germany.
930910. Pasteurizing and cooling process. J. Willman, Derby, Conn.
931025. Pasteurizing holding tank. J. E. Amend, Milwaukee, Wis.
931113. Syringe. A. Bean, New Brunswick, N. J.
931378. Adjustable support and aseptic trays. C. F. Booth, Canandaigua, N. Y.
931030. Sprayer. D. O. Bowman, Rockford, Mich.
931034. *X*-ray apparatus. E. W. Caldwell, New York.
931612. Knife for surgical purposes. E. Huttmann, Hamburg, Germany.
931219. Douche pan protector. E. Reynolds, North Salem, N. Y.
931520. Emulsion and producing same. J. Stockhausen, Crefeld, Germany.
931240. Atomizer. R. F. Vanner and A. W. Brown, London, Eng.
931539. Bed or douche pan. B. C. Williams, Stamford, and A. C. Scott, Temple, Tex.

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Original Articles

THE OBLITERATION OF THE CRAVING FOR NARCOTICS

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NEW YORK

If some years ago any one had told me that it was possible to take away the desire for morphin, cocain, or alcohol in less than five days with a minimum of discomfort and suffering to the patient, I should have felt justified in treating the statement with a polite skepticism. Such, however, is the fact, if the treatment which is about to be described in this article is carefully carried out. I do not doubt that in my turn I shall be met with skepticism, and perhaps ridicule, and more especially from those members of the profession who have struggled and toiled to break up the morphin and cocain habits. Heretofore there has been nothing so discouraging, so trying to both physician and patient, as the endeavor to eradicate the craving for these drugs.

In my service in the alcoholic wards of Bellevue Hospital most of the patients were simply in the various stages and degrees of alcoholism, but there was always about 1 per cent. among the men and 2 per cent. among the women who were addicted to morphin and cocain. Many of these patients did not wish to be cured; many did earnestly desire to be rid of their enslaving habit. Many were the forms of treatment and drugs with which I tried to break off the habit and take away the craving. In a very few cases I sometimes believed that I had succeeded, but even in these cases there was always a doubt in my mind. In the vast majority of patients I knew that I had failed.

Five years ago Mr. Charles B. Towns, of New York City, informed me that he had a treatment by the use of which it was possible in about three days to remove the craving for morphin and cocain and also for alcohol. After this desire for the narcotics was gone the patients would be able to remain free from the use of morphin, and if it was worth while to the patients it was possible for them to abstain from the use of cocain and alcohol. Mr. Towns, not being a physician, was not bound to tell me the ingredients of this treatment. I begged him to publish it and to put it on an ethical basis, as otherwise I could not use it, but at that time it did not seem expedient for him to do so. Recently he has made the treatment known in all its details to the Opium Congress at Shanghai, and on his return from China he has given me the full details of the treatment and I have been using it in Bellevue Hospital during the last two months.

While the treatment was still unknown to me, and before I used it, I watched Mr. Towns treat various patients addicted to morphin, cocain and alcohol, and found that the claims he made for the treatment were true. I have, therefore, watched patients who ceased the use of their drug five years ago and have not returned to it, and recently I have myself carried out the treatment indicated below.

There are so many factors to be considered in treating those addicted to narcotic drugs that there is no intention here to claim an infallible cure. We are dealing very often with the morally perverted, with those who have been suffering mental or physical pain, with those who have endeavored to stimulate their flagging abilities to ward off failure in life and to spur themselves on by means of these drugs in the hope of succeeding where failure seemed inevitable. Every morphin habitué knows the ease and sureness with which morphin will relieve pain and distress, and if once off the drug and the temptation returns there is a full knowledge of how it may all be relieved. There is no stimulant like cocain, which so fully gives the feeling of being able to do all that one hopes and dreams possible; and there is no drug which so gives the feeling of physical and mental well-being. Added to this, after a few months' use of cocain, there arises a form of persecutory insanity which convinces those addicted to the drug that every one and all the world is against them, and they refuse to listen to any advice. Most alcoholics do not desire to cease from their drinking. When once the habit becomes thoroughly formed, they do not become drunk from haphazard drinking, but they deliberately drink to excess that they may blunt the knowledge of their unhappiness and the realization of their misery and their environment. Alcohol also in many cases brings with it actual physical lesions in the nervous tissues, so that with a deteriorated mentality the higher functions of the mind are destroyed.

The specific in this treatment is the old 15 per cent. tincture of belladonna and the fluid extract of xanthoxylum (prickly ash) and the fluidextract of hyoscyamus mixed in the following proportions:

℞.	gm.	
Tincturæ belladonnæ..................	62	℥ii
Fluidextracti xanthoxyli..............		
Fluidextracti hyoscyami ....āā	31	℥i

While this specific is being given, the patients do not suffer from the intense diarrhea which usually accompanies the withdrawal of morphin. On the contrary, the most energetic, drastic, cathartic medication is necessary to obtain the desired elimination and to make their bowels move satisfactorily. This cathartic medication forms one of the crucial points in the treatment. Unless it is properly carried out the treatment will fail and the patients suffer intensely and to no avail. If properly carried out, according to the directions given below, the sufferings of the patient are actually but little, and the treatment goes on to a successful issue.

The most useful combinations in my hands have been the compound cathartic pills of the Pharmacopeia, which contain:

℞.	gm.	
Extracti colocynthidis compositi......	08	gr. i⅓
Hydrargyri chloridi mitis.......... .	06	gr. i
Cambogiæ	016	gr. ¼
Resinæ jalapæ	02	gr. ⅓

And also the pilule catharticæ vegetabilis:

℞.	gm. or c.c.	
Extracti colocynthidis compositi.......	06	gr. i.
Extracti hyoscyami		
Extracti jalapæ ....āā	03	gr. ss
Extracti leptandræ		
Extracti resinæ podophylli..........āā	015	gr. ¼
Olei menthæ piperitæ................	008	M. ⅛

To these last I have added in each pill 1/10 (6 mg.) of a grain of the oleoresin of capsicum, ½ gr. (30 mg.) of ginger, and 1/25 minim (.0025 c.c.) of croton oil. I also found that the ordinary stock preparations of compound cathartic pills were too dry to be effective. I, therefore, had made up fresh masses of these preparations, and the mass equivalent to each pill put into a capsule. The preparations kept their freshness, and their effectiveness was very noticeably increased. I also had put in capsules blue mass in five-grain doses. I have thus gone into details because of their importance.

For brevity, I shall hereafter refer to the compound cathartic pills as C. C. pills, and the vegetable cathartic pills, as modified above, as B. B. pills.

The treatment of a case of morphin or cocain is as follows: Before beginning the treatment, give four C. C. pills and five grains of blue mass. It is also wise at this time to give an enema of soapsuds to clean out the rectum and sigmoid thoroughly. When these pills have begun to act, begin with the specific, 6 to 8 minims, and give it every hour throughout the treatment, or until some signs of belladonna intoxication are observed. Every six hours, increase the specific 2 minims until 14 or 16 minims are being taken every hour. Do not increase above 16 minims. If the signs of belladonna intoxication are noticed, such as dilated pupils, dryness of the throat, red rash, or a rapidity and incisiveness of speech, or sometimes a beginning delirium, stop the specific. When these belladonna symptoms have subsided begin the specific again in 8-minim doses. Some patients are very susceptible to belladonna, and one may have to begin again with 4, 5 or 6 minims. Give with the first dose of the specific from one-half to two-thirds of the usual total daily dose of opium, morphin, or cocain which the patient is taking at the time of his treatment. Divide this amount of narcotic in three doses and give them at half-hour intervals, by mouth or by hypodermic as the patient is accustomed to take it. After the first dose of the specific, wait fourteen hours and then give four C. C. pills and five grains of blue mass; again, six hours later, repeat the four C. C. pills or give four to six B. B. pills. It is essential that the cathartic should act at this time, and, if the above amounts do not produce the desired action within three or four hours, they must be repeated with five to ten grains of blue mass. It is astonishing how difficult it sometimes is to obtain a cathartic action at this period, but cathartics must be persisted in until a movement is obtained. If this is not done, the patients are liable to begin to vomit, and the distressing symptoms of the narcotic withdrawal will come out in full force. An ox-gall enema is sometimes of assistance.

After the bowels have acted, but not before, one-third or one-half the original dose of the narcotic may be given. This will make the patient comfortable and contented and ready for the final stage.

Twelve hours after the second dose of the narcotic again give 4 C. C. pills or 4 to 6 B. B. pills with five grains of blue mass, and six hours later give an ounce or more of castor-oil disguised in coffee or orange juice, but not in whiskey. Just before the castor-oil acts, one may have to give from two to five grains of codein phosphate hypodermically or by mouth to quiet the nervousness and discomfort. This is not always necessary, but it adds to the comfort of the patient and does not tie up the secretions as does opium or morphin. The castor-oil at this time will produce a characteristic stool, which shows that the entire treatment may cease. This is a liquid green stool, composed of mucus and bile. When this stool occurs, or shortly afterward, the patients often will feel suddenly relaxed and comfortable, and their previous discomfort ceases. The transition from discomfort to relaxation and contentment is often strikingly marked.

After the patient has been under treatment for thirty hours, one should begin to give some cardiac stimulant, such as strychnin, 1/30 to 1/60 grain, every three hours, or digitalis or strophanthus, either one of these separately or in combination. These tend to overcome the relaxation of the vascular system, which in these patients often produces a feeling of exhaustion.

During the treatment the patients should be given a regular diet of easily digested food, such as eggs, cereals, bread and butter, and vegetables; coffee or tea if they desire it. Many of these patients have a good appetite throughout and eat abundantly; some, of course, do not, and, beginning in a poor physical condition, do not begin to eat abundantly until after the treatment is ended. After they are through the treatment, their appetite becomes voracious, and during the first week care must be taken that they do not overeat, which they are very prone to do. If their stomachs should become overloaded the discomfort will often make them feel as if they were suffering from the symptoms of withdrawal of their accustomed narcotic. If this occurs, the best thing to do is to give them an emetic, and their distressing symptoms will soon cease.

The treatment of alcoholics with this specific differs slightly from the treatment of the morphin or cocain habitué. The same specific is used and in the same dosage, but it does not have to be continued for so long a time, although there may be some exceptions. Much closer observation is necessary in treating the alcoholic in regard to the symptoms of the intoxication of belladonna. The alcoholic is more sensitive to the belladonna effects. This is only a general rule, because, no matter what narcotic drug an individual may take, or how accustomed he may be to enormous doses of any given narcotic, he may have a marked idiosyncrasy toward any other drug. If, however, there is an idiosyncrasy against belladonna this sensitiveness will show within six or eight hours, no matter which one of the three narcotics under discussion the patient has been taking. The alcoholic is more prone to show a slight delirium from belladonna than are the patients who take morphin or cocain, and often a good deal of shrewd observation is necessary to differentiate the beginning

TABLE OF TREATMENT OF PATIENTS ADDICTED TO NARCOTICS

Case.	Sex.	Age.	Duration of Habit, yrs.	Drugs.	Daily Dose, Gm.	Mode of Admin.*	Alleged Cause.	State on Admission.	Initial Dose Drug, Gr.	Hours of Subsequent Doses.	No. Hours Specific Medication.	Average Hourly Dosage, Drops.	Hour Typical Stool Appeared.	Day of Discharge	Complications
1.	F	33	12	M	18	h	Pain after operation.	Emaciated, depressed.	7	26-38-60	58	12	36	14	Vomiting.
2.	M	33	11	M	25	h	Experiment. with drug.	Good.	6	28-39-60-63	58	11	58	11	
3.	F	45	⅔	H	4	h	Pain and nervousness.	Weak and nervous.	1	13-24-35-38	52	11	52	10	
4.	M	33	2	M	12	h	Pain after operation.	Good.	8	22-33-43-53	58	10	50	13	
5.	F	43	1½	M	12	h	Pain, acute rheumatism.	Good.	8	24-35 52-58-82	50†	9	44		Continued nervousness relieved by supplementary treatment.
6.	M	24	8	M	30	h	Pain.	Fair.	2	17-36	40	11	36	13	
			3	C	15	h	....		15	24-36	64	10	46	8	
7.	M	32	3	M	6	h	Acute rheumatism.	Weak and despondent.	2.5	25-67	45	12	43	11	
8.	M	24	¼	M	1	h	Rheumatism.	Good.	0.5	25	35	11	34	4	
9.	F	24	⅔	M	2	h	Prevent threat. abort.	Weak and nervous.	1		30	10	38	5	
10.	M	38	3	M	10	h	Stone in bladder.	Good.	4	24-32-41-47-53 11-21-27-35-48 54-64-74-81-97 101-111	42† 123	9 3-10	41	26	Bad condition. A previous "fake" treatment made this long course necessary. Final result excellent.
11.	M	50	4	M	2	m	....	Weak and hypochondriacal.	1	25	57	11	57	9	
12.	M	36	4	M	6	h	....	Fair.	3	23	48	10	48	12	
13.	F	27	⅔	M	4	h	Pain.	Good.	2.5	15-25-37	40	13	35	12	
14.	F	30	⅓	M	6		Gastralgia.	Fair.	2	36	54	12	55	9	Slight dyspnea due to heart.
15.	M	27	1½	M	7	h	Painful disease.	Weak and despondent.	5	26-33	61	10	59	7	Slight elevation of temperature.
16.	M	35	1/6	M	4	h	Alcoholism.	Fair.	2	14-27	48	11	48	12	
17.	F	59	20	M	12	m	By Phys. pain.	Feeble, nervous.	6	22-34	46	12	46	13	
18.	M	58	3	M	1	h	Grief, death relative.	Feeble, depressed.	0.5	26	56	9	58	13	
19.	M	35	⅔	M	30	m	Pain after operation.	Good.	20	26-38	50	8	41	11	
20.	M	58	12	M	5	m	....	Good.	3	24-38 7-22 36-60	49 114	10 3-12	47†	14	Persistent nervousness removed by supplementary treatment.†
21.	F	32	8	M	10	h	Environment.	Fair.	12	24 hrs. 4 grs. 52 hrs. Cod.	52	13	48	22	
22.	F	23	3	M	12	h	Prescribed following typhoid.	Poor.	8	18 hrs. 2 gr.	52	13	48	11	Alcohol.
23.	F	30	7	M	12	h	Prescribed during illness.	Poor.	8	24 hrs. 2 gr. Cod. 5 gr. 47 hrs.	47	8½	47	12	
24.	F	28	8	M	10	h	Environment.	Very poor.	5	23 hrs 3 grs.	49	12	49	14	Anemia.
25.	M	32	1½	M	5		Lumbago.	Good.	2	30 hrs. 1 gr. 54 hrs. 5 Cod.	54	13½	54	10	Alcohol.
26.	M	39	3	C M	12 5		Nasal catarrh.	Fair.	4	32 hrs. 1 gr.	40	19½	40	8	
27.	M	36	2	M	6	m	Following operation.	Good.	6	26 hrs. 2 gr. 22 hrs. 3 gr. Cod.	45	11	45	17	
28.	M	50	7	L	2 doz.		Following diarrhea.	Good.	2	24 hrs., oz. 1 Laudanum; 40 hrs. Cod. gr. v.	47	11	47	6	

*M stands for morphin; C for cocain; H for heroin; L for laudanum; h for hypodermically, and m for by mouth.

† Supplementary treatment indicated in text.

delirium of belladonna from the ordinary delirium of alcohol. The belladonna delirium is, I think, a less furious and less pugnacious delirium than that of alcohol. The patients are more persistent and more insistent in their ideas, and more incisive in their speech concerning their hallucinations than is the alcoholic. The hallucinations of alcohol are usually those of an occupation delirium; those of belladonna are not. The various hallucinations of alcohol follow each other so quickly that a man is busily occupied in observing them one after another. The belladonna delirium is apt to be confined to one or two ideas in which the patient is very insistent.

If these symptoms of belladonna intoxication occur, of course, the specific must be discontinued, beginning again with the original smaller dose. When an alcoholic is admitted in the midst of his spree, or at the end of it, the first thing to do is to put that patient to sleep, and the only medication which precedes his hypnotic is the four C. C. pills. The hypnotic which has given me the best results is the following:

℞.	gm. or c.c.		
Chlorali hydrati	1		gr. xv
Morphinæ		008	gr. ⅛
Tincturæ hyoscyami	2		ʒss
Tincturæ zingiberis		6	m. x
Tincturæ capsici		3	m. v
Aquæ ad	15		℥ss

This can be given and the dose repeated in an hour, with or without one or two drachms of paraldehyd.

If these are not effective within two hours, or even less, and the patient is of the furious, thrashing, motor type, a hypodermic injection of the following will almost invariably quiet him:

℞.	gm. or c.c.		
Strychninæ sulphatis		002	gr. 1/30
Hyoscyamin sulphatis		0006	gr. 1/100
Apomorphinæ hydrochloridi		006	gr. 1/10

If the patient has been very hard to put to sleep and needed all these hypnotics, I let him sleep until he wakes naturally before beginning the specific. If, however, he goes to sleep easily with the chloral and paraldehyd, it is safe to wake him every hour for his specific, as he will quickly drop off to sleep.

I believe it wise to give most alcoholics 1/60 to 1/30 of a grain of strychnin every four hours. In the young robust alcoholic this may not be necessary, but in the majority of those at the end of a protracted spree it is more often indicated than not. Fourteen hours after the beginning of the specific the patient should again be given a cathartic. One must judge here from the severity of the action of the 4 C. C. pills whether the same dose should be repeated, or whether only 2 C. C. pills with five grains of blue mass should be given. Although I have never seen one of these patients overphysiced, we must treat them as individuals and not fall into the dangerous habit of routine treatment.

At this stage of the treatment the young full-blooded alcoholics may need a further dose of the hypnotic, and one may be able to carry them through the entire treatment without any alcohol; but the older alcoholics and those in a weakened and poor physical condition should have with their milk one or two ounces of whiskey about four times a day. This whiskey and milk is to be given only for the first twenty-four hours. During the second twenty-four hours probably only two doses of whiskey will be required, and after that it should not be given at all.

After the second dose of cathartics has acted, if the patients begin to show the characteristic green, mucus stools, they should be given an ounce of castor-oil, and from this dose the characteristic stool, as described under morphin, will appear and the treatment may cease. If, however, the green stool does not begin to appear at this time, further C. C. pills should be given, and as soon as the green stool begins to appear the castor-oil should be given.

After this treatment, with its vigorous elimination, these patients will feel languid and relaxed, but there is no craving for the alcohol. For the next two or three nights, if they can not sleep, they should be assisted with some hypnotic, such as sulphonethylmethanum (trional), and they should be given at regular intervals any good vigorous tonic that does not contain alcohol but will act quickly. For at least a week following this treatment they should continue their tonic, and they should live on a simple diet which is readily digested, but have an abundance of food.

It seems well to reiterate here, and to emphasize in the strongest way possible, that this treatment is not an infallible cure for alcoholism, for there is no such cure short of the grave. This does obliterate the craving, and establishes a patient's self-confidence to go on without alcohol; it will do all that can be done for the man who honestly desires to be helped; but as sure as that man lives, and just so long as he lives, he can not touch alcohol in any form whatsoever without danger of a relapse.

In the above description of the treatment for morphin, cocain or alcohol, I have spoken as if the patient was taking a single drug. Very frequently we encounter patients who are taking morphin and cocain or morphin and alcohol. When this treatment is given to the cocain habitué who is taking only cocain, or when morphin and cocain are combined, the patients sleep almost continuously throughout the treatment. Cocain is usually taken as a stimulant, an antidote against the depressing effects of the morphin, and this should never be forgotten; therefore, the initial dose of the morphin, in the very beginning of the treatment, when the two drugs are combined, should be smaller than when morphin alone is taken. Cocain is so strong a stimulant that when it is withdrawn it is often necessary, from the very beginning of the treatment, to give a stimulant, such as strychnin, instead of waiting thirty hours, as stated above.

The familiar symptoms in morphin withdrawal, such as intense diarrhea, intense joint and abdominal pains, and muscular contraction, do not occur when this treatment is properly carried out. They are most likely to appear just before the second cathartic acts, and for that reason, as emphasized above, the cathartic action must be obtained at this time. If this is not done, the patients are certain to have trouble.

The accompanying table gives in abbreviated form the course of the treatment in a number of patients and gives a statistical view of the various types of patients and the duration of their treatment. The duration of stay in the hospital may seem excessively long, but many patients remained in order that they might be built up physically after their treatment. Their craving for their drug ceased when the characteristic stool occurred.

As is well known, morphin is often taken to smother the pain of some underlying disease, or the distress of some disturbance of function. If these causes still exist after the morphin has been eliminated, the evidence of this former disease or this disturbed function will come to the surface again. At times the narcotic addiction is but a symptom of some abnormal mental state which is only diagnosticated after the narcotic craving in the patient has been removed. This treatment is not a cure-all for disease, a rehabilitator of all the disturbed functions of the body, but if properly carried out it will obliterate the craving for the narcotic and the patient starts anew where he was before taking the narcotic.

The details of this treatment have been given so minutely because it is necessary that they should be carried out, for the success of this treatment depends on the conscientious adherence to its many details. Unless this adherence is given, this treatment will probably not succeed. A successful issue is endangered when an attempt is made to carry out the treatment in the patients' homes and in their accustomed environment. They must be placed where they are alone and where they can be carefully watched. Morphin habitués never begin a treatment with any confidence of its success, but invariably with a dread of the distressing withdrawal symptoms. They will secrete the drug in the most unexpected places, and they are the most sly and resourceful creatures on earth, especially those who have ever tried to break it off. No physician is capable of taking this treatment himself and carrying it through successfully. If it is attempted, the old medical adage that the doctor who treats himself has a fool for a patient will be strikingly exemplified.

This treatment does not offer a cure of the perverted habits of the human race, or a regeneration of the mentally defective. It will obliterate the craving for narcotic drugs, and that is all that is claimed for it.

36 East Thirty-first Street.

THE PREVALENCE OF RABIES IN THE UNITED STATES *

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The identity of rabies as a definite disease appears now to be generally accepted, although there is still some question as to its etiology. The impression has prevailed, however, that the prevalence of the disease among both man and animals was exaggerated and that press reports of rabies among animals were in most instances erroneous.

That rabies has been endemic in the United States for more than a hundred years is shown by reports of cases and references to the disease in the medical literature from time to time during that period.

In reviewing the history of rabies in America, Ravenel states[1] that the first outbreak was reported from Boston in 1768, that it appeared in Philadelphia in 1779, that it was prevalent throughout the Northern states in 1785, and that soon after that time it spread to the Southern part of the country.

Reports of the disease have also appeared in newspapers from time to time for over a century; one of these, published in 1798 and recently quoted by Peters,[2] indicates that the disease prevailed in Massachusetts at that time.

There has undoubtedly been considerable variation in the prevalence of rabies from decade to decade, which fact has been responsible for inquiries in the past regarding the disease. Outbreaks in Massachusetts and other places have been observed within a year or two and invited attention to the desirability of further studies as to its general prevalence at the present time, and the means necessary for its control.

The Legislative Council of the American Medical Association, which met in Chicago, Dec. 10, 1907, adopted resolutions to the effect that rabies should be investigated by the U. S. Public Health and Marine-Hospital Service with the view to its prevention and control.

Provisions for investigations of rabies as it affects man had previously been included in a measure which was introduced into the Sixtieth Congress, and which it was expected would become a law. In view of the adoption of the above-mentioned resolution, however, it was decided immediately to resume laboratory investigations and to institute preventive treatment for the protection of persons bitten by rabid animals.

The Surgeon-General accordingly instructed the Director of the Hygienic Laboratory to undertake the preparation of rabies virus in connection with other investigations, and treat any persons who had been bitten by rabid animals and who might apply for such treatment.

The large demand for virus from different parts of the country indicated a widespread distribution of rabies throughout the United States. It, therefore, seemed desirable to determine as far as possible the geographical distribution of the disease as indicated by deaths among human beings and prevalence among animals.

SOME PREVIOUS REFERENCES TO THE PREVALENCE OF RABIES

In 1900 Salmon[3] reported an extensive investigation into the prevalence of the disease. He reported 230 deaths among human beings in seventy-three of the principal cities of the United States during the decade, 1890 to 1899. He also detailed reports of the existence of the disease in man or animals in the twenty-five states as follows:

Massachusetts
New York
Pennsylvania
Illinois
Iowa
Indiana
Missouri (?)
Wisconsin
Montana
Colorado
Nebraska
Minnesota
Ohio
Alabama
Tennessee
Maine
Maryland
North Carolina
Louisiana
Delaware
South Dakota
Kansas
Oklahoma
West Virginia
Wyoming

From the data presented, he concluded that rabies was much more common than had been supposed.

In 1906 Schroeder,[4] in discussing the prevalence of rabies, presumably in animals, quoted the Chicago *Chronicle* of Sept. 22, 1906, to the effect that rabies had existed during that year in the following fourteen states: Massachusetts, Ohio, North Dakota, South Dakota, New York, Michigan, Connecticut, Indiana, New Jersey, Kentucky, Pennsylvania, Delaware, Illinois and Rhode Island. In addition, Schroeder knew of cases in Maryland, Virginia, North Carolina and the District of Columbia.

In 1908 Hart[5] reported especially the prevalence of the disease in the District of Columbia, and stated that since 1903 positive cases had been diagnosed at the pathological division of the Bureau of Animal Industry from the following states: Virginia, Maryland, Indian Territory, Indiana, North Carolina, South Carolina, Georgia, West Virginia, New Jersey, Maine, and Wisconsin. He also referred to reports of its prevalence in Pennsylvania, Connecticut, Florida, Mississippi, New York, Illinois, and Minnesota, and stated that there was abundant evidence to warrant the statement that not a single state was free from the disease. Interesting facts on the prevalence of rabies are in the appendix to a report[6] issued in 1900 by the Committee on Public Health of the Medical Society of the District of Columbia. Among the localities mentioned is California.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Ravenel, Mazyck P.: Bull. 79, Dept. of Agric., Pennsylvania, 1901.

[2] Peters A.: Rabies in Massachusetts, Am. Jour. Pub. Hyg., February, 1907, p. 94.

[3] Salmon, D. E.: Year-Book Dept. Agric., 1900.

[4] Schroeder, E. C.: Circ. 120, Bureau of Animal Industry, 1908.

[5] Hart, G. H.: Circ. 129, Bureau of Animal Industry.

Many similar references might be made to reports of cases and estimates of its prevalence scattered through the literature. The assembling of such isolated references would be of much interest, but it is doubtful if they would render clearer our knowledge of the general prevalence of the disease.

In 1901 Ravenel[7] stated that there was no systematic report of rabies in the lower animals in any state, so that it was impossible to give any idea of the number of dogs or other animals affected yearly. He expressed the belief, however, that the disease was more prevalent than was generally supposed, and that it would increase unless controlled by means of efficient laws.

Moore[8] has also stated that the prevalence of the disease can not be accurately determined as there are no reliable statistics concerning it.

The same statement in a measure applies also with respect to the prevalence of the disease among human beings.

MORTALITY STATISTICS OF RABIES

On account of the almost uniform fatality of rabies among human beings, complete mortality statistics, if available, would give a fairly accurate idea of the geographical distribution of the disease. Unfortunately such statistics for the entire country are not available.

The Bureau of the Census has collected statistics[9] of rabies in the registration area, the deaths by years from 1900 to 1907 being given in Table 1.

TABLE 1.—DEATHS FROM RABIES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1907

1900	1901	1902	1903	1904	1905	1906	1907
33	41	45	43	38	44	85	75

The registration area comprised fifteen states, the District of Columbia, and seventy-eight cities, and contained an estimated (1906) population of 40,996,317. The total estimated population of the country during that year was 83,941,510.

The census statistics indicate that in 1906 and 1907 there were almost twice as many deaths from rabies as had occurred in any previous year since 1900. These deaths were distributed as shown in Table 2.

TABLE 2.—DEATHS FROM RABIES IN THE REGISTRATION AREA OF THE UNITED STATES, 1906 AND 1907

	1906		1907	
In Registration Area.	Cities.	Rural.	Cities.	Rural.
Connecticut	5	1	2	1
District of Columbia	0	0	1	0
Indiana	1	4	1	2
Maryland	2	0	0	0
Massachusetts	5	3	3	0
Michigan	2	2	1	2
New Hampshire	0	0	1	0
New Jersey	5	4	1	3
New York	15	1	27	3
Pennsylvania	10	4	2	10
Rhode Island	2	0	0	0
Cities in other states	19		15	
	66	19	54	21

PRESENT INQUIRY INTO THE PREVALENCE OF RABIES

When prophylactic treatment of rabies was begun by the service in April, 1908, preparations were also made to secure information regarding the occurrence of the disease throughout the country. Every effort was made to secure information regarding cases reported, and a letter was addressed by the Surgeon-General to health officers in every state and requesting their cooperation in the collection of data.

It was not expected that the facts elicited would by any means represent the exact prevalence of the disease, but rather its geographical distribution. This latter information is of importance from a public health standpoint as indicating where preventive measures are most needed and where prophylactic treatment should be made available.

For information regarding the disease, recourse has been had to state and territorial health authorities, including the District of Columbia; county and municipal authorities; the Bureau of the Census; Pasteur institutes, and press reports. Valuable assistance has been received through these agencies.

On account of the large number who furnished data, it is impossible to make personal mention, but acknowledgments are due and here made to all who contributed information, and whose cooperation rendered possible the collection of facts presented.

By making as careful inquiry as possible covering a certain limited period, it was thought that more definite information would be secured regarding the incidence of the disease. The facts collected and presented, therefore, relate only to the calendar year 1908.

Every effort has been made to include only authentic cases among human beings, and it is safe to say that no duplication of cases has occurred.

The same care has also been observed with respect to outbreaks among animals.

Table 3 contains the number of deaths reported among human beings in each state, and the number of localities in each state from which rabid animals were reported.

TABLE 3.—RABIES IN THE UNITED STATES DURING 1908

State.	No. deaths in man.	No. localities in which rabid animals were reported.
Alabama	1	13
Arizona	1	1
Arkansas	1	5
California	0	0
Colorado	0	1
Connecticut	1	7
Delaware	0	5
District of Columbia	0	1
Florida	0	11
Georgia	3	17
Idaho	0	0
Illinois	2	18
Indiana	5	57
Iowa	1	5
Kansas	2	4
Kentucky	1	7
Louisiana	4	3
Maine	0	0
Maryland	6	12
Massachusetts.	5	9
Michigan	3	11
Minnesota	2	18
Mississippi	1	10
Missouri	8	9
Montana	0	0
Nebraska	1	5
Nevada	0	0
New Hampshire	2	7
New Jersey	11	41
New York	19	52
New Mexico	0	0
North Carolina	0	19
North Dakota.	0	2
Ohio	4	32
Oklahoma	3	6
Oregon	0	0
Pennsylvania	14	25
Rhode Island.	1	10
South Carolina	1	5
South Dakota.	0	2
Tennessee	1	7
Texas	3	15
Utah	0	0
Vermont	0	1
Virginia	1	37
Washington	0	0
West Virginia.	0	2
Wisconsin	3	42
Wyoming	0	0
	111	534

The accompanying map shows the reported deaths from rabies among human beings and outbreaks of the disease among animals.

There are 111 crosses, representing deaths, scattered over thirty states and territories. These crosses are placed as accurately as possible to show the exact location within the state where the infection occurred. This placing of the crosses was thought preferable for the purpose of this investigation to one in which the place of death would be indicated.

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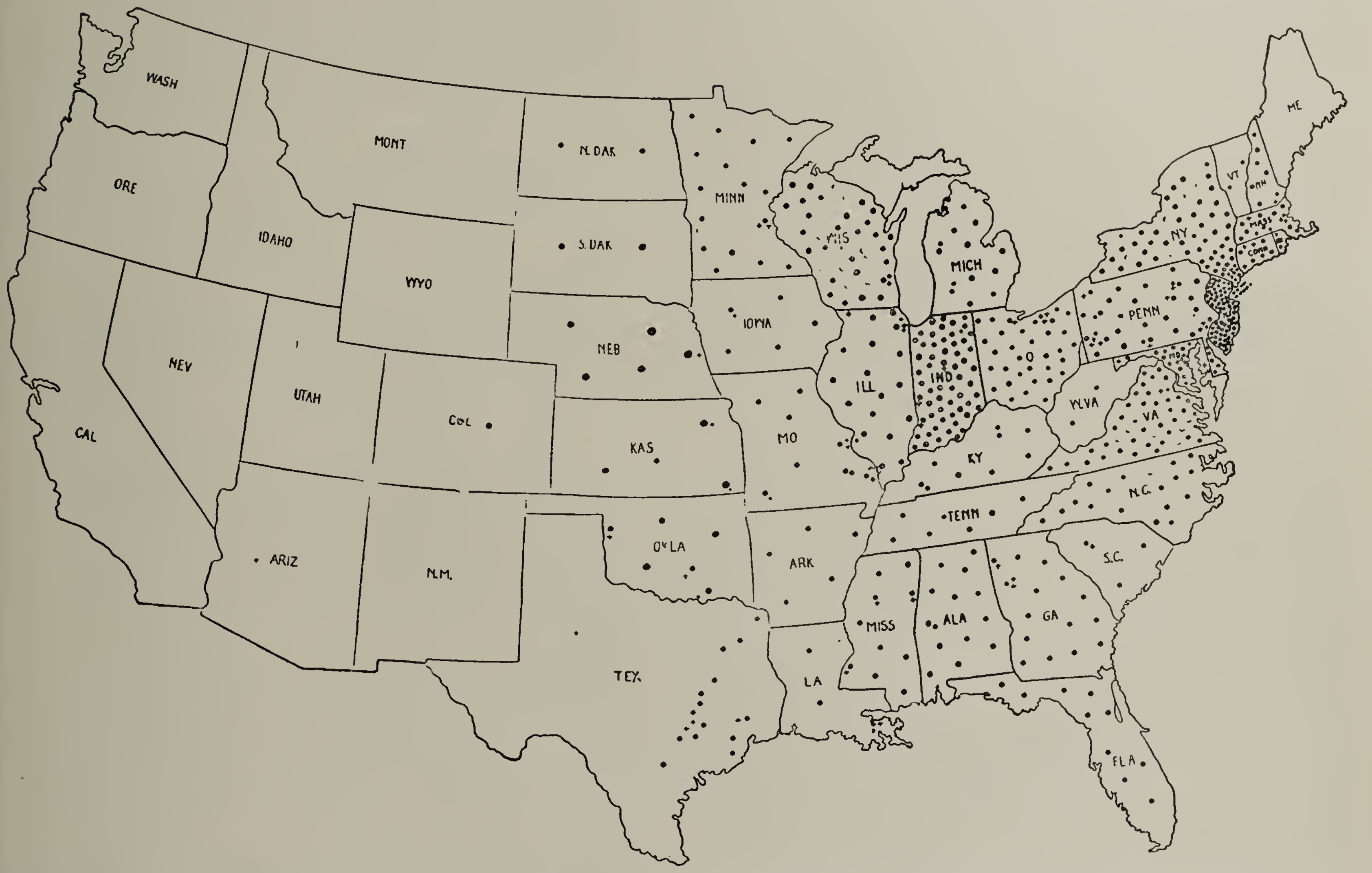
[6] Bull. 25, Bureau of Animal Industry, 1900.

Ravenel, Mazyck P.: Bull. 79, Dept. of Agric., Pennsylvania, 1901.

[8] Moore, Veranus A.: The Pathology of Infectious Diseases of Animals, p. 406.

[9] Mortality Statistics, Bureau of the Census, 1904, 1906-1907.

The dots represent 534 localities where rabies in animals was reported to have existed during 1908. They are not placed to represent the exact location of the disease, but indicate rather the number of places in each state where rabies existed. This arrangement was adopted in order to illustrate more strikingly the national prevalence of the disease. It is necessary to state in this connection that the apparent preponderance in certain states must be attributed in part to the receipt of more complete and detailed information from those sections.



Map showing results of inquiry into the prevalence of rabies in the United States during 1908. The crosses represent human deaths, their position showing where infection occurred. The dots indicate towns, etc., where animals were reported infected, the position in state not being shown.

In some states where comparatively meager data are indicated, a large number of rabid animals were reported, but the localities, not being mentioned, were necessarily omitted in order to avoid possible duplication.

The data presented represent foci of infection actually determined and not the number of cases among animals. The number of foci, however, would no doubt be greatly increased if complete reports from the various agricultural and veterinary institutions were at hand.

Practically all of the figures given, however, are compiled from official sources, representing 3,285 replies to inquiries sent out. Press clippings, on the other hand, furnished only a small proportion of the figures, and in no instance did a press report lack official confirmation. This is contrary to the general opinion that the cases reported in newspapers are usually without foundation.

The most striking feature brought out is the very general distribution of the disease throughout the Eastern portion of the country, and its almost complete absence from the extreme Western part, especially the Rocky Mountain and Pacific Coast regions. It must be remembered, however, that these sections, apparently free from rabies during 1908, have not always been exempt, cases having been reported by previous investigators from Montana, Colorado, California and Wyoming. The animals reported as having been affected were dogs, cats, wolves, horses, cattle, sheep, hogs, squirrels, and skunks.

It was among skunks that the disease was reported in Arizona, and the single death among human beings in that state followed the bite of one of these animals.

Dr. William Brumby, Health Officer of Texas, in a discussion of this subject at the Conference of State and Territorial Health Officers with the Public Health and Marine-Hospital Service, referred to the frequency of the disease also among skunks in western Texas and the dangers of the transmission of the disease through the agency of these animals.

Reports received from various sources indicate that a large number of laboratory diagnoses were made of the disease among animals during the year, but it was impossible to include many of these cases in determining the foci of infection for reasons previously mentioned.

FACILITIES FOR TREATMENT OF RABIES IN THE UNITED STATES

The reports thus far secured indicate that nearly 1,500 persons took the Pasteur treatment during 1908 on account of having been bitten by rabid, or supposedly rabid animals. On account of the futility of legal measures for the suppression of the disease, resort to prophylactic treatment to this extent was rendered necessary.

Pasteur treatment was no doubt a potent factor in the prevention of human deaths from this disease, but it must be regarded as a temporary and costly expedient to be maintained to save lives only until such time as more effective measures of attacking the disease at its root are being perfected and put in operation.

On inquiry, it has been ascertained that the Pasteur treatment is being given at present at the following institutions:

PASTEUR INSTITUTES, OR THEIR EQUIVALENTS, IN THE UNITED STATES

Montgomery, Ala.	Under State Board of Health.
Newark, Del.	Under State Board of Health.
Washington, D. C.	Hygienic Laboratory, Public Health and Marine-Hospital Service.
Jacksonville, Fla.	Under State Board of Health.
Atlanta, Ga.	Two institutions, one of them under the State Board of Health.
Chicago, Ill.	
Indianapolis, Ind.	Two institutions.
Iowa City, Iowa.	Under State Board of Health.
New Orleans, La.	
Baltimore, Md.	
Ann Arbor, Mich.	Under Board of Regents, State University.
Minneapolis, Minn.	Under State Board of Health.
St. Louis, Mo.	
New York City.	Two institutions, one of them under the municipal government.
Raleigh, N. C.	State Laboratory of Hygiene.
Pittsburg, Pa.	
Marietta, Pa.	
South Carolina.	One to be opened in July, 1909, under State Board of Health.
Austin, Tex.	Under State Board of Health.
Richmond, Va.	

There are thus over twenty institutions located in nineteeen states prepared to give Pasteur treatment, twelve of them being under official auspices.

VIRUS FURNISHED BY THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE

Since April, 1908, the U. S. Public Health and Marine-Hospital Service has been treating, free of charge, exposed persons who applied at the Hygienic Laboratory, Washington, D. C. At the close of the calendar year, ninety-nine persons had availed themselves of the privilege. In addition, virus has been furnished to state health authorities on their request and for administration under their direction.

The treatment of persons at a distance from the laboratory by means of virus, forwarded when necessary under the system maintained, has proved entirely satisfactory. By this means a supply of virus is made available at all times, and especially to persons unable to secure it themselves because of financial limitations.

The treatments are shipped by mail in response to telegraphic request, and on arrival are both pure and potent. Slight delay in delivery has seemed to cause no appreciable decrease in potency, a considerable number of treatments having been sent to the Isthmian Canal Zone and used there with complete success.

The Pasteur treatment is undoubtedly a powerful factor in preventing mortality, but the necessity for it will be obviated when measures for the suppression of the disease among animals become effective.

That the extinction of rabies is a possibility is a matter of historical knowledge, as evidenced by the brilliant results of effective legislation in England and other countries.

The prevalence of rabies to the extent shown by this inquiry is evidence that further measures of suppression are necessary. It is pertinent in this connection to refer briefly to the measures authorized in certain states concerning which information is at hand.

In Connecticut a state law requires the registration and tagging of dogs and the destruction of dogs not registered and tagged. Local health officers are required to report the occurrence of rabies to the Commissioner on Domestic Animals, who may make regulations to check the spread of the disease, such regulations to be published and obeyed under penalty of fine. A state law also provides for Pasteur treatment when necessary at state expense. On the oath of a physician that the treatment is necessary it is furnished at the expense of the town, the town being reimbursed from the state dog license moneys.

In Delaware, patients are treated by the State Board of Health at cost.

In the District of Columbia, the District Commissioners are required to issue a muzzling ordinance on the occurrence of rabies. Exposed persons are treated at the Hygienic Laboratory, Public Health and Marine-Hospital Service, on application, and treatments are mailed free, on application by state health authorities.

In Florida, the duty is placed by law on the State Board of Health to prevent the importation and spread of rabies. The Pasteur treatment is administered under the general statutes by the State Board of Health at the patient's home.

In Indiana, the state veterinarian is authorized to order the muzzling of dogs on the appearance of rabies.

In Maine, the state law empowers the State Board of Health to make regulations preventing the introduction and spread of rabies.

In Massachusetts, the powers to take measures are delegated to the Cattle Bureau, except in the City of Boston, where the Board of Health has this authority. A resolution recently approved in the legislature provides that the State Board of Health shall cause suitable provision to be made for the treatment of rabies in man by appropriate remedies, and shall report as to the expense and advisability of preparing these remedies under the direction of the State Board of Health.

In Michigan, the prevention of rabies is provided for in the law relating to diseases in cattle, and indigent persons are treated at the expense of the township, city or village.

In Minnesota, by a regulation of the Sanitary Live Stock Board, a muzzling order may be issued by local boards of health where rabies exists. A state law provides for the free treatment of residents of the state, a special appropriation having been made for that purpose.

In New Hampshire, a law permits the local authorities to cause all dogs to be muzzled for such period as may be determined.

In New Jersey, laws provide for the issuance of a muzzling ordinance by the mayors of incorporated towns and the destruction of unmuzzled dogs; also for the notification to the State Board of Health of contagious or infectious diseases among animals, the investigation of reports by the board, and the taking of such precautionary measures as may be deemed necessary.

In New York, the restriction of the disease is placed under the control of the State Commissioner of Agriculture. A law provides that patients may be sent to New York for treatment at county expense.

In Rhode Island there is no state law controlling rabies. When the disease exists the local councils require the muzzling of dogs for a certain period.

In South Carolina, a law provides that the health officers shall, in case rabies exists, place restrictions to prevent its spread.

In Vermont, the public statutes empower the State Board of Health to make regulations to muzzle dogs when rabies is found, and to kill unmuzzled animals.

These serve to illustrate briefly the measures in use. A considerable number of states seem to have no provision for the institution of measures against rabies, while from others no data have as yet been received.

Notwithstanding the beneficent intent of these state laws and the good results to be expected of them, it is a matter of common observation that their enforcement is too often, through neglect or inability to overcome the obstacles which always appear, more of a failure than an effectual application of suppressive measures.

SUMMARY

To summarize briefly the results of this inquiry, there were 111 deaths in human beings from hydrophobia reported from 30 states during the year 1908. Rabies was reported in the lower animals from at least 534 localities in 39 states and territories, including the District of Columbia. Evidence has also been secured of nearly 1,500 persons who, on account of exposure to rabies, or presumably rabid animals, were obliged to take the Pasteur treatment.

The disease is disseminated throughout the Eastern three-fourths of the country, and seems to have been unknown during the past year only in the Rocky Mountain and Pacific slope regions.

The suppression of rabies in man merely affords another instance of the necessity of eliminating a like disease from among animals.

This means the destruction of infected animals and the proper muzzling of all dogs in infected areas.

ABSTRACT OF DISCUSSION

Dr. H. M. Bracken, St. Paul: I hope that Dr. Kerr will revise the map before it is published. It is not quite fair to Indiana that it should appear to be so much worse than all other states, some of which undoubtedly have as much rabies. Probably Minnesota would be as badly spotted as Indiana is if all the cases of rabies had been reported. In Minnesota the reporting is under two departments, the Live Stock Sanitary Board and the State Board of Health. This map illustrates what I have always maintained, viz., that it is a mistake to have two sanitary boards, one for animals and the other for humans. Under the present Minnesota law the State Board of Health has no interest in a rabid dog until it bites a human being. There is a Pasteur Institute in Minnesota, where during the past year over 200 human beings were given prophylactic treatment. All had been bitten by a rabid (or supposedly rabid) animal. In a few instances we were not able to get the head of the biting animal, and therefore could not prove rabies, but a large percentage of the individuals were shown by the findings to have been bitten by rabid animals. I think the Minnesota State Live Stock Sanitary Board would be glad to furnish Dr. Kerr with the number of cases of rabies on its records, and I know that Dr. F. F. Wesbrook, director of the laboratories (and Pasteur Institute) will be glad to give data for the State Board of Health. I am glad to know that the material for prophylactic treatment put out by the United States Public Health and Marine-Hospital Service is to be sent only through boards of health. I do not think it is safe to put the prophylactic treatment for rabies in the hands of every physician in the country. Health officers know who the competent physicians are, and if a dog has bitten a person and prophylactic treatment is to be given, the health official is the proper one to determine who shall give the treatment. In Minnesota, when prophylactic treatment is necessary, this is given at the Pasteur Institute free of charge to residents of the state.

It may be interesting to know that in Minnesota the attorney general has given a ruling that the control of rabies comes under the same law as other communicable diseases, and, therefore, the expense connected therewith falls first on the municipality (city, village or township, as the case may be). The bitten person, if poor, does not have to stop and ask where the money to pay for traveling expenses, board, etc., is to come from. The local board of health sends the individual to the Pasteur Institute at once and the question of who shall pay the bills finally is determined.

Dr. W. M. Brumby, Austin, Texas: I notice that very few cases have been reported from Texas, which I regret. So long as we have had so many cases, it is unfortunate that Dr. Kerr did not have the opportunity of making a better report possible from our state. The Pasteur Institute, however, is not under the state health department, but under the superintendent of one of the insane asylums. As many as 1,350 cases of hydrophobia have been treated at that institution in a little less than the last five years, with 6 deaths. The patients who died were invariably bitten fearfully, lacerated or macerated, many bitten as frequently as from 25 to 50 times, if I am not mistaken; 5 or 6 were children. At our institution the officials prepare their own specimens, and have been very fortunate in their work; very few instances of any septic trouble resulting are known. There is a uniform charge of $25 in each case—each patient treated; unless, of course, the patient is in needy circumstances, when no charge is made.

In 75 per cent. of the cases the individuals were bitten by skunks. There is more hydrophobia in west Texas, Arizona and New Mexico, apparently, in proportion to population, than east of that point. It is asserted that a certain skunk is very susceptible to this disease and it is known as a "hydrophobia cat." These animals have rabies and die with it. About 2 or 3 per cent., possibly, of the patients bitten, were bitten by wolves. Our institution at present has 27 or 28 rabies patients in it, and has had constantly, for the last twelve months, from 22 to 32 cases at a time. I forgot to get the exact number of cases treated last year; but I am pretty sure that there were about 400 such patients treated in the last 12 months in Texas, 80 per cent. of which were from the state of Texas. Others came from Mexico, New Mexico, Arizona and Louisiana.

Dr. John F. Anderson, U. S. Public Health and Marine-Hospital Service: It has been decided that in the lack of any special arrangements it was not wise to send out the emulsion ready for use; although that is done by some of the commercial firms, who send it out in a modified thermos apparatus. We sent out our cords, each treatment being in a separate glass vial. This is sent out to the state health laboratory, with full directions showing how the emulsion should be prepared, and stating the scheme of treatment—either mild or intensive. We have adopted the Berlin scheme; that is, the most attenuated cord we use is the one dried 8 days; whereas, in the Pasteur method, the 14-day cord was used in the beginning. In the Pasteur method, the 2-day cord is only reached at the end of 7 days; we reach it in 4 days; and in the intensive treatment the 1-day cord, which is given only once, is reached on the fifth or sixth day. It is interesting that Ferran in Barcelona has reported some good statistics in which he uses the fresh cord from the rabbit; so, after all, we may be losing a good deal of time in drying our cord and not taking it immediately from the rabbit.

Dr. W. Forrest Dutton, Walker's Mills, Pa.: Within the last few months there have been 25 or 30 cases of rabies in western Pennsylvania. I do not know what is ascribed as the cause; the disease seems to me to be increasing at a rapid rate. There is an efficient Pasteur institute in Pittsburg, but it does not seem to affect the increase in the rate at all. I do not know whether it is the fault of the authorities or some unseen thing that we have to deal with.

Dr. M. F. Gates, U. S. Navy: Have any experiments been undertaken at the Hygienic Laboratory or elsewhere, with a view of determining whether or not there is any persistent infection in animals or men apparently cured or recovered from rabies, and to ascertain whether it is possible to redevelop a virulent virus from these cases? It seems to me that, in view of the tendency toward the injection of sera containing living organisms, this is an important point.

Dr. John W. Kerr, Washington, D. C.: I shall be glad to revise the map to date if anybody will be kind enough to furnish additional information of definite location where rabies was found in 1908. To secure the data presented, over 7,000 inquiries were sent out, and in some instances we have received duplicate reports. In order to avoid misrepresenting a particular state or locality, therefore, we have had to exercise great care, and probably have had a few more reports of infected localities than are shown on our map.

Rabies is a striking disease because of the method of its transmission and uniform fatality. On this account, and on account of the relatively few cases that occur, one would suppose it to be, and it probably is, the easiest disease concerning which to get accurate information. I assure you, however, that a collection of definite data of this disease has been extremely difficult to secure, and this only represents the great difficulty of collecting morbidity and mortality statistics for the entire United States.

Dr. Stimson, my associate in this work, has had entire charge of preparing the virus, and he has made a special study of it, whereas my part of the work has been in connection with the collection of the statistics.

Dr. J. N. Hurty, Indianapolis: Indiana is very well spotted on the map. The reports come in very promptly since we had a symposium on the subject of hydrophobia in our health officers' school, which is held whenever the state board commands. We tried to get a law that would prevent hydrophobia. The idea was to place a heavy tax so as to get rid of all miserable curs, and then only the well-bred, well-cared-for animals would be kept. The bill failed to pass. At Bloomington, Ind., where the state university is located, and where there are from 2,000 to 3,000 students, it was found that in each fraternity house there were from 2 to 4 bulldogs. In one "frat" house a bulldog went mad and infected 21 boys. They all took the Pasteur treatment, and none of them had the disease. With all this horrible experience, the people can not be brought to the point of handling the dogs so as to prevent hydrophobia. I do not know that we can attribute it to stupidity. The people there are students of science and the college has a highly cultured faculty; and yet they will not take steps toward controlling the dogs, the source of the hydrophobia. When we consider educating people in preventive medicine, this experience is rather discouraging. Our statistics show that 3 per cent. of the cases of hydrophobia reported proceeded from cats. Cats and dogs only. We have no record of any other animals imparting hydrophobia.

One of the deaths at Indianapolis occurred eleven months after incubation. A woman's pet dog bit her; the dog afterward died of some disease not known—it may have been hydrophobia; and then the woman developed hydrophobia and died. The physicians who attended (I did not see the case) are confident that it was hydrophobia.

Dr. M. Frederick, Cleveland: We had an epidemic of rabies in Cleveland, so much so that at the present time every dog that bites is placed under the care of a veterinary surgeon at the owner's cost. The city treats every person bitten by a rabid dog free of charge. They are not guarded in an institution. They are allowed to go about their business. Any intelligent physician can administer the treatment. There is no need of sending these people hundreds of miles over the country. A physician who can inject antidiphtheritic serum can also inject antirabic serum.

Dr. W. Litterer, Nashville, Tenn.: Prior to 1900, rabies was a very rare disease in Tennessee. Since that time it has been progressively increasing, until now there are reported more than 100 cases occurring every year in dogs alone. I am sure I could put on the chart 100 dots as well as 3 crosses. One case occurred in Nashville; the patient died recently from typical rabies. I made an autopsy and found the Negri bodies in the cerebellum, in the hippocampus major and in other parts of the brain. A portion of the brain was emulsified and subdural injections made in 3 rabbits and 3 guinea-pigs; they all died from rabies in from 15 to 21 days. The pigs died sooner than the rabbits. When one studies this disease carefully, I am at a loss to know how anyone can doubt its existence. I want to call attention to the prevailing idea, especially among negroes and uneducated whites in my section of the country, concerning the therapeutic value of the madstone when one has been bitten by a rabid animal. The madstone is said to be an enterolith from the deer and is applied to the wound. Owing to its porosity it will stick and when put into milk it is said to turn the milk green. This performance is impressive to many of the lower classes and a number resort to this mode of treatment. I wish to say that such a practice is pernicious. In the first place, it creates in the mind a false security, and secondly, I have in mind a case in which the madstone actually produced the disease. It occurred after the following manner: A man was bitten on the hand by a rabid dog and a madstone applied; several hours later a vicious bulldog (not rabid) bit a 5-year-old child severely on the cheek. The same madstone was applied to the cheek of the child. In twenty-two days the child died from typical hydrophobia. No autopsy was allowed. The bulldog is living to-day, showing that the disease could not have been transmitted by it, but that the only means of transmission was by carrying the virus from one person to another by means of this madstone. As I said before, such a practice is pernicious and should be controlled by legislation.

Dr. A. C. Abbott, Philadelphia: From a limited experience with this disease in Philadelphia, I am convinced that the suggestions of Dr. Friedrich of Cleveland are both important and practical. The value of the treatment is no longer under debate. The time at which the treatment should be given is of immense importance. To waste time in discussing how the means are to be raised for a patient bitten by a rabid animal to go to a Pasteur institute, is, in my opinion, not justifiable. I do not think we should pause to determine who is to pay for this treatment. If the community wants to get rid of the disease and save the patient, it can fairly have the cost of this treatment charged up against it.

The plan that we have followed in Philadelphia in a small number of cases—some of which were certainly hydrophobic, some of which were doubtful in my mind, but which I considered of sufficient gravity to give the patient the benefit of the doubt—has been this: We have secured, at the expense of the health department of the city, materials from reliable laboratories (usually from the New York laboratory), and have detailed one of the physicians of the health department to administer the treatment. We have not had a single death in a number of cases, how many I can not state precisely, but probably twelve would cover them all. They were among people who could not have raised the means to go to New York and remain there long enough to get the treatment; and had they not received the treatment in the way given by us, they would not have received it at all; and I am convinced that there would have been some fatalities. As it was, there was no fatality. We pay $25 for material enough to treat a single case. I do not know the terms under which the emulsion can be secured from the government laboratory.

Dr. H. M. Bracken: It is free.

Dr. A. C. Abbott: I feel, therefore, that it is advisable for those in authority to keep a small supply of this material on hand for emergencies. There is no difficulty whatever about the injection; and so far as the results of the injection are concerned, as Dr. Friedrich says of the Cleveland experience, we had no more bad results than one would get from the injection of antitoxin for diphtheria.

Dr. Juan Guiteras, Havana, Cuba: This disease also extends to Cuba. We had been several years without any cases of rabies until last year, when there was a remarkable increase; and there was just as remarkable a falling off after the law in regard to street dogs was put in force. The disease is now rapidly dying out. We have a Pasteur institute there; and the patients receive the treatment with great success.

Clean Milk.—Preventive measures are better than corrective ones. Pasteurization can not atone for filth. Milk should be produced under clean conditions and kept clean, and it would not then have to be purified. But we must guard against enemies so long as they exist. We would all like to do away with the necessity for armies and navies, but present conditions demand their maintenance. The same is true of harmful bacteria in milk; so long as the average market milk is apt to contain these insidious foes, the only protection we have is to destroy them with heat.—M. J. Rosenau, in *Annals of Medical Practice.*

A NEW TYPE OF PHTHISIOPHOBIA *

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NEW YORK

In these twenty years of work in tuberculosis and with the tuberculous, I have come across a good many types of phthisiophobia. There is, first, the general phthisiophobia, that is to say, the exaggerated fear on the part of the layman of the presence of the consumptive. All physicians who have had anything to do with tuberculosis have seen this type of phthisiophobia. Then there is a phthisiophobia of communities which object to the establishment of sanatoria, tuberculosis dispensaries, day-camps, or even open-air schools. Nearly all our state commissions which have been entrusted with the establishment of sanatoria, have encountered this phthisiophobia, which has its origin in the fear that a sanitary or financial danger may arise to the neighborhood wherein such an institution should be established. In my books and articles[1] I have protested against this type of phthisiophobia more than once and have been able to demonstrate conclusively by statistics that the mortality from tuberculosis among the inhabitants in or near communities where sanatoria have been established has always decreased after the opening of the institution, and continued to decrease.[2] Furthermore, the financial prosperity of the community has been improved as compared with what it was before the establishment of the sanatoria in such localities.

Heretofore, phthisiophobia usually originated in the minds of laymen, although some years ago a young physician,[3] first quoting a number of other authors and then stating his own experience, denounced the average consumptive as having mental peculiarities which manifest themselves in psychasthenia, the loss of self-control, the rise of brute selfishness, all combining to distort the clearness of ethical perception. It was not very difficult to reply to this unjust, totally unwarranted, and unscientific accusation.[4] The best men in our profession came to my assistance. Such men as Osler, Biggs, Janeway, Trudeau, Otis, Tyson, and others gave the benefit of their experience, all showing conclusively that the average consumptive, far from being below the usual moral standard, more often has a higher ethical and humane conception of his duties toward his fellowmen.

Therefore, it was with a genuine feeling of sadness that I read in the *Survey* (New York) of May 22 and in various Oklahoma newspapers that the State Board of Medical Examiners of Oklahoma recently decided to refuse granting licenses to practice medicine to all physicians afflicted with tuberculosis. To justify their position it was held by the board that the interests of the patients demanded this action.

I confess that in all my experience with phthisiophobics I have never heard of such an inhuman, cruel decision. How often has it not been proved that the clean, conscientious, and trained consumptive is not a danger to his fellowmen, but is as safe to associate with as anybody else! Who in the world, in the name of justice and fair play, can be better trained, more careful, or conscientious than the physician who is afflicted with tuberculosis? I have had as internes in one of the great German sanatoria, and in later years as private patients, a goodly number of consumptive physicians, and, while I am willing to concede that they were by no means model patients when it came to resting when they ought to have rested, not once can I recall an instance when they were not scrupulously clean and careful with their expectoration, and in their general behavior the last persons who could propagate the disease.

Last, but not least, what would be our medical science of to-day, where our modern therapy of tuberculosis without the tuberculous physicians—a Laennec, a Brehmer, a Dettweiler, a Grancher, a Solly, a Trudeau, or the hundred others who, because they were tuberculous, devoted or are devoting their lives to saving others from falling victims to the same disease? Laennec taught us to auscultate the tuberculous chest; Brehmer founded the first sanatorium for the tuberculous in Germany and proved more than anybody else the curability of tuberculosis when he defended his celebrated thesis, *Tuberculosis primis in stadiis semper curabilis* (tuberculosis is always curable in its first stages). His most illustrious pupil, Geheimrath Dettweiler, my own immortal teacher, who elaborated on Brehmer's system by adding the rest cure, realizing the need of the greatest precautionary measures in sanatoria, invented the first pocket flask as a receptacle for tuberculous sputum. Anxious to let the masses also be benefited by the invaluable sanatorium treatment, he became the founder of the first sanatorium for the consumptive poor in Germany. And Grancher, one of my French masters, how much are we not indebted to him for proving the pathologic unity of tuberculosis long before Koch's discovery of the bacillus! How much do we not owe him for his clinical description of incipient tuberculosis, and what a beautiful example of brotherly love did he not exemplify when, though childless himself, he created and endowed the work of preserving children against tuberculosis (*œuvre de la preservation des enfants tuberculeux*).

Solly, a consumptive English physician, sought and found in hospitable Colorado and among the fraternal members of the medical profession of Colorado Springs a welcome and a home. He became an American and added glory to the American medical profession by his antituberculosis labors and climatologic studies. His book on climatology is one of the classic productions of the day on this subject.

I name our own Trudeau last, not that he is the least, but perhaps the greatest of them all, for if there ever was a tuberculous physician who typified all that is best in man and in our profession surely he is the one. Twenty-five years ago he arrived, a tuberculous invalid, in the Adirondack wilderness. He was not content to cure himself, but immediately set about to help others, and by hard work and study and with a heart for suffering humanity he has become one of the greatest authorities in the therapy of tuberculosis and the pioneer in the sanatorium treatment in the United States. Thanks to his indefatigable labors there exists to-day at Trudeau, the place named after its founder, one of the most flourishing and beautiful sanatoria, comprising over twenty cottages, infirmary, administration building, church, library, laboratory, etc.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Tuberculosis, Its Modern Prophylaxis and the Treatment in Special Institutions and at Home, P. Blakiston's Son & Co., Philadelphia; Tuberculosis, in Twentieth Century Practice of Medicine, xx and xxi, Wm. Wood & Co., New York; Tuberculosis as a Disease of the Masses and How to Combat It, The Survey, New York; Public Measures in the Prevention of Tuberculosis, in American Treatise on Tuberculosis, D. Appleton & Co., New York; Tuberculosis a Preventable and Curable Disease, Moffat Yard & Co., New York.

[2] The Sanatorium for Tuberculous Patients, Its Medical and Social Mission, New York Med. Jour., Oct. 21, 1905.

[3] Saxe, G. A. De Santos: Psychical Relation of Tuberculosis in Facts and Fiction, New York Med. Jour., Aug. 1 and 8, 1903.

[4] A Plea for Justice to the Consumptive, Med. Rec., New York, Jan. 2, 1904.

I have named only six of our great therapeutists and antituberculosis workers who, though themselves tuberculous, saved, by their devotion to the cause, by their labor for science and love for humanity, thousands and thousands of consumptive sufferers who without their skill would have been doomed. But what would the places be where these men chose to reside had they not been made famous by the cures wrought by these tuberculous men of science? It was Brehmer who gave the reputation to Goerbersdorf and made of the sleepy village a prosperous town. Dettweiler did the same for Falkenstein. Solly added to the reputation of Colorado Springs, and Grancher to that of Pau, in the Pyrenees, while Saranac Lake, now one of our greatest American health resorts, certainly owes its prosperity to Trudeau.

But what we are most concerned with is not the economic but the purely humane and scientific consideration of Oklahoma's attitude toward tuberculous physicians. Scientifically, the decision of the Oklahoma State Board of Medical Examiners can not stand the test. Tuberculosis is the most prevalent of all diseases, and it has been demonstrated at the autopsy table that almost all of us either have or have had a little tuberculosis at some time or other in our lives. Physicians are not exempt from the disease, and many a one would have to lay down arms and retire should this cruel law of Oklahoma become universal.

And now one more word as to the humane consideration. The majority of tuberculous physicians were well and strong when they entered the profession of the healing art. When they contracted tuberculosis they contracted it in the performance of their duty. In my own life I can count, indeed, altogether too many whom I know became consumptive from overwork and exposure to infection. They had taken tuberculosis from others, but I know they have never given it. They have saved many lives and effaced centers of infection, but never became themselves a source of infection. To reward these men by excluding them from practice, by excluding them from any locality where they may recuperate, do good to others and support their own families, is the most cruel and most inhumane action conceivable by one physician toward another.

The medical profession of the State of Oklahoma can not afford to have the distinction of having created a new kind of phthisiophobia which is cruel, unkind, unjust, and certainly not fraternal. The authorities of that great state can not afford to have the unique stigma of inhumanity and selfishness, not to say lack of wisdom, attached to the fair name of Oklahoma. If the medical board of that state should maintain its attitude, I would consider it a reflection on the medical profession of the whole United States. And it is in the hope that the Oklahoma State Board of Medical Examiners may be induced to reconsider this decision by learning the sentiment of the American medical profession at large on the subject that I ask this Section to adopt resolutions,* for recommendation to the House of Delegates.

16 West Ninety-fifth Street.

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*Editor's Note: Dr. Knopf's resolutions set forth that the clean, conscientious, and trained consumptive is not a menace to his fellowmen, and that the scientific knowledge of tuberculosis has been vastly increased by physicians of the past and present who have been afflicted with tuberculosis; and expressed the regret of the Section at the action of the Oklahoma board and the wish that the restriction be withdrawn. The resolutions were referred by the Section to the House of Delegates, which body referred them to the Reference Committee on Hygiene and Sanitary Science, but no report was returned from that committee, so no action was taken by the House.

A SIDE-LIGHT ON THE ORIGIN OF TABES

DRAWN FROM A COMPARISON OF TABES WITH DIFFUSE SPINAL DEGENERATION AS SEEN IN CERTAIN ANEMIAS AND KINDRED DISORDERS OF NUTRITION *

JAMES JACKSON PUTNAM, M.D.
BOSTON

The opinion that syphilis is the usual cause of tabes is now almost universally accepted. Yet there still remains a certain percentage of cases for which the proof of this etiology is lacking, and students of the subject still seek for other influences, which may claim to share with syphilis the right to be considered as real causes or to represent agencies without the concurrent action of which the disease would not have occurred. The most prominent of these rivals of syphilis to the claim of being real or virtual causes of tabes is fatigue, in Edinger's sense; that is, not necessarily fatigue which is felt, but physiologic overstrain of special portions of the nervous system, carried to the point of seriously damaging the power of nutritive repair of the parts concerned.

I have myself seen, as we all have, cases in which, under the influence of severe exertion, tabetic incoordination has come on in an acute form. But I have seen exactly the same thing happen from severe and general nervous shock, unattended by physical exertion or by any obvious local strain, and, on the other hand, my personal observation has not led me to the view that local overstrain should count either as an exclusive cause of the tabetic degeneration or as capable of determining to any great extent the direction in which it will develop. I admit that these two opinions do not stand on precisely the same footing. The argument for the view that fatigue and local overstrain can not be adjudged sole causes of tabes is much stronger than the argument that they can not be regarded as capable of determining the direction of development of the degeneration. Still, the evidence is far from being overwhelming that one form of tabes is characteristic of brain-workers, another form, of muscle-laborers. We know as yet so little of the developmental influences or the influences related to local nutrition which so obviously help to make the optical apparatus more sensitive in one case, the sensory apparatus concerned in locomotion more sensitive in another case, that the argument for fatigue should not be accorded too much weight.

The failure of syphilis to cause multiple neuritis, in view of the facts that so many toxic agents do cause it and that syphilis exerts such widespread damage elsewhere, affords a cause for wonder, and both sets of facts intensify the suspicion that the really decisive causes of localization, where the syphilitic or the antisyphilitic virus is at work, lie deeper than the localizing influence of fatigue.

At all events, these two questions, whether syphilis is to be rated as the sole real cause of tabes, and as to the part played by fatigue, are still open for debate, and it has seemed to me that some light could be thrown on them by contrasting the tabetic group of cases with another group which bear, clinically, and also as regards the localization of lesions, a certain resemblance to tabes, and, like tabes, owe their characteristics to certain toxic influences, yet which are seen to differ widely from tabes when intimately studied.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The group of cases to which I refer are those presenting anatomically that form of degeneration of the central nervous system which sometimes accompanies pernicious anemia and which other observers and I have reported as occurring in conditions of nutritive debility not easily classifiable in one category.

The nervous symptoms characteristic of these cases resemble those of tabes in that they affect primarily and mainly the sensory or afferent functions of the nervous system, and thus lead to well-marked incoordination and paresthesias, usually with loss (though sometimes increase) of the knee-jerks.

If, now, the syphilitic infection so frequently met in conjunction with tabes was present mainly or wholly as a matter of coincidence, we might expect to find it present in this latter group of cases also, with at least reasonable frequency. But although I have seen, in hospital or private practice, nearly or quite a hundred instances of this disorder,[1] I have no record of a single case of undoubted syphilis. It is true that the majority of these patients have been women, and it is, of course, quite possible that an occasional instance of syphilitic infection may have been overlooked. In spite of these considerations, however, the contrast between these two groups of cases in respect to the frequency of syphilis is certainly very striking.

Still more striking is the evidence furnished by the comparison of these two sets of cases from another standpoint. The symptoms and lesions of tabes, although numerous, are singularly well defined and characteristic, and much the same may be said of the symptoms and lesions of the "diffuse degeneration." The two sets of cases resemble each other in various respects, but this resemblance is only superficial. In reality both disorders "run true" and show no tendency to overlap or even to approach each other. It is difficult to believe that this statement would be justified if each disease was due, not to one cause, but to any one of several different causes, and especially if the same influence, namely, fatigue, played any considerable part in both cases. Stated in other terms, the argument is as follows: We are dealing, here, with two disorders resembling each other superficially in certain respects, but at the bottom very different from each other, and each "running true" to a remarkable extent. Two hypotheses are advanced to explain their genesis, namely, (a) that they are due, respectively, to special toxins, modified and accentuated doubtless by fatigue and other influences, but not essentially modified; (b) that they may arise as the result of any one of various toxins or other causes, and that fatigue, or nutritive overstrain in particular, may play a notable part in determining the outcome. If the first hypothesis can be accepted the definite character of the two disorders is readily intelligible, and it need excite no wonder that they approach each other in some respects and yet do not really overlap. If the first hypothesis must be rejected and the second can be accepted, these facts are hard to understand. It would be going too far to say that the facts are unintelligible under the second hypothesis, because, of course, it may be that the tabetic degeneration and the diffuse degeneration of pernicious anemia do not owe their peculiarities, in any case, to the action of specific poisons, but represent only particular modes of breaking down of the nervous system under strain. This is probably the explanation of the neuroses, such as migraine. But if this is so and we are not dealing, in the case of the two disorders under consideration, with the action of specific poisons, analogous to diphtheria, but with native tendencies to particular forms of giving way of the nervous system, inducible by various causes, then it is hard to comprehend why syphilis appears to play such an important part in tabes and so trifling a part in the diffuse degeneration. It is also hard to comprehend, on this hypothesis, why these two disorders or modes of breaking down, implying special sorts of weakness, do not oftener coincide. Patients with migraine have also epilepsy at times, and show neurasthenic and hysteric tendencies, but tabetics do not have diffuse degeneration. This is especially striking in view of the consideration that fatigue, if it is an effective agent in inducing tabes, ought to be doubly prone to cause the diffuse degeneration, because it would find itself reinforced by its natural allies, anemia and nutritive debility.

In view of these considerations, taken in conjunction with the evidence already brought forward with relation to the frequency of syphilis in tabes in men, women and children, I think that the argument for a special toxin (or antitoxin) as the essential cause of the disease, while not proved and not to be asserted as positive for every case, is nevertheless a very strong one and deserves especial recognition as a guide to treatment.

106 Marlboro Street.

ABSTRACT OF DISCUSSION

Dr. C. L. Dana, New York: I suppose we all agree in the main with Dr. Putnam in regard to the relation of syphilis to tabes; however, we are not only neurologists but also physicians and are dealing with practical and human questions. It happens that I have seen families almost disrupted and even insanity produced by the bald assertion made to the patients, or indirectly to the patients, that because he has tabes he must have had syphilis. If, therefore, there is any justification in our assuming the position that a certain percentage of cases of tabes may be caused by something else, I think we ought to hold on to that view. I think it is an extremely painful sort of position often nowadays to make a diagnosis of tabes. At least one-third of my patients who have tabes honestly do not believe they have ever had syphilis; and yet if they have tabes must I say to them: you must have had syphilis? I should say no. And at any rate there is certainly a syphilis insontium which runs its course without the patients knowing it, and that fact ought to be acknowledged by us and used to soften the situation.

Dr. F. W. Langdon, Cincinnati: I agree that this question of what might be called the ethical relations of the diagnosis are so important that we should give the patient the benefit of the doubt. But there is another and very much stronger reason in that so careful and conservative, and we may say, prosyphilitic advocate as Gowers, positively states that in 10 per cent. of cases of tabes, syphilis can be absolutely excluded. Others give a much larger percentage of exclusion. But that statement of Dr. Gowers is well worthy of consideration in any discussion of this kind.

Dr. C. C. Hersman, Pittsburg, Pa.: It is well known that the foreign laboring class is a prolific source of the initial lesion of syphilis, and that this class receives but little treatment after the disappearance of the lesion, and yet tabes is not very frequent among these people. Now is the syphilis the cause of the tabetic condition or is it the mercury and iodid or whatever the treatment has been? Also the colored race, possibly the most fruitful source of specific infection, with little attention, is seldom seen suffering from tabes. Those who come to us for tabetic or paretic treatment give a history of from six months to two years' treatment, and often a time at the springs, and they are doomed in spite of the treatment.

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[1] Cf. A Group of Cases of System Scleroses of Spinal Cord, etc., Jour. Nerv. and Ment. Dis., February, 1891; Diffuse Degeneration of the Spinal Cord, Am. Neurol. Assn., May, 1900.

Dr. Julius Grinker, Chicago: Fatigue seems to exert a powerful influence in the production of tabes. Some years ago I examined a woman whose husband had infected her with syphilis and then died of some lung trouble. Being obliged to support her family, the poor woman exerted herself to the utmost, taking in washing at first, later working in the capacity of book agent, which necessitated being on her feet almost constantly. In due time she developed tabes. Her three children, the subjects of congenital lues, suffered from nervous syphilis or parasyphilitic disorders. The oldest boy, an intelligent lad of 19, showed signs of juvenile paresis and died within a year and a half from the development of the first symptoms. Another child, a girl, developed luetic endarteritis, which was followed by thrombotic hemiplegia and death from gummatous meningitis. The only surviving member of this syphilitic family is a blind tabetic boy who peddles newspapers in Chicago. In this family, reported by me in 1904, the element of fatigue seems to have played an important part in determining which part of the nervous system shall become affected. The mother, a hard-working woman, who was in the habit of walking and standing most of the time, developed tabes. The most intellectual of the family, a bookkeeper of unusual ability, suffered from general paresis. The remaining son, a newspaper vender, is the subject of tabes.

Dr. A. D. Brush, Brooklyn: In cases of tabes that I have had the character of the syphilis itself is sometimes overlooked. In a number of cases coming under my care in the hospital I have noticed that the secondary lesions have often been wanting. The patients have had the disease but the secondaries have been slight and the treatment has been little or nothing. If you look at these patients you will notice what has already been stated, that they are distinctly neurotic individuals, and the opinion which I have formed is that the tabes in these cases is due to the prolonged action of an untreated syphilis plus neurotic heredity.

Dr. M. Allen Starr, New York: Before the discussion closes I would like to put myself on record in this discussion as being against the position of Dr. Putnam in the statement that all tabetics are syphilitic. I have careful records now of over 500 cases of tabes in public and private practice. I admit that the histories of the public cases, and by that I mean dispensary and hospital cases, are sometimes insufficient, but in the private cases I have taken the greatest pains to explain to the individual the absolute need of knowledge on the part of the physician of any possible syphilitic causation, and on investigation very thoroughly of both the history and physical condition of the individual, I cannot shut my eyes to the fact that in 20 per cent. of my private cases there has been absolutely no evidence whatever of a syphilitic origin of the tabes. I therefore share Dr. Dana's opinion that to endorse this opinion, which first originated, I believe, with Moebius in Leipzig, that all tabetics are necessarily syphilitics, is to throw a certain amount of doubt on the statements of patients, and to engender a cause of great unhappiness in many families; that I do not think in view of the facts at the disposal of the world—not of any one individual, but of the world—is justifiable. For in a collection of the literature of tabes which I made not long ago, I found that reputable expert neurologists differed from Moebius on the one hand with his 100 per cent. down to a very reputable and very experienced Russian physician of wide hospital experience who took the other position that only 11 per cent. were syphilitic. And the range of neurologists can be put down between those two extreme individuals, and you will find that every neurologist almost in the world has put himself already on record with regard to his percentages of syphilitic cases of tabes, and they all differ. Now, so long as they differ, so long as there is no consensus of opinion, it seems to me unfortunate that the idea should become prevalent that all cases of tabes are syphilitic.

Dr. James J. Putnam, Boston: I should entirely agree with Dr. Starr and Dr. Dana in feeling that we have a social duty with regard to patients' families, and I have always taken the position Dr. Starr asserts, namely, that I was not willing to claim that a causal relationship between syphilis and tabes necessarily exists. But I think it is quite different when we are talking among ourselves and discussing evidence. I am not stating certainties but increasing probabilities, partly in the interest of treatment.

As regards Dr. Fisher's remarks, I believe and stated in my paper that I also have seen the incoordination of tabes brought on abruptly by a considerable exertion—a long march in the snow. I think that such fatigues act mainly like any general strain. I doubt very much whether any one can say broadly—although now and then it may be the case—that a march is bound to bring on incoordination of the legs when it could not bring on atrophy of the optic nerve or throat affection. I admit that there is something to be said for the localizing effect of fatigue and strain, but I have seen, for example, a fall from the steps of a street car also bring on incoordination very rapidly, almost abruptly. The case for overstrain as a localizing cause is not so clear that for the sake of it we should neglect the evidence for other causes of more obvious value, as genetic nutritive defects or specific toxemias. There are many exceptions to the rule that those who work with the eyes are especially prone to optic atrophy, those who use the legs to locomotor ataxia.

THE FEEDING OF IMMATURE AND ATROPHIC INFANTS *

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Predisposing causes to infantile immaturity and atrophy may at times be detected in the pregnant woman, and certain of them later may be of considerable value in determining why the usual milk formulas fail to nourish the child.

Scant consideration is given to the fact that an individual's existence really commences at the time of conception and too much importance is attached to the usual expression which merely states the dividing line between intrauterine and extrauterine life. At conception the child is endowed with all the ills or graces of a bad or a good ancestry and little can be done to counteract the immutable laws of heredity, but with environment, intrauterine as well extrauterine, the physician can do much either to harm or to aid the growing individual. It is a well-recognized fact that pregnancy associated with marked anemia or toxemia predisposes to poor fetal development, which may be evident at birth or which may be expressed later by failure to digest and assimilate properly the natural food of the infant or of the carefully prepared modified milk formulas. This is frequently seen in syphilis, alcoholism, poverty, gonorrhea and nephritis and in some cases of heart disease and tuberculosis. In large cities the combination of alcoholism, poverty and gonorrhea seems to be almost as serious to the child as is syphilis.

The long ten months of intrauterine life affords the physician a very favorable time for feeding the prospective immature or atrophic infant through the blood of the mother. Too little attention is paid the average case of pregnancy and too much is left to chance and Nature. It is wise to consider the husband and to remember that, no matter what his station in life may be, he may have a very bad past venereal history. In suitable cases, mercurial treatment antepartum is of more value to the child than a consideration later of intricate algebraic equations of theoretical milk formulas.

An infant with full forty weeks' intrauterine gestation may be decidedly immature, while another born at the thirty-sixth week may be full of vigor and good health. Weight is of more importance than age, and an infant weighing less than 2 kilos (4.5 pounds) at birth is immature.

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* Read before the Sacramento Society for Medical Improvement, March 17, 1909.

With this weight there is a paucity of subcutaneous fat, the muscles are poorly developed, the nervous system unstable and the powers of digestion weak. Atelectasis is more or less present, while the increased ratio of skin area to weight produces a condition of unstable heat regulation. Added to this the amount of blood and the capacity for producing new blood elements is much below par.

An atrophic infant, although normal at birth, tends gradually toward the type of the immature. The thickness of the intestinal wall is diminished and there is evidence that certain needed glandular structures are in abeyance. Changes have been reported in the adrenals, in the parathyroids and in the mesenteric glands, while Wentworth has recently demonstrated that secretin, which is necessary to activate the pancreas, is lacking in the epithelial cells of the intestines of new-born and atrophic infants. From recent investigations by Pawlow, Starling, Bayliss and other physiologists it seems probable that there exists in all vertebrates a number of so-called hormones whose function it is to stimulate or activate the different digestive ferments. They are undeveloped at birth and are functionally inactive in atrophic infants. Speculation is rife as to what aids and what retards the action of these hormones. Wentworth suggests that certain inherent properties of mother's milk are needed. However, immature and atrophic infants can be reared without resorting to mother's milk, and, while granting that mother's milk is of the greatest aid for a proper infant nutrition, I am inclined to believe that failure of development is largely due to food intoxication caused by improper feeding—particularly the too early resort to artificial feeding or to too high percentages of butter fat. With mother's milk failure can follow from the same reason.

A delicate infant must have fat, proteid, carbohydrate, salts and water of such quantity and relative proportions as will meet the possibilities of its digestion. Food is not in the body until it has been absorbed by the walls of the intestine, and the food that is absorbed is not of use unless it contains the food essentials competent to meet the needs of the body cells. Carbohydrate and fat are needed for immediate consumption to furnish energy or for storage purposes and padding. Proteid is essential to the growth of cells as well as for the production of new cells. The salts of milk plasma are needed by all the cells of the body and probably aid with the casein in the development of the digestive tract.

Excess of proteid is thrown off by the kidneys, causing an increase of nitrogenous elements in the urine. Excess of sugar may cause intestinal fermentation, may interfere with the digestion of fat, and aids in the production of systemic intoxications. Excess of fat not only causes food intoxications, but abstracts from the body valuable alkalies, which are used to make soap of the fatty acids in the intestines, and causes an increase in the ammonia excretion of the kidneys. Excess of salts interferes with the proteid digestion in the stomach and is a factor in the production of edema.

On the other hand, a deficiency of any of the food elements will cause sooner or later serious disturbances in nutrition.

In order to avoid the dangers of over-feeding or under-feeding various systems of percentage feeding have been suggested by a number of American authors. A great deal of good has been accomplished with the percentage method. It inaugurated a logical line of thought and placed infant feeding on a more or less scientific foundation, but practically it caused an over-feeding of babies. Certain French authorities, notably Budin and Heubner, have devised a system of feeding by which the caloric value of the food bears a certain relation to the weight of the child. This is another marked advance in infant feeding, for by asserting certain standards it has permitted not only a better knowledge of the proper food values, but has afforded a means for determining the relative amounts of the different food elements that should be fed. While it is of great value to feed normal babies according to the principles of the percentage method and while it is of greater value to feed them according to the caloric value of the food, it is most reprehensible to attempt to force an immature or atrophic baby to digest mathematics or to persist in feeding that which the baby does not want and can not digest simply because it looks well on paper. The baby must be studied clinically and physiologically and the food adjusted to meet the powers of its present digestion and to aid in the development of its digestive tract.

TABLE 1.—CLINICAL CHART. IMMATURE INFANT

Day.	Date. 1908.	Stools.*	Skin.	Cord.	Notes.	Treatment.
B	Mar. 26	m ii....	Red...	Dry...	Cotton jacket incubator at 40° C.	
1	27	m iii....	Red...	Dry...	Unable to nurse, regurgitates food.	Gavage.
2	28	m iii....	Clear.	Dry...	....	Gavage.
3	29	m iii 6 i	Clear.	Dry...	Eyes puffed..........	Gavage.
4	30	g iii	Clear.	Dry...	....	Calomel, gr. 0.1; colon irrigation.
5	31	g ii y i..	Clear.	Dry...	....	Gavage.
6	April. 1	y ii g i..	Clear.	Dry...	....	Gavage.
7	2	y ii g i..	Clear.	Dry...	....	Gavage.
8	3	y i g i...	Clear.	Dry...	....	Gavage.
9	4	y iii.....	Clear.	Off...	....	Calomel, gr. 0.1.
10	5	y iv.....	Clear.	Dry...	Edema: hands, feet, eyes.	Colon irrigation.
11	6	g i y ii..	Clear.	Dry...	Slight edema: feet..	Gavage.
12	7	g i y ii..	Clear.	Dry...	No edema............	Gavage.
13	8	y iii....	Clear.	Dry...	....	Gavage.
14	9	y ii......	Clear.	Dry...	....	Castor oil min. xv.
15	10	y iii g i.	Clear.	Dry...	Slight edema: hands, feet.	Gavage.
16	11	y iii	Clear.	Dry...	Slight edema.........	Gavage.
17	12	y iii	Clear.	Dry...	No edema; nurses bottle.	
18	13	y ii......	Clear	Dry...	Nursing well.........	
19	14	y i......	Clear.	Dry...	....	
20	15	g i y i...	Clear.	Dry...	....	
21	16	y ii......	Clear.	Dry...	Removed from incubator.	

Condition on discharge, May 13, 1908: Eyes, nose, mouth, anus, genitals and extremities O. K. Navel healed. General condition good.

At the University of California Hospital I have developed a system of bottle feeding that not only succeeds with most of these delicate infants, but also is comprehensible to the nurse preparing the food and instructive to the student. The plan consists of insisting on careful observation of the physiologic condition of the baby and of maintaining a written record of the foods given and the effect the food has had on the child. Clean ingredients and clean apparatus are, of course, necessary. Certified milk is used and has proved of the greatest aid. This milk comes from tuberculous-free cattle, is produced according to the requirements of the Milk Commission of the San Francisco County Medical Society, has a germ count of less than 10,000 per c.cm., is cooled, bottled and sealed at the producing farm immediately after milking and averages 3.6 per cent. butter fat. Various top milks are obtained from the quart bottles of milk with a Chapin dipper which average as follows: Top 12 oz. 8.5 per cent.. top 14 oz. 7.5 per cent., top 16 oz. 6.5 per cent., top 20 oz. 5.5 per cent., lower 20 oz. 0.5 per cent. fat. Whey from whole milk averaging 1 per cent. fat and 1 per cent. albumin and whey from skim milk are also used. The different milks average about 5 per cent. sugar and 3.5 per cent. proteid (except whey).

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* In this column, m means meconium, y, yellow, g, green.

For carbohydrates pure milk sugar and Robinson's barley are used. Other carbohydrate foods have at times been used and the barley has been dextrinized in certain cases of atrophy, but as a rule good results have followed the use of a limited variety of carbohydrates. The physician should know the actual composition of any prepared or patent food he uses. Knowing the actual ingredients of a proprietary baby food permits of its intelligent use, and with some cases of atrophy the different varieties of carbohydrate have considerable value, but their ignorant use, blindly following the commercially scientific directions accompanying them, leads only to confusion and is a mute acknowledgment that one is unfitted to cope with the difficulties of malnutrition. The so-called foods can all be prepared, if necessary, by dextrinizing the different flours.

TABLE 2.—FEEDING CHART. IMMATURE INFANT

Date. 1908.	Milk. Per cent.	Sugar. Lactose Per cent.	Salt. Nacl 20 per cent. Solution.	Water. Per cent.	Number of Feedings.	Total Amount. Ounces.	Calories.	Whey. Per cent.	Treatment.	Per cent. Fat.	Sugar.	Barley.	Prot.
Mar. 27	0	6	0	100	24	6	5		....	0	6	0	0
28	0	0	0	0	12	6	69	100	Gavage........	0.9	5.5	0	0.9
30	0	0	0	0	12	12	138	100	Gavage........	0.9	5.5	0	0.9
April. 1	0	0	0	0	12	18	207	100	Gavage........	0.9	5.5	0	0.9
4	0	0	0	0	12	24	276	100	Gavage........	0.9	5.5	0	0.9
6	Up 10 5	5	2.5	0	12	24	447	92.5	Gavage........	1.2	10.2	0	0.9
9	7.5	5	2.5	0	10	24	467	90	Gavage........	1.4	10.2	0	1
11	10	5	2.5	43.5	10	24	360	44	Gavage........	1.2	7.9	0	0.7
13	12.5	5	2.5	42.5	10	24	381	42.5	Bottle........	1.4	8	0	0.8
14	15	5	2.5	41.5	10	24	401	41	....	1.7	8	0	0.8
18	20	5	2.5	77.5	10	24	336	....	....	1.8	6.1	0	0.7
20	22.5	5	2.5	75	10	24	360	....	....	2	6.2	0	0.7
22	25	5	2.5	72.5	10	24	384	....	....	2.2	6.3	0	0.8
29	27.5	5	2.5	60	10	24	420	Barley 5% 10	....	2.4	6.5	0.5	0.9
May. 1	30	5	2.5	57.5	10	24	444	10	....	2.7	6.5	0.5	1
6	Up 16 32.5	5	2.5	55	10	24	397	10	....	2.2	6.6	0.5	1.1
10	35	5	2.5	52.5	10	30	520	10	....	2.4	6.7	0.5	1.2

Salts of sodium or magnesium (chiefly sodium chlorid) are used to aid the gastric digestion of casein and to promote the absorption of the different proteids. Occasional resort is made to buttermilk, malt sugars, and dextrinized gruels, but as a routine such feeding has not been found equal to the carefully prepared and modified fresh cow's milk.

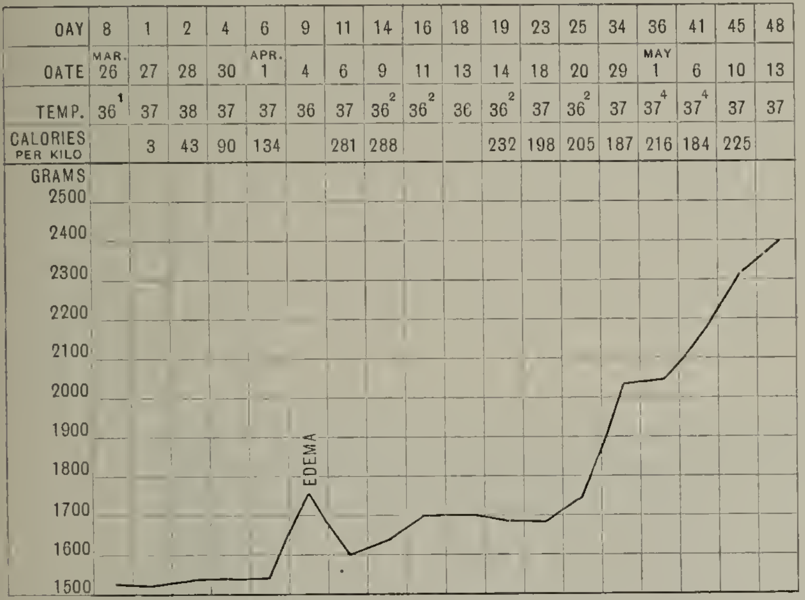
Each immature or atrophic infant is fed according to its power of digestion as expressed clinically. The clinical chart is not difficult to keep and is absolutely necessary for success with these difficult cases. For the first few days little attention is paid to the percentage value or to the caloric value of the food. It is usually necessary at first to feed the immature and some of the atrophic babies by gavage. Body warmth must be maintained by artificial heat and stimulants if necessary must be given hypodermically or normal salt solution by hypodermoclysis. Calomel is usually necessary to clear the intestinal tract of the atrophic babies.

The immature babies are started with sugar solution (5 per cent.) or with salt solution (0.5 per cent.) and the atrophic babies with whey in order to ascertain the amount of liquid the infant will retain. Gradually the sugar solution is replaced with whey and the whey replaced with one of the top milk, whole milk or fat-free milk mixtures according to the behavior of the child. Barley water is not added until the food contains from 20 to 30 per cent. of milk, unless the sugars fail to agree. The quantity of food is increased to meet the desires of the child and its ability to retain. The relations between the weight chart, the clinical chart and the feeding chart are constantly studied. At intervals the percentage formula of the food and the calories, with the energy quotient and the proteid ratio, are estimated to avoid a continued over-feeding or under-feeding.

A description of the feeding chart used will elucidate how practically the food for these infants is ordered and controlled. The chart is ruled in columns, in one of which is indicated the quantity of food to be prepared, while in a second is noted the number of feedings to be given. In a third column marked "milk" is stated the kind of milk to be used—skim milk, whole milk, buttermilk, or indicated top milk—and the percentage that this milk shall make with the total quantity of food ordered. In a fourth column is placed the order for starch. It is here necessary to know the strength of the gruel prepared by the nurse. I have found that a rounded tablespoon of Robinson's barley to 12 ounces of water when cooked for half an hour and the water loss replaced makes a 5 per cent. solution of barley. In the column marked starch is stated the strength of the gruel and the per cent. this gruel shall make with the total food ordered. In similar columns the percentage of sugar, salt, limewater, or other ingredient desired is placed, and finally, and most important, must be charted the percentage of water necessary to be added to make with the other liquids 100 per cent. In preparing the food the nurse multiplies the total quantity of food ordered by the different percentages in the different columns in order to ascertain the amount of each ingredient to use.

When an immature or atrophic infant can digest whey, 10 per cent. of milk (usually top milk 16) is added and this is increased gradually but constantly until the baby can digest from 30 to 40 per cent. of milk. With this 5 per cent. of sugar and 0.5 per cent of salt is also given and 10 per cent. of the 5 per cent. barley gruel added and rapidly increased as the whey is eliminated.

It seems to me that as a rule these infants do better when the ratio of fat to proteid in the food is not more than two to one, and, while the number of calories needed for the normal infant may not be more than 100 per kilo of body weight, and can gradually be reduced as the child grows older, I have found that it is necessary to feed the immature and atrophic infants as high as 250 calories per kilo for several weeks at a time; and with food of this high caloric value I have seldom found signs of over-feeding, except when the fat calories ran high. However, when a baby digests fat all right it is fed fat, but is watched carefully and the fat is reduced with the first signs of indigestion.



OAY	8	1	2	4	6	9	11	14	16	18	19	23	25	34	36	41	45	48
OATE	MAR. 26	27	28	30	APR. 1	4	6	9	11	13	14	18	20	29	MAY 1	6	10	13
TEMP.	36^{1}	37	38	37	37	36	37	36^{2}	36^{2}	36	36^{2}	37	36^{2}	37	37^{4}	37^{4}	37	37
CALORIES PER KILO		3	43	90	134		281	288			232	198	205	187	216	184	225	

Weight chart of immature infant. Birth expected May 3, born March 26. Mother i-para; one miscarriage at third month, two years ago; symptoms of toxemia during present pregnancy.

The weight chart urges always for more food, and the clinical chart acts to hold this in check. Intelligent interpretation of these two indicates the sensible way to feed in these interesting problems of malnutrition.

240 Stockton Street.

A TERATOMA OF THE HYPOPHYSIS *

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PATHOLOGIC REPORT BY MAXIMILIAN HERZOG, M.D.†

Neither from the earliest collation of cases nor even from the more recent ones do we seem in a position to estimate accurately the frequency of hypophyseal tumors. The cases are reported from such widely different premises, most often according to points of special clinical significance. Thus we find it necessary to search the records of ophthalmology, treatises on acromegaly, contributions to intracranial surgery, journals devoted to radiography, and so forth, in getting at information bearing on the pathology. Mindful of this difficulty encountered in making up an exhaustive tabulation of cases, I think we may, nevertheless, assume that tumors of the hypophysis and infundibulum are quite rare.

As concerns the variety of neoplasms, we meet with simple hyperplasia, adenoma, glioma, sarcoma, carcinoma and teratoma. The teratomata of the gland are, indeed, a very rare form of tumor. Boyce and Beadles, in their large collection of cases, include three of this variety reported by Beck, White and Sainsbury; in the last mentioned of these the tumor had its origin not in the gland proper, but in the region of the gland. This particularity as to the original seat of the growth should not be construed as an idle distinction, for there is a difference both in the pathologic and clinical aspects of a tumor arising from the gland or invading it from its immediate neighborhood.

The teratomata are in their nature a fetal type of tumor and present structural changes identical with those noted in the case herewith reported. Kon has very recently reported a case of cretinism with a teratoma in the hypophyseal region, a case of periepithelioma and one of angiosarcoma with extensive hemorrhage. I contend, and for reasons which the pathologic report will no doubt make clear, that the tumor in this case in all probability arises from the anterior portion of the gland.

Bearing in mind the embryonic development of the anterior or glandular portion of the hypophysis as derived from the oral ectoderm, it is to be wondered at that the teratoma is not a more frequent factor in the classification of hypophyseal neoplasms. Bruns divides the tumors of the hypophysis, which he says in the main arise in the anterior and spread to the posterior portions of the gland, into homoplastic and heteroplastic. The homoplastic growths are made to include the simple hypertrophies, colloid and cystic enlargements and the adenomata. The heteroplastic are the round-cell sarcomas, the teratomata with their epithelial, cartilaginous or bony content, the primary and metastatic carcinomas, lipomas, tubercles and gummata; of these, he states, the sarcomas are most commonly met.

The clinical notes of this case will appear somewhat abridged in favor of a more detailed report of the pathologic findings which, in my opinion, are unique and, so far as I have been able to learn, almost without precedent in the literature. My sincere thanks are due my friend and colleague, Dr. Isaac A. Abt, for the privilege of this case citation, and I owe grateful acknowledgement to Dr. Maximilian Herzog, formerly pathologist to the Michael Reese Hospital, both for his valuable interpretation and painstaking arrangement of the pathologic material.

REPORT OF CASE

Summary.—A tumor of the hypophysis, correctly diagnosed as regards neoplasm, but not localized; absence of sufficient focal symptoms; skiagraphs unsatisfactory but faintly suggestive of cerebellar involvement. Tumor not found at operation because of its deep situation. Termination in death six hours after operation. Autopsy reveals a tumor of the hypophysis proved to be a teratoma arising in all probability from the gland.

Patient.—K. F., a slender blond girl, aged 11, American born, was referred by Dr. Ticken to the care of Dr. Abt and admitted to the service of the latter at the Michael Reese Hospital, May 27, 1908. The parents were regarded as healthy; so were their direct and collateral antecedents, as far back as could be ascertained. The mother had experienced several miscarriages and a still-birth, these, however, occurring after the patient was born.

History.—The birth of the girl was spontaneous, at full term, and in all respects normal. Except for whooping cough, measles and varicella, her childhood was uneventful. At 8 she experienced three distinct attacks of appendicitis with general peritonitis. During a free interval the appendix was successfully removed and she regained her health, remaining perfectly well for the next two years. About one year before examination, at the age of 10, she complained of disturbed vision and headaches that made it difficult for her to pursue her studies. The headaches were frontal, most often occasioned by mental strain during study hours, and in their earlier exhibition were, on the whole, quite irregular. Five weeks after their onset they became increasingly severe and diffuse, extending well back to the nape of the neck, and attended with a feeling of more acute pain back of the eyeballs and in the ears. At this time vomiting appeared, at first only occasionally at breakfast, but later with regularity after each meal. The vomiting, far from being projectile, was preceded by a feeling of nausea, affording the patient sufficient time conveniently to leave the room and use some receptacle. Five weeks prior to admission the right eye turned strongly inward and remained so. Periods of dizziness were occasional. Always a sound sleeper, the patient now rested well only in the fore part of the night, after that tossing about with headache. Nervous irritability was marked at times and induced by the slightest noises, such as the ordinary footfall or the low-pitched soft voice. The mentality, according to reports, seemed in no wise impaired, nor had the child's disposition changed except for the late outbursts of irritability. Convulsive seizures had never occurred. Neither weakness of the extremities nor clumsiness in any of the voluntary movements had ever been noticed. There was marked constipation, but no difficulty with micturition. During the last five months of her illness there was an increasing aversion for food.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

† From the Pathological Laboratories of Michael Reese Hospital.

Examination.—The physical examination, made and noted under date of May 28, was as follows: The general nutrition was fair. The head seemed slightly retracted. Pupils were large, equal, regular, with normal response to light and accommodation. Photophobia was present, and in this connection it should be added that the eyes had received atropin for fundus examination. There was complete right external rectus paralysis. Dr. E. F. Snydacker reported bilateral choked discs, with two or three diopters of swelling in each eye. Ear examination made by Dr. Ira Frank proved negative. The teeth, somewhat irregular as to shape and arrangement, were otherwise normal. Some neck rigidity was present. There were no palpable glands. Heart, lungs and abdominal viscera were negative. Muscular strength seemed normal. The gait was not much disturbed, but on finer tests in the recumbent posture some loss of coordination in the legs was evident. Sensory symptoms were absent. A positive Babinski was obtained on the right side. The skin and tendon reflexes were everywhere present and equally brisk. Ankle clonus was absent; likewise spasticity. The stereognostic sense was not tested. Hearing was normal; vision was equally defective in both eyes to the extent that the patient could not read type, but was able to discern objects and differentiate those persons having access to the sick-room.

Clinical Notes.—On day of admission an afternoon temperature of 99; thereafter a daily variability of from 97.3 to 99. Pulse rate, 80 to 104.

Laboratory Data.—A. Blood findings, May 27, 1908: Hemoglobin, 95 per cent.; white cells, 10,600; red cells, 5,372,000. May 30: Leucocyte count, 82,000.

B. May 31: Von Pirquet vaccination test on right arm (Dr. Davenport), negative.

C. May 31: Ocular tuberculin test, one minim of a 1 per cent. solution injected in the left eye, likewise negative.

D. May 31: Blood. Tuberculo-opsonic index taken and found to be 1.19.

E. Skiagraphs doubtful, it having been thought by several who saw them that the shadow cast was, if anything, in the cerebellar area, thus prejudicing one in favor of a diagnosis of cerebellar tumor.

F. Daily urinalysis negative.

The patient was seen by Dr. A. Church, and later by Dr. L. L. McArthur, who performed the operation on June 8. The operative notes in very abbreviated form read as follows:

Operation.—June 8, 1908, by Dr. McArthur, Dr. Hoover assisting. Anesthetic, ether. Head prepared in the usual manner for brain operations for two days prior to operation. Fissures of Rolando mapped out on either side. Brain punctured near the left occipital and left posterior parietal regions. Punctures made with fine drill and aspirating needles. No fluid obtained in occipital puncture, but about 3 or 4 c.c. of a clear fluid containing three or four white, hard floccules was obtained by puncture in the posterior parietal region. Fluid saved for diagnosis. Semicircular incision, base downward, through skin and subcutaneous tissue to periosteum. Incision began a little above Reed's base line, about in a vertical line drawn through the left external auditory meatus, arching upward and backward, describing a semicircle, and ending about four inches posterior to its own origin. All bleeding vessels caught and ligated with fine gut ligatures. Periosteum incised in similar manner about 0.75 cm. inside scalp incision. Edges of periosteum raised with an elevator. Trephine hole.

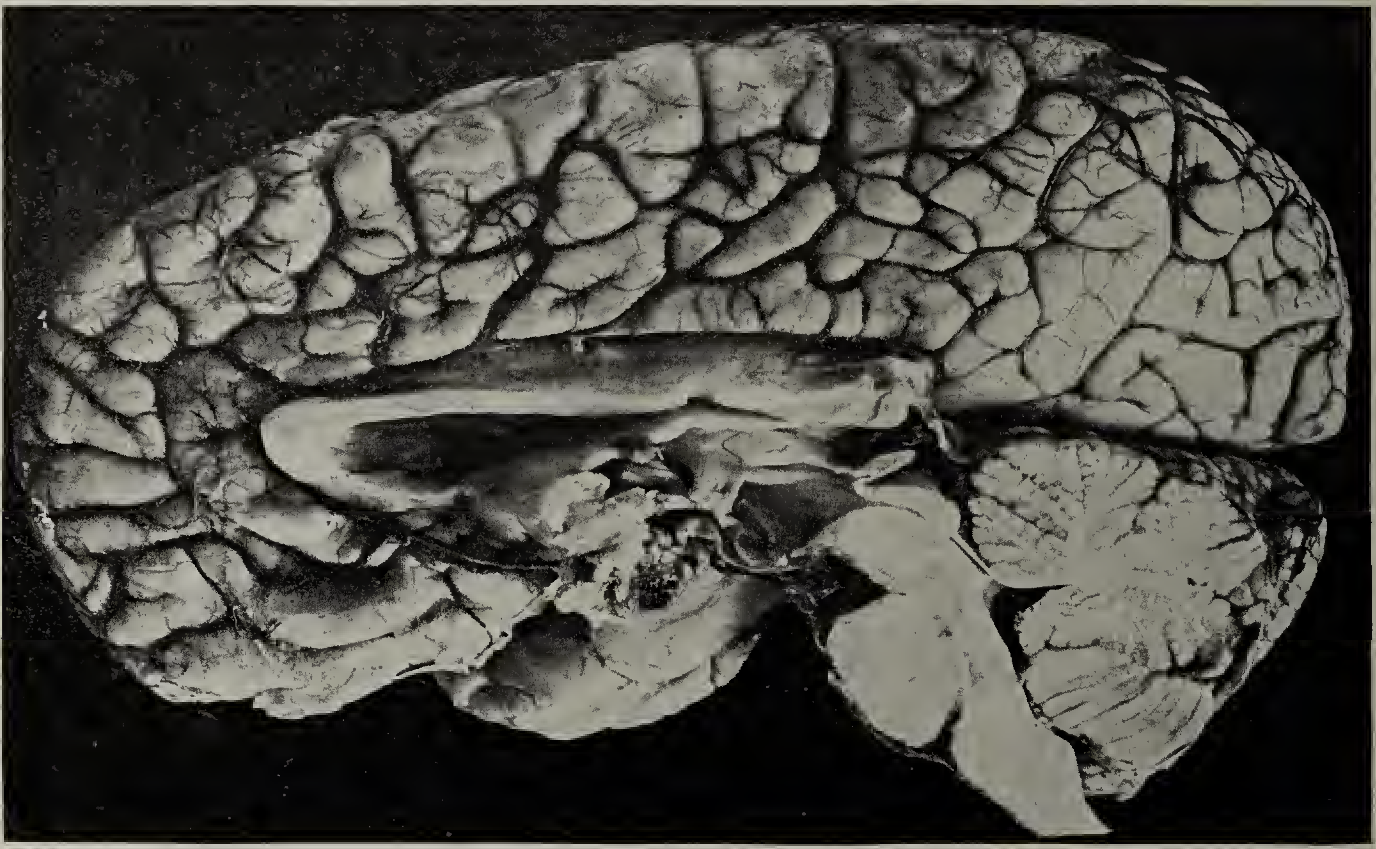

Fig. 1.—Median sagittal section of brain showing tumor of the hypophysis (Hecht and Herzog).

about three-eighths of an inch in diameter, made in anterior lower angle of wound and the bone cut through from before backward with a rongeur forceps. Base not cut through. Upper edge of bone flap raised and steadily increasing pressure applied on elevators until bone fractured across the base. Bone and scalp flaps now laid back together. Dura found intact and apparently normal, but ballooning up strongly through skull opening, showing a greatly increased intracranial pressure. Aspirating needle again passed into posterior parietal region, needle passing inward, upward and slightly forward. Several cubic centimeters of fluid withdrawn. Dura carefully washed with warm normal saline; all rough edges of bone smoothed, and the bone flap replaced. Scalp incision closed with continuous waxed silk suture. Wound sealed with gauze and collodion, excepting about 1 cm. at posterior inferior angle. A large dry dressing applied. Stimulating enema given on table. Patient put to bed in poor condition. Foot of bed elevated.

Cerebral Fluid.—A smear of the cerebral fluid sent to the laboratory was reported on by Dr. Herzog as follows: A very few mononuclear cells seen in the sediment after centrifuging; some red blood corpuscles; no bacteria of any kind. Small solid particles and carbonate of lime, soluble in dilute hydrochloric, with giving off of carbon dioxid. No tubercle bacilli. No evidence of cysticercus or echinococcus. Shortly before exitus, which followed operation in six hours, one-half ounce of fluid was aspirated through the wound by Dr. McArthur, examination of which was negative.

The autopsy was performed within six hours after death.

DESCRIPTION OF TUMOR

The following description of the tumor and histopathologic comment by Dr. Herzog is of interest:

"When the tumor was removed with the brain, it was found that it had markedly corroded, thinned out and excavated the sella turcica, on which it rested. The neoplasm (Fig. 1) is more or less globular in outline and has a diameter of about ¾ inch from above downward, and about one inch from before backward. Its longest axis is not absolutely horizontal, but is oblique, so that the anterior attached pole of the tumor is on a higher level than the posterior free end. At the anterior pole the tumor is attached in such a manner that it has become fused with and presses on the optic commissure. It is also fused to the corpora mamillaria and to the floor of the third ventricle. The pedicle of the hypophysis has disappeared. The neoplasm is apparently everywhere surrounded by a capsule, except where it is fused to tissue of the cerebrum proper. The tumor substance itself looks rather irregular, heterogenous, and contains small calcareous particles. The cavities of the lateral and of the third ventricle, although markedly enlarged, may, nevertheless, be considered of moderate size. The aqueduct and the cavity of the fourth ventricle are of normal configuration. In removing pieces of the tumor for microscopic examination, portions of the floor of the third ventricle had to be taken along with the tumor substance.

"The tumor tissue is composed of a variety of cellular elements. It appears that the original tumor parenchyma has been formed by epithelial cells of the anterior portion of the pituitary body. The proliferating cells have formed quite irregular gland-like or alveoli-like spaces in a stroma, of very loose vascular embryonal connective tissue composed of stellate cells. Where the proliferated tumor cells have arranged themselves into more or less globular spaces we find these alveoli either completely filled with epithelial cells, or there is present only an outer shell of epithelial cells and an inner mass of hyaline material. The latter, however, is not perfectly homogeneous, like typical colloid, but rather scaly and shows clearly its derivation from degenerating cells which have been moulded together in the interior of the follicles, but have not become completely fused into a homogeneous mass. On the whole, these bodies in the interior of the follicular spaces look somewhat like the epithelial pearls of cornifying carcinomata, although the material does not show any true cornification. It stains with Van Giesen from an almost pure yellow to deep yellow with some red, and even to a deep reddish orange. The epithelial cells forming the follicular spaces are cuboidal or short columnar. The latter shape occurs in situations free from pressure. Here the basal vesicular nuclei are oval, while the shorter cubical cells have spherical nuclei. The latter possess a rather finely granular chromatin, while here and there one or two nucleoli are visible. The protoplasm of these cells is very finely granular and takes but a very faint stain. These cells have not only formed the follicular or alveolar spaces, but have also proliferated in a very irregular manner, and this has led to the formation of irregular masses and tracts of cells. In some places giant cells with numerous centrally located nuclei are seen. The origin or derivation of these cells is not clear.

"It is found on microscopic examination that the hard portions of the tumor which were noticed when it was cut consist of osteoid tissue. Part of the latter is composed of very coarse primitive fibrils and fibril bundles which are variously infiltrated with lime salts, some very little, others abundantly. Aside from the fibrillar structure, the bone substance here

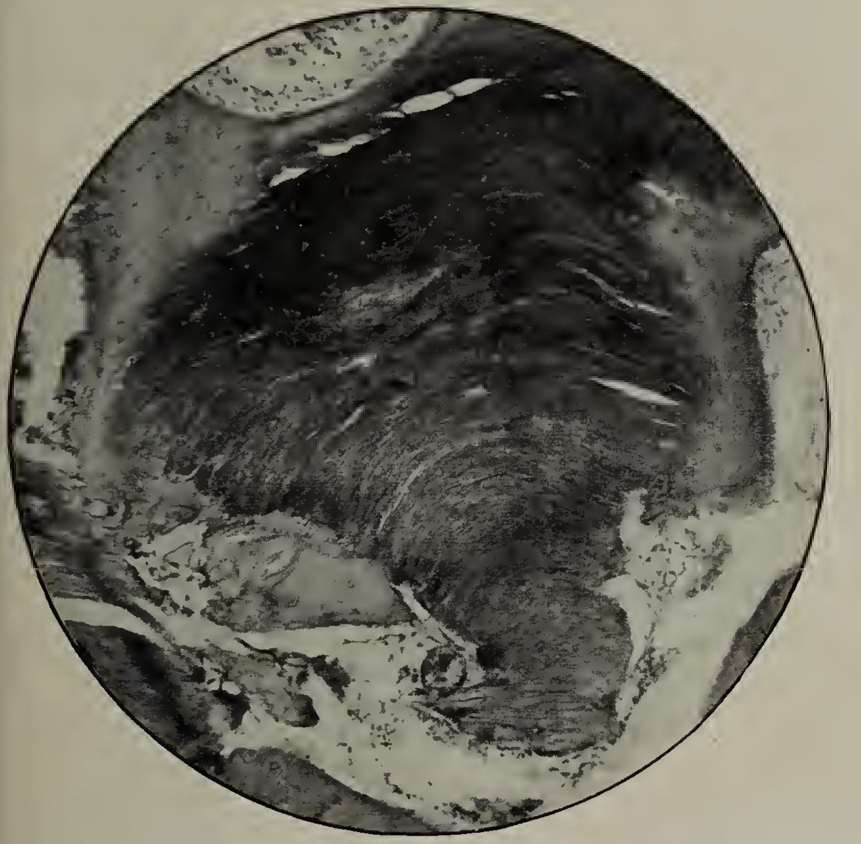

Fig. 2.—Section of decalcified osseous portions of tumor, showing strongly calcified bone fibrils. Magnified 100 diameters.

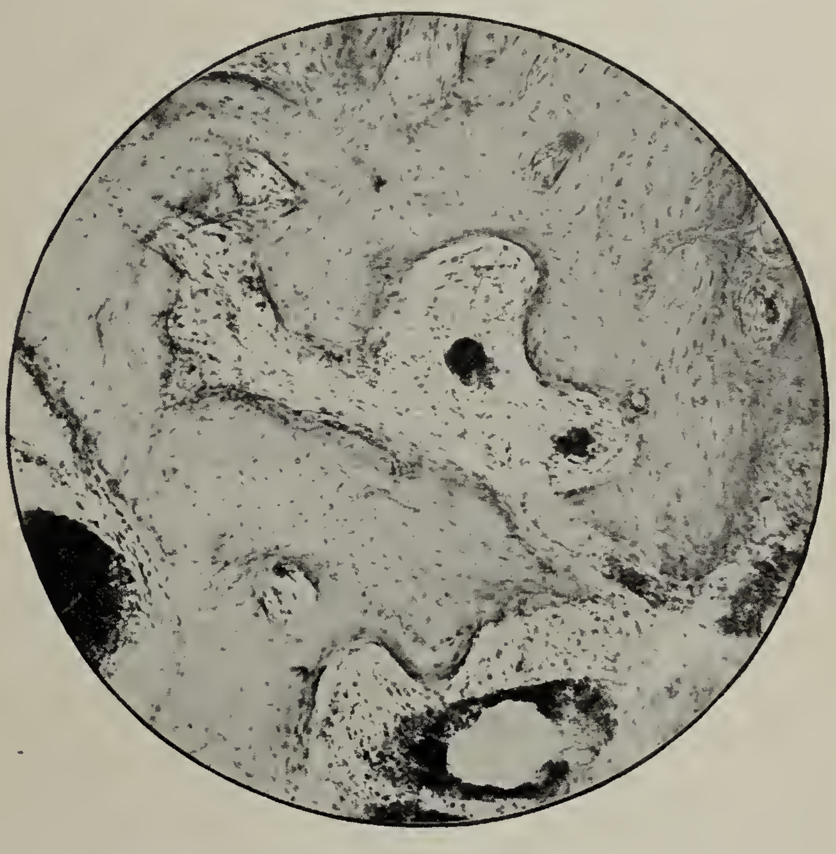

Fig. 3.—Same as Figure 2, showing marrow spaces and lamellated bone. Magnified 100 diameters.

shows no other differentiation. Again, other portions of the bone show all of the osseous elements of bone—corpuscles, Haversian canals, concentric lamellæ and cellular marrow spaces.

"Where the tumor has become fused with the floor of the third ventricle, we find a loose edematous connective tissue, with numerous coarse and delicate wavy fibers, forming a wide-meshed reticulum. To the outside of it is seen a portion of the chorioid plexus; its ependymal cells have proliferated and formed branching villous excrescences. No cartilage was found in the tumor, nor any glia cells or fibers.

"This tumor, then, of a mixed type, shows epithelial elements derived from the anterior portion of the pituitary body, and osteoid tissue, very probably derived from any early embryonal inclusion."

DEVELOPMENT AND NORMAL STRUCTURE

Essential to any epicritic consideration of the pathologic features in the case at hand is a thorough understanding of the development and normal architecture of the hypophysis.

This structure, for so long called the glandula pituitaria, is a somewhat flattened oval body, slightly broader than long, of grayish-red color, with an average weight of 0.69 gm. (Boyce and Beadles), resting in the sella turcica of the sphenoid bone. Bilobate gland that it is, it consists of an anterior and posterior portion, united and enveloped in a fibrous capsule, which is a special prolongation of the dura. These portions are histologically and histogenetically dissimilar. The anterior lobe, the larger and darker of the two, is bean-like in shape and concave behind, where it embraces the smaller posterior lobe. It is glandular in structure, and, being developed embryonically from a hollow protrusion, derived from the primary oral ectoderm, is sometimes referred to as the oro-hypophysis. The distal end of this protrusion (Böhm and Davidoff) or pouch comes in contact with the anterior surface of the lower portion of the infundibulum and becomes loosely attached to it. As the bones at the base of the skull develop, the attenuated oval end of this pouch atrophies, the distal end becoming finally completely severed from the buccal cavity. When this has occurred, the anterior portion of the gland is situated in cartilages, which later on become parts of the sphenoid bone, and, as Dr. Herzog suggests, it is easy to see how some of these sphenoidal cartilages might become included in the anterior portion of the hypophysis and thereby become the matrix of a tumor containing bone. It is fair to assume that this is what actually occurred in this case.

Several writers have ventured the opinion that any variations noted in the size of the gland as a whole are perhaps due to the variable dimensions of this glandular portion.

Its close resemblance to the thyroid has been a matter of repeated comment.

The vascular supply to the anterior lobe comes from the internal carotid by five branches coming from the trunk within the cavernous sinus. The posterior lobe is supplied by arteries that pass down with the pia mater of the infundibulum.

The posterior lobe, connected by a solid stalk with the infundibulum and regarded as a continuation of it, is developed from that part of the embryonic brain which later goes to form the third ventricle. In marked contrast to the anterior lobe, it is in its nature a cerebral structure, and for that reason by some called the neurohypophysis.

103 State Street.

ABSTRACT OF DISCUSSION

DR. HARVEY CUSHING, Baltimore: I think it important in relation to tumors of the hypophysis to distinguish between tumors arising from the hypophysis itself and tumors merely in the infundibular region. Tumors in the interpeduncular space may exist with or without disturbance of the hypophyseal function. That is what we are especially interested in. Tumors which disturb the hypophyseal function may be associated with over-activity or under-activity of the gland. Those are things which, as physicians and neurologists, it is incumbent on us to distinguish. The case that has been reported by Dr. Hecht is very similar to a case that was in my care a few years ago (also a teratoma), in which there were glandular elements, and I doubt not that there were active glandular elements in this case of Dr. Hecht's sufficient to enable this child to continue to live, for I emphatically believe that the hypophysis or a portion of it is necessary to maintain physiologic equilibrium.

It will be necessary, I think, in every case before one can say that this is a tumor of hypophysis or a tumor in its neighborhood, that serial sections be taken, and it is important in this case that a careful search be made for remnants of the flattened, possibly distorted pituitary gland. These elements which have been demonstrated are suggestive of the fact that the tumor actually may have been of hypophyseal origin; but we should bear in mind the developmental character of structures in this neighborhood, the favorite site for teratomata. The important thing to determine, of course, is what the growth in the neighborhood has done to the gland.

Dr. Hecht has devoted some of his investigations to considering the effect of the growth on neighboring structures. Of course, disturbance of the optic nerves and other structures in the neighborhood, such as pressure on some of the oculomotor nerves, often occur whether the hypophysis has been affected or not; but I think that primary optic atrophy is the usual early symptom of pressure here. That is the striking thing—a primary optic atrophy without an associated choked disc. One can have a choked disc, or optic neuritis if you chose to call it that, superimposed on primary optic atrophy. But I think you will always find in these cases, and I think it will prove to have been present in Dr. Hecht's case, that there was an internal hydrocephalus present when the child died, if it had choked disc of three or four diopters. The pressure of the nerves themselves, without the associated condition of hydrocephalus will induce a primary optic atrophy, and it is only when the growth in this neighborhood reaches such size that it interferes with the outflow of fluid through the foramina of Monro that it causes dilatation of the optic sheaths and leads to choked disc.

DR. MAXIMILIAN HERZOG, Chicago: Dr. Cushing has referred to the embryology, which has also been discussed in the paper; but in order that you may fully understand the histogenesis of the tumor, it is perhaps desirable that I should refer briefly to the development of the hypophysis. The latter takes its origin from a double source, one part develops from that portion of the brain which later becomes the floor of the third ventricle, it is called the infundibulum, while the posterior or lower portion is developed from an offshoot of the primitive oral cavity. So that, from an embryologic standpoint, the hypophysis is quite complicated.

I have not made a complete serial section examination of the tumor in question because that would have necessitated a destruction of the specimen, which was not desirable. The tumor shows epithelial portions which arise from the posterior portion of the hypophysis, that portion which develops from the early oral epithelium. Evidently those proliferating epithelial cells have retained their physiologic function; they have formed a material somewhat colloid in character; and as I understand the clinical history of the case, there was no disturbance of nutrition at all in the child, which would indicate that the hypophyseal physiologic function was not entirely missing nor greatly disturbed. The child did not die from the tumor, but the operation led to a fatal issue.

There are three types of mixed tumors or teratomata, one type which imitates a certain organ of the body, for instance, an ordinary dermoid of the skin; the second type, which imitates an entire embryonic region, the best type of which are the embryonal adenosarcomata of the kidney; and then, thirdly, tumors which may contain all the tissues of the body, and these are the most complicated mixed tumors, arising from the germ cells of the ovary or testis. This tumor belongs to the second type. It shows epithelial structures derived evidently from the early oral epithelium, and shows bone which is probably derived from the early cartilages which later form portions of the sphenoid bone.

Prof. Max Nonne, Hamburg, Germany: I wish to speak of a case of a woman of 27 who has suffered for two or three years with a hypophyseal tumor which has caused acromegaly. Her hands increased gradually in size. At the time of her marriage her wedding ring was No. 8, whereas she now wears a No. 13. The size of her shoes has been changed from 5½ to 8; her frontal bones are very prominent; her nose has changed; the rows of front teeth do not meet, on account of the changes in the size of the jaws. She has complained of slight headache; there have been no eye symptoms; but she suffers from rheumatic and neuralgic pains all over her body. A radiogram shows excavation of the bone which makes the diagnosis of hypophyseal tumor certain. The patient has not consented to an operation as yet.

Dr. William G. Spiller, Philadelphia: After a number of years the bitemporal hemianopsia from tumor of the pituitary body may diminish, as in a case reported by F. A. Packard about 1890 in the *American Journal of the Medical Sciences.* Some years later I obtained the specimen through Dr. Cattell, and found a large tumor filling the third ventricle. It had greatly enlarged the sella turcica, and the relief of pressure on the chiasm afforded in this way had lessened the hemianopsia. Recently, in consultation with Dr. Zentmayer, I examined a similar case in which the bitemporal hemianopsia diminished as other symptoms increased. Tumors in this region are frequently of slow growth. In the last case referred to the symptoms began many years before death. The patient was a woman over 40, and one of the earliest symptoms was cessation of menstruation occurring about the age of 20; other signs, such as bitemporal hemianopsia, have since developed. The early cessation of menstruation in this case indicates that the tumor probably has been growing more than twenty years.

Sir James Grant, Ottawa: I recall a case sent to Sir Victor Horsley by Sir Richard Gower, diagnosed as tumor in connection with the spinal cord. Horsley diagnosed it differently, cut down on the tumor, took out a large amount of material between the theca and spinal cord, scraped it out, injected it with bichlorid of mercury, and the individual shortly recovered and went back to his business, entirely restored as regards function of his extremities, and to-day enjoys perfect health. That shows the advances that surgery has made in the treatment of diseases of the spinal cord as well as of the brain.

Dr. Hugh T. Patrick, Chicago: That a central scotoma with this optic atrophy is relatively frequent I did not know. Within a week I have seen a case which bothered me exceedingly, and except for the fact that the patient had a large central scotoma on one side and a small one on the other, I should at once have made a diagnosis of hypophyseal growth; but not knowing that that was a symptom of hypophyseal pressure I was not willing to come to that conclusion, but now I feel certain. I might add that in this case menstruation ceased at 20. I have in mind also another case in which menstruation also ceased at 20, in which there was unilateral optic atrophy. I think we are apt to demand schematic cases when we have classical bitemporal hemianopsia and we are loath to recognize cases of unilateral optic atrophy with irregular fields as mentioned by Dr. Hecht and Dr. Cushing. I think if we keep this in mind we will more frequently make the diagnosis of tumor of the hypophysis and less frequently that of tabes with optic atrophy as the first and as yet only symptom.

Dr. Julius Grinker, Chicago: I recall a case in which optic atrophy was almost complete on one side, while there was temporal hemianopsia on the other. From the history I learned that it began as a bitemporal hemianopsia. The noteworthy feature in this case was the almost total absence of the knee and Achilles jerks. The diagnosis rested between tabes with beginning optic atrophy and tumor of the hypophysis. I decided in favor of tumor, but had no opportunity to verify the diagnosis. Recently I observed another case of tumor of the hypophysis in which bitemporal hemianopsia was pronounced. In addition there were intermittent dull headaches, which had lasted for several months. The temporal halves had been blind for six months. Acromegalic enlargement is only slightly indicated in the face, but on comparing the patient's photograph with one taken several years ago, the difference is not apparent. A radiogram shows distinct enlargement of the sella turcica. In marked contrast with my first case, this patient has normal reflexes.

Dr. D'Orsay Hecht, Chicago: Dr. Cushing's point in reference to the differentiation between tumors of the hypophyseal region and tumors of the gland proper is very well taken. I find in the literature that most writers are prone to refer rather loosely to tumors in the hypophyseal region, without due regard to the site of origin in the gland itself or its neighborhood. Dr. Cushing's remarks relative to optic atrophy are well borne out by Bartels' statistics, which tend to show that 50 per cent. of the cases are primarily optic atrophies. What Dr. Spiller has said with reference to the variation in the visual fields is most pertinent, but I may add that, particularly in the ophthalmologic literature, these variations in the visual fields and the extent of hemianopsia have been noted. In one instance, reported by Bartels, and observed by Erdheim, I think, the fluctuations were explained on the ground of cyst evacuation, which explanation was subsequently confirmed on postmortem. This variability, therefore, should be borne in mind. Dr. Patrick's point with reference to the type of tabes that presents early optic atrophy is well taken, and he is right in saying that in those cases, when other symptoms are conspicuous by their absence, we should be on the lookout for hypophyseal growth. Professor Nonne's citation of a case in point is most interesting and instructive.

THE CLINICAL VALUE OF RADIOGRAPHY OF THE MASTOID REGION *

SAMUEL IGLAUER, B.S., M.D.
CINCINNATI

The difficulties encountered in radiographing the temporal bone are due to its position at the base of the skull, to the thickness of the parts that the Roentgen rays must penetrate, and to the liability of superimposing the shadows of other portions of the skull on the skiagram of the temporal bone. By directing the rays in the anteroposterior (posteroanterior) axis of the skull Kuhne and Plagemann[1, 2] have taken radiograms of the projecting portions of both mastoid processes, and have drawn clinical deductions therefrom. Voss[3] and Winckler[4] have obtained more detailed Roentgen pictures of the temporal bone by directing the rays in the transverse diameter of the skull.

During the past year Dr. S. Lange, radiologist to the Cincinnati Hospital, to whom I am greatly indebted, has been kind enough to undertake the radiography of the mastoid region for me. After some experimentation, at my suggestion, the radiograms were taken in an oblique profile, i. e., the rays coming from the target were made to center just below the parietal eminence on one side of the skull and were directed through the cranium in the direction of the temporal bone on the opposite side of the skull. At this angle the best skiagrams were obtained. In this position Dr. Lange found that the axis of the x-ray diaphragm was tilted upward at an angle of 25 degrees from the base of the skull (Reid's line), and that it was inclined backward 20 degrees, from the vertical plane passing through both external auditory canals. Figure 1 illustrates this double inclination. In a previous paper on this subject[5] I have given further details concerning the technic, and these need not be repeated here.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Kuhne and Plagemann: Fortschr. a. d. Geb. d. Roentgenstr., Sept. 1, 1908, xii, No. 1.

[2] Plagemann: Verhandl. d. Deutsch. Roentgen-Gesellsch., Sept., 1908, iv.

[3] Vos, O.: Verhandl. d. Deutsch. Otol. Gesellsch., May, 1907, reprint pub. by Gustav Fischer in Jena; also abstr. in Ztschr. f. Ohrenh., July, 1907, liv, 208.

[4] Winckler: Abstr. Ztsch. f. Ohrenh., July, 1907, liv, 209.

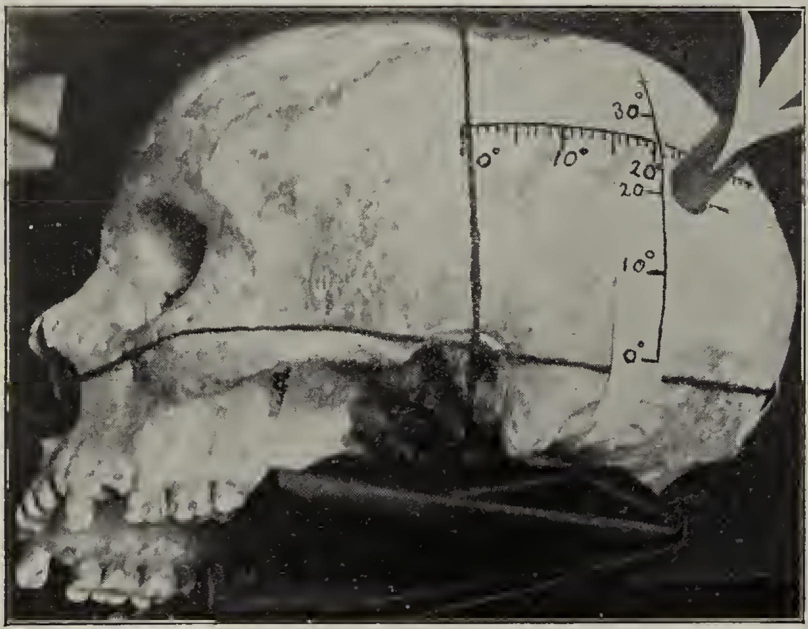

Fig. 1.—The arrow indicates the inclination at which the radiogram should be taken, *i. e.*, the x-ray diaphragm should be tilted backward 20 degrees from the vertical plane, and should be inclined upward 25 degrees from the horizontal plane. (As measured by Dr. S. Lange.)

RADIOGRAPHY OF THE NORMAL MASTOID REGION

In the normal subject; skiagrams obtained by this method delineate the following: (1) The mastoid process with its cells; (2) the position of the external auditory meatus; (3) the line marking the floor of the middle fossa; (4) frequently the position of the groove for the sigmoid sinus.

Many plates in addition show the floor of the posterior fossa, the ascending ramus of the mandible and the suture lines radiating from the asterion. Figures 2 and 3 show all the landmarks above mentioned. From these and similar plates it will be apparent that the internal anatomy of the temporal bone may readily be determined by radiography. Considering the great variability in the structures of this bone, the knowledge so obtained prior to operation will prove of great value to the surgeon.

RADIOGRAPHY OF THE PATHOLOGIC MASTOID REGION

Among the pathologic cases examined were seven cases of chronic otorrhea, one subacute case and four acute cases.

In cases of suppuration of long standing, attended with osteosclerosis and obliteration of the mastoid cells, the dense bone shows very distinctly, and the sigmoid groove very often stands out sharply in the picture. The position of the antrum may be indicated if the overlying bone is not too dense. Seven of the cases which had been radiographed came to operation and the x-ray findings were in a great degree confirmed. It may be interesting to recount these cases somewhat in detail.

RADIOGRAMS CONTROLLED BY OPERATION

CASE 1.—L. K., male, aged 21. Diagnosis: Chronic suppurative otitis media on the right (of uncertain duration). X-ray examination showed a dense shadow over the right mastoid region, with the absence of cellular structure. The position of the sinus is indicated. The left normal mastoid region showed an enormously developed pneumatic process. Operation, Aug. 28, 1908, confirmed the findings in the right ear.

Remarks.—In this case it seems likely that the chronic suppuration retarded the development of the right mastoid.

CASE 2.—M. S., male, aged 12. Diagnosis: Chronic suppurative otitis media, right and left, of seven years' standing. X-ray examination showed a diploetic mastoid, a high tegmen, and the line marking the position of the sinus. A meatomastoid operation (Nov. 21, 1908) showed the anatomic relations as in the radiogram.

Remarks.—The tip was not disturbed because it appeared normal in the radiogram. In the light of subsequent experience, the radiogram in this case would have indicated that operation might have been deferred.

CASE 3.—A. Z., male, aged 55. Diagnosis: Subacute tuberculosis of left middle ear and mastoid. X-ray examination (two plates at different times) of left ear only, showed a very large pneumatic mastoid with hazy outlines of its cells. Radical operation revealed pus and granulations in the middle ear and antrum, and showed serum in the mastoid cells, some of which extended behind the sinus.

Remarks.—Some of these cells might have been overlooked had they not been delineated in the radiogram.

CASE 4.—H. N., male, aged 62. Diagnosis: Chronic suppurative otitis media in left ear with caries of the promontory; unhealed radical mastoid in the right ear. Radiogram

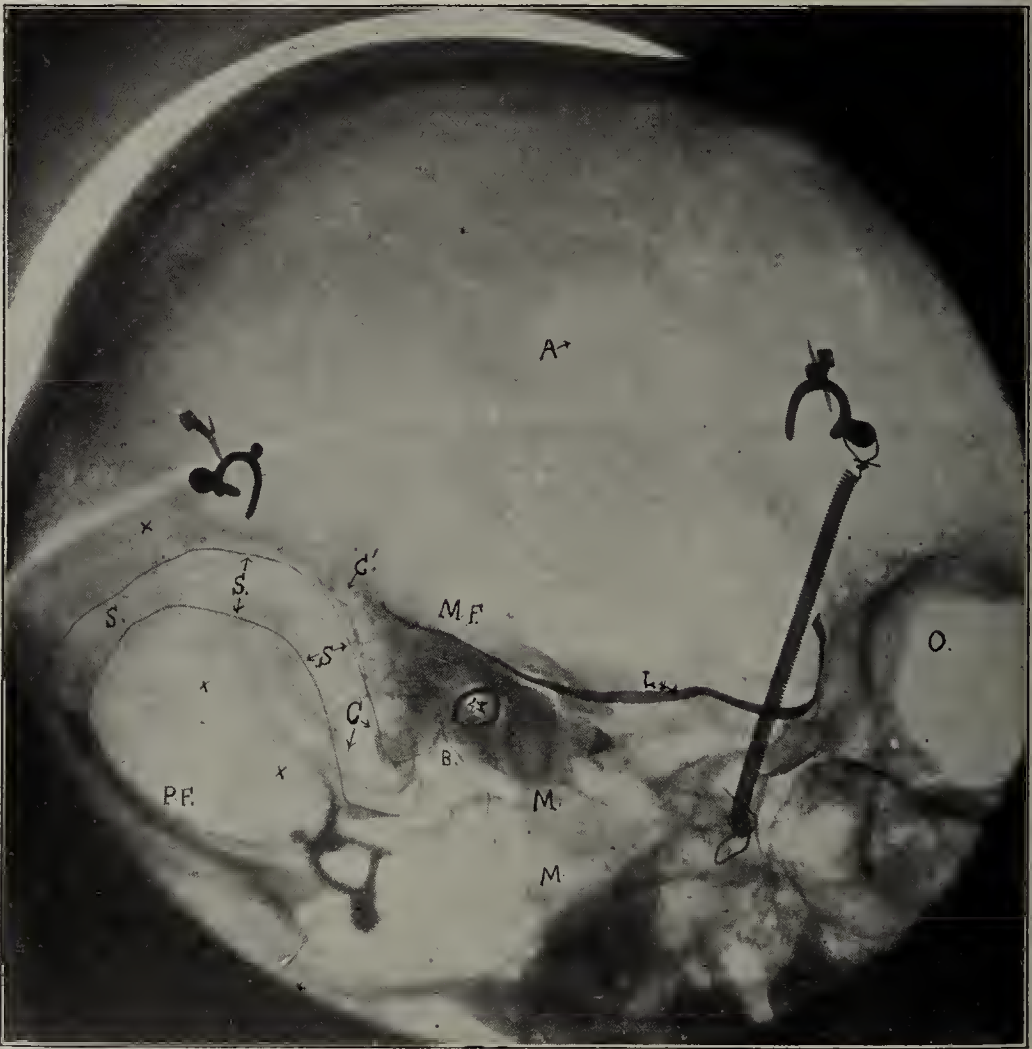

Fig. 2.—Radiogram of mastoid region of a skull: * Auditory meatus; M. F, middle fossa; L, lead foil in middle fossa; C, large cell at the mastoid tip; C,' smaller cells; S S, sinus (marked by wires); B, jugular bulb; P F, posterior fossa; O, orbit; X X, suture.

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[5] This article will appear in the Annals of Otology.

(Fig. 4) of left mastoid region showed dense shadow of osteosclerosis, and a few cells, just indicated, in the antrum region. A small break was noted in the line of the middle fossa and a tentative diagnosis of a defect in the tegmen antri was made. Radiogram of the right ear showed large opening made by a previous operation.

Operation.—Dec. 29, 1908. This revealed a dense sclerosed mastoid, large antrum filled with pus and granulations, and a defect in the tegmen antri with the dura covered with granulation at this point.

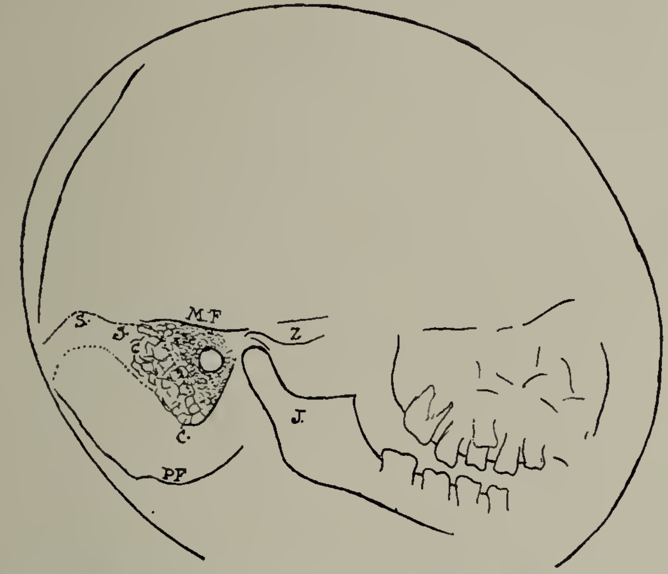

Fig. 3.—Tracing from radiogram. Normal. Mastoid region of a child. M F, middle fossa; C C, mastoid cells; S S, sigmoid sinus; J, jaw; Z, zygoma; P F, posterior fossa.

Subsequent History.—The patient died on the forty-first day after the operation. Postmortem revealed tuberculous lesions in apices of both lungs and a tuberculous caries of the right internal ear and pyramid. The temporal bone, showing defect over the antrum, was removed.

CASE 5.—H. B., female, aged 4. Diagnosis: Chronic mastoiditis on the left; right ear normal. *X*-ray examination: An excellent picture of the left side showed a dense shadow of osteosclerosis and clear zone corresponding to the middle ear and antrum, the sinus being sharply outlined (Fig. 5). The right mastoid shows normal diploetic bone and the sinus (Fig. 6). Operation Jan. 11, 1909, showed a small fistula in the external auditory meatus leading into the antrum, which was filled with granulations; the sinus was not uncovered.

Remarks.—There is a striking contrast between the radiograms of the right and left mastoid regions.

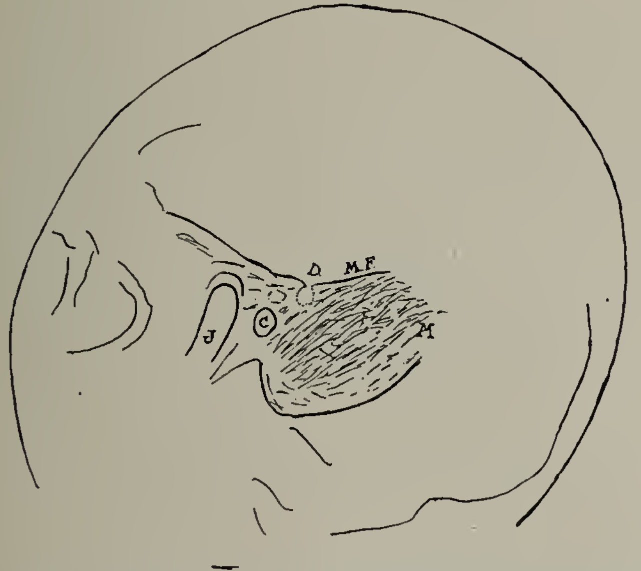

Fig. 4.—Tracing from a radiogram showing osteosclerosis of mastoid (left) and a defect (?) in tegmen antri. M, sclerosed mastoid; M F, middle fossa; D, defect; C, external auditory meatus; J, mandible.

CASE 6.—F. M., male, aged 2½. Diagnosis: Acute otitis media with mastoiditis on the left. *X*-ray examination of the right side showed mastoid process of infantile type. The left shows the same in additon to the outlining of the posterior semicircular canal (Fig. 7). Operation Jan. 19, 1909, revealed softened bone about the mastoid antrum.

Remarks.—The outlining of the semicircular canal on the one side and not on the other would indicate that the bone over the canal was softened.

CASE 7.—J. R., male, aged 21. Diagnosis: Chronic suppuration in the right and left ear (of years' duration). *X*-ray examination (Fig. 8) of the right ear only (2 pictures) showed osteosclerosis, absence of cells from the tip region and a rather forward lying sinus. The meatomastoid operation (Feb. 3, 1909) uncovered a small deep-seated antrum with a few adjacent cells containing a few drops of pus; the sinus was not uncovered.

Remarks.—The tip of the mastoid was not disturbed, since the skiagram showed that it was not involved.

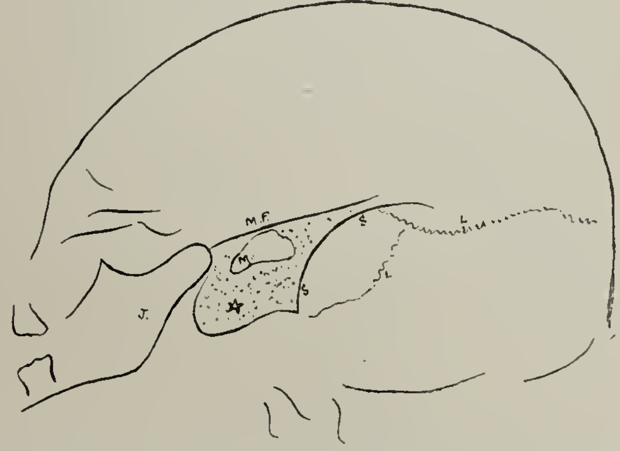

Fig. 5.—Radiogram tracing of left mastoid region, showing osteosclerosis of mastoid process*; M, middle ear; M F, middle fossa; S S, sigmoid groove; L L, suture lines.

In addition to the above, five patients on whom mastoid operation had been performed were radiographed after operation, and the appearance of the operation cavity noted. One of these skiagrams taken several months after a Schwartze operation was especially interesting, since it showed that a number of cells had not been opened, and still the patient had made a perfect recovery.

The number (four) of acute cases examined is too limited to permit of any definite conclusions being drawn. One of these came to operation as already described above. The second case, that of a little girl of 10, simulated mastoiditis. The Roentgen picture of the affected side showed a haziness of the mastoid cells with clear cells on the sound side. The patient recovered without operation, and the radiogram taken six months after recovery showed that the cells had regained their normal contour.

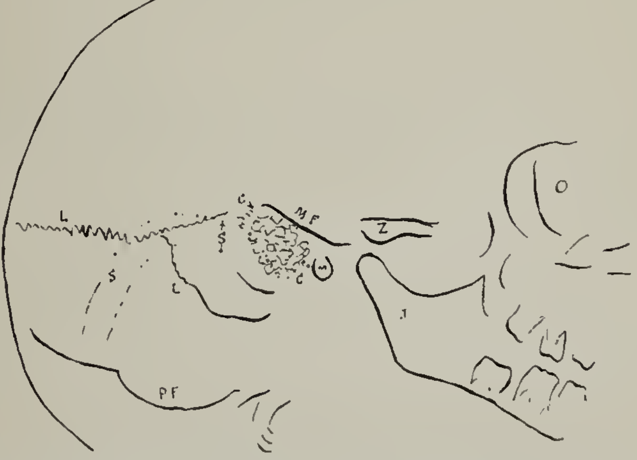

Fig. 6.—Tracing from a radiogram. Normal mastoid: M, meatus; M F, middle fossa; S S, sinus; C C, mastoid cells; P F, posterior fossa; L L, suture lines; J, mandible; O, orbit; Z, zygoma. (Right mastoid region of Case 5.)

The third case of acute otitis media showed similar clouding of the cells on the affected side. These two cases are interesting as confirming the contention of v..

Troelsch[6] and of Politzer,[7] that the mastoid process is involved in most severe cases of acute middle-ear infection. The skiagram in the fourth case, which is too recent for complete description, shows a fistula leading into a large abscess cavity in the mastoid process. It appears probable that repeated x-ray examination in acute cases will give valuable information concerning the progress of the disease.

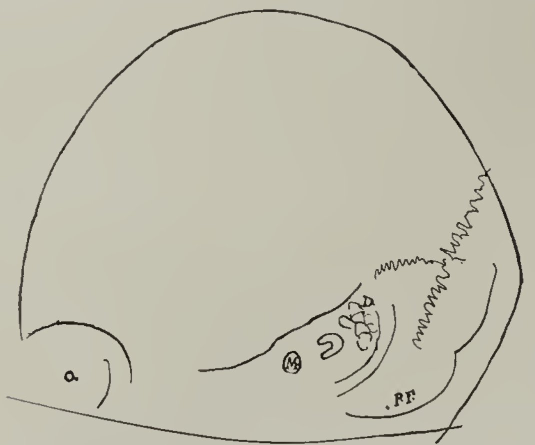

Fig. 7.—Left mastoid region, showing posterior semicircular canal: M, meatus; D, diploetic bone; P F, posterior fossa; O, orbit.

CONCLUSIONS

In conclusion it may be stated:

1. The most satisfactory Roentgen pictures may be obtained in oblique profile of the temporal bone.
2. The internal anatomy of the temporal bone can be determined prior to operation, and the knowledge so obtained is a great aid to the surgeon.
3. Osteosclerosis of the mastoid secondary to chronic suppuration can usually be diagnosticated by radiography.

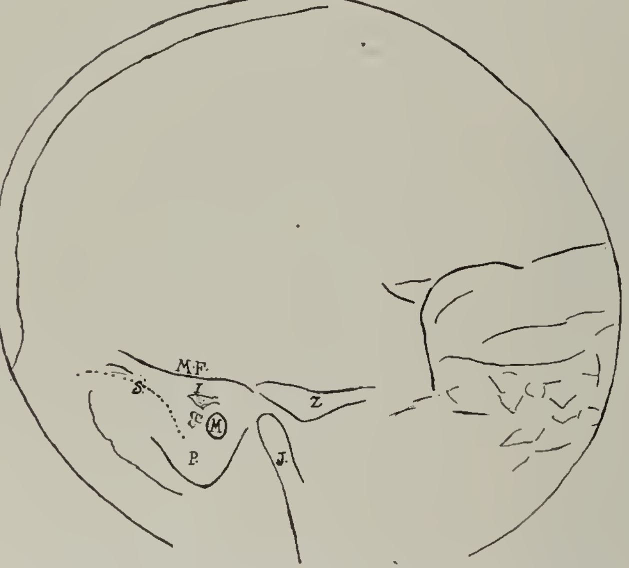

Fig. 8.—Tracing from radiogram: M, meatus; I, antrum (?); M F, middle fossa; P, sclerosed mastoid process; S, sigmoid groove; Z, zygoma; J, ascending ramus of upper jaw.

4. It is likely that defects in the limits of the temporal bone will appear in the radiogram.
5. Cases failing to heal after operation should be controlled by skiagraphy, as this may reveal the seat of the trouble.
6. The value of the Roentgen examination in cases of acute mastoiditis remains to be determined.

22 West Seventh Street.

ABSTRACT OF DISCUSSION

Dr. Sydney Lange, Cincinnati: When Dr. Iglauer first asked me to do some of this work for him it was with misgivings that I undertook it, for I did not believe we could get any practical results, but since starting the work, I believe that with perfected technic this method will form an important link in the chain of symptoms that go to establish the diagnosis of disease in the mastoid bone. The technic is very difficult. It is perhaps as difficult to examine a mastoid in this manner as to examine a frontal sinus and antrum after the method of Drs. Coakley and Caldwell. The whole thing narrows down to this: If the technic is right we have here a method of outlining the anatomy of the mastoid bone. If the tube is just right the anatomy will come out very clearly. The lateral sinus and mastoid cells can be seen very well. From examinations of the cadaver and normal subjects I have never failed to get an outline of the mastoid cells, and in comparing the two sides they have shown close similarity. Reading *x*-ray pictures of the mastoid must be in terms of increased or decreased density, and by comparing the two sides we can draw inferences regarding the pathology of the line. Increased density of one side as compared with the opposite side means sclerosis, decreased density with indistinctness of cell outline means inflammatory softening or necrosis. As in all *x*-ray work, the picture of the mastoid is just one link in the diagnosis and should be regarded as such.

I was very glad to have the subject presented here in order that expert Roentgenologists may take up and further develop the method from this humble beginning..

Dr. R. P. Scholz, St. Louis: Without question radiograms are of great value in diagnosing conditions in and about the temporal bone. I believe that skiagrams of the two sides should be made for comparison. As an aid in outlining the cavities of the temporal bone and of fixing certain landmarks, I would suggest the injection of bismuth, in suspension in peroxid of hydrogen, into the tympanum; having the patient hold his head so as to favor the settling of the mixture to the mastoid. I recommend that this be used as a final examination in patients to undergo shortly the radical operation. If these precautions be taken there need be no fear of bismuth intoxication.

Dr. J. Holinger, Chicago: This demonstration leaves the feeling that we are now more certain and safe in doing mastoid work. A sclerosed mastoid with deep-seated sinus comes out clearly. On the other hand, what we call a dangerous mastoid will show just as clearly. A short time ago we had a discussion in Chicago as to comparison of the mastoid processes of the two sides in the same individual. It was said that both mastoids are usually alike. I differed with that statement then, and do so now, inasmuch as I have often found in operating on both sides that the two mastoids differed markedly in the arrangement of the cells as well as in their size. I think if one mastoid is pneumatic, that is, contains many and large cells, the other one is similar and not likely to consist of one solid mass of bone. But I think the groove of the sinus may be shallow in one side and deep in the other. Large cells may be in one side along the sinus, in the other side they are in the tip of the mastoid, etc., and these are the points that interest us in the operation.

Dr. B. A. Randall, Philadelphia: As in all radiographic work, it takes an expert to translate the picture; with all his knowledge, the aurist himself may be at fault and the results in certain cases may not justify his anticipations. In one case, a large hyperostosis filled the canal and it was impossible to determine clinically where it had its origin. With the picture this was easily seen. Such information may at times be very valuable.

Dr. C. F. Welty, San Francisco: In taking up something new we must demonstrate how and why we are going to be benefited. In these pictures a lesion of the bone will show, but after all, what does that amount to? You have a case in question, a case of acute otitis, for instance; your indications for operative interference are quite well established now and generally accepted by all. If you follow these I do not think it is necessary to have an *x*-ray picture. When it comes to the chronic cases, if we follow the most approved indications for operation we can go ahead with our operative work without fear. As to the sinus encroaching on the wall, if we uncover it with the first blow of the chisel, we must know how to go ahead without getting into the sinus. If the dura is uncovered it is of little consequence. So, after all, while it is a very beautiful thing, I do not see that we profit a great deal by it.

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[6] Troelsch, A. von: Lehrbuch der Ohrenheilkunde, Leipsic, 1881, pp. 291-410.

[7] Politzer, A.: Ohrenheilkunde, 893, p. 417.

Dr. Frank Allport, Chicago: I do not feel that criticism such as that of the preceding speaker should be made without some challenge. We can not say that any progress, anything that sheds light on a case, should be brushed aside as of no use, or not of distinct use. Those of us who have operated on many mastoid bones will, I am sure, feel that we would have been glad if before we operated we had known the internal condition of things. I have many times found conditions that I would like to have known about before operating, and I certainly think it would be unwise to pass up such work and say that it is not of much use. It is unquestionably of great use.

Dr. S. MacCuen Smith, Philadelphia: This past winter Dr. Manges has been doing some of this work. It seems to be of little worth in acute cases, but it certainly is of considerable value in pointing out two features of the greatest interest to the operator—the position of the lateral sinus and the condition of osteosclerosis.

Dr. Samuel Iglauer, Cincinnati: I am very much pleased with the discussion and that Dr. Lange was able to take part in it. This work requires an expert radiographer as well as an otologist and I agree with Dr. Randall that it takes these two to make the diagnosis. It is important to take all the pictures in the same way and at the same angle. The suggestion concerning the injection of bismuth seems to me a good one. I believe Dr. J. Beck of Chicago is employing this method. I have put a piece of lead foil in the meatus and another piece on the tip, and the pieces of metal give two fixed points, which serve as guides in interpreting the radiograms. There is often a difference in the two mastoids, especially if one be diseased. Chronic inflammation in the mastoid retards development on the inflamed side. It is true that we have been able to get along without the x-ray, but that is true in general surgical work also. It might as well be said that fractures of the long bones can be treated without x-ray pictures. Of course they can; but we know that they can be treated to much better advantage with the aid of the x-ray. I am pleased to learn that Dr. Smith's findings correspond with mine, and agree that we can not as yet tell much about the acute cases.

BRONCHOSCOPY AND ESOPHAGOSCOPY

GLEANINGS FROM EXPERIENCE *

CHEVALIER JACKSON, M.D.
PITTSBURG, PA.

One hundred and five deaths, recorded in North America in five years, from foreign bodies in the air and food passages, or from ill-advised efforts at removal, show the necessity of acquainting the general profession with the advances already made and still being made in esophagoscopy and bronchoscopy. Further, I wish to report cases which point out lessons for us all. As evidence of the prevalence of blind groping after foreign bodies, 36 per cent. of the foreign-body cases that have come to me have been in a state decidedly the worse for the unjustifiable, obsolete attempts at removal, which, moreover, had failed to remove the intruder.

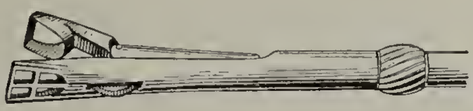

Fig. 1.—Specimen forceps tip to fit universal handle. The side jaw will bite into a flat lateral wall. The cross forms the bottom of a basket to hold the tissue removed.

In one case, seen in consultation, a child of 2 years was dying from acute esophagitis. A penny had lodged in the esophagus five days before. Forceps had been passed blindly, without an esophagoscope. Two days after this utterly unjustifiable procedure, the temperature was 104 degrees, pulse 150. When I saw the patient, five days after operation, the temperature was subnormal, pulse fluttering and uncountable, sloughs were being vomited, and the child was sinking away in the profound shock of a traumatic esophagitis. I concurred in wording the death certificate: "Death from acute esophagitis following the swallowing of a penny." It was really due to the absolute ignorance of the family physician who had never heard of esophagoscopy, and its safety in trained hands.

In another instance a prominent surgeon did a rapidly fatal thoracotomy for a glass bead which at autopsy was found free in the right bronchus. The pathologist who did the autopsy called the surgeon's attention to the fact that in such a case the foreign body could have been readily removed by bronchoscopy. The surgeon said: "What is bronchoscopy?" In that town were two men competent to remove that bead quickly and safely.

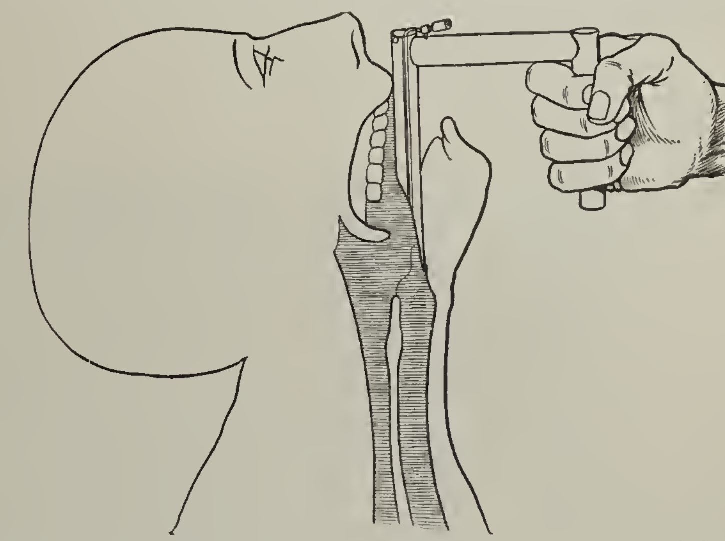

Fig. 2.—Misleading schema of direct laryngoscopy and bronchoscopy.

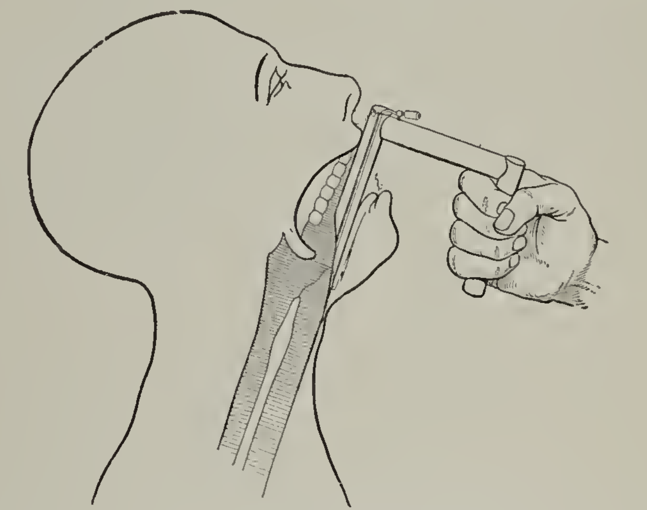

Fig. 3.—Schema showing correct position of patient and of the instrument in relation to the air passages. The instrument should touch the upper teeth very gently if at all.

There were three thoracotomies for bronchoscopically removable foreign bodies reported in 1908. They were published admittedly because the patient survived the operation. It is hoped that no one will misunderstand me. No criticism can attach to thoracotomy for the evacuation of an intrathoracic abscess following the lodgment of a foreign body that bronchoscopic methods have failed to remove. In the three cases mentioned the patients were never examined bronchoscopically, and there was no wait for abscess formation.

I have used the esophagoscope in forty-one cases for foreign bodies in the esophagus, in all but one of which the intruder was removed. In this one case, a child of 2

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

years had a double-pointed, partially straightened tack, shaped like a fish-hook, in the esophagus. One point had perforated and the other point had almost disappeared. Slight traction on this one point was found ineffective, and strong traction was deemed unsafe; the tack disappeared from the esophagus and wandered into the pleural cavity. The case was fluoroscopically watched by Dr. John W. Boyce. After abscess formation around the tack at the bottom of the pleural cavity, and not until then, Dr. Boyce advised thoracotomy, which was skilfully done by Dr. James McFarlane, who resected a rib, evacuated the pus and removed the tack. The child made a good recovery, and now, six months later, is doing well, though the fistula which communicated with the esophagus is still discharging.

I have practiced tracheobronchoscopy on thirty-two patients with foreign bodies lodged in the air passages below the glottis. In twenty-eight of these cases the foreign body was removed, not removed in four. There were no deaths from any cause whatever within thirty days, which was as long as the cases were followed.

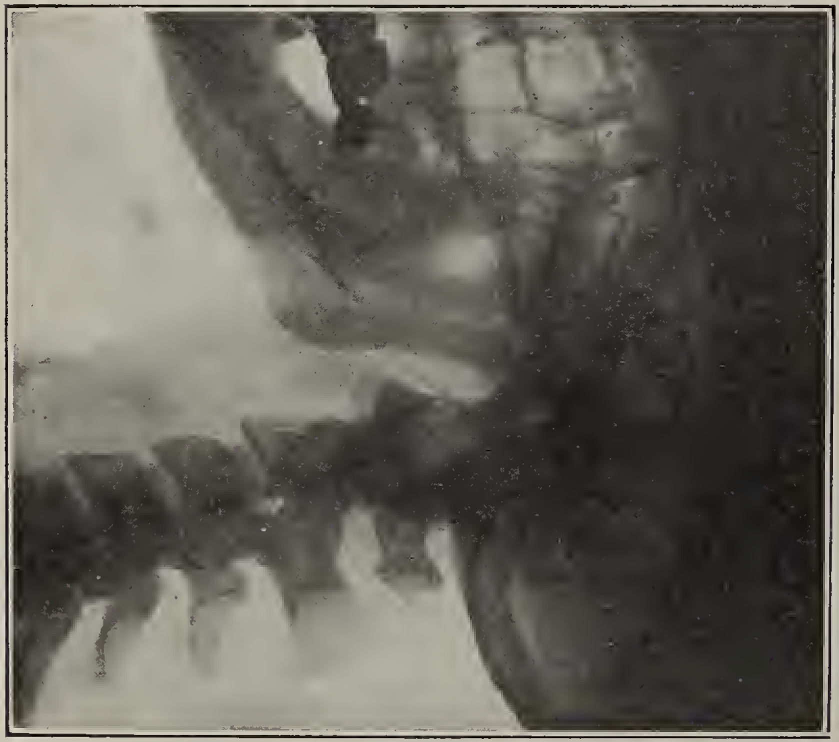

Fig. 4.—Correct position of the cervical spine for esophagoscopy and bronchoscopy. Radiograph by Dr. George C. Johnston.

By this I do not mean that there is no mortality from tube work. I have had two deaths from anesthesia for direct laryngoscopy. One patient, a child, died in convulsions three hours after the removal of papillomata from the larynx. Idiosyncrasy to cocain was the cause. The other patient, a man of 46, died about one week after direct laryngoscopy for the removal of a laryngeal neoplasm. There was a gangrenous bronchitis due to delayed chloroform poisoning. He had an old bronchial history. Anesthesia was impossible, and the anesthetic was abandoned, the operation being finished without an anesthetic. In neither of these cases was there any instrumentation whatever below the larynx. They were for diseased conditions, not for foreign bodies, and they were the only fatalities in over 300 cases of tube work. They point clearly to the necessity of developing such a great degree of skill that little or no anesthesia is needed. If as much time were spent in acquiring skill in tube work as in golf or billiards, tube work would be about the least dangerous of all surgical procedures.

ANESTHESIA

For esophagoscopy in infants I now do not use any anesthetic, general or local. It is not necessary, if the esophagoscope be very carefully and skilfully passed, and, most important of all, if the patient be held in the Boyce position by a trained assistant. In adults, the relaxation of a general anesthetic is advantageous, though not absolutely necessary, except in a few conditions. Foreign bodies in the esophagus are just as apt to cause dyspnea as those in the trachea.

In direct laryngoscopy the lessening of the cough reflex is usually necessary for careful work under direct inspection. The blades of the forceps must never be closed unless their closure is carefully guided by the eye. This necessitates a lessening, or, in some instances, the total abolition of the cough reflex. In children the sparing administration of chloroform is safer than the local use of cocain in most cases, though, of course, the bronchoscope must be instantaneously introduced into the trachea and kept there, if there is any respiratory difficulty. The bronchoscope is a better breathing channel than a tracheal wound. Oxygen and amyl nitrite can be administered directly through the tube, in any idiosyncratic chloroform intoxication. Respiration is more often arrested in the endoscopic removal of foreign bodies from the esophagus than in tracheo-bronchial cases, though laryngeally lodged cases are worse in this respect than any of the others.

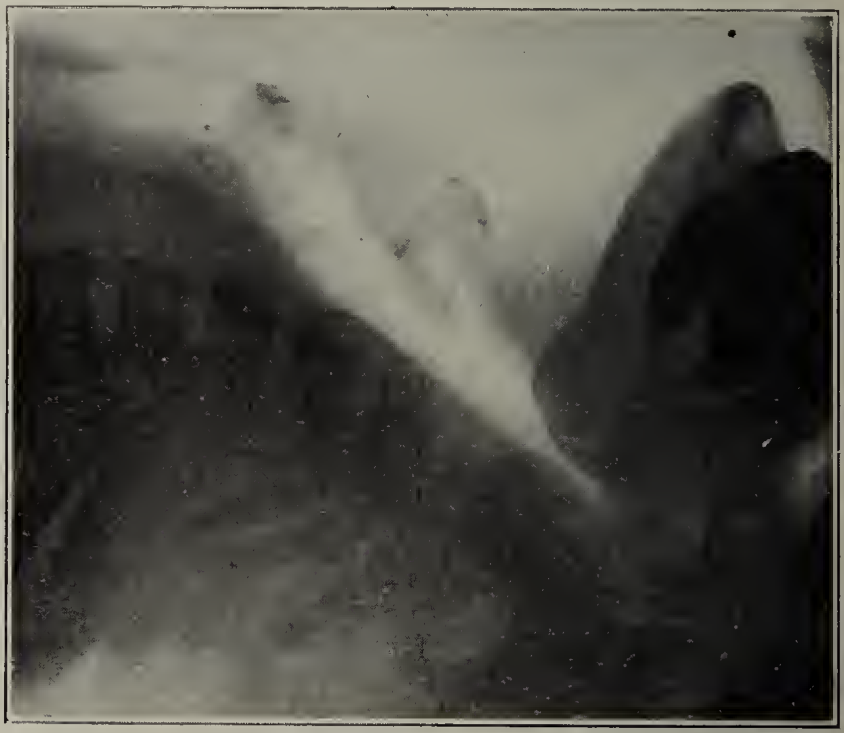

Fig. 5.—Curved position of the cervical spine in the Roser position, rendering esophagoscopy and bronchoscopy difficult or impossible. The devious course of the pharynx, larynx and trachea are plainly visible. Radiograph by Dr. George C. Johnston.

INSTRUMENTS

I have reduced my tubal armamentarium to four tubes and two slide speculums. It is impracticable to have one tube for adults and children, or the same tube for the esophagus and the bronchi. This means one bronchoscope for adults and one for children; one esophagoscope for adults and one for children. A good working set would be the following:

1 bronchoscope, 5 mm. by 30 cm. for children.
1 bronchoscope 7 mm. by 40 cm. for adults.
1 esophagoscope 10 mm. by 53 cm. for adults.
1 esophagoscope 7 mm. by 45 cm. for children.
1 adults' slide speculum.
1 childs' slide speculum.
1 aspirator for the esophagoscopes.
1 specimen forceps, long and short (Fig. 1).
1 foreign-body forceps.
3 Coolidge sponge-holders.

1 Sajous cotton-holding laryngeal forceps, for cocainizing the pharynx and upper laryngeal orifice.
1 double bronchoscopic battery.

No practical effort has yet been made to adapt the tallow candle or a kerosene lamp to endoscopy. We are compelled to use electric light of some kind. If the endoscopist is not of a sufficiently mechanical turn of mind to keep his electric lights burning he will not have the greatest success in foreign body work, for it is a question of mechanics from beginning to end. It does not require great brain power or high intellect, but in some cases mechanical ingenuity is taxed to the utmost to get out the foreign body without interfering with breathing and without traumatism to the tissues. If the surgeon is not a mechanical genius he should have a skilled instrument-maker in the operating-room, or, better still, a trained surgical assistant who has the necessary mechanical ability. The simplest, best and safest source of current is a double dry battery; that is, two sets of four cells each. Each set should have two binding posts and a rheostat. I find men working with all kinds of makeshift batteries, the current from which, with only a cell selector for control, jumps up from underillumination to overillumination and burns out the lamps. Dr. Ingalls (who is a leading authority on bronchoscopy) and I concur in the belief that all forms of rheostats devised for adapting commercial circuits to tube work are dangerous when attached to a tube which makes a moist contact with tissues so close to more or less of the course of the vagi.

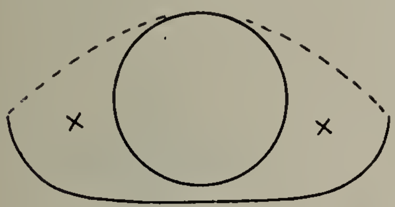

Figure 6.

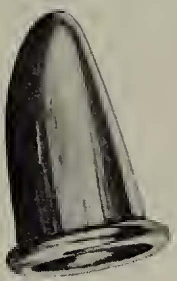

Figure 7.

Fig. 6.—Schema showing relation of the cricoid cartilage (the circle) to the posterior hypopharyngeal wall, in the dorsally decumbent patient, observer looking down the esophagus. The pyriform sinuses are at the position marked X.

Fig. 7.—Thimble gag or bite block for bronchoscopy and esophagoscopy.

TECHNIC

Direct Laryngoscopy.—The illustration (Fig. 2) is schematically correct, but is very misleading. It shows the head thrown too far back. This is the position into which the patient will throw his head if allowed so to do; but, if he is allowed, a very poor view of the larynx will be obtained, and the trachea will not be in line with the slide speculum. Further, nearly every one infers from this illustration that the upper teeth are used as a fulcrum; the chipping of the enamel from the teeth is evidence of an incorrect position. Nothing could be worse, and it is impossible to get a good view or to pass tubes easily in this position.

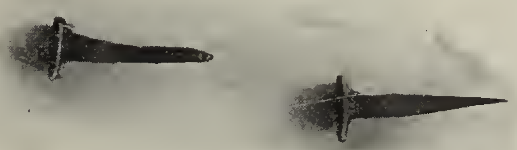

Fig. 9.—Tacks removed by bronchoscopy from posterior branch of right inferior lobe bronchus of a woman aged 41 years, referred by Dr. Lewis G. Cole.

Figure 3 gives a more correct idea of the procedure. The head of the patient is drawn forward by the forward pull of the tip of the slide speculum placed on the epiglottis. The hyoid bone and all its attachments as well as the base of the tongue are drawn forward. The axis

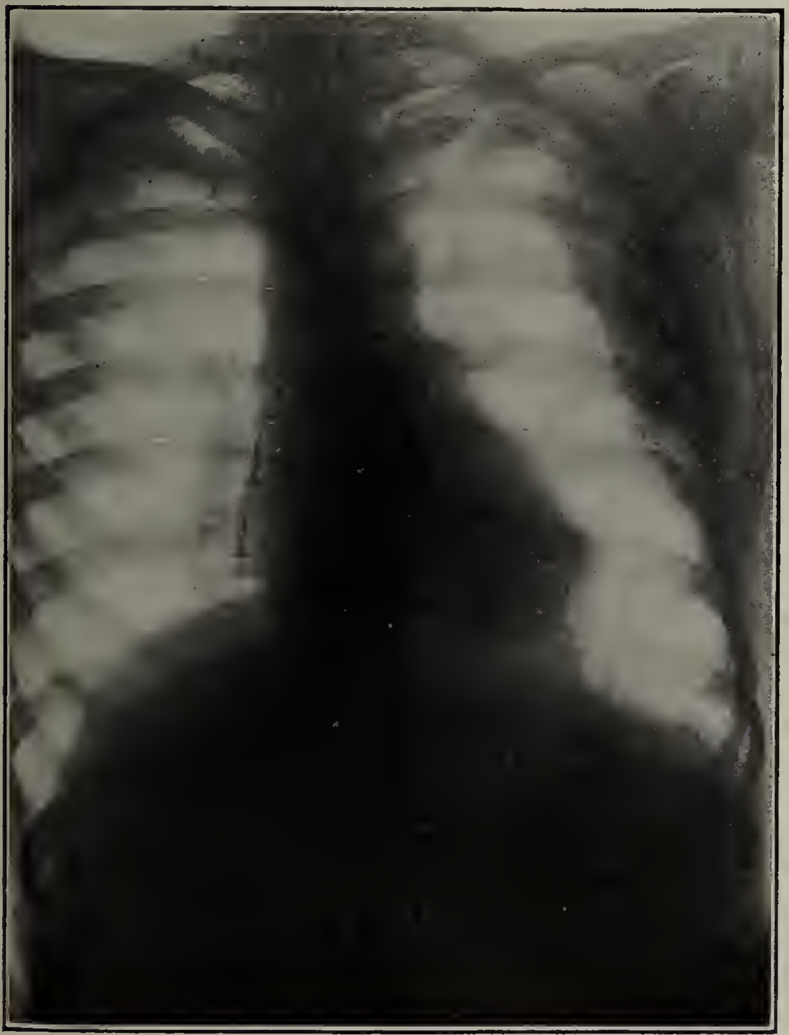

Fig. 8.—Radiograph by Dr. Lewis G. Cole, showing 2 tacks in a posterior branch of the right inferior lobe bronchus. Tacks removed by bronchoscopy through the mouth.

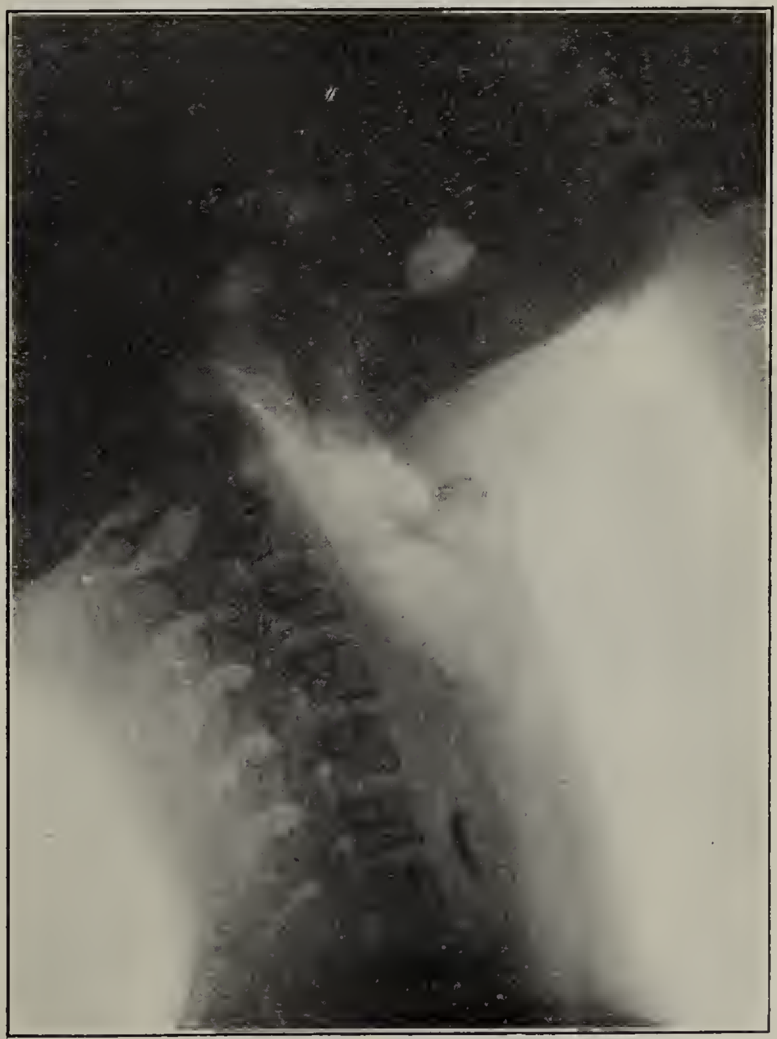

Fig. 10—Radiograph by Dr. George C. Johnston, showing bone in the esophagus. Note the swelling of the esophageal walls and the clear outline of the air passages.

of the slide speculum corresponds to the axis of the trachea and this axis is not vertical, but leans forward toward the operator, about 20 degrees from the vertical. This exposure of the larynx is the whole art of introducing the bronchoscope. Until it is so mastered that the larynx can be exposed and held exposed to view indefinitely, no one should attempt bronchoscopy.

The foregoing description is of the technic in the upright position. In the dorsally recumbent position, the relation of the parts is the same, but an assistant must be trained to place the parts in the same position by raising the head, at the same time that it is squarely extended on the occipito-atlantal joint, not on the cervical spine. The shoulders slightly overhang the head end of the table, so that the head and neck are free to move under the control of the assistant who holds the head. This position not only brings the air passages in line, but the esophagoscope may be inserted with perfect ease and safety. The effort to use other and unsuited positions like the Roser and the lateral positions have led to accidents, and are especially dangerous in inexperienced hands. I have with the greatest ease slipped a tube down a patient on whom esophagoscopy and bronchoscopy was after trial by others said to be impossible.

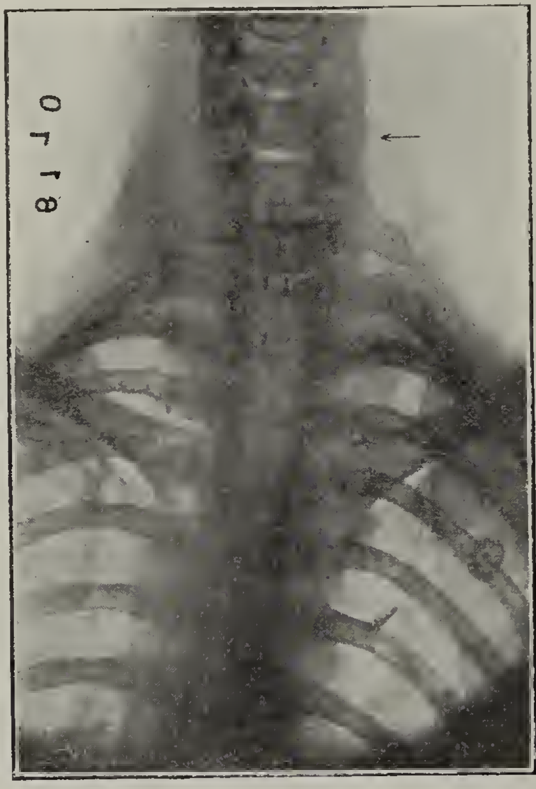

Fig. 11.—Radiograph of same patient. The piece of bone, though present at the level of the dart, does not show. An example of the misleading negative radiograph, and an indication for lateral as well as antero-posterior radiography.

This was in no case due to any superiority in skill, but simply to the head and neck being held in the Boyce position.

Esophagoscopy.—The esophagoscope is pointed as a billiard cue, the operator having a mental picture of the course of esophagus beneath the bared neck. If the head is held in the Boyce position the cervical vertebræ are parallel to the esophagoscope, so that they are (in the recumbent position) in the horizontal plane (Fig. 4). If the head is held in the dangerous (for this work) position of Roser, the cervical vertebræ are curved (Fig. 5) and the esophagoscope strikes almost vertically on the convexity and can not be introduced into the introitus esophagi. If the attempt be made to pass the esophagoscope in the middle line it encounters at once the cricoid cartilage which is pressing firmly on the posterior hypopharyngeal wall. Very often, too, in the center line the tube mouth will hook over one or both the arytenoids and the voice will be damaged if force be used, but the chief obstruction is the posterior half of the cricoid cartilage. Nearly every one, on meeting this obstruction, uses force; this is a serious and often fatal blunder. If the esophagoscope is inserted in the pyriform sinus the tube will glide down like a pencil in a pocket. The position of the pyriform sinus is on either side of the cricoid cartilage, as shown schematically in Figure 6, which is drawn to show as if the operator were looking down the esophagus of a dorsally decumbent patient. The circle represents the cricoid cartilage resting on the posterior hypopharyngeal wall. The cross shows the pyriform sinuses, one on each side of the median line. These are the normal food passages, but it is through the right one that is most convenient for esophagoscopy.

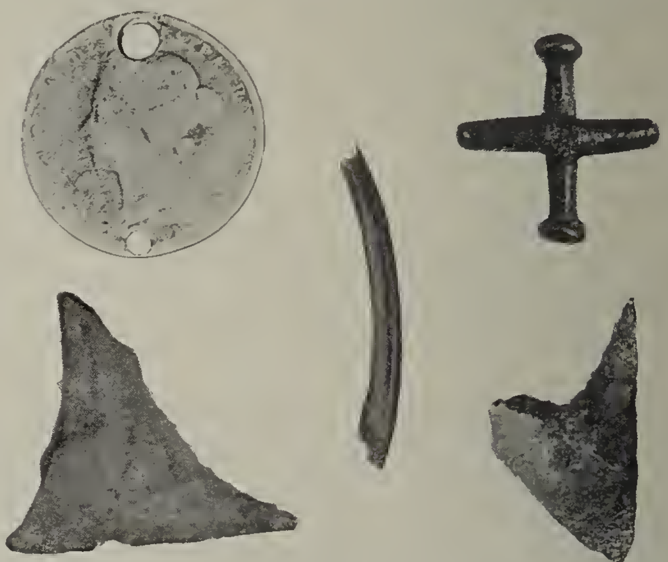

Fig. 12.—Foreign bodies removed from the esophagus by esophagoscopy at the Eye and Ear Hospital, Pittsburg, Pa. Six coins also removed are not shown because illustration of United States coins is forbidden by law.

A gag, properly so-called, should never be used. Some form of bite-block to prevent the patient biting the tube is necessary. The best and simplest is the thimble-gag of Boyce (Fig. 7). The slide speculum requires nothing, as it is of heavy metal that can not be damaged by biting. A widely spread gag may render bronchoscopy and esophagoscopy utterly impossible by jamming the lower jaw down on the hyoid bone.

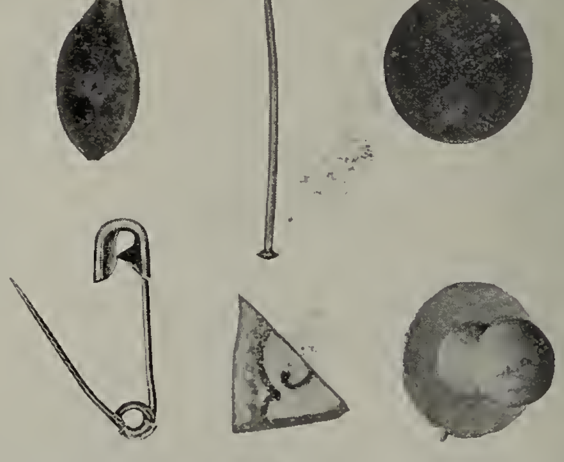

Fig. 13.—Foreign bodies removed from the bronchi by bronchoscopy bloodlessly through the mouth, at the Eye and Ear Hospital, Pittsburg, Pa. In addition 3 coins were removed.

In esophagoscopy for foreign bodies it is always better to introduce the esophagoscope without a mandrin, lest the foreign body should be located high up and be overridden. Every millimeter of the way down must be inspected, beginning with the pyriform sinuses. If even a start be given to the tube before the ocular watch begins, a very large foreign body may be overridden and sometimes the foreign body will crowd the trachea and impede respiration.

Space forbids the illustration of all the radiographs and foreign bodies.

Westinghouse Building.

ABSTRACT OF DISCUSSION

DR. R. H. JOHNSTON, Baltimore: Nothing was said about direct laryngoscopy in the flexed position. Mosher of Boston, in an article in the *Boston Medical and Surgical Journal* advocates the left lateral position, which is as follows: the patient is placed on the table with the head slightly flexed on the chest; the head is turned to the left until the cheek almost touches the table. The mouth is opened and his special instrument introduced until the epiglottis comes into view when it and the base of the tongue are pulled upward, using the left upper bicuspid teeth as a fulcrum. So far as I know, he has used it only under general anesthesia. Last summer I had a case of papillomata in a child of 4 years and tried in vain to use Mosher's instrument. I flexed the head of the child on the chest, introduced Dr. Jackson's child speculum, pulled the epiglottis and the base of the tongue up, and obtained a splendid view of the larynx. In my next case, a child of 6 years, with dyspnea, I placed the child on the table, had her head, arms and legs held and succeeded in getting a good view of the larynx. In this procedure little force is used, because the tissues in a child's throat yield easily to slight pressure. With the smaller speculum there is no danger of loosening or breaking the incisor teeth. This method in my opinion will prove of more value to most of us than the method in extension. It is very simple and it will be found preferable to the other method. The great trouble I find in extension is that the operator is in a cramped position and the muscles of the neck are so tense that it is difficult to get a clear view. In the few cases in adults in whom laryngeal tumors can not be removed by the extension method, the flexed position again comes into use. An assistant pushes the thyroid cartilage back and brings the anterior part of the larynx into view. I have used this method in a number of cases in the last twelve months in children from 14 months to 6 years and have never failed to get a good view of the larynx. For diagnostic purposes it is ideal and for operative procedures superior to the extension position. In a little child seen some months ago the diagnosis could not be made with the mirror; the patient was placed on the table without anesthesia and the obstruction found to be in the subglottic space. To those who have used extension without success I would recommend this simple procedure.

DR. B. R. SHURLEY, Detroit: I would like to make a plea for more extensive digital exploration of the larynx in very young children prior to the use of the bronchoscope. In three cases in which I have had the instrument prepared for further investigation of these regions I have been surprised to find how far down I was able to reach with my finger. Having taken an *x*-ray picture in three instances in which a coin was lodged there the foreign body was located and I was able to dislodge it easily with the finger. The digital exploration of the larynx, if you are blessed with a long index finger, has many advantages.

DR. R. P. SCHOLZ, St. Louis: I believe that endoscopy is used too seldom; particularly is this true of the esophagoscope. I have observed that the esophagus has little or no pain and pressure sense and that even extremely large foreign bodies, lodged in the esophagus, produced mild or no subjective symptoms. One of my patients scarcely complained, with a piece of hog's vertebræ 2.6x2.8x0.8 centimeters in size, lodged in the esophagus 17 centimeters from the cutting edge of the upper incisors. This patient claimed to have a feeling of pressure over the superior notch of the thyroid cartilage. Dr. Jackson, while in St. Louis recently, told me that his patient, with a plate of artificial teeth in the esophagus, had only very mild if any subjective symptoms. This I believe indicates how readily foreign bodies in the esophagus may go undiscovered. I wish to cite a case which came to my notice while in the Pathological Institute in Vienna. A man, while eating fish, swallowed several bones. Esophagoscopy was performed and three large fish vertebræ were removed. Some time later when signs of mediastinal infection developed, it was attributed to the traumatism produced by the bone removed. The postmortem examination revealed a fourth vertebra lodged about 1 cm. below the lowest point of the esophagus explored. This case illustrates, I believe, how careful one should be to explore the esophagus thoroughly, and not be satisfied with the removal of a foreign body.

DR. J. R. FLETCHER, Chicago: I wish to emphasize the fact that more foreign bodies enter the bronchi than are now suspected. I had the pleasure of visiting Professor Killian's clinic in Freiburg some time ago. He told me that more foreign bodies were removed there than in all other parts of Germany together. He attributes this to the alertness of the physicians in the neighborhood. Because it was known that they were doing a great deal of this work patients are sent to them whenever foreign bodies are suspected. He showed me a patient under treatment who six years before had swallowed an upholsterer's tack.

CLINICAL MANIFESTATIONS OF ADENOIDS IN ADULTS *

OTIS ORENDORFF, M.D.
CANON CITY, COLO.

When we think of adenoids, a picture appears of a childish face, devoid of expression, dull eyes, thick lips and open mouth. This familiar face is so constantly before us that we almost recognize the listless type across the street. We are liable, however, to fail to recognize the disease when it occurs in a well-developed, apparently healthy adult, of age anywhere up to 50, giving a history like this: Catarrh was present during childhood, accompanied by the well-known symptoms of nasal obstruction. Perhaps there was also an attack of scarlet fever with a prolonged recovery. With the change from adolescence to maturity the symptoms of obstruction gradually lessened and troubles of a different type were noticed, for which the patient now seeks relief.

In order to make the clinical course clear I will diverge into the pathology. The reason that these patients frequently date the disease to an old severe attack of scarlet fever or measles is that bacterial invasions have more effect in enlarging and causing hypertrophy in the lymphoid structures of children than in adults. Again, the fauces and nares rapidly enlarge as the child grows older; hence the same amount of tissue would cause less and less obstruction and yet would retain its power of doing other damage. One would naturally suppose that the size of the vegetations would diminish as the individual advanced in life; this is probably true in nearly all cases.

Inspection in these patients shows the usual highly arched palate with the "adenoid fringe," or its remnants and the fauces and pharynx covered with a slimy sticky mucus. There is an enlargement of the lingual papillæ and there are nodules on the posterior wall—"granular pharyngitis." In my limited experience I have never encountered a case that did not exhibit this nodular condition on inspection high up on the posterior wall, and I have begun to believe that it will always be found as a complication in all adenoid patients over 15. The tonsils are usually sclerotic, burnt embers of the spent fires of the repeated attacks of acute or the slow destruction of chronic inflammation. The epipharyngeal mirror or the examining finger reveals the disease to be of a more fibrous nature than in children, having lost to a degree the fish-worm character and being more in furrows and folds which run in an anterior and posterior direction. Somehow the real size is deceptive and there is always more of the tissue than would appear to be from examination.

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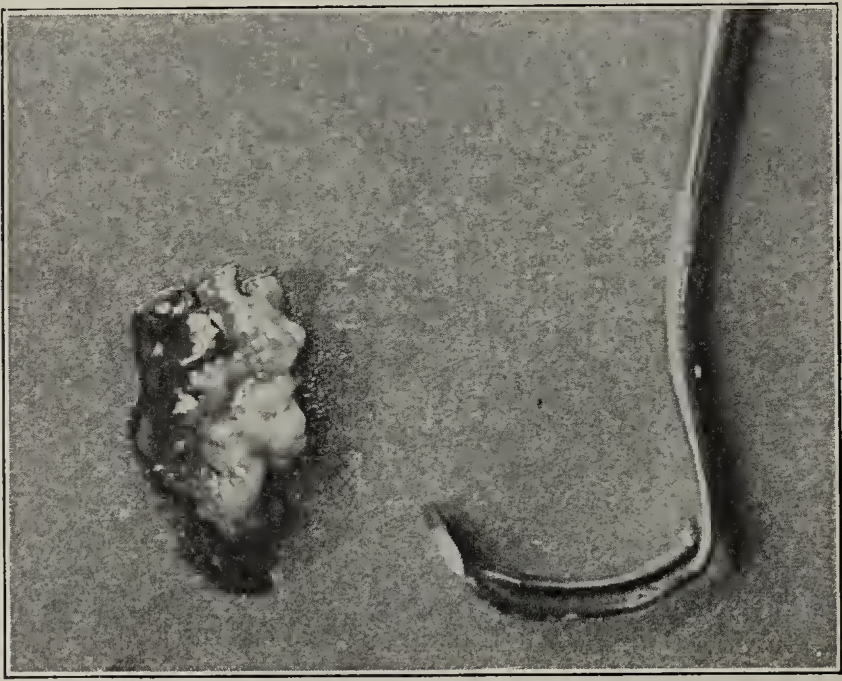
* Read before the Fremont County Medical Society, July 26, 1909.

These patients are apt to be dismissed in clinics with sprays and gargles, and in private practice with sprays and atomizers and other forms of what should be called "office suggestion." After a course of such treatment, patience ceases to be a virtue and the sufferer prefers to continue his unpleasant existence as it is rather than submit to the experiments which experience has taught him are of no avail.

In an average practice there should be four or five well-defined cases in a year.

The case from which this photograph was taken is one of the most instructive ones that I have recorded and it is presented as illustrating a type and also as a lesson in humility, as the underlying pathologic condition was overlooked by several good general physicians and by at least one specialist of reputation. When recognized it was not relieved by the first operation and for no other reason than that it seemed too simple for the exercise of careful technic. The accompanying illustration shows the real size of the specimen, with the old-fashioned curette which I have now discarded.



Second adenoid growth removed. The one removed the day before was fully as large.

Patient.—E., female, aged 38, single, well developed; home in Nebraska, temporary climatic resident of Colorado. (When an eastern physician exhausts his resources the patient is sent to Colorado for climate regardless of what the disease is.) She said that she had a dry mouth, slight deafness, frequent desire to clear the throat, which was not relieved by the almost constant hawking; ears hurt when nose was blown hard. At one time a douche was prescribed which brought on an attack of excruciating pain in ears which have been worse ever since.

Examination.—This showed the presence of adenoids, "granular pharyngitis," hypertrophied inferior turbinate on one side and the throat full of ropy mucus.

Treatment.—Only enough of the turbinate was removed to give clear space and the adenoids were supposed to be thoroughly curetted. The next day the voice was still muffled and examination showed the mass in the nasopharynx apparently as large as before although the quantity removed the day previously was fully as large as the specimen shown in the illustration. Local anesthesia was used as before and the mass removed under the inspection with the mirror by one sweep of the curette.

Remarks.—Evidently the tumor was bifurcated and the anterior portion was pushed forward into the posterior nares at the first operation. At the completion the patient at once remarked: "Doctor, you have removed something that has been stopping up my nose for years." She remained three weeks for treatment which consisted of massaging a strong solution of one of the silver salts into the nasopharyngeal membranes with use of the Eustachian catheter every third day.

Before operation the tuning-fork test was minus 30 and at the time of returning home three weeks later it was minus 15, both ears being about the same. A letter received two months later stated that the throat had given no trouble and that the mouth and ears were well.

Adenoids in adults are not common, as they usually disappear before maturity, but when they do not their character changes from those of childhood.

The patients are really sufferers and think that there is no relief because the "catarrh is in the system." There is no value in sprays and applications or internal treatments. Results of complete operation are satisfactory and permanent.

SUPPURATIVE ACCESSORY SINUS DISEASES IN WHICH AN INTRANASAL OPERATION IS INDICATED *

HANAU W. LOEB, A.M., M.D.
Professor of Diseases of the Ear, Nose and Throat in St. Louis University
ST. LOUIS

The great majority of the cases of suppuration of the accessory sinuses of the nose are amenable to intranasal treatment at some period in the course of the disease. Suppuration of the ethmoid labyrinth responds most readily to this form of treatment, with that of the maxillary, sphenoid and frontal, following in the order mentioned. Intranasal treatment may be of no avail in suppuration of any of these cavities, however, if the process has been long-continued, or if the infection is rapid and virulent. Between these two extremes lies the field of intranasal surgery as applied to the suppurative conditions which involve the accessory sinuses of the nose.

The methods by which good results are obtained are various, and for their success depend largely on the personality and equipment of the individual operator; for a method which is satisfactory in the hands of one thoroughly familiar with the technic may be without favorable result in the hands of another who is accustomed to a different plan of operative procedure. Inasmuch as this paper comprehends conditions rather than individual methods, only casual reference will be made to the latter where the discussion requires it.

Besides discussing processes which call for intranasal lessons which anatomy teaches with respect to surgical treatment, however, it will be the endeavor to show the treatment of the accessory sinus through the nose.

To bring this more clearly into view, there are here presented lateral reconstructions of twenty heads, showing forty groups of sinuses with their relations shown to one another and to the floor of the nose, the turbinates, and the external contour of the nose and upper lip. The frontal, sphenoid and maxillary sinuses, and the contour of the nose and upper lip are shown in unbroken lines, the posterior ethmoid in dotted lines, the anterior ethmoid in alternate dots and dashes, the infundibulum in broken lines, and the turbinates in feathered lines.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

This makes it possible to see the exact relations of each factor that is brought up for consideration. The nasal orifices of the sphenoid and frontal sinuses are indicated in black dots. The method employed in reconstruction has already been fully described in previous papers on the subject.

MAXILLARY SINUS

An intranasal operation ordinarily suffices for the relief of simple, uncomplicated suppuration of the maxilliary sinus, provided there is no dental cause. Even then, relief may follow the intranasal operation if there is no active process going on in the teeth or alveolus. Furthermore, good results may be obtained by combining with the nasal operation the removal of diseased roots of teeth.

While a simple puncture through the nasoantral wall is often sufficient, as a rule the best results are obtained only when an extensive resection of this wall is made. This naturally requires the removal of a portion of the inferior turbinate, in this way affording ample space for irrigation and drainage. The well-known tendency of all these openings to contract, and, in many instances, to close altogether, further calls for a large opening which would, at least, do no harm.

Considering the variability in the size and shape of the maxillary sinus, it is always important to be sure that the opening is made into the sinus and not into the tissues anterior or inferior to it. If the opening is made too near the anterior extremity of the inferior turbinate, it may escape the sinus altogether; as, for instance, in heads II left, III right, IV right, VII, VIII left, IX, X right, XI left, XII, XV, XVI, XVII, XVIII, XIX, and XX. In these heads the distance between the anterior extremity of the inferior turbinate and that of the maxillary sinus is more than 5 mm. This distance is greatest in VII right, IX, XV left, XVI left, XVII, XVIII, and XX.

In IX the maxillary sinuses are so small that only a careful operator who has anticipated the existing state of affairs would have been successful at the first attempt.

In the main, the inferior turbinate courses along the nasoantral wall in a horizontal direction, but in a number of instances it inclines sharply downward and backward from its anterior attachment. This is particularly well shown in X right, XIV, XVIII and XX, in which it reaches the level of the superior wall of the sinus, or even higher. In only one instance, IX, does the inferior border of the inferior turbinate reach a lower level than the sinus, though in several cases the distance between them is not great: VI left, XII, XVI, and XVII right.

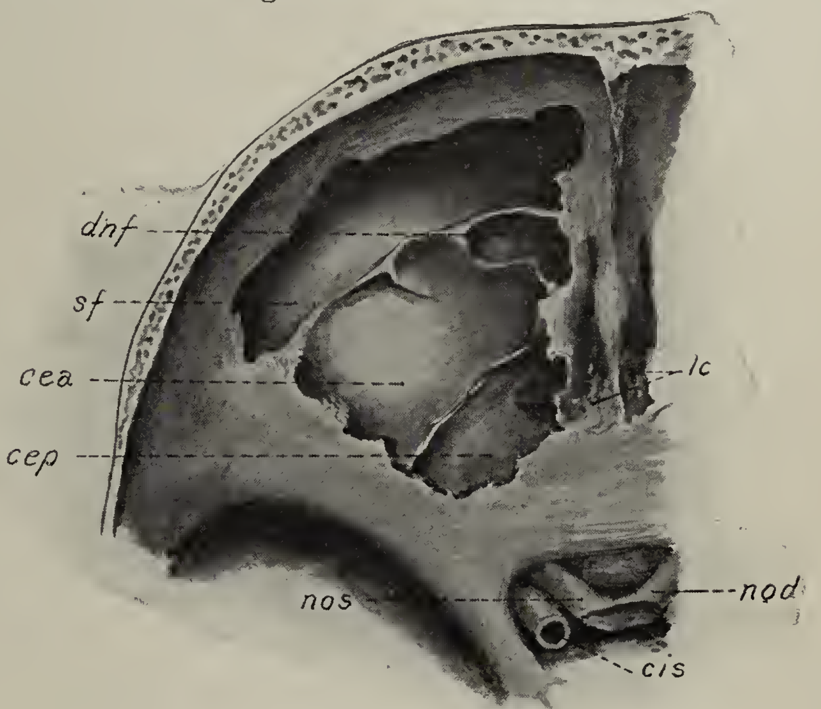
The position of election for opening the sinus, as ascertained by a study of these twenty heads, is just below the attachment of the middle portion of the inferior turbinate. This enters the sinus in every instance, and, in the main, at its most dependent part—at least, so far as possible, by using the inferior turbinate as a guide.

When the inferior turbinate has the great inclination already mentioned and the floor of the nose is widely separated from the turbinate attachment the portion of the nasoantral wall penetrated under this rule will be high above the floor of the sinus, so that it will be advisable to remove the wall below this for quite a considerable distance, easily determinable at the time of operation.

FRONTAL SINUS

In some acute cases, even when associated with ethmoiditis, operation through the nose will afford sufficient drainage and thereby result in cure. Even in the more chronic cases relief follows resection of the adjacent ethmoid cells and irrigation through the nasofrontal canal with or without enlargement. Although claims are made that well-marked cases of frontal sinus suppuration may be relieved by the various intranasal methods, it must be admitted that ordinarily nothing short of an external radical operation suffices.

A study of the reconstructions here presented throws some light on the accessibility of the frontal sinus to nasal operative procedures, and, at the same time, on the anatomic variations which make the operation uncertain, difficult or impossible. These comprehend the distance between the nasal opening of the frontal sinus and the anterior wall of the nose, the presence of an ethmoid cell or nasofrontal canal which reaches a high elevation, and, what can not be shown in these illustrations, septal irregularities, congenital narrowness, or new growths.



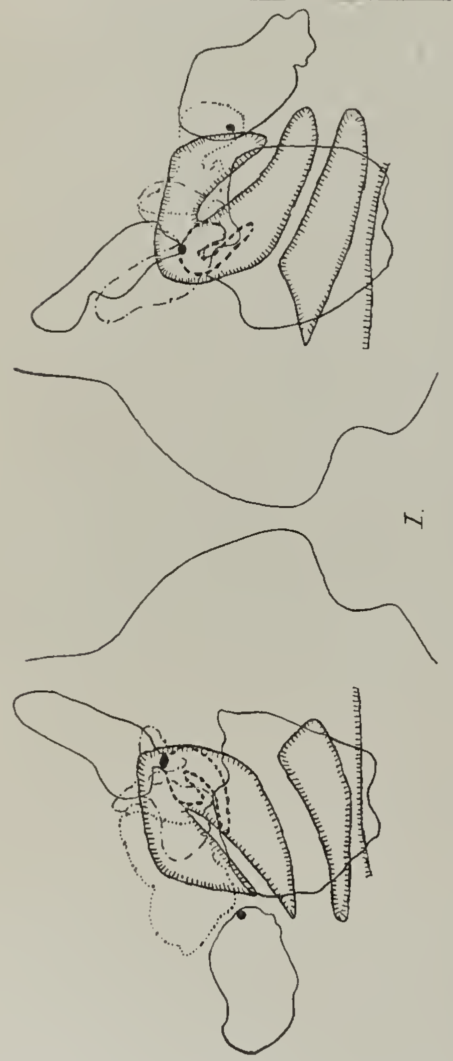
XXI

Frontal sinus (sf), anterior ethmoid cell (cea) and posterior ethmoid cell (cep), extending over the roof of the orbit; dnf, nasofrontal duct; lc, cribriform plate, nos, nod, optic nerves; cis, left internal carotid.

In the following a probe would readily enter the frontal opening without any likelihood of entering any other cell with which the frontal might be confused; of course, assuming that the operator understands the technic: I right, III right, IV, V, VI right, VII, VIII, X, XII, XIII right, XVI, XVII, XVIII, XIX right, and XX.

In only twenty-five out of forty instances, therefore, could the probing be accomplished with a reasonable degree of accuracy, and in several of these cases one who is not an expert might be deceived by the entrance of the probe into one of the adjacent ethmoid cells or nasofrontal canal. This can be more or less obviated by making a radiograph which would show how high upward the frontal extends.

In I left, II left, IX, XI, XIII left, XIV, XV, XIX left, an adjacent ethmoid cell reaches so nearly the superior level of the frontal that it would be practically impossible to state whether the probe was in it or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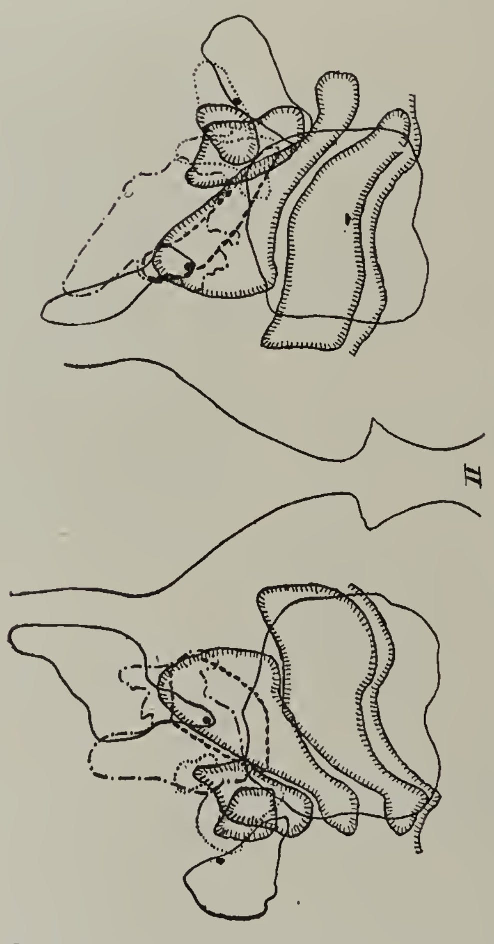
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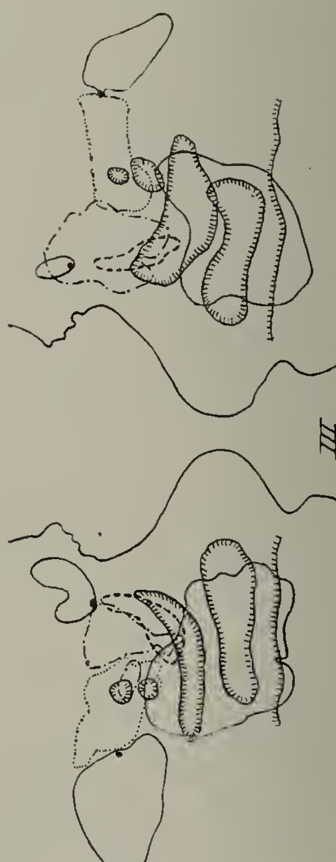
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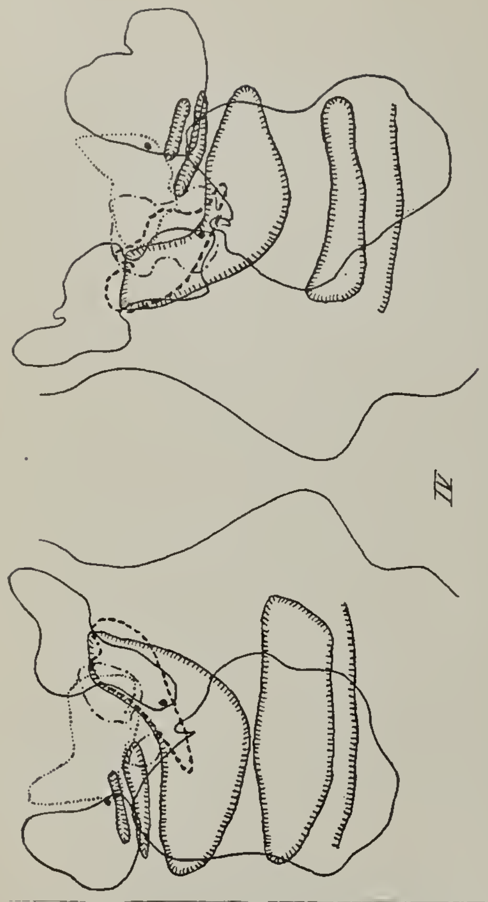
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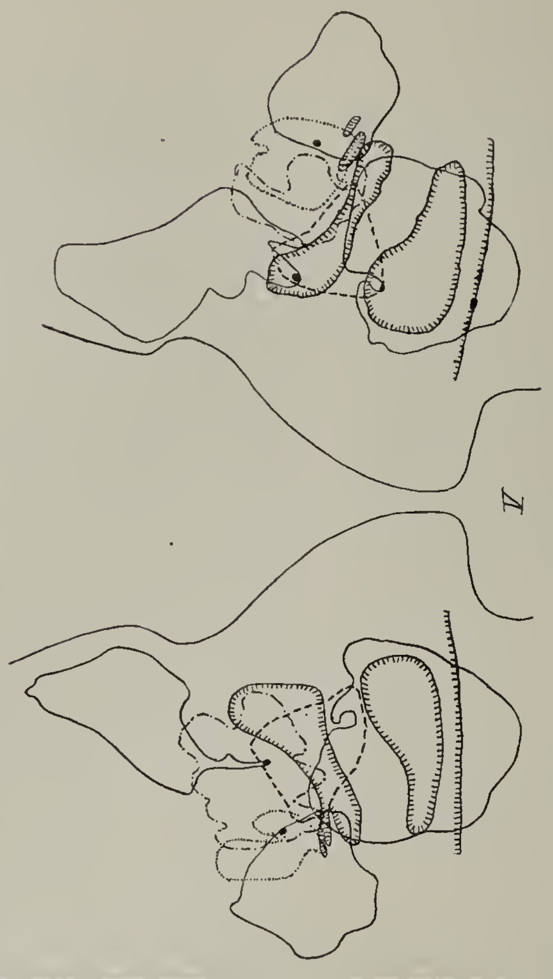
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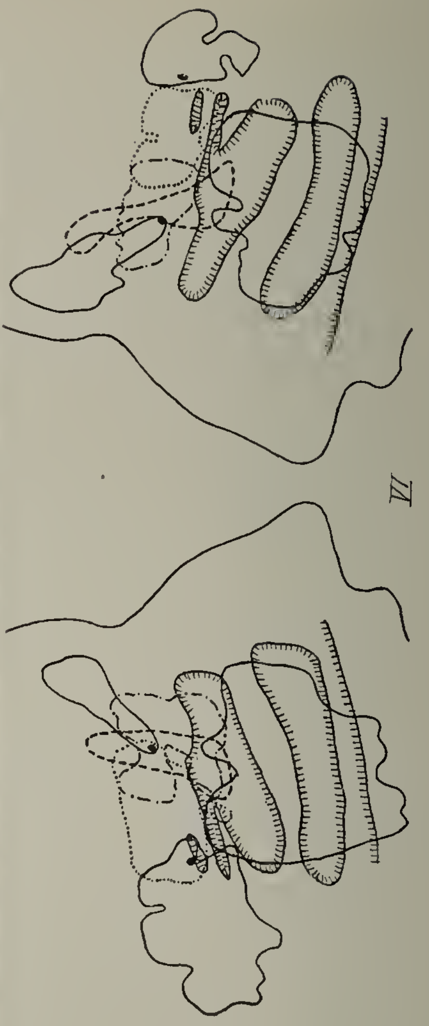

VI.

In these figures, the frontal, sphenoid, maxillary sinuses and the contour of the nose and upper lip are indicated by unbroken lines, the posterior ethmoid by dotted lines, the anterior ethmoid by alternate dots and dashes, the infundibulum by broken lines and the turbinates by feathered lines.

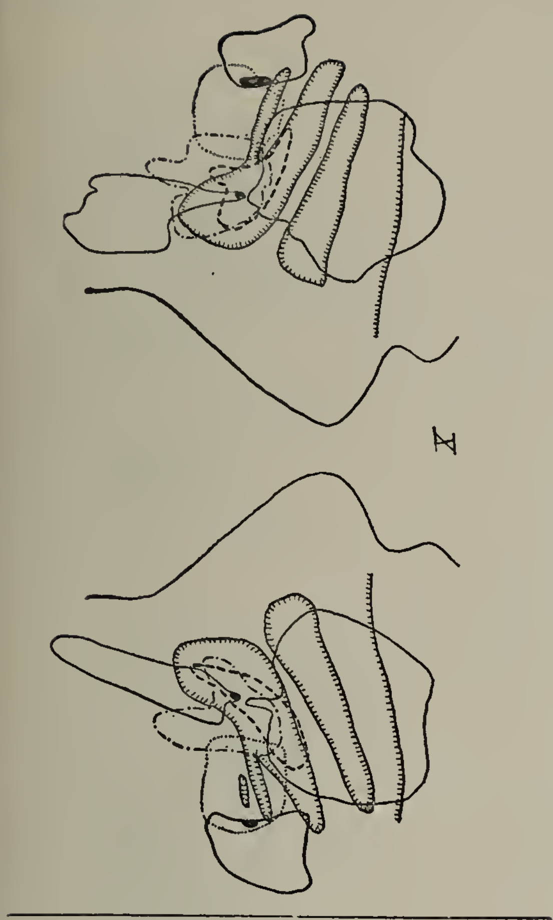
in the frontal, and in II right and VI left the nasofrontal canal occupies a similar relation. It is thus evident that there must be some doubt in almost half the cases as to whether the frontal sinus is being treated when intranasal operative measures are directed toward relief of frontal sinus suppuration. It must be admitted, however, that a careful study of properly taken radiographs will reduce this possibility of error considerably, but this involves lateral as well as anterior views, perhaps with probe *in situ.*

The intranasal operation has, therefore, a limited field of service, and is subject to much likelihood of error. There is, however, this saving clause—that, even if the operation is directed toward an adjacent cell, so much bone and other tissues will be removed that drainage from the frontal is promoted and the condition is relieved.

We do not anticipate a good result in those cases in which the frontal extends over the orbit and is affected in this portion.

ETHMOID CELLS

Ethmoid suppuration, when uncomplicated, practically always responds to intranasal treatment, for the entire ethmoid labyrinth may be exenterated by operation through the nose. The most anterior cells can not, sometimes, be freely opened and curetted on account of their nearness to the nasal bone. Hajek asserts, however, that it can always be done if the middle turbinate has been properly resected. There are occasionally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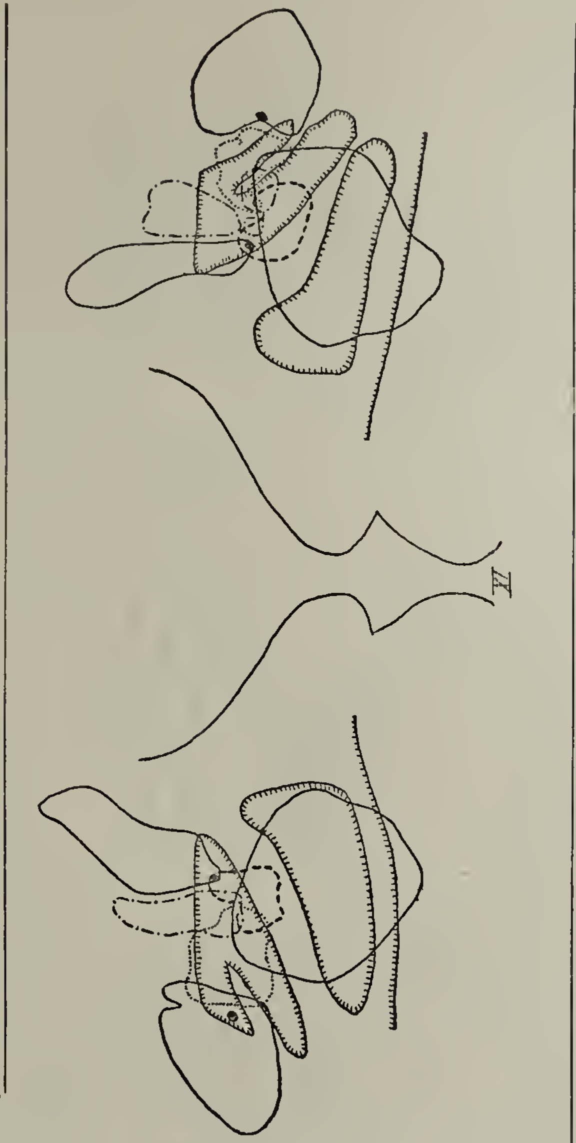
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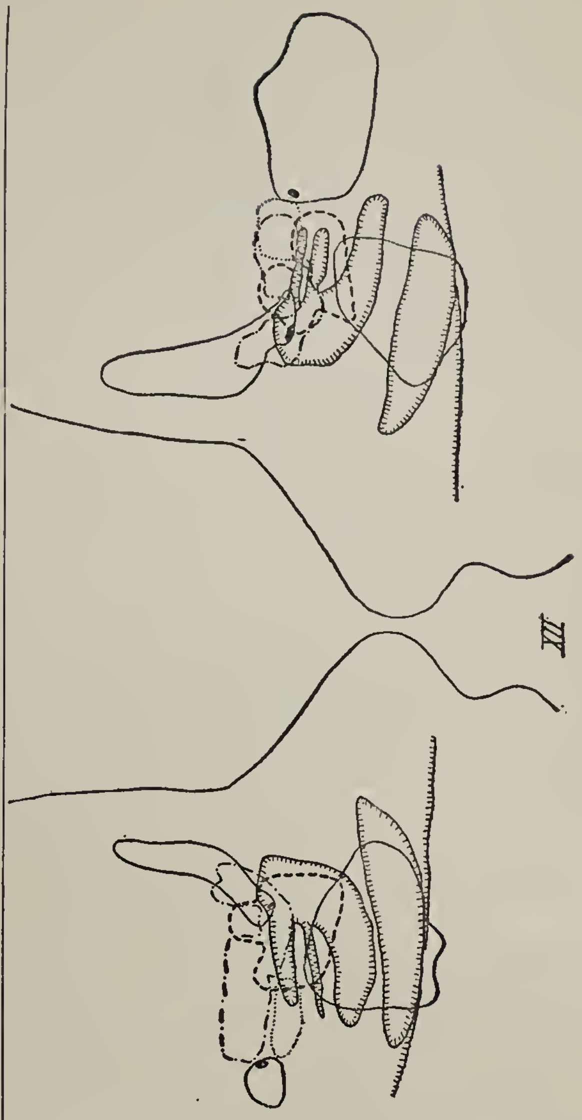
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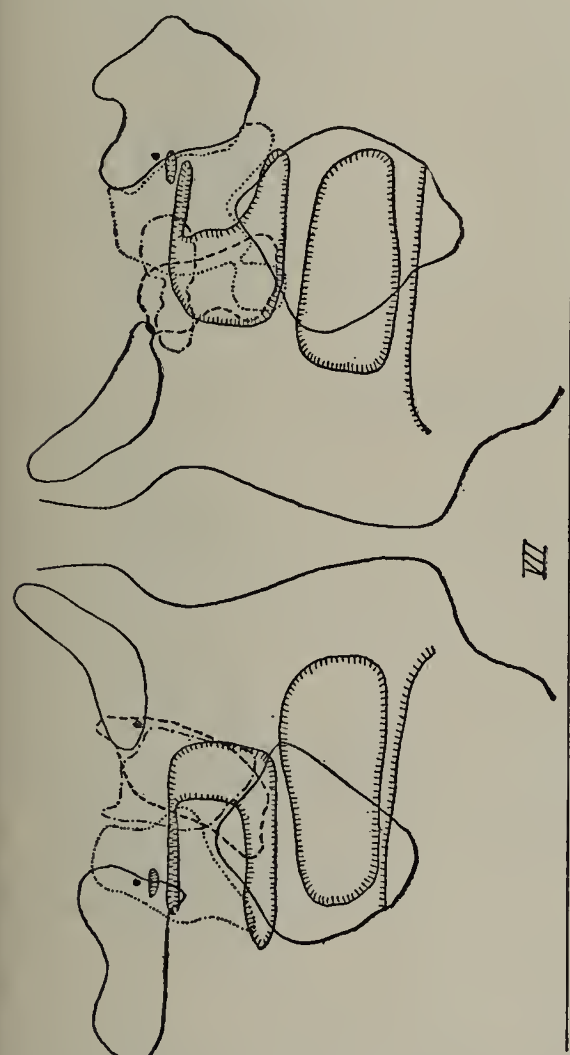
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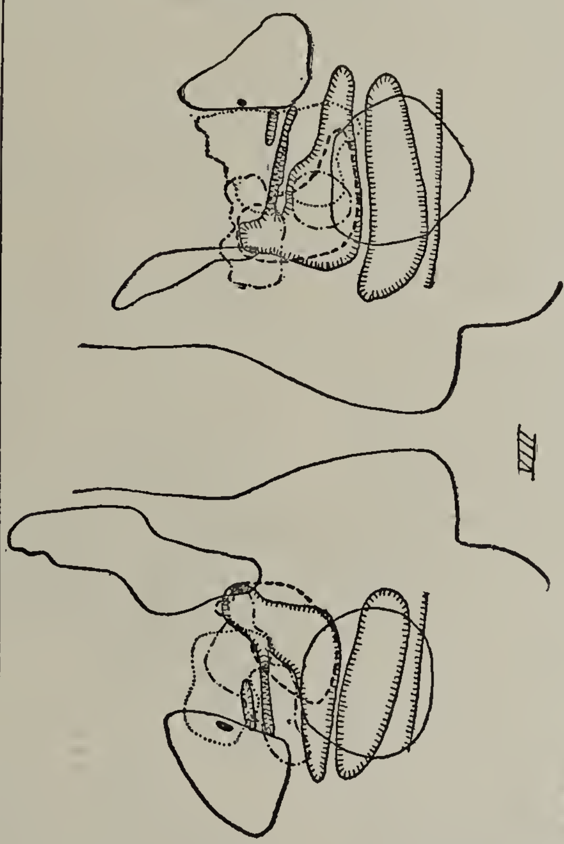
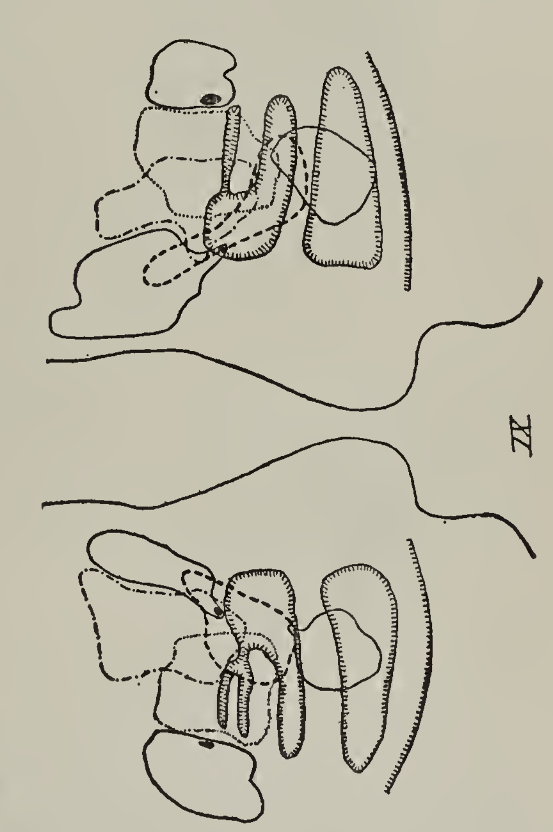
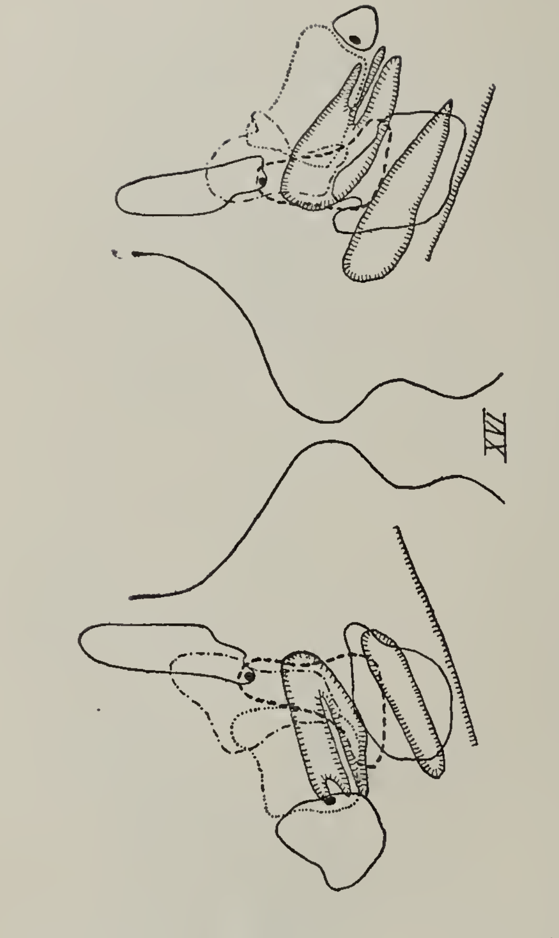

XIV

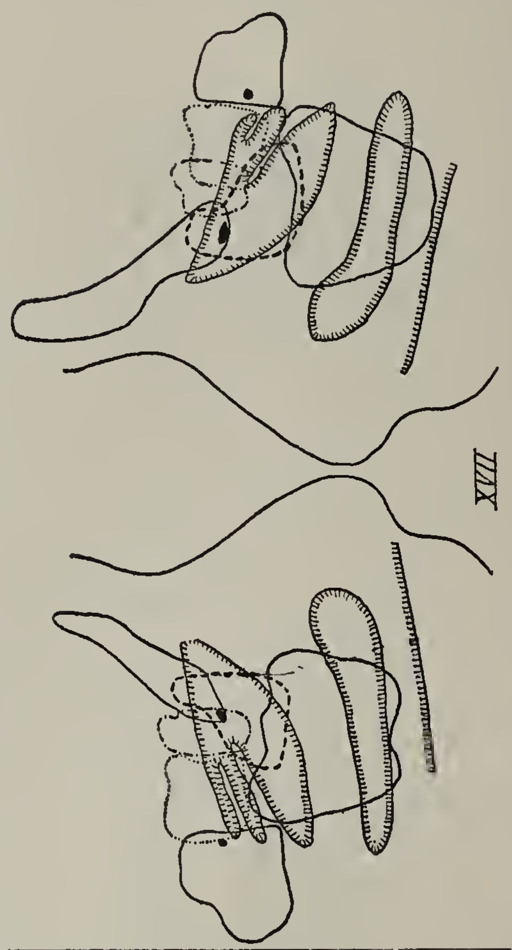

XV

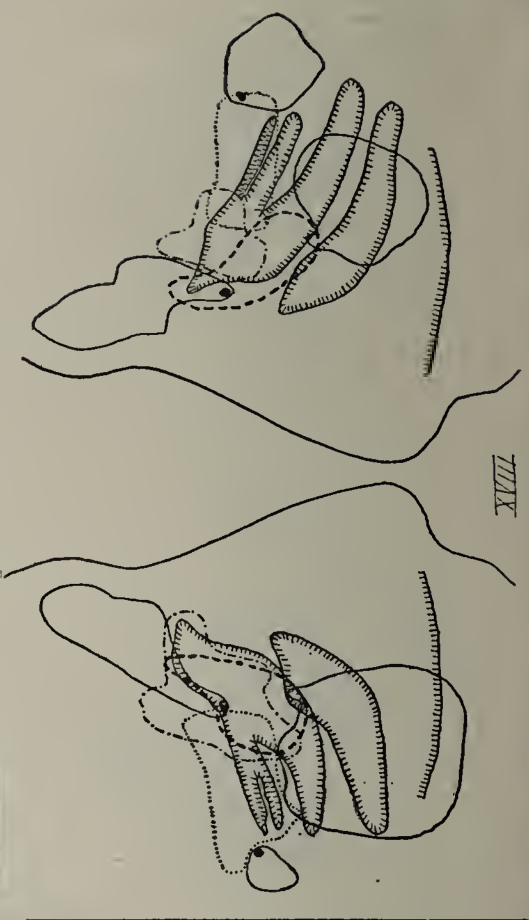
anomalies of development of the ethmoid cells, which render the operation either difficult or unavailing. For instance, in XXI, it will be seen how both the anterior and the posterior ethmoidal cells extend, in this particular case, over the roof of the orbit. In this position the cells could not be properly exenterated through the nose and would probably escape observation in a radical frontal operation.

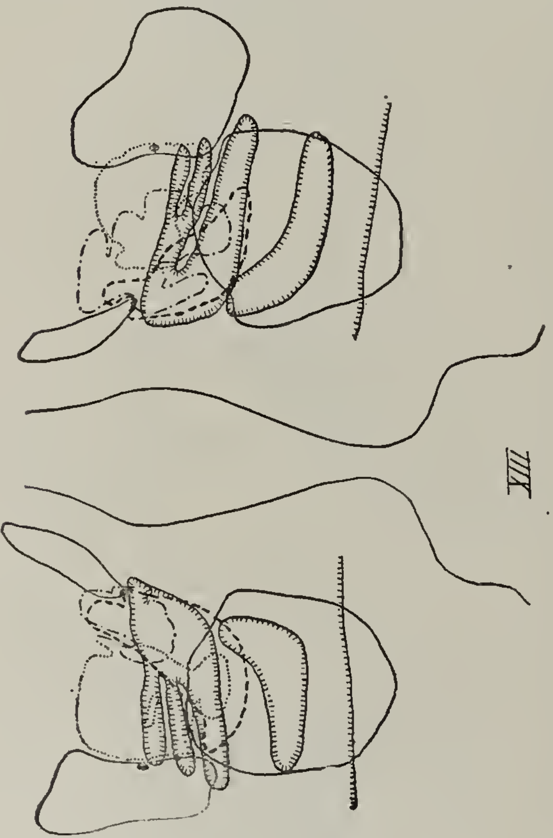
Of course, there is always some danger in working in the dark, as it were, and the process may be most marked in the most inaccessible portion of the cells, which extend farthest from the seat of operation. Yet, it must be said that, as in all suppurative conditions, drainage does a great deal toward affording relief, and the operative field being in the most dependent portion of the cells, drainage is apt to be secured.

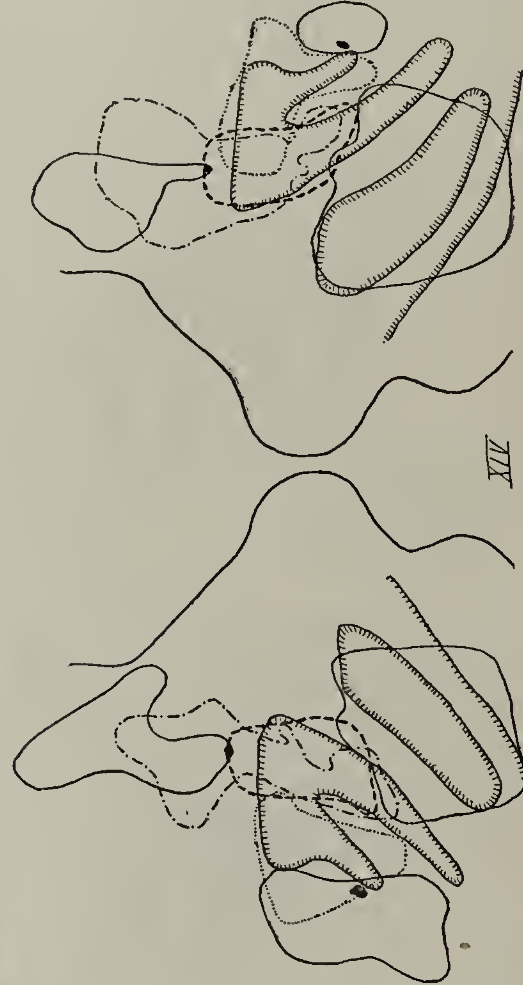
The truth of Hajek's contention—that if the middle turbinate is resected the most anterior of the ethmoid cells may be exenterated—is borne out by the figures. In only nine instances—I, III left, VII, VIII left, XIV left, XV left, XVIII right—does an ethmoid cell extend as far forward as the anterior extremity of the middle turbinate; and in most of these instances the distance is insignificant, certainly not sufficient to inter-

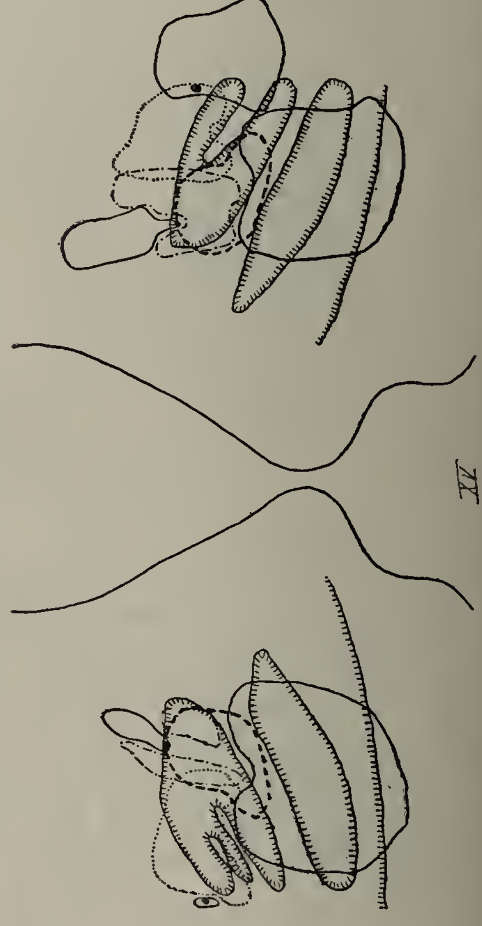












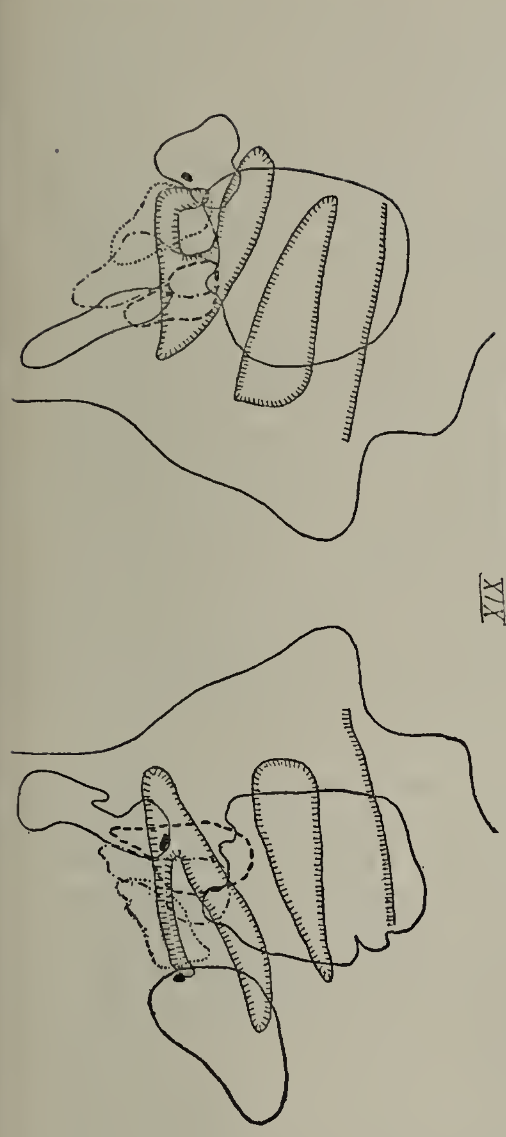
fere with the operation. The cells extend upward considerably in most of the heads, more than 10 mm. above the superior attachment of the turbinate in I left, II, III, V, VI, VII, IX, XI, XIII, XIV, XV, XVI, XIX and XX. This distance is very considerable in I left, II, III left, VI, XIII left, XIV, XV left, XVI and XX. In I left an ethmoid cell extends upward anterior to the frontal for a distance of 17 mm., while in IX right an ethmoid lying immediately behind the frontal reaches a higher level than the frontal.

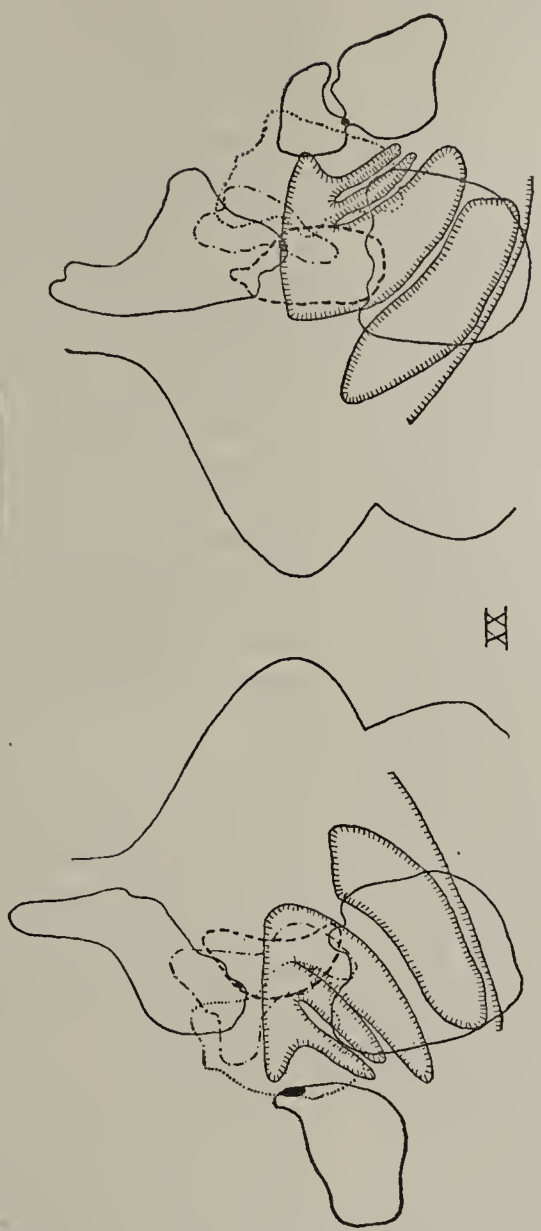
These facts are important only in that they show how high up the ethmoid cells extend, thereby accounting for the recurrence of the polypi even after the floor of the cells has been removed; they emphasize the importance of thorough exenteration of the diseased part. It goes without saying that, however radical one may be in this operation, respect must be had for the cranial wall of the sinus.

SPHENOID SINUS

In uncomplicated cases, and those in which the ethmoid alone is involved with the sphenoid, the nasal route is the only one to be advocated. There is a growing disposition, even among those who formerly thought that the external operation was always to be advised, to rely more on the intranasal method.

The nasal operation can be of service only by the curettement and the improved drainage occasioned by the enlargement of the nasal opening. Whether this be





confined to the pars nasalis, or, as Hajek suggested, made to include the pars ethmoidalis, the endeavor is the same.

The location of the nasal opening of the sphenoid is such that in any suppurative process affecting it there is a quantity of pus more or less constantly present. Practically all the sphenoids here shown have the opening so far from the floor that this must be quite general. In most comparison will show that even extensive resection of the anterior wall will fail to reach the floor. The drainage which results from this operation, however, provided the opening be permanent, will generally be followed by disappearance of the pus.

The distances between the sphenoid orifice and the tip of the nose and the anterior border of the middle turbinate are given in the table:

DISTANCE FROM SPHENOID ORIFICE

No.	Anterior Tip of Nose. Right.	Anterior Tip of Nose. Left.	Anterior Border of Middle Turbinate. Right.	Anterior Border of Middle Turbinate. Left.
I	77	77	36	31
II	77	74	43	38
III	64	69	33	39
IV	75	72	35	33
V	72	74	30	31
VI	75	80	37	44
VII	88	93	37	39
VIII	69	72	29	38
IX	70	71	37	32
X	72	70	36	33
XI	88	89	37	33
XII	91	88	41	34
XIII	77	77	38	35
XIV	84	82	39	34
XV	86	79	41	31
XVI	71	71	30	35
XVII	77	77	41	39
XVIII	80	80	50	40
XIX	77	77	42	36
XX	87	92	37	40

For the first, the variations are from 64 to 93, the usual (leaving out the five shortest and longest) from 71 to 88, the average 78.

In regard to the distance between the orifice and the anterior border of the middle turbinate, the variations are from 29 to 50, the usual (leaving out the shortest and longest five) from 31 to 41, the average 37. This gives a fair idea of the length of the probe and operative instrument required.

In a previous paper I called attention to the greater likelihood of optic nerve involvement, in cases in which the nerve lies near the level of the orifice, for this would signify that the pus would be separated from the optic nerve by a thin bony wall only, instead of the air, which would intervene if the opening was at a lower level. Whether this relation can be ascertained by radiographic study is still to be determined, with fair prospects of success. At any rate, sphenoid suppuration with only the slightest suspicious eye symptoms calls for immediate operation.

I wish, again, to call attention to an observation made before this body two years ago, with reference to the four heads reconstructed up to that time, that in cases in which the middle turbinate has an inclination downward and backward the floor of the sphenoid lies at a lower level than the ethmoid, or at its level. Compare I, II, V, VI, X, XI, XII left, XIV, XV left, XVII, XVIII left, XIX and XX. It will be noted that this is confirmed in every instance, except XV right, in which the sphenoid is only a little pit 2 by 4 by 2 mm.—and the left sphenoid, which occupies the space usually given over to the right, follows the rule. A glance at XV, right, shows that, even though the sphenoid be small, it lies considerably nearer the level of the floor than that of the roof of the ethmoid.

In the other instances in which the middle turbinates run horizontally backward the floor of the sphenoid lies above that of the ethmoid. The exact value which this will have will depend on the further confirmation of the observation and on the subsequent development of its utility.

Humboldt Building.

Ligation of the Jugular in Sinus Phlebitis.—R. Botey of Barcelona says that he will present a communication on this subject at the International Medical Congress, and the *Archives Internat. de Laryngologie*, August, has, rather prematurely, published it. He states that he has encountered 8 cases of thrombophlebitis of the lateral sinus in the course of 404 mastoid operations, and that the 4 patients who survived the phlebitis had not had the jugular ligated, while this was done in the 4 other cases. He used to ligate as a matter of course, but his own experience and review of the literature have convinced him that in most cases ligation is useless at best, and is liable to do actual harm. He advocates curetting the sinus in case of otitic thrombosis, without the Gerhardt sign, curetting from the knee to the bulb, without ligating the jugular. When the jugular is manifestly affected, and can be felt as a hard cord, it should be opened, ligated over the clavicle and resected. Pulsation in the sinus is not a sign of phlebitis, he adds, but is merely a transmitted pulsation from the brain tissue.

ACUTE INFLAMMATIONS OF THE ACCESSORY SINUSES, SYMPTOMS, DIAGNOSIS AND TREATMENT *

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From a general standpoint, acute inflammations of the accessory cavities may be considered as primary and secondary. An inflammatory process involving the mucous membrane of the nasal cavity is the most frequent cause of acute sinus disease. Irregularities as to contour of the nasal cavity, not only interfering with the drainage of the nasal cavity, but also directing the current of mucous toward the opening of the sinus, is a common causal factor. These same pathologic conditions would by directing the current of air toward the opening of the sinus tend to carry infectious material into these cavities. This is especially true of the frontal, ethmoid and sphenoid sinuses. The narrow, poorly developed nostril, which frequently is seen as a result of postnasal obstruction in childhood (especially from adenoid vegetations), is often a cause of acute sinus involvement, owing to the fact of the abnormal arrangement of the intranasal structures, interfering with the normal opening into the accessory cavities both as to size and situation, and also interfering with the size and development of the cavity. Such irregularly formed nostrils and intranasal structures would naturally predispose the individual to inflammations of the nasal mucous membrane, which in turn would predispose to sinus involvement and infection, such lesion, however, being secondary to the primary nasal involvement.

Primary involvement of the nasal accessory cavities is a very rare condition. It may, however, be brought about by injury, or contiguity of tissue in which the nose was not primarily involved. In some cases in which the cavity is apparently primarily involved, if a careful history is obtained it will be found that previously to the existing attack there had been some inflammatory condition in the nasal cavity, with slight involvement of the accessory cavity. The nasal irritation having cleared up, yet the cavity was left susceptible, and later an exacerbation may be mistaken for a primary involvement. An important pathologic subdivision of the acute inflammatory processes of the accessory cavities is simple acute inflammation without infection and acute inflammation with infection. However, in acute catarrhal inflammation, unless it clears up in from twenty-four to forty-eight hours, on account of the constant presence of bacteria in the secretions, the simple catarrhal inflammation will become an infective one, so that from the standpoint of treatment they can be considered under the same heading, the difference being one of degree and severity rather than variety.

Occupation is an important predisposing factor, when the individual is subjected to irritating dust, vapors, or fumes.

Irregularities and abnormalities in the formation of the accessory cavities, the antrum, etc., may explain many of the peculiar and unique cases often reported. It has been shown by sections of the skull, with a view to demonstration of the relation of the accessory cavities to the nasal chamber, and to each other, that almost any size or shape of cavity or thickness of bone is possible, the antrum cavities varying in size from a little larger than a pea to three times the usual size, and extending under the floor of the nose.

With the possible exception of the maxillary sinus, inflammation of any of the other accessory sinuses may be attended with curious mental phenomena, these phenomena depending entirely on the severity of the inflammation, and whether or not there is any existing systemic lesion.

Too much importance can not be attached to the relation of these cavities to headache and neuralgia, and curious eye symptoms. It is the duty of the rhinologist and of the ophthalmologist to look carefully into the history of the patient as to whether there was any previous history or associated history of epidemic influenza, and whether there is any pathologic alteration of these accessory cavities. It has been my experience that many cases of curious and ill-defined neuralgia about the head and face have been entirely cured when attention has been directed toward the accessory cavities.

Physiologically, the accessory cavities are practically closed cavities, and while the mucous membrane lining is somewhat similar to that of the mucous membrane of the upper respiratory tract, yet the glandular elements and the terminal nerve filaments are not so numerous as in the respiratory mucous membrane. The epithelial layer is also much thinner and the submucosa not so resistant on account of the deficient blood supply.

It is a well-known fact that the obstructive lesion which interferes with the ventilation and drainage of the frontal, anterior ethmoidal, and maxillary sinuses is usually not located in the sinuses, or even in their ostia, but is in the hiatus semilunaris and infundibulum, or in the structures in their immediate vicinity. Any cavity lined with mucous membrane is predisposed to infection and inflammation when its drainage and ventilation are impaired, and therefore any anatomic or pathologic condition which causes obstruction to the flow of the secretions from the infundibulum, via the hiatus semilunaris, will predispose the mucous membrane lining the sinuses draining into it to infection and inflammation. It is obvious that if the obstruction to the drainage and ventilation is removed, the predisposition to infection and inflammation will disappear.

The nasal obstruction may be produced by many conditions: The nasal septum is frequently deviated toward the lateral wall of the nose in the region of the anterior half of the middle turbinated body, often crowding the middle turbinal against the outer wall of the nose, thus obstructing the drainage and ventilation of the frontal, anterior ethmoidal and maxillary sinuses. The middle turbinated body is frequently enlarged by edema, hyperplasia, or by the presence of accessory ethmoidal cells in its body, and may in consequence block the hiatus semilunaris; or the middle turbinal may cling closely to the outer wall of the nose as to block the hiatus. The bulla ethmoidalis is located immediately above the hiatus, and when enlarged it may overhang and completely obstruct it. The lip of the uncinate process, or median wall of the infundibulum, may be the seat of accessory pneumatic cells which may obstruct the infundibulum. New growths, spurs on the septum, and congestion of the mucous membrane due to underlying systemic conditions, are allegorical important factors.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The accessory sinuses, even in a simple acute cold, are slightly involved, and after the cold has disappeared a slight latent irritation remains in the cavity and may suddenly light up into a serious acute attack. In all the infectious diseases, with high temperature and necessarily vascular disturbances, nasal congestion occurs and the accessory cavities become acutely congested.

One-half of the arc of the orbit is taken up by the accessory cavities and many eye symptoms are associated with or follow lesions of these cavities. Orbital abscess is secondary to disease of the sinuses, displacement of the globe may be occasioned by encroachment on the orbit by a distended sinus, and blindness may result from an involvement of the chiasm through the roof of the cavity or by an implication of the optic nerve as it passes through its foramen, in the sphenoid, as a consequence of inflammation in the cells within that bone. A general orbital cellulitis may be occasioned by an acute inflammation of any accessory sinus. Edema of the lids is one of the most significant symptoms of disease of the accessory sinuses, the edema usually starting directly over the sinus involved. Paresis, or even paralysis, of one or more of the eye muscles may occur as a consequence of sinusitis.

Inflammatory processes involving the mucous membrane of the sinuses do not differ from those occurring in any other mucous membrane, except that they pass through the various stages with greater rapidity, so that the difference is merely one of degree or intensity. Any infection of the accessory cavities would necessarily be preceded by or associated with some inflammatory process, which process involves the opening of the sinus and thus converts it into a closed cavity, causing retention of the infectious material. This, in turn, intensifies the already existing inflammation and produces rapid changes in the mucous membrane, which if drainage is not established, may lead to total destruction of the membrane and necrosis of the underlying bony structure. If the severity of the inflammatory process is not sufficient to cause destruction of the mucous membrane and denudation of the bony walls of the cavity, a fibroid formation within the basement membrane may take place, or, in other words, the physiologic function is interfered with, resulting in permanent pathologic alteration.

As a rule, a combined acute infectious process within the accessory cavities shows irregular systemic symptoms, unless there is a point where the physiologic wall of the closed cavity has broken down, and rapid general septic infection takes place, when the clinical phenomena are pronounced. In other words, acute involvement of the accessory cavities amounts to a walled-in process, and it is only when necrosis takes place that sytemic infection occurs.

A point of considerable importance in regard to systemic phenomena, as well as local symptoms, is the size and shape of the cavity and the variations in the thickness of its walls. For example, a frontal sinus with thin walls may result in perforation and involvement of the brain cavity. Dural and subdural abscesses frequently follow pathologic changes within the frontal sinus. Again, in the case of the antrum of Highmore, when the superior wall is very thin, there will be marked eye symptoms, while in another case with a thick bony wall the eye symptoms will be entirely absent.

In acute inflammation of the accessory sinuses there is usually a history of exposure to cold, acute coryza, riding in an automobile or railroad train, or of influenza or other infectious disease. The pain is always of the dull, aching or boring character, influenced by position. Tenderness, marked over the sinus region, extends all over the head in the beginning, usually bone tenderness; the pain and tenderness are increased by percussion. Swelling, not always a prominent symptom, may or may not be present, and is irregular in extent. The patient has a curious symptom referable to the eyes. He states that when he tries to read and looks up, the eye on the side of the sinus disease hurts, the muscles seem to be involved in the edema, and there is slight edema of the lids together with ptosis. This enables the physician to tell whether one or both sinuses are involved. There is tenderness at the inner angle of the eye on pressure, more marked in frontal sinus than in the others.

In acute involvement of the frontal sinus, usually the involvement is accompanied by symptoms of acute coryza with mucopurulent discharge and intense pain over one or both eyes, and at the inner angle of the eyes. The pain is intensified by stooping forward, straining at stool, coughing, or by any sudden movement. The pain is not continuous, and is apt to cease at bed time to begin on awaking with increased intensity, and unless relieved by frequent hot douches and hot applications over the forehead, it becomes intolerable. There is also headache, with a feeling of fullness or constriction in the forehead. The symptoms are aggravated by using the eyes for reading.

In inflammation of any accessory cavity there is always "bone soreness," and the pain on pressure is not limited to nerve points. Various tender spots pointed out by certain authors are often misleading, owing to the fact of frequent irregularity in the size and formation of cavities. This is especially true of frontal and ethmoidal cavities. Irregularity of eye symptoms would at once suggest irregularity in these two cavities.

From a standpoint of diagnosis, the use of the *x*-ray can not be overestimated. It shows the extent of the involvement, the relation of structures, and the formation of the cavity, so that irregularities can be quickly recognized and predisposing anatomic factors easily discerned. Transillumination, unfortunately, is nothing more than an adjunct. In my experience it has been misleading as often as it has been useful, and should never be depended on in itself. However, in association with the clinical history, the careful examination of the nasal cavity, the thorough observation of the patient, and also a careful study of the *x*-ray picture, transillumination may aid in the diagnosis and treatment.

In my previous writings on this subject, I have urged the conservative method of dealing with these conditions, and by persistently and carefully shrinking the tissues about the orifice of the accessory cavity, have been able, in the majority of cases, to open the cavity by the natural orifice; in other words, to reverse the pathologic process. The cavity, which is an open cavity, has been converted into a closed one. By what process? Simply by inflammation with its accompanying swelling of the surrounding structure as well as the orifice. Certainly, then, by shrinking these tissues at the right point, drainage by the natural orifice can be obtained

In making the application to these points, the contour of the intranasal structures must be carefully observed; otherwise, the application will not be made at the right point. This, I think, will explain the failure in many individual cases to secure drainage by the natural opening, and necessitate an unnecessary radical procedure. In my clinic at Jefferson Medical College Hospital, where from 10,000 to 12,000 treatments are made yearly, and also in my private practice, where many of these acute inflammatory involvements of the accessory cavities are observed, this plan has been successfully carried out for a number of years with such satisfactory results that radical interference has been practically eliminated in acute cases. In fact, in the last year, in only two cases, and they were of the chronic variety, was the radical operation necessary. Even in the chronic cases, unless there is bony necrosis, the same plan of treatment will give equally good results.

Since, in the majority of cases, the primary lesion is intranasal, the treatment, then, should be directed toward cutting short the inflammatory attack, reducing the swelling in the nasal mucous membrane, especially about the orifices of the opening of the sinuses, so as to allow free drainage of the accessory cavity. Once the normal opening is established it is remarkable how quickly an inflammatory lesion of the accessory cavity will clear up. The 2 to 4 per cent. solution of cocain is sufficiently strong to insure the proper amount of shrinkage of the inflamed and swollen tissue. Personally, I do not use the suprarenal extract, because in my hands I have observed that in many cases in which I have used this solution the after-irritation is so marked that it overcomes largely the beneficial results due to cocain. For this reason, I have ceased to use it. As stated before, it is essential to study carefully the individual case in order to locate the exact position of the orifice and its relation to the intranasal structure. For example, I have seen cases involving the maxillary sinus, in which it was said that it was impossible to open the natural orifice, in which the middle turbinate was of the scroll variety, and the solution had been applied on the outside of the turbinate and never underneath this body. With a little care and minute pledgets of cotton the mucous membrane underneath the scroll turbinate was shrunken and in a very short space of time the pus began trickling from the blocked up cavity. By keeping the membrane shrunken down, free drainage was established and without any surgical interference with the antrum, a permanent cure was effected.

This paper has to deal with the acute processes, and in an acute process necrosis would not occur. To be sure, if bony necrosis has occurred within any of the cavities, nothing short of opening that cavity and removing the necrosed tissue would effect a cure, but such cases must not be confused with acute inflammations, neither must cases that have become subacute or chronic, and are largely latent when lighted up by some acute process, be termed acute. This, I think, will account for many cases of disagreement as to diagnosis and treatment, whether or not it is actually an acute process, or whether there is some left-over inflammation which has been lighted up by some infection or nasal inclination. Illustrating this, a severe acute case was treated by this conservative method.

Patient.—A young man, aged 22, a medical student, was admitted to the hospital suffering with acute inflammation of the left frontal sinus. He had a temperature of 103 F., marked tenderness and swelling over the left frontal sinus, marked edema of the upper and lower lids, with considerable redness and discoloration. He was suffering from severe boring frontal headache, and the pain extended into the temporal region. He was restless and apprehensive. Two days before, following a slight cold, suddenly the symptoms of the sinus involvement began. The day before admission he had a decided chill, and these symptoms rapidly increased until he presented himself at the hospital as described above.

Treatment.—The application of a 2 per cent. solution of cocain was made at once to the swollen mucous membrane in the nasal cavity, and gradually carried up to the region of the frontal sinus opening. At the same time the general condition was treated by thorough cleansing of the intestinal tract by means of calomel and a saline purge. The application of cocain was continued until carried to the orifice of the sinus. In this particular case this was rather difficult, as the sinus opened rather high and posteriorly, and the superior portion of the nostril was narrow and obstructed. This was overcome, however, by making a short, sharp curve at the end of the applicator, and in this way carrying the cotton into the nasopharynx and bringing it forward and upward, it was possible to reach the opening. In less than two hours there was a free flow of pus from the frontal sinus. Heat was also applied externally and the resident physician was instructed to make the application at the first sign of blocking up of the sinus. In exactly three days all swelling and pain had disappeared.

Remarks.—At first examination the patient's condition was such that it seemed almost inevitable that the frontal sinus would have to be opened externally. This was obviated by the careful and faithful carrying out of the method of drainage by the natural orifice.

In 1898, I reported some cases in which apparently there was an acute involvement of the antrum, with all the symptoms pointing to such an acute inflammation, in which it was clearly proved afterward that the entire condition was produced by the accumulation of gas in the antral cavity. By directing the treatment to the orifice of this cavity the accumulated gas was allowed to escape and the symptoms rapidly disappeared. Since reporting those cases, I have observed the condition rather frequently, not only in my private practice, but in the out-patient department at the hospital.

From a general pathologic standpoint it should be remembered that the accessory cavities are truly such, and that they are not independent cavities. That they are accessory cavities to what? To the nasal respiratory tract. Hence, the origin of many pathologic lesions is the nasal cavity. It must be remembered also, that these accessory cavities are dependent on adjacent structures for nutrition. Also, when infected, the rhinologist is dealing with a closed cavity, but not a cavity of new formation, hence the pathologic alteration is not subject to the same law as that of a cavity of new formation.

I do not mean that never are we to perform the radical operation, but I wish to call attention to the fact that many patients who are subjected to the radical operation could and should be cured without any such procedure.

In general, then, the treatment should be directed to the cause and the removal of any interference with the natural drainage. Swelling of the nasal mucous membrane may be reduced by cocain or any solution that will shrink the mucous membrane; douching with warm alkaline solutions to favor drainage; measures directed toward the relief of the pain. Rarely, it may be necessary to wash out the cavity through the natural opening, an enlargement of this opening, or through exploratory puncture. If free drainage is not maintained the condition is likely to become chronic.

Value of Playgrounds.—The twentieth century has caught the real meaning of the unsurpassed Grecian classical education; and modern cities in spending millions for playgrounds are repeating history and we are entering the new educational renaissance.—J. E. Peaus, in *Hygiene and Physical Education.*

DISEASED CONDITIONS INVOLVING ACCESSORY SINUSES IN WHICH EXTERNAL OPERATION IS INDICATED *

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A discussion of the choice of operative measures necessary to relieve or to cure any pathologic condition in the body frequently has to take into account many factors other than those directly connected with the disease in question. Nowhere, perhaps, is this so marked as it is in discussing the advisability of treating diseases of the nasal accessory sinuses by intranasal surgery or by an external operation.

Rhinologists at present are at considerable variance, and personally I find myself, as the result of wider experience, changing my views considerably from year to year as to the desirability of resorting to an intranasal or an external operation for the relief or cure in any given case of sinus disease.

External surgical operations undertaken for the cure of disease of the frontal, ethmoid and sphenoid sinuses require a thorough knowledge of the anatomy of this region, acquired not only from the many excellent monographs on this subject, but also from an extensive practical experience resulting from numerous dissections. The operator should also have had a thorough training in general surgical technic and have acquired skill and reasonable rapidity in operating before attempting these long major operations. The proximity of the brain and the great variety in the size, shape and relation of these cavities to the cranium renders unskilled work on the part of the operator likely to be followed by serious consequences to the patient.

In all but the very acute cases complicated by cellulitis, when an immediate external operation is indicated, before deciding on recommending to the patient the intranasal or external operative route, a complete examination should be made. This includes:

First.—The determination of the number of sinuses involved.

Second.—Having a skiagraph made which, if good, will show the size and shape of the frontals and the number of septa within them; the width of the ethmoidal area and the approximate size of the sphenoids.

Third.—The general condition of the patient. In chronic sinus disease, the presence of marked disease of the arteries, heart, lungs or kidneys makes the external operation far more serious and frequently undesirable.

Fourth.—Determine, if possible, whether the disease is acute or chronic. In very few acute cases, not complicated by the external manifestations described later, does the condition require an external operation.

Fifth.—If acute, decide whether the history points to a simple acute inflammation of a previously healthy sinus or to an acute exacerbation of a chronically diseased sinus. In the latter case it is wiser to defer the external operation until the acute symptoms have subsided.

Sixth.—The severity of the symptoms, more especially of headache and its effect on the patients. I have not yet been able to determine why some patients suffer so much more from sinus disease than others. There is nothing in either the character or amount of discharge to help us, nor even in the size of the sinuses as shown by the skiagraph. As a rule, those with very large sinuses suffer more than those with small sinuses, but I have seen many exceptions to this rule. If intranasal operations fail to give the desired relief, then an external operation is indicated.

Seventh.—The ultimate result of the treatment of chronic sinus disease should be carefully explained to the patient by his physician. Intranasal methods relieve and may cure. The cavities remain and may again become infected. External operations remove all the diseased membrane, obliterate the cavities and result in a permanent cure. There is a scar and frequently some deformity in a portion of the anatomy where it is easily seen by the patient, and this fact alone often deters some individuals from submitting to the external operation.

Eighth.—As intranasal treatment necessitates frequent operations at short intervals, many who can ill spare the time for such treatment prefer the more thorough and less time-consuming external operation.

Ninth.—The neurasthenic patient who is prostrated each time any intranasal operation is attempted and rarely submits to enough being done to make much headway against the disease should be urgently advised to submit to the external operation.

Tenth.—Very narrow nasal chambers add greatly to the difficulty of intranasal operations, and to such patients with chronic suppuration of the frontal, ethmoid and sphenoid, we recommend the external operation.

CONDITIONS REQUIRING THE EXTERNAL OPERATION

When considering the diseased conditions in the various sinuses requiring external operation, it would seem best to divide them into an acute and chronic type.

1. *Acute Frontal, Ethmoid and Sphenoid Involvement.*—Whenever acute involvement of these sinuses is accompanied by marked edema of the skin of the forehead, eyelids or side of the nose, exophthalmos, orbital cellulitis, local heat, great local tenderness, with or without a rise in the body temperature, an external operation is imperative and should be done without delay for fear of supervening meningeal or other intracranial complications. On the other hand, it must not be considered that we would invariably advocate external operation for the relief of very slight local edema and swelling without first attempting by intranasal treatment to relieve the condition. It is possible that deflections of the septum, or large bony exostoses, might render it impossible to give adequate intranasal treatment, in which case external surgery must be resorted to. The proportion of acute cases demanding external operation is few as compared to those which can be cured by intranasal treatment.

2. *Acute Maxillary Sinusitis.*—Very rarely one meets with an osteomyelitis of the superior maxilla associated with acute maxillary sinusitis. Such cases should be treated by a larger opening and drainage through the gingivo-buccal fold. All other cases of acute disease of this sinus may be satisfactorily treated intranasally.

3. *Chronic Suppuration of the Frontal, Ethmoid and Sphenoid.*—As all three of these groups are usually simultaneously involved, we will consider them together:

A. Those associated with multiple polyp formation in the nose. Most of these cases are accompanied by such extensive alterations in the mucous membrane lining the frontal, ethmoid and sphenoid, that intranasal treatment, while affording great relief, seldom affects a permanent cure. The polyps recur more or less rapidly in a large percentage of cases. An external operation may be relied on to cure.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

B. Frontal sinuses which are demonstrated by the skiagraph to be of large size with one or more septa and extensive prolongations over the roof of the orbit can seldom be so drained by intranasal operations as to prevent the recurrence of the symptoms with each succeeding attack of severe acute rhinitis. If the patient's general condition, therefore, will warrant it, I advise an external operation for this class of cases in preference to repeated intranasal treatments.

C. Closed empyemata of the frontal as evidenced by recurring attacks of supra-orbital pain without the history of any secretion from the nose or nasopharynx or occasional scanty secretion, which the examining physician fails to detect, and in which the skiagraph shows an evident involvement of the frontal, are best treated by an external operation.

D. Cysts of the frontal and cysts of the ethmoid region which do not bulge into the nasal cavity are proper cases for external operation. In this class of cases the anatomic structures are considerably altered and absorption of the bony wall of the cranium not infrequently has been observed. Any attempt to evacuate the cysts through the nose is too much a matter of guess work to be called good surgery.

E. Those in whom a fistula has formed leading from the frontal or ethmoid are advised to have an external operation. The question of scar does not affect these patients, as they already suffer a disfigurement which may be considerably improved after the operation.

4. Chronic Maxillary Sinusitis.—My present belief is that very few cases of chronic suppuration of the antrum need anything more than a thorough opening through the inferior meatus to effect a cure. If these patients do not recover promptly, I search for involvement of the ethmoidal cells or frontal sinus, and find that by curing the disease in this region the antrum promptly ceases to discharge. If, however, there is a tendency to recurrence of the disease two or three times a year as a result of attacks of acute rhinitis, I then recommend thorough opening of the antrum through the canine fossa.

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ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. KYLE, LOEB AND COAKLEY

DR. ROSS HALL SKILLERN, Philadelphia: Dr. Kyle, speaking of the treatment of acute inflammation of the frontal sinus, makes the following statement: "The cavity, which is an open cavity, has been converted into a closed one. By what process? Simply by inflammation with its accompanying swelling of the surrounding structure as well as the orifice. Certainly then by shrinking these tissues at the right point, drainage by the natural orifice can be obtained." While this is, of course, true, it is open to modification. In the majority of cases we are able to bring about relief by the application of cocain to the hiatus and surrounding parts, but it has been my experience that this relief is often but momentary, from one to three hours, on account of the degree of inflammation and the narrowness of the nasofrontal duct. The mucous membrane quickly again becomes turgid with blood. In these cases I resort to a procedure which has invariably given good results, that is, infraction of the middle turbinate. It is a simple procedure which can hardly be dignified by the term operation, being done as follows: Apply 20 per cent. solution of cocain between the middle turbinate and processus uncinatus, wait five minutes, then introduce a blunt submucous retractor and pry the turbinate away from the lateral wall of the nose. Sometimes this will fracture the turbinate at the base, but more often it is necessary to introduce a long Killian speculum and spring apart the blades. This will invariably bring about the desired result. The advantages of this procedure are self-evident, as we procure good drainage room without sacrificing any tissue. The after-treatment consists merely in keeping the bowels open and giving aspirin one-half dram every two or three hours.

Dr. Loeb calls attention to the ethmoid cells which extend so high up as to be almost inaccessible to the intranasal operation. In the endonasal radical operation, suppuration in these cells may be overlooked and only be discovered at some later date.

They can easily be reached and opened by the Grünwald forceps. When operating on the nose we see the inferior edge of the middle turbinate far up in the nasal cavity, and it appears as though we are getting on dangerous ground when we penetrate a half inch beyond this point. As a matter of fact, this edge is approximately only half the distance between the floor of the nose and the lamina cribrosa.

In operating on the sphenoid sinus, a condition is liable to arise which may be very confusing. After one has exenterated the ethmoid cells, if the pars nasalis of the sphenoid sinus is very narrow one is apt to mistake the posterior ethmoid cell for the sphenoid sinus. This error can be discovered by measurement and exploring the wall near the septum where the end of the probe would strike the remainder of the nasal wall of the posterior ethmoidal cells.

Dr. Coakley states: "In all but the very acute cases complicated by cellulitis, when an immediate external operation is indicated, before deciding on recommending to the patient the intranasal or extranasal route, a complete examination should be made." I do not believe an external operation is ever indicated in an uncomplicated case of chronic frontal sinus empyema in which the patient has not as yet undergone an intranasal operation. In other words, I mean that the chances of relieving the symptoms are so great that the endonasal procedure should first be resorted to. I wish to emphasize the clause: "Relieving the symptoms" not curing the patient. After they are relieved it is a personal equation with the patient whether the discharge, occasional headaches, and possible chances of arising complications shall persuade him to submit to a radical operation.

This brings us to the following question: If the pain and the sensitiveness, together with the secretion, although improving do not entirely cease, how long shall we wait before advising a radical procedure? It seems to me that this will depend largely on the mental effect produced on the patient. As Dr. Coakley mentions in his sixth condition, some patients suffer much more than others in uncomplicated cases. In those who do not find the discharge and headache particularly annoying, it is wise to wait weeks and even months, for these cases often heal spontaneously; on the other hand, if the patient seems to be in a fair way of becoming a neurasthenic in consequence of his symptoms, no matter how trivial they appear to us, an external operation is indicated; therefore, fixing a time for a radical operation after the endonasal procedure depends entirely on the individual characteristics of the case.

Finally, in advising a radical operation, we must remember that it is by no means a minor procedure and every patient radically operated on does not always mean every patient radically cured.

DR. J. A. STUCKY, Lexington, Ky.: I fully agree with Dr. Skillern that frontal sinus, or any nasal accessory sinus surgery, is by no means minor surgery. I have recently had two patients with amblyopia due to trouble in the sphenoid sinus, who recovered after operation on the sinus. I have also had two cases of involvement of the frontal lobe of the brain due to suppuration in the frontal sinus. In one a large part of the anterior lobe was destroyed by suppuration.

I want to emphasize Dr. Coakley's remarks in regard to the skiagraph, and also, for the benefit of those just beginning this work, the necessity of proceeding cautiously. The last word has perhaps been said as to the time to operate on a mastoid, but this is not true regarding the operation on the nasal accessory sinuses. I am surprised that nothing has been said as to the mental disturbance in these conditions. I have published a paper on this subject and have now in course of preparation a paper going somewhat into detail as to the question of mental disturbance caused by sinus involvement.

Recently, I obtained permission to examine 1,000 patients in the Insane Asylum at Lexington, to determine the percentage having sinus trouble. The mental symptoms may be due to acute or subacute infection in the anterior part of the brain, the thickened and inflamed membrane being the cause. In no other way can we account for the subsidence of the symptoms after operation. Complete mental recovery may be predicted in many of these individuals after radical operation. I have proved this in five cases now and am surprised that more has not been written on this subject.

DR. R. H. GOOD, Chicago: I am afraid to use a drill of any kind in the frontal sinus, but I am not afraid to use my frontal sinus rasp. Those who have read my articles will recall that I described chisels, but I am indebted to Dr. Joseph Beck, who has persuaded me to do the operation without chisels. The middle turbinate is removed in part or in its entirety; then I bite out the ethmoid cells up to the cribriform plate; then after having done that I use the rasp. There are rasps on the market that are not made smooth on one side—they should not be used. The instrument should be smooth on one side but cutting on the other side and in front. The rasp is introduced up to the floor of the skull. The orbital surface is smooth. You can rasp forward and you can not do any damage to the cranial cavity. If the ordinary methods of straightening the septum and removing the middle turbinate and some of the ethmoid cells fail, then it is time to do this operation. I do it in all cases in which a frontal sinus operation is indicated except when I suspect tumor or brain complication. The opening one can make with this rasp is large, and if the external operation is necessary afterward there has already been established a large opening into the nose. The rasping is away from the brain, and no damage can be done to the eye because that side of the rasp is smooth.

DR. B. R. SHURLY, Detroit: It has been my privilege for a decade or more to travel the middle road in the treatment of disease of the accessory sinuses. Waves of radicalism have come from Europe and the earthquake region of our country and waves of conservatism have come from the east and middle west, but I have still traveled on the same old middle road. There are many interesting points to be weighed in considering these problems. First, we might divide all here into three classes: first, those who form their views from clinical experience; second, those who derive their views from clinical experience and private practice, and, third, those who form their opinions from private practice alone. It seems to me the question we should ask in each of these cases is just how we should like that sinus treated if it were our own. The problem of the bacteriology of the condition is one not sufficiently weighed. We have more difficulty in controlling a sinusitis that is due to the streptococcus or *Bacillus prodigiosus* than one due to the *Staphylococcus albus* or *S. aureus*. And the resistance of the patient and personal equation are such important factors in this class of cases that they should have great weight with us before we decide on operative procedure. We all understand the necessity for drainage and the necessity for having as thorough drainage as possible. We should have an *x*-ray picture in every chronic case. In the acute cases we should treat the patients carefully with sprays, keeping up proper drainage from day to day, washing out the region carefully with antiseptic solutions. I am proud to say that the American physicians and surgeons to-day stand for first of all the comfort of their patients, and that is something we should all be proud of. The procedure in chronic cases can be carried on in a very conservative way in the beginning. We should find out what the resistance of the patient will be, and what we can do with irrigation or vaccine therapy when feasible and then proceed to the removal of the middle turbinate or an intranasal operation. If necessary, as a last resort, the radical procedure may be adopted.

DR. PERCY FRIDENBERG, New York: I want to speak from the ophthalmologic standpoint as to the choice of operation. The danger of the intranasal route is accentuated by bone-cutting instruments, drills, rasps, and so on, which must be used blindly and may easily penetrate the orbit, or cranial cavity. The dangers of infection, hemorrhage, and of traumatism to various important nervous and vascular structures, as the optic nerve, internal carotid and cavernous sinus, must be considered. Finally, the accuracy and completeness of the intranasal operation are problematical, and can be determined, as a rule, only by the subsequent course of the case. When there is evidence of involvement of the orbit to adopt the intranasal operation is simply a loss of time. In the development of this subject the ophthalmic surgeon and the rhinologist have seen the cases from a different standpoint. In the eye clinics the patients come for ocular conditions, motor paralysis, orbital abscess, exophthalmos and pain or intractable headache. These cases, as a rule, the rhinologist doesn't see, just as we do not see the milder cases with only nasal symptoms. The objection to the external operation has been from a rhinologic point of view, the fear of injuring the eye and the lachrymal apparatus. And I want to call attention to the fact that the external operation does not necessarily affect either of these structures. There is less danger of ocular injury in the external operation where the operator sees the cells and can gauge the operation by the conditions present than there is in the intranasal procedure where he can not know whether he has removed all the diseased area or not. In the external operation he does know this. Radiography gives us a great deal of information and is a great help in this work, especially in external operations.

DR. H. C. MASLAND, Philadelphia: When there is pus in the sinus I have serious doubts as to the worth-while percentage of cures that are effected by treatment through the natural opening. The mechanics of the condition would call for drainage at the most dependent portion. The curved trocar is unsatisfactory, in that it can not be rotated without obscuring the vision, and if it is forced in it is liable to slip, to penetrate at the upper thinner part of the bony wall, or to lacerate the mucous membrane. A straight trocar can be rotated to cut, not force, its way through the thicker portion of the dividing wall at the floor of the antrum. A curved silver canula can be made in twenty-four hours to be inserted in this opening. It can have a collar at its inner end to be self-retaining. The curve fitted to each patient removes all questions of pressure distress; its outer end lies at the vestibule of the nose, obscured by the alæ of the nose. The patient with a suitable rubber bulb is thus permitted to give the antrum a thorough cleansing at home each day.

DR. R. P. SCHOLZ, St. Louis: Most of the speakers seem to agree that the conservative intranasal method, followed when necessary, by radical external operation, is the proper means of coping with sinus diseases. This being the middle path, seems to me to be the proper course. Ordinarily we should be as conservative as the case will permit, since after radical interference the nose is seldom so satisfactory an organ as when less radical means have been resorted to. Even when there are signs of the inflammation having spread beyond the limits of the sinus, as into the orbit, etc., it is often surprising what can be accomplished by the most conservative intranasal treatment, shrinkage of the nasal tissue so as to favor drainage, removal of polypi, lavage, etc. Of course, these patients need the closest observation on the part of the rhinologist, since many can only be coped with by radical external operative means. Not long ago two European writers described their methods of producing nasal suction. This principle (my statement being on the trial I have given it) is both an excellent diagnostic and therapeutic aid. I feel confident that it is one of our most valuable means of diagnosing ethmoidal suppuration. Not only is the pus sucked from the cavity as such but by the production of hyperemia (diminishing the size of the cavity) the pus is forced from the cell. One essayist claims polyp formation to be an indication for radical operation. To this I do not agree. Believing that in these cases often the polyp formation is the prolonging cause of suppuration. Frequently the simple removal of the polypi, thus establishing free drainage, will lead to entire restoration.

Dr. C. M. Robertson, Chicago: It seems to me that the first thing to do in treating cases of empyema of the sinuses is to determine whether the condition is acute or chronic; this is absolutely essential. The next thing is to determine the character of the inflammatory condition to be attacked. If it is of staphylococcus origin we can be more dilatory than if we have to deal with a more virulent infection. I operate very little on the frontal sinus, that is, radically. I think I am able to effect a cure in most of the cases intranasally by cutting away the anterior part of the middle turbinate and establishing free drainage. It is necessary, however, to have a skiagraph to determine the exact topography. If the sinus extends over the orbit or is divided by septa it is useless to try to treat it intranasally. With the anterior ethmoid cells intranasal treatment is more efficacious. I believe that it is necessary to conserve the turbinate tissue. It is a physiologic tissue and unless there is a great deal of disease we should try to save it. When polypi exist I have done the radical operation on the maxillary sinus and ethmoid cells and seen the polypi disappear. They shrink up when drainage is established, for they are nothing more than exuberant granulations. In the treatment of the posterior ethmoid cells and the sphenoid sinus I have not had such good results intranasally.

Dr. E. A. Crockett, Boston: We have heard a great deal about complete removal of the middle turbinate and intranasal removal of the ethmoidal labyrinth, and most of the gentlemen would leave us with the impression that it is a simple operation and that the external operation is much more difficult. Now, that does not accord with my experience. I always advocate extranasal operations in preference. It is easier for the man with limited experience. In Boston we have had no deaths from the external operation. On the other hand, I know of two deaths at the Eye and Ear Infirmary and two at the Massachusetts General Hospital following the intranasal operation. These statistics may not conform to the experience of men from other parts of the country, but the fact is significant that these patients were in the hands of four different men.

Dr. George M. Case, Elmira, N. Y.: During the spring of 1904, I spent some time in the clinic of Professor Jansen, of Berlin. It was not uncommon in one day to witness three or four operations for radical cure of chronic sinusitis. The operations were brilliant indeed; in three-quarters of an hour he would clean out frontal, ethmoid, maxillary and sphenoid sinuses, using drainage from each. It seemed a rapid way to cure these patients. But by inquiry and observation in the hospital I found many of these patients relapsed and required a second operation. Again, although the suppuration was lessened, these patients were uncomfortable, suffering intensely from dryness in the nose and throat, and requiring almost constant attention to have any degree of comfort. Of course, the middle turbinate was removed in all patients I saw operated on. My observations, both in Berlin and Vienna, and since, have taught me to be conservative in the management of these cases. Of course, if patients can not spend the time necessary to carry on a long and tedious nasal treatment we may be forced to institute radical measures early in the case. I think it poor surgery to sacrifice the turbinate and destroy nasal and lining mucous membrane of the sinuses, when we can get drainage by less radical measures.

Dr. C. F. Welty, San Francisco: I wish to report the death of two patients in San Francisco from the so-called intranasal operation. They were not my cases but came to my knowledge.

Dr. H. W. Loeb, St. Louis: A man can not be absolutely sure that he is in the frontal sinus. He may be in an ethmoid cell that is diseased and he may relieve the patient, but he doesn't know that he is in the frontal sinus. Dr. Coakley speaks of the impossibility of relieving sphenoid suppuration entirely by the nasal route. We have all seen patients operated on radically in which suppuration continued. Whether it is due to the impossibility of getting away all the diseased mucous membrane or not I am unable to say.

Dr. Crockett calls attention to the difficulty of the intranasal operation, but I think his inference is rather overdrawn in regard to the difference in the number of deaths in comparing the two operations. While there are thousands and thousands of operations done intranasally, there are comparatively few done extranasally, and not every one who has a death from the extranasal operation reports it. One trouble is that we do not look on the intranasal operation as a surgical procedure. Some rhinologists do it in the office. If we would take as much pains in operating intranasally as we do with the extranasal operation our results would be immeasurably better and there would be less danger of death. In the external operation we make the same preparation as if we were going to do an abdominal operation. The intranasal operation should be entitled to as much respect.

Dr. D. B. Kyle, Philadelphia: No one method will succeed in every case. The conservative method will fail occasionally and so will a radical operation. It is merely a question of judgment, the individual case, and the experience of the operator. Knowing when to operate is the most important thing, and we should always question whether we would do that particular operation on our own sinuses. If you try the conservative method you will find that you will not have to do the radical operation very often.

Clinical Notes

THE TRANSPARENCY OF MATTER FOR *X*-RAYS NOT AFFECTED BY TRANSVERSE RADIATION FROM A SECOND TUBE

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In a recent article[1] it was asserted that greater transparency and, as a result, better skiagraphs, can be obtained in *x*-ray work by having two sources of the rays at right angles to each other, radiating simultaneously on the body to be photographed. In order to test the truth of this assertion by the electroscope method the following experiments were undertaken:

Two *x*-ray bulbs, one which will be called the direct bulb D and the other the transverse bulb T, were arranged as indicated in the diagram, both being carefully enclosed in lead screens. Openings in the screens were made at a, b, c and d, through which the rays could pass and produce ionization in the three electroscopes, E_1, E_2 and E_3. These electroscopes were protected in such a way that they were unaffected by the radiation from the bulbs when the openings a, b, c and d were closed by lead shutters.

The two bulbs D and T were always run simultaneously during all observations. The electroscope at E_1 was used for observing, first, the intensity of the rays from D which pass through any body placed at A when the shutter c is closed and the shutter b open; second, the intensity of the rays from D which pass through the body at A when both b and c are open so that the body is being radiated on by both D and T; third, the intensity of the secondary rays which enter E, when b is closed and c open so that only transverse rays fall on the body at A. If the transverse rays from T increase the transparency of the body at A for the direct rays from D, the effect produced per second on E, when both b and c are open should be greater than the sum of the two effects produced per second on E_1 when b and c are opened successively.

The electroscopes E_2 and E_3 were used merely for eliminating irregularities in the rates of radiation of the two bulbs D and T. E_2 was affected only by D, and therefore served as a measure of the rate of radiation of D, while E_3 was affected only by T, and hence served as a measure of the rate of radiation of T.

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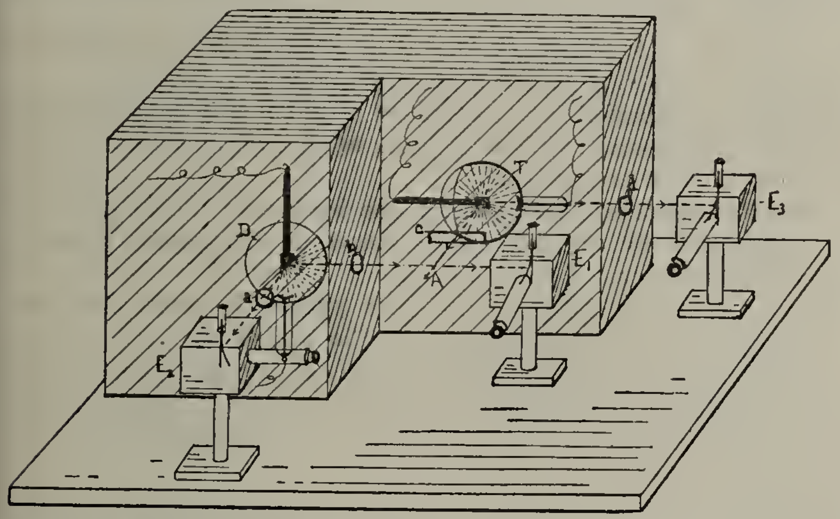
[1] O'Donnell, P. S.: A New Method of Taking *X*-Ray Pictures, The Journal A. M. A., April 17, 1909, lii, 1246.

The observations were taken in the following manner: There was first placed at A a piece of pine wood of such thickness that rays from D had to pass through 12 inches of pine in order to reach E_1. All of the shutters, a, b, c and d, were opened and the rays from D and T were allowed to pass simultaneously through this wood. The effects on all the electroscopes were observed. The openings c and d were then closed and rays from D alone allowed to pass through A, and the effects on the electroscopes E_1 and E_2 again observed. Finally a and b were closed, c and d opened, and rays from T alone allowed to pass through A, and the effects in the electroscopes E_1 and E_3 observed.

Now if we subtract from the effect produced on E_1 when both D and T are simultaneously radiating on the body at A, the effect on E_1 when T alone is radiating on the body, and call this corrected value e_1, and if we call the effect on E_2, e_2, and the effects on E_1 and E_2 when D alone is radiating on the body e'_1 and e'_2, then it is evident that the ratio $e_1 : e_2$ must equal the ratio $e'_1 : e'_2$, provided there is no increase in the transparency due to transverse radiation from T. This we found to be the case within the limits of our observational error.

The energy for the bulbs was furnished by two 12-inch induction coils, the primaries being connected in series with a Wehnelt interrupter on a 110-volt circuit. The current in the primary was varied from 10 to 25 amperes.



In the accompanying tables the numbers immediately under E_1, E_2, E_3 are the readings of the electroscopes before the bulbs were energized. The numbers just beneath these are the electroscope readings after the bulbs had been energized for a period of about six seconds. The third rows represent differences, and these are, of course, proportional to the amounts of ionizing energy entering the electroscopes under the conditions specified.

It will be seen that in the first three trials, in which the absorbing material was unchanged, the values of $e'_1 : e'_2$ agree with each other, as of course they should. It will also be seen that $e_1 : e_2$ agrees in every case with $e'_1 : e'_2$ within the limits of observational error, which were about 1 or 2 per cent.

In the fourth and fifth trials conditions as regards absorbing medium were changed, but $e_1 : e_2$ still agrees in each case with $e'_1 : e'_2$ to within the limits of observational error.

In each of the above experiments observations were made by two independent observers whose results always agreed with one another to within the limits of observational error.

TRIAL 1.—WOOD USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
Both Bulbs (a, b and c open)			
0.5	1.5	2.6	
33.9	29.3	23.	$\frac{e_1}{e_2}=\frac{31.3}{27.8}=1.126$
34.4	27.8	20.4	
Direct Bulb (c and d closed)			
5.6	3.0		
39.6	33.4		$\frac{e'_1}{e'_2}=\frac{34.}{30.4}=1.118$
34.0	30.4		
Transverse Bulb (a and b closed)			
4.4	1.6		
7.6	22.6		
3.2	21.0		An apparent increase in transparency of 0.7 per cent.

TRIAL 2.—WOOD USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
	Both Bulbs		
6.3	0.6	1.6	
39.6	26.6	21.8	$\frac{e_1}{e_2}=\frac{30.2}{27.2}=1.110$
33.3	27.2	20.2	
	Direct		
6.6	1.5		
37.4	29.		$\frac{e'_1}{e'_2}=\frac{30.8}{27.5}=1.120$
30.8	27.5		
	Transverse		
4.6	.6		
7.6	19.6		
3.0	19.0		An apparent decrease in transparency of about 1 per cent

TRIAL 3.—WOOD USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
	Both Bulbs		
0.3	0.5	3.1	
37.3	29.6	25.5	$\frac{e_1}{e_2}=\frac{33.4}{30.1}=1.110$
37.0	30.1	22.4	
	Direct		
2.4	1.6		
35.2	30.8		$\frac{e'_1}{e'_2}=\frac{32.8}{29.2}=1.123$
32.8	29.2		
	Transverse		
.6	0.6		
4.2	21.5		
3.6	22.1		An apparent decrease in transparency of 1 per cent.

TRIAL 4.—WATER USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
	Both Bulbs		
6.6	6.4	2.5	
24.2	33.4	23.6	$\frac{e_1}{e_2}=\frac{27.}{8.4}=3.21$
17.6	27.0	21.1	
	Direct		
2.2	0.8		
11.	27.4		$\frac{e'_1}{e'_2}=\frac{28.2}{8.8}=3.20$
8.8	28.2		
	Transverse		
5.4	2.8		
14.7	24.2		
9.3	21.4		An apparent decrease in transparency of 0.33 per cent.

TRIAL 5.—WATER USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
	Both Bulbs		
3.6	1.6	3.2	
38.5	27.3	23.4	$\frac{e_1}{e_2}=\frac{26.5}{25.5}=1.039$
34.9	25.7	20.2	
	Direct		
5.4	7.7		
32.6	33.6		$\frac{e'_1}{e'_2}=\frac{27.2}{25.9}=1.050$
27.2	25.9		
	Transverse		
.9	.2		
9.5	20.9		
8.6	20.7		An apparent decrease in transparency of 1 per cent.

These observations appear to demonstrate conclusively that under the conditions of our experiments the effects which can be obtained from D through A are altogether independent of the radiations of the transverse bulb T; i. e., the transparency of the body at A to radiations from D is altogether uninfluenced by transverse radiations from T.

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AN OVARIAN ABSCESS CONTAINING A LUMBRICOID WORM WITHIN THE CAVITY

BACILLUS COLI COMMUNIS INFECTION *

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Patient.—M. J., colored, primipara, aged 23, was taken sick suddenly, Jan. 21, 1909, with pain in the lower abomen, followed by chills, restlessness, and vomiting. No information of importance was elicited from her family history.

History.—For some time before her present illness began, her appetite had been poor; she had suffered pain in her lower abdomen, and nausea after eating; her bowels usually moved twice daily.

Examination.—Jan. 23, 1909, she was admitted to Garfield Memorial Hospital. Her tongue was coated with a grayish white fur; facial expression was drawn; she was in dorsal decubitus position with knees flexed. Pulse was 132; temperature, 103; leucocyte count, 20,560. The abdominal muscles were rigid, especially the left rectus; there was tenderness on pressure over both ovarian regions; on the left side a mass was outlined as big as a hen's egg. Vaginal examination revealed double salpingitis and a large mass on the left side. The afternoon of the day of admission she vomited a lumbricoid worm about 10 centimeters long. Microscopic examination of the feces showed numerous ova of the *Ascaris lumbricoides*.

Operation.—She was kept under observation until the acute symptoms had subsided. Temperature fluctuated between 98 and 102.5 F., and remained normal after February 5. Leucocytosis was 14,750. February 9 operation was performed at my clinic, assisted by the house staff. The right appendage was inflamed and adherent. The left ovary and tube were adherent to the cornua of the uterus; the ovary was enlarged to the size of a hen's egg, the surface was smooth, and there were no intestinal adhesions. While enucleating the mass the ovarian wall of the abscess sac ruptured. About 30 c.c. of pus escaped into the abdominal cavity, and projecting from the abscess through the tear in the wall was a small lumbricoid worm about 6 or 7 centimeters long; it was dead and flattened. Both tubes and ovaries were removed. The patient made an uneventful recovery.

Pathologist's Report (by J. B. Nichols).—Ovary enlarged. Dimensions: 6 cm. long, 4 cm. thick; yellowish-white color. Section shows an abscess cavity throughout its entire length. This is irregular in shape and its wall is not smooth but ragged. The wall is pearly white in general with areas of light yellow throughout. Cavity contains pus and a single worm 6.5 cm. long, identified as *Ascaris lumbricoides* by Dr. B. H. Ransom of the U. S. Department of Agriculture. The outer surface of the ovary is smooth and the abscess wall is from 3 to 5 mm. thick, except at one point, where it is only about 1 mm. The external surface at this point is perfectly smooth.

Microscopic Examination.—Extensive aggregation of round cells, mingled, especially in places, with polynuclear leucocytes. These cellular areas broken up by strands of dense fibrous tissue. Round cell aggregations apparently inflammatory areas.

Bacteriologic Examination.—*B. coli communis* in pure culture from pus.

The female lumbricoid deposits eggs in the human intestine, whence they are expelled with fecal matter. Embryonic development takes place in water 5 or 6 months after expulsion. During summer heat the development is more rapid, but in autumn and winter the egg can remain five, six or seven months without presenting the least trace of segmentation. According to Blanchard,[1] the egg passed in the feces produces an embryo in time varying from several weeks to one or two years. Carried into the human intestine by drinking water, the embryo gains liberty from the egg envelop and grows into adult state. The development is rapid and the female worm extrudes ova at the end of one month. The life of the worm does not exceed one year.

Lumbricoid worms are expelled in feces; are vomited; are passed out through the mouth or nares; through the Eustachian tube and external ear; through the nasal fossæ and lachrymal ducts to the inner angle of the eye.

Lumbricoid worms travel extensively through natural and artificial passages. They are passed into the trachea and cause death by suffocation and by gangrene of the lung. They have been found in the pancreatic duct; in the common bile duct; in the hepatic and cystic ducts, and in the gall bladder. Hepatic abscesses have been caused by lumbricoid worms. They have perforated the intestines and escaped from the peritoneal cavity into the pleura; through the ventral wall; through umbilical and inguinal tumors and into lumbar and psoas abscesses. Hippocrates reported a worm expelled from an appendiceal abscess. Numerous cases of a similar kind have been reported since.

The genitourinary tract has not escaped invasion by the *Ascaris lumbricoides*. Blanchard mentions the following cases:

> Alghisi: Infant, 7 years of age, passed through the urethra in one year 60 worms—ascarides and oxyures.
>
> Chapotin: A negro, 20 years old, passed by the urethra a number of ascarides from 3 to 4 cm. long.
>
> Cases by Kingdom, Krakowitzer and Du Jardin of lumbricoid worms passed with the urine at intervals from eight or ten days to several months.
>
> A fistulous tract leading from the bowels to the bladder was demonstrated by autopsy in the cases of Pereboom, Kingdom and Krakowitzer.
>
> Anciaux reported a woman who passed lumbricoides from the vagina by a fistulous tract to the bowels.
>
> Numerous cases have been reported of round worms having been found within the vagina. Bedel reported a case of hydrometritis complicated by the presence of a lumbricoid worm within the uterus.

The *Ascaris lumbricoides* gains access to the genitourinary passages of the male and female by passing from the intestines into the peritoneal cavity; by fistulous tracts communicating with the bowel; and by passing externally from the anus into the vagina or urethra.

The only case I can find recorded of the presence of these worms within the ovary is that of Dufour:[2]

> A girl, 17 years old, was operated on Aug. 28, 1904, at the Hôpital St. Pierre for a multilocular cyst of the right ovary. The intestines were adherent to the cyst, and in detaching them a tear in the cyst wall gave escape to a viscid, gelatinous substance, and projecting from the opening was found a lumbricoid worm. It was removed; a second worm was found, and then a third. They were alive. An examination of the portion of the intestinal wall that had been adherent to the sac revealed two small perforations.

In my case it is evident from the condition found at the operation and from the examination of the pathologic specimen that the lumbricoid did not pass from the intestine to the ovary. The only satisfactory explanation is that it migrated through the vagina, uterus, and tube to the ovary, where it gained access to the interior through a ruptured Graafian follicle.

Donation for Cancer Research.—The British Imperial Cancer Research Fund has received from the Duke of Bedford, the vice-president, a donation of $5,000.—*Science.*

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Traité de Zöologie médicale, Paris, 1889.

[2] Dufour, E.: Cas de kyste de l'ovaire renfermant des lombrics vivants; double perforation intestinale, Gaz. de gynéc., xx, 97.

PERFORATION OF APPENDIX BY ROUNDWORM *

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While there have been several reports of cases of perforation of the vermiform appendix by roundworm, these accidents are yet quite rare. The pathologic development of these cases, of course, varies, but as a rule it is believed—and with good reason—that the worm, finding itself shut in so narrow and blind a canal, bores through in its endeavor to escape. Once in the peritoneal cavity, the worm offers to the peritoneum a twofold insult, mechanical and bacteriologic. Outside of its normal habitat the worm soon dies and is walled off by adhesions. If all goes well, a well-circumscribed abscess surrounds the worm.

In the case I have to report the worm failed to get entirely through his own tunnel and probably died as a result of the constriction which took place around his neck, so to speak. In the Museum of the Royal College of Physicians and Surgeons, Lincoln's Inn Fields, London, is shown a roundworm which was strangulated in similar fashion on its ill-advised attempt to pass through the ring of a hook such as is commonly used in fastening women's dresses.

The roundworm is at times given to wandering and instances are on record in which it has been found in the stomach, nose, glottis, Eustachian tube, biliary and pancreatic ducts. In rare instances it may perforate the alimentary canal and escape into the peritoneal cavity and escape from thence by suppurative perforation into the bladder or through the abdominal wall. At times large masses of worms accumulate in the intestine, causing obstruction and requiring surgical aid.

Since the roundworm is cosmopolitan and the majority of people living in warm climates are infected, it is rather remarkable that more of these cases do not occur.

Patient.—A boy, L. M., of West Charleston, aged 12, of slight build, referred by Drs. W. A. McMillan and A. T. Mairs, was suffering from a typical attack of acute appendicitis of three days' duration. There was a well-defined mass in the right lower abdomen. There was a rise of pulse and temperature, marked leucocytosis, abdominal rigidity, etc. The history of the case presented nothing of special interest.

Operation.—An incision of medium length was made over McBurney's point, and, since the abscess was postcecal in location, it was carefully walled off with gauze packs and opened. After opening this abscess and sponging away about three ounces of pus, a whitish slough-like mass was seen to be projecting from the side of an inflamed appendix near its base. On opening the appendix it was found that a roundworm was tightly wedged in a tiny perforation, the appendical tissues having a sort of strangle hold about its neck. While the portion of the worm which had lain in the abscess was partly broken down, the intra-appendiceal part was well preserved and lifelike in appearance. This worm had undoubtedly perforated the appendix, become locked in the wall, and died *in situ*. The intraperitoneal part of the worm, acting as a foreign body, plus the infection, had resulted in an abscess.

The cavity was drained in the usual manner and the boy made an uneventful recovery.

Diet.—I. J. Wolf, in the *Journal of the Missouri State Medical Association*, states that after all it is not what we eat but what we digest and assimilate that counts. A superabundance of food, which causes the intestines to be filled with decomposed and putrefying matter, and which leads to malassimilation, is certainly a mistake and not wise and economic nutrition.

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* Reported before the Kanawha County Medical Society.

Therapeutics

ANEMIA

Before this condition can be properly treated, it should be determined whether it is a so-called blood disease or a condition caused by a disease of some other part.

Anemia is well divided into primary and secondary; the former denoting a disturbance of the blood corpuscles caused by disease or malcondition of the blood itself or of the blood-making organs, the latter being a symptomatic anemia caused by organic disease, loss of nutrition from gastrointestinal disturbances, suppuration, profuse secretion or excretion from any organ, especially from albuminuria, and from toxemias due to poisons or toxins that have gained access to or have been abnormally retained in the blood. Consequently, a diagnosis of the condition presupposes a careful analysis of all the organs and functions of the body, and not only a counting of the red blood corpuscles, but a study of the hemoglobin content and the shape and form of the corpuscles. In the future, a careful study of the blood plasma will also be found necessary to understand many of the disturbances of the blood. Excess of salts or lack of them, and excess or lack of some particular salt, will doubtless be found to play an important part in the causation of anemias.

Before deciding that a simple anemia is primary, all secondary causes must be eliminated, but there can be a primary anemia that is mild in form, which, if the cause persists, will become a pernicious anemia with the typical blood picture of that disease. In other words, a simple anemia may be caused by a mild type of the condition that is the cause of pernicious anemia, i. e., pernicious anemia may be mild in type, if one is allowed the paradox.

It having been decided that an anemia is secondary to some organic lesion or debilitating condition, it is useless to aim the treatment strongly at the blood condition to the neglect of the condition that has caused the anemia. In other words, the disease present must be correctly treated, and, even if organic, much help may generally be given. If the drain on the system can not be medically prevented, it is generally useless to wait for operative interference until medicinal or other treatment can improve the condition of the patient. Therefore, surgery should be brought to the aid, if surgery is indicated, at the earliest possible moment.

Everything possible having been done to remove, or ameliorate, or stay the cause of the secondary anemia, the number of red blood corpuscles may be increased and their health may be improved by treatment.

Perhaps the most important of all treatments of anemia is fresh air and sunlight, in the best possible hygienic and climatic surroundings. Some anemic patients will do best in the country, others best at the seashore, others best in the mountains.

The next most important element in the blood improvement is the diet, and a diet that contains sufficient meat, combined with such vegetable foods as contain iron, and arranged so as to be most easily digested and assimilated by the individual patient. In other words, the diet must be individualized.

The next consideration in the treatment of secondary anemia is that of drugs, and whether or not drugs can stimulate the organs concerned in the production of healthy blood corpuscles. The principal origin of the red blood corpuscles in the adult is the red marrow of bone, while the spleen may possibly produce red corpuscles before birth, and some physiologists believe it is possible, under certain anemic conditions, for the spleen again to assume such work. The spleen, however, may be considered as a storehouse for red corpuscles and the place for their destruction, although after serious hemorrhage the spleen doubtless gives up large numbers of healthy corpuscles to the needs of the blood. Also, under conditions of hemorrhage, nucleated red corpuscles will be found in the blood stream, having been prematurely given to the blood by the red bone marrow in the blood's need. This same need of the blood for erythrocytes seems to be one of the reasons for finding nucleated reds in pernicious anemia. The hemolymph nodes, glands near the vertebral column, partake more of the action of splenic tissue than of blood-forming tissue. That is, in serious anemic conditions they may become very active, but perhaps do not actually produce red corpuscles as does the bone marrow. The destruction of red corpuscles is evidenced by the splenic vein containing more hemoglobin than is found in any other part of the circulation. This going directly to the liver is quickly changed by the latter into material for bile pigments. Ninety-five per cent. of the contents of the red corpuscles is hemoglobin, a very unstable compound, and about 14 per cent. of human blood consists of hemoglobin, equal to about 750 grams in the sturdy adult of 165 pounds. Ninety-six per cent. of this hemoglobin is globulin and 4 per cent. is hematin, which contains iron. As this hematin is concerned in the oxygen and carbonic acid exchange in the lungs, if its iron content is insufficient or if the number of red corpuscles is much diminished, breathlessness and dyspnea on the least exertion occur. The amount of hemoglobin in each corpuscle is decreased in chlorosis and increased in pernicious anemia. While the number of the red corpuscles is decreased in the secondary anemias, and while the number is enormously decreased in pernicious anemias, the hemoglobin content of each corpuscle may be decreased or increased. It is, therefore, essential to determine the number of red corpuscles and the hemoglobin content before the best medicinal treatment may be inaugurated.

With such an investigation, an apparent anemia may be proved not to be such, and sometimes even the reverse. Many neurasthenic, pale patients really have a plus red blood count in the peripheral blood. Certainly iron is not needed by them. It will also be found of value to take the blood pressure of anemic patients, as many patients with abnormally low pressure will have a general improvement of all metabolism if circulatory stimulants are given, possibly cardiac tonics, and possibly vasoconstrictors. Certainly patients with impaired, sluggish circulation, possibly a tendency to pendent edemas, cold hands and feet, perhaps dilated peripheral vessels, and sluggish circulation in the stomach and intestines will not recover with iron, arsenic, or other so-called blood-making drugs. Such patients certainly should not be urged to take physical exercise, when by their blood condition they are absolutely unfitted for it. The harm from the exhaustion caused is far in excess of any good that will be done by the exercise. Massage and sometimes gentle hydrotherapeutic measures are of value as tending to tone up the skin and muscle circulation and, therefore, improve the general circulation.

It having been determined that the patient has a loss of hemoglobin in excess of the loss of red corpuscles, iron is certainly indicated, but the amount needed is theoretically very small, when it is remembered that from 0.005 to 0.006 gram daily is all that occurs in an ordinary diet, and that from 0.003 to 0.005 gram of iron a day will preserve the normal iron equilibrium in normal individuals. The feeding of much iron will not increase the iron output in the urine, which is always very small, but it will increase the output in the feces. The food iron, or iron administered as such, is absorbed in small amount from the duodenum, circulates in the blood, and is mostly excreted again by the epithelial cells of the intestine in the lower part of the canal. The iron content of the liver has been found increased by the administration of iron, and iron has been found in the epithelial cells of the duodenum. The epithelial cells of the lower intestine and cecum will give the reaction for iron some time after it has been administered. The administration of iron also does not much increase the amount of iron that is in the bile. Almost all the iron administered, then, passes off through the intestines without having ever been absorbed, and the excess of even the iron absorbed is quickly excreted by the epithelium of the lower intestines; therefore, the body really uses daily but a minute amount of iron. Consequently, if the iron in the hematin of the red corpuscles is all that is needed to improve an anemic condition due to diminished hemoglobin, the need will be completely satisfied and more than satisfied by one grain of iron a day. Also, it is a fact beyond all reasonable doubt that an inorganic iron is just as efficient in raising the hematin content of the hemoglobin and of stimulating the hematopoietic organs and improving the anemic condition as is any organic iron, and there is positively, absolutely, no excuse whatsoever for ordering a patient to buy a dollar bottle of some proprietary iron product, no matter how elegant that product may be. A frequent excuse made for ordering such iron preparations is that other iron does not agree with the patient's stomach, or causes indigestion, or causes headache, constipation, and other unpleasant symptoms. The only reason that such symptoms ever occur from an inorganic iron is because too much is administered. One drop of the tincture of the chlorid of iron in a little clean lemonade or orangeade is sufficient to satisfy the blood need and can never cause any harm. The sugar of iron tablet (*Eisenzucher*), i. e., the saccharated oxid of iron, in a three-grain tablet, given once a day, can cause nothing but good to the patient. The Blaud pill, or the dry carbonate of iron capsule are other elegant preparations of iron, and if three a day cause headache one a day is sufficient. The reduced iron capsule is the only other form of iron that is positively needed in the Pharmacopeia. If iron is badly needed in serious anemia, there is nothing that is such a stimulant to digestion and to the organs concerned in the production or nutrition of red corpuscles as the tincture of the chlorid of iron, and five-drop doses, in a sour menstruum as suggested may be given, in serious conditions of infection, three or four times in twenty-four hours, with marked benefit to the patient. In fact, in serious illnesses, and especially in septic conditions when the diet is perhaps iron-free, one or two doses a day of a simple iron will often protect the blood corpuscles from hemoglobin loss.

To return to chlorosis: The cause has not been definitely determined. For some reason or other these patients do not metabolize to blood iron the food iron that they ingest. This may be a gastrointestinal chemical mistake, or it may be some secretory disturbance. In this kind of anemia large doses of iron have sometimes been found of more benefit than small doses, possibly because they satisfy the chemical mistake in the intestines. Frequently the same beneficial results have been obtained by the administration of small doses of salines, as Rochelle salt or other simple laxative. This must again be improvement caused by correcting chemical changes in the intestines that are pernicious, or possibly a freer action of the bowels may prevent autoinfection from causing disturbance of the blood.

From the standpoint of disturbance of internal secretions, if chlorotic girls also have the condition of amenorrhea, there is no drug that will be of more benefit than thyroid if administered in small doses. Menstruation develops and chlorosis disappears in a large proportion of cases. It should be emphasized that the dose of thyroid in chlorosis should be small, three grains of the official preparation a day, except, perhaps, for the first week of treatment.

It is perhaps true in the conditions just discussed that manganese, in the form of the dioxid, will be of as much value as iron, but when small doses of iron are sufficient, why consider or ponder the value of manganese? Why ever use a drug of secondary importance when the drug of primary importance suffices?

Now as to the value of arsenic in this condition of chlorosis. Arsenic may be a slight stimulant to the bone marrow, and sometimes is. Fatty degeneration of the bone marrow has been caused by arsenic, as well as fatty degeneration of other organs. It is a foreign element in the system, and theoretically is a poison. It stimulates many secretions, principally that of the thyroid gland, and the administration of arsenic in exophthalmic goiter cases has repeatedly made the symptoms worse. Its slight irritant action to the stomach certainly does increase the appetite, and we are all aware of its bad digestive action when such stimulation is excessive. It may also have some antiseptic action in the bowels which may be of value in chlorosis. In chorea salol and salicylic acid, both bowel antiseptics, will often do as much good as arsenic, and it is quite possible that the choreic disturbances proceed from some kind of intestinal infection. When arsenic is in the blood in sufficient amounts to produce symptoms of its activity, such as edema under the eyes in the morning, besides gastrointestinal disturbances, it is also in sufficient amount to irritate the kidneys, and if the urine be carefully tested it will be found often to contain albumin. During such intense action the arsenic is also likely to cause a sudden loss of red corpuscles, which is the opposite of the action from it that is desired. While small doses of arsenic may be of value in chlorosis, its medicinal value is not comparable to that of iron or even thyroid.

In secondary anemias it is only necessary medicinally from the blood standpoint alone to administer daily a small dose of inorganic iron. If the cause of the anemia can be stopped, the blood will improve.

If primary anemia does not from its blood picture present the condition of pernicious anemia, and yet no secondary cause can be found, we must believe that an incipient stage of pernicious anemia may be present, and should treat the condition as actively as though the blood picture of that disease was in evidence. In these cases and in pernicious anemia the content of the red blood corpuscles is perfect or even plus, and iron does but little good. While the red marrow of bone may be actually diseased, and an insufficient number of red corpuscles be produced, or while there may be enormous destruction of the red blood corpuscles in the spleen or elsewhere, there is probably always an intestinal cause, and there may be serious liver disturbance. The frequent record of improvement in anemia from large doses of arsenic is constantly offset by the reports of cases in whom the apparent first improvement was followed by sudden, great and serious loss in the number of red corpuscles. This is especially true if, during the arsenic treatment of pernicious anemia, any infection attacks the patient. In other words, while arsenic is perhaps the most frequently successful treatment of pernicious anemia, if the patient is helped at all, it may also be a frequent cause of increased blood defect. Certainly when large doses are given, the danger of general fatty degeneration, and the danger of kidney inflammation, and the danger of localized or even general neuritis, is great. Like the bad effects of other treatments, serious injuries from arsenic have been rarely reported, and perhaps many times have not even been recognized.

It has been stated that arsenic has many times been given hypodermically with better success than when given by the mouth, and doses thus administered have been gradually increased to the point of poisonous symptoms. Recently Dr. William L. Harris, of Providence, R. I., has advocated the hypodermic injection of iron, arsenic and mercury, in small doses, as a treatment for inoperable cancer, and he states he has had good results from such treatment. He has had prepared for him by a pharmacist in Providence little glass aseptic ampoules containing the trioxid of arsenic, 1/40 of a grain, and the citrate of iron, ⅓ of a grain, in 15 minims of distilled water. If one decides to use arsenic hypodermically in anemia, certainly this combination would be a good one to use.

Sometimes most successful stimulation of the red blood-forming organs is caused by the administration of preparations of red bone marrow. It is of frequent occurrence in any kind of anemia to find the red blood corpuscles increased in number under the administration of red bone marrow.

While it can not be decided from the blood picture that a patient is not in the incipient stage of pernicious anemia, other symptoms may bear out the possibility of such a condition. It can also never be stated that a patient suffering from well-developed pernicious anemia can not improve and be practically well for a long time. Patients apparently in the last stages of exhaustion from the disease have been known to recover and to remain well for a long time. Improvements, however, in pernicious anemia are likely not to be permanent. On the other hand, some patients without the typical blood picture of pernicious anemia, and with no other evident cause of the anemia than a blood condition, go continuously and persistently down hill in spite of all treatment.

Successful Operative Treatment of Gastric Crises.—O. Foerster of Breslau calls attention to the fact that the gastric crises of tabes are always ushered in by the pain, and that this may persist alone for some time before vomiting and hypersecretion occur. The trouble is evidently the result of morbid irritation of the sensory nerves of the stomach, probably the seventh to the ninth spinal roots. He reports a case of gastric crises in a syphilitic man of 47. During the last two of the six years since they began they have been practically continuous, the vomiting keeping up for three weeks at a time, with intervals of only five or six days when, under morphin, he was able to retain food. No treatment gave relief until Foerster advised resection of the nerve roots, which he regarded as the source of the disturbances, and Küttner resected the seventh to the tenth dorsal roots. The day after the operation the patient called for food and retained it, and there has been no vomiting and no more pain in the gastric region during the two months since the operation. The case is reported in the *Allg. med. Central-Zeitung,* April 3, 1909.

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[*For other information see second page following reading matter*]

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THE RELATION OF THE SPIROCHÆTA PALLIDA TO GENERAL PARALYSIS

The *Spirochæta pallida,* concerning the etiologic rôle of which in syphilis there now is no question, has been demonstrated in chancres, syphilids, the tissues in cases of congenital syphilis, gummas, and in a few cases of syphilitic aortitis, but in so-called parasyphilitic disease, *e. g.,* general paralysis, it as yet has not been seen. By means of the Wassermann reaction, however, chemical changes peculiar to syphilis have been demonstrated in the blood serum of individuals suffering from general paralysis and locomotor ataxia and on this account the question arises as to the exact relation between the spirochete and parasyphilitic diseases. For the purpose of illuminating certain phases of this problem Browning and McKenzie[1] call attention to the points of resemblance between syphilis and trypanosomiasis. The principal points are: In trypanosomiasis the infecting agent is a protozoon, and this, they say, probably also is the case in syphilis; in experimental trypanosomiasis there occurs a change in the blood serum resembling that in syphilis and parasyphilitic diseases and manifesting itself by giving the Wassermann reaction; there is considerable similarity in regard to the early involvement of the lymph glands; the early febrile and constitutional disturbances with eruptions, the periods of latency, and the later involvement of the central nervous system, roughly correspond fairly well in the two diseases; and then the cellular changes are the same in both—lymphocytes and plasma cells playing a prominent part in the reaction, the perivascular proliferation of general paralysis being similar to that in sleeping sickness, which is the final stage of human trypanosome infection. In sleeping sickness, however, trypanosomes occur in the cerebrospinal fluid; and the failure to demonstrate the spirochete of syphilis in general paralysis is an important missing link in the chain of comparison. It is also noteworthy that, while both diseases may be transmitted to animals, yet the mode of natural infection in the case of syphilis is far different from that in the case of trypanosome infection, which is conveyed by a biting fly *(Glossina palpalis).*

In spite of the failure so far to find *Spirochæta pallida* in the cerebrospinal fluid in general paralysis there are a number of points that may be considered to speak in favor of the contention that it is still active in this disease. Thus general paralytics appear to be immune to syphilis reinfection. It will be recalled that Krafft-Ebing failed to inoculate with material from a typical hard chancre nine general paralytics who had no history of syphilis. Naturally this might be interpreted as the result of immunity to syphilis, but Neisser has shown experimentally that in monkeys reinfection is impossible if the spirochete is still present. The occurrence of a latent period between active syphilis and so-called parasyphilitic diseases has also been explained as the result of an acquired immunity, but it is also explainable in other ways. The early and effective use of drugs may cause a complete disappearance of the symptoms of syphilis, but apparently without killing the organisms completely, because the disease may reappear after some time; and a mother who gives birth to syphilitic children without herself showing the symptoms undoubtedly harbors the virus. Hence it is not unlikely that the germ of syphilis may remain latent in the body for long periods and yet be capable of giving rise to disturbances on the occurrence of favorable changes concerning the exact nature of which we know little or nothing.

It has been claimed that failure to respond to antisyphilitic treatment speaks for the view that general paralysis is not a true syphilitic disease. Here, again, the possibility that the virus may have become serum-resistant, or drug-resistant, a condition which is now well known in experimental trypanosomiasis, should not be lost sight of. Assuming that the spirochete may occur in the cerebrospinal fluid in general paralysis, Browning and McKenzie suggest that antisyphilitic treatment may not be effective in this disease on account of impermeability of the spinal membranes, which are held to be more or less impermeable not only to bacterial antibodies, but also to certain drugs, as, for instance, potassium iodid.

In view of these considerations these authors feel that the independence of syphilitic and parasyphilitic disease has not been established and that, especially in general paralysis, search for the organism of syphilis should be continued. They also suggest that, in view of the likelihood that the disease is the result of an active process, intraspinal injections of remedial agents might be tried.

A PHYSICIAN'S DAUGHTER

With the passing of Sarah Orne Jewett some time ago there went a sterling American writer who portrayed affectionately and to the life "the dry, shrewd, quick-witted New England type." She was born "down East" in Maine, the daughter of a country doctor. Making the rounds with her father amid the New England folk, she learned to know, to respect and to love them, and no one has done greater honor than she to the homespun virties, the sharp humor and the real kindliness beneath the sometimes bleak exterior of the country folk of Maine and of New England generally. She was a true artist, seeking not to produce effects, but to reproduce character and life as she saw it. What she has written will live, then, doubtless for generations after much of the present-day writing that seeks merely after effect and does not go below the surface of things has been forgotten.

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[1] Review of Neurology and Psychiatry, June, 1909.

We who are physicians can scarcely help but feel that she owed much to her intimate relations with her father that enabled her to get so near the heart of truth in life. Indeed, she as much as says so herself. "You doctors ought to be our historians," says a character in her novel, "A Country Doctor," "for you alone see the old country folk familiarly and can talk to them without restraint." Doubtless there is more than one reminiscent, if not biographic touch in this appreciative sketch of the country physician who joined knowledge of personality and of human nature to his skill in diseases, which last grew to be "a wonderful second-sight." Such, for instance, is this: "The doctor told Nan many curious things as they drove about together: certain traits of certain families, and how the Dyers were of strong constitution, and lived to a great age in spite of severe illnesses and accidents and all manner of unfavorable conditions; while the Dunnells, who looked a great deal stronger, were sensitive, and deficient in vitality, so that an apparently slight attack of disease quickly proved fatal. And so Nan knew that one thing to be considered was the family, and another the individual variation, and she began to recognize the people who might be treated fearlessly, because they were safe to form a league with against any ailment, being responsive to medicines, and straightforward in their departure from or return to a state of health; others being treacherous and hard to control, full of surprises, and baffling a doctor with their feints and follies of symptoms; while all the time Death himself was making ready for a last, fatal siege; these all being representatives of types which might be found elsewhere."

The great body of country physicians in America may well be proud of Miss Jewett and her work because it shows their attitude toward humanity in so sympathetic a light.

INTERNATIONAL CONFERENCE ON VITAL STATISTICS

The successful completion of the labors of the International Commission for the Revision of the Classification of Diseases and Causes of Death is highly gratifying to all those interested in uniform, complete and accurate vital statistics. It also marks a degree of uniformity and cooperation hitherto unattainable in this work. For many years, attempts were made in the old International Statistical Congress to formulate a classification of diseases that could be universally accepted. These efforts, however, were not successful, and until comparatively recently each nation and, in the United States, practically every city and state, followed its own methods in compiling mortality statistics. Consequently one could never be certain on examining a statistical table whether the figures given were in any way comparable to those found in other reports.

The first definite attempt at a solution of the problem was made at the session of the International Statistical Institute at Chicago in 1893, when Dr. Jacques Bertillon submitted a system that has since become recognized as the International Classification of Causes of Death. In 1898 at Ottawa, the American Public Health Association formally adopted this classification and recommended its use in all national, state, provincial and city reports in the United States, Canada and Mexico. The committee of that association at that time recommended a decennial revision in order that the classification might be kept up to date. This recommendation was approved by the International Statistical Institute, and in 1900 the French Government called the first meeting of the international commission at Paris. Unfortunately for the progress of vital statistics in the United States, however, medical men and registration officials were not represented, and as a result the revision was not in all ways satisfactory. The delegates to the second decennial revision, however, were admirably chosen, and it is anticipated that their work will help to solve the problems of vital statistic registration in this country.

Particularly gratifying is the recognition given the medical profession and the American Medical Association in the selection of three representative physicians, one of them the chairman of the Association Committee on Nomenclature and Classification of Diseases, to represent the United States on the International Commission. The work of Dr. Foster and his associates is of the utmost importance and is deserving of the recognition which has been accorded it.

TREATMENT OF PELLAGRA

Much interest has been aroused during the last two or three years in the subject of pellagra. A study of the disease in the United States has thus far shown that it is widely distributed throughout the south, and is present in some localities in the north and middle west. The question of prognosis and treatment is naturally, therefore, one of much interest. Dr. C. H. Lavinder,[1] of the U. S. Public Health and Marine-Hospital Service, who for more than a year has been devoting his time to a study of the disease, in a recent article, has given a brief review of the subject.

He states that the prognosis must invariably be considered as grave, and that complete recovery can seldom be assured. Reliable statistics on the subject in the United States are practically limited to asylum cases, and give a mortality of 67 per cent. It must be borne in mind, however, that asylum cases are undoubtedly the more advanced and hopeless ones, and for that reason will give a mortality much above the average. Lombroso gives statistics of hospital cases in Italy in 1883 and 1884, showing a mortality of 13 per cent., whereas Wollenberg gives Italian statistics for 1905 showing a mortality of a little over 4 per cent. The disease resembles tuberculosis, both in that it is an insidious and chronic condition, and that much depends on early diagnosis and treatment, prognosis in early cases being far better than in advanced ones. The importance of this is apparent when it is considered that the disease is an intoxication, and that it is probably associated with diseased corn products used as food.

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[1] Public Health Reports, Sept. 10, 1909. Copies of this article can be obtained by making request to the Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

Predisposition is believed to be an important factor in this disease. Lowered physical resistance, worry, insufficient food, bad housing and alcoholism are supposed to render an individual more susceptible. In Italy, laws have been passed regulating the use and storing of corn and its derivatives, institutions have been established for the care and treatment of pellagrins, improved agricultural methods are encouraged, and assistance is given to the sick in many ways by the government.

In the treatment of patients, Lombroso recommends a liberal diet; in some cases he uses baths and cold douches, believing them to be of benefit in certain cases with nerve and skin manifestations; he has found arsenic a valuable remedy, and sodium chlorid of service.

Good results have been reported from the use of arsenical preparations, and transfusion of blood from cured individuals to the sick has been tried with apparent success.

THE UNSATISFACTORY CANADIAN PATENT MEDICINE ACT

On another page[1] we give the essential features of the new Canadian "Act Respecting Proprietary and Patent Medicines." A careful perusal of this act will leave the impression that the law has been framed with a view rather to appeasing public clamor than to furnishing public protection. The law defines "proprietary or patent medicine," in the sense in which the terms are used in the statute, as any artificial remedy or prescription whose name, composition or definition is not to be found in the various pharmacopeias or approved formularies or—and herein lies "joker" number one—which has not the "true formula or list of medicinal ingredients, which must not contain cocain," printed on the label or wrapper. This would seem to mean that nostrums of the most dangerous and objectionable type would not come under the jurisdiction of the new act, providing they contained no cocain, and their ingredients were published on the label. That is to say, such nostrums as Peruna and Orangeine, whose manufacturers claim to publish the "formulas," would not be "patent medicines" within the meaning of the new Canadian law! Nor is this the only weakness in the new statute. A poison schedule is given and any "patent medicine" containing one of the scheduled drugs must have the name of such drug—nothing is said of the quantity—"conspicuously printed" on the label and wrapper. Provided, however—"joker" number two—that if the manufacturer tells the authorities the quantity of any such scheduled drug his nostrum contains he may be permitted to sell his "patent medicine" without printing the name of this drug on the label "if it appears to the minister that the proportion of the drug used is not dangerous to health"! The potentiality for harm of this provision is limited only by the judgment of the man to whom is entrusted the enforcement of the act. It would seem that the new law will actually protect the Canadian public against cocain-containing nostrums; but from the innumerable other vicious forms of self-administered medicaments the act seems to offer tempting opportunities for the unscrupulous manufacturer to profit at the expense of the people. It may be that if the law is broadly interpreted and wisely administered our northern neighbors may obtain that measure of protection which they evidently desired; should it be enforced, however, with that slavish adherence to the letter, rather than to the spirit, that too often characterizes the execution of laws, we fear that Canadians will soon awaken to the fact that their representatives have handed them a legislative "gold-brick."

Medical News

CALIFORNIA

Will Teach Tropical Medicine.—The faculty of Oakland College of Medicine has instituted a chair of tropical medicine, the first occupant of which is Dr. Creighton Wellman.

Hospital Notes.—The San Jose General Hospital was formally opened to the public September 3.——Plans have been completed for the new St. Francis Hospital, San Francisco. The building, equipment and furniture will cost about $200,000, and will be under the direction of Drs. John Gallwey, Walter B. Coffey, Wallace I. Terry, John H. Graves and Malcolm O. Austin.

New Medical Department Opens.—A meeting of the assembly was held September 8, for the formal assimilation of Cooper Medical College, San Francisco, with Leland Stanford, Jr., University. The address of the occasion was delivered by Dr. Henry Asbury Christian, Dean of Harvard Medical School, on "A Career in Medicine and Present-Day Preparation for It." Dr. Henry Gibbon spoke on behalf of the corporation of Cooper Medical College and President David Starr Jordan on behalf of the university.

Personal.—Irving Hardesty, Ph.D., of the University of California, has been appointed professor of anatomy in Tulane University, New Orleans.——Dr. Harold A. Miller has been elected president and Dr. Lewis W. Stidham, secretary, of the board of health of Alameda.——Dr. William A. Weldon, San Pedro, Dr. John F. Spencer, Gardena, and Dr. Pierronnette, Wilmington, have been appointed assistant health officers of Los Angeles county.——It is announced that Dr. Wallace I. Terry, San Francisco, chief surgeon of the Emergency Hospitals, will resign to take effect October 30.——Dr. Henry C. McClenahan, for six years superintendent of the Gardner Sanitarium, Belmont, has resigned, and will go to Europe for a year.

GEORGIA

Tuberculosis Clinic for Negroes.—A clinic and dispensary for the treatment of tuberculosis among negroes was opened August 3 in Atlanta, with Dr. J. Ansley Griffin in charge, and Drs. Julius E. Sommerfield and Wesley E. Taylor as assistants.

Personal.—Dr. Harry H. McGee was appointed city physician of Savannah, ad interim, vice Dr. Lawrence Dee, resigned, September 1, and Dr. B. H. Gibson was elected city physician September 8.——W. D. Sloan, Milltown, and Jack Standifer, Blakely, have been appointed by the governor beneficiaries of scholarships at the Medical College of Georgia, Augusta.

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[1] Pharmacology Department, this issue.

ILLINOIS

Bequest.—By the will of Lawrence McMahon of Urbana, St. Elizabeth's Hospital, Danville, receives a bequest of $700.

Presentation to Dr. Greene.—On September 11, Dr. James L. Greene, recently appointed alienist of the State Board of Control, was called to the amusement hall at Kankakee State Hospital and presented with a diamond shirt-stud by the employees and a silver fruit dish and grape shears by the heads of the departments.

Personal.—Dr. Frank Parsons Norbury, Jacksonville, formerly resident physician of the Pennsylvania Institute for the Feeble-Minded, assistant physician of the Jacksonville State Hospital, and later proprietor of a private sanitarium in Jacksonville, was appointed superintendent of the Kankakee State Hospital, September 16, vice Dr. James L. Greene, resigned.——Dr. Francis W. Barton and family, Danville, sailed for Europe, September 22.——Dr. Carl J. F. Rochow, physician in charge of the Illinois Asylum for Feeble-Minded Children, Lincoln, has resigned.——Dr. Karl F. Snyder, Freeport, has succeeded Dr. John F. Fair, resigned, as local surgeon to the Illinois Central Railroad.——Dr. C. R. Spicer, Springfield, was elected national medical examiner of the Yeomen of America, September 17.

Chicago

Personal.—Drs. E. Fletcher Ingals, George E. Shambaugh and W. E. Buehler have returned from Europe.——J. B. Gookin, city chemist, resigned September 17, to take a similar position in the state food laboratories.—Dr. Robert H. Gault has been appointed instructor in psychology in Northwestern University.

Medical College to Open.—The opening exercises of the College of Physicians and Surgeons, the College of Medicine and Surgery of the University of Illinois, will be held September 28, in the college assembly hall at 8 p. m. Dr. William Allen Pusey will deliver the opening address.

Sources of Infection.—The chief of quarantine and disinfection of the health department has made investigation to determine the sources of infection of cases of scarlet fever and diphtheria reported during the week ended September 18, and finds the following to be the most prominent factors:

> Association with unrecognized case at school—10 cases. Association with a case in the immediate vicinity—20 cases. "Following a cold"—only a predisposing factor, if true. More likely, the first signs of the illness were taken for a "cold." And here is where a danger lies to the patient and the community. At the playground. By coming in contact with mild undeclared or convalescing cases—4 cases. From unreported case—3 cases. Insanitary premises, only a predisposing factor. Previous case in family—2 cases.

It is always association with a previous case, in one way or another. The largest number of cases are found to originate from other cases in the immediate vicinity, and here the blame falls directly on the parties concerned.

IOWA

No Signs for Physicians' Homes.—It is reported that medical men of Des Moines are planning a campaign for the elimination of physicians' cards or signs from their residences.

Personal.—Dr. O. B. Hawley, Corning, received painful injuries in a fall from an automobile, September 1.——Dr. Smith A. Spillman, Ottumwa, who was operated on, August 26, for the removal of gall-stones, is reported to be securely convalescent.——Dr. Louis B. Carson, Maquoketa, has been seriously ill with septicemia due to an operation wound.——Dr. Robert J. Nestor has been elected health officer of Waterloo, vice Dr. Guilford H. Sumner.

KENTUCKY

Donation to Sanatorium.—Hon. R. T. Lightfoot, Paducah, and Superintendent Will Thompson of the McCracken County Sanatorium, have donated to the county the concrete material and rough lumber necessary for the erection of a tuberculosis hospital at the county poor farm.

National Guard Appointments.—Dr. Charles W. Hibbitt, Louisville, has been promoted from captain and assistant surgeon to major and surgeon of the First Infantry; Dr. George H. Day has been commissioned captain and assistant surgeon in the same organization.——Dr. Thomas C. Holloway, Lexington, has been commissioned major and surgeon.——Dr. Lee C. Redmon, Lexington, has been commissioned captain and assistant surgeon and assigned to duty with the Second Infantry.

MARYLAND

Fountain Dedicated.—At Middletown, on September 11, a public drinking fountain was dedicated, the gift of Dr. S. Philip Appleman, Braddock Heights, in memory of his deceased parents.

State Society Meeting.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held at Braddock Heights, September 15. In his presidential address, Dr. George M. Linthicum, Baltimore, took issue with the national referee board as to the harmlessness of benzoate of soda. The association is making plans to use its influence in the next legislature in behalf of a pure food, drug and beverage law; a slaughter-house and meat inspection law; a dairy and cow inspection law; a law providing for the state care of the insane; a midwifery law; adoption of the Crede method of prevention of ophthalmia neonatorum, and provision for an appropriation for hospital and medical schools and for the library and hall of the faculty.

Baltimore

Personal.—Dr. Robert Talbott Miller, Baltimore, has been appointed surgeon in chief of St. Francis Hospital, Pittsburg. ——Dr. Benjamin Frayser has been appointed resident physician of the Pottsville (Pa.) Hospital.——Dr. Charles Metcalfe Burns has been appointed instructor in Johns Hopkins Medical School.

MICHIGAN

New University Planned.—A plan is proposed to amalgamate the Detroit College, Detroit College of Law and the Detroit College of Medicine and Surgery into an institution to be known as the University of Detroit.

Personal.—Dr. Henry W. Stiles of the University of Michigan has been appointed assistant professor of anatomy in Tulane University, New Orleans.——Dr. Edward V. Howlett, Trimountain, a member of the staff of the Copper Range Consolidated Mining Company, has resigned.——Dr. Nelson R. Gilbert, Bay City, has been reelected for the seventh time president of the board of control of the Home for Feeble-Minded and Epileptics, Lapeer.

MISSISSIPPI

Tuberculosis Camp to be Permanent.—The trustees of the Mississippi Insane Hospital, Jackson, have decided that the tuberculosis camp established there during Governor Vardaman's administration, shall be made permanent.

Personal.—Dr. W. R. Card, for six years assistant physician at the East Mississippi Hospital for the Insane, Meridian, has resigned to take effect October 1, and will move to Biloxi.——Dr. William W. Mathis, Orwood, has been appointed a member of the State Board of Health, vice Dr. Robert A. Seale, Holly Springs, resigned.

NEW MEXICO

Sanatorium Improvements.—The Cottage Sanatorium, Silver City, is erecting an administration building to provide the necessary accommodations for the medical and business staffs of the institution.

Do Not Wish Names Mentioned.—At the meeting of the Santa Fe County Medical Society, August 26, the secretary was instructed to request editors of local papers to prevent the appearance of the name of any physician in connection with the announcement of sickness and accidents of any person in the community.

Medical Society Organized.—The Pecos Valley Medical Society was organized in Roswell, August 31, with thirteen charter members and the following officers: Dr. J. E. Caldwell, Hagerman, president; Dr. O. R. Haymaker, Roswell, vice-president; Dr. Frederick J. Walters, Roswell, secretary-treasurer, and Drs. David H. Galloway, Roswell, Frederick F. Doepp, Carlsbad, and William W. Phillips, Roswell, censors.

NORTH CAROLINA

Pellagra in State Hospital.—Dr. James McKee, superintendent of the State Hospital for the Insane, Raleigh, reports the presence of 14 cases of pellagra in the institution.

Medical Colleges Open.—The seventeenth annual session of the North Carolina Medical College, Charlotte, opened September 8, with about 100 students in attendance.——The eighth annual session of the University of North Carolina Medical School, Raleigh, began September 8. The new members of the medical faculty are Dr. Watson S. Rankin, professor of general hygiene and preventive medicine; Dr. John S. McKee, demonstrator of obstetrics; and J. M. Harper, assistant demonstrator of pathology. A free out-patient clinic is to be conducted in connection with the school.

NEW YORK

Health Department at State Fair.—Arrangements have been made for an extensive exhibit illustrating the work done by the State Department of Health to be placed in the State Fair to be held in Syracuse on September 13 and subsequent days.

Tuberculosis Exhibitions at Fairs.—The State Charities Aid Association and the State Department of Health are once more cooperating in a joint campaign for the prevention of tuberculosis. Exhibits will be sent to 42 county fairs this fall.

Need of an Alcoholic Ward.—The vice-president of the State Prison Commission, in a report on the city prison in Raymond street, Brooklyn, complains of lack of accommodation for the care of persons suffering from alcoholism. It is absolutely impossible under present conditions to do them justice. He suggests that an alcoholic ward be installed in the Cumberland Street Hospital as soon as possible.

Superintendent of Hospital Responsible.—Attorney General O'Malley has advised the secretary of the board of trustees of the State Hospital for Tuberculosis, Raybrook, that the treasurer of the institution is not responsible for the defalcation of about $9,000 discovered last June in the accounts of the purchase clerk, and that as the purchase clerk was subordinate to Superintendent Garvin and his agent, and as the custody of the funds was placed in the superintendent's charge by the law, he was personally liable for the amount of the defalcation.

New York City

For Crippled Children.—The Darrach Home for Crippled Children has received $10,000 from the estate of the late Benjamin Ellis Martin.

Steamers Held at Quarantine.—The steamer *Martha Washington* from Patras and Palerma was held up at quarantine because of a case of smallpox in the steerage.——The steamer *Neapolitan Prince* from Rotterdam was also detained at quarantine for a thorough inspection.

For Tuberculous Children.—The Board of Education is making an effort to provide for tuberculous children and for those who may become tuberculous if not given proper care. They have asked for money to fit up twenty practically open-air school rooms for these children. Classes for the blind have also been established in connection with the public schools.

Reception to Pole-Finder.—On September 14, at a meeting of representative medical men of Brooklyn, in which the medical societies of Brooklyn and Long Island were represented, a committee composed of Drs. Walter B. Chase, Elias H. Bartley and Alfred Bell was appointed to tender a public reception to Dr. Frederick A. Cook at such a date as may suit his convenience.

Money for Charity.—The will of Michael Horn leaves bequests to forty-three charitable and philanthropic institutions. Among the larger bequests are $5,000 to Mount Sinai Hospital; $2,500 to the Montefiore Home; $500 each to the Flower Hospital, J. Hood Wright Hospital, German Hospital, Nursery and Child's Hospital, and Sydenham Hospital; and $750 each to Blackwell's Island Hospital, Beth Israel Hospital, Home for Aged and Infirm Hebrews and Jewish Hospital, Brooklyn.

Buffalo

Medical Examiners of Schools.—The acting health commissioner, Dr. Francis E. Fronczak, has appointed the following medical examiners for public schools: Dr. Franklin W. Barrows, District A; Dr. William C. Callanan, District B; Dr. David E. Wheeler, District C; Dr. Arthur C. Schaefer, District D, and Dr. Daniel V. McClure, District E.

Maternity Department in General Hospital.—Work which has been under way for several months at the Buffalo General Hospital for the perfection of a maternity ward, has been completed, and the city now has a modern obstetric department in which patients will be cared for by nurses specially trained for this class of work. Several nurses connected with the hospital who were sent to New York for a course of study at the Sloane Maternity, have now returned properly equipped for the care of cases in the ward.

District Society Meeting.—The fourth annual meeting of the Eighth District Branch of the Medical Society of the State of New York was held in Buffalo, September 8, and the following officers were elected: President, Dr. Edward Munson, Medina; vice-presidents, Drs. Thomas H. McKee, Buffalo, and John S. Wright, Perry; secretary, Dr. Carl S. Tompkins, Buffalo, and treasurer, Dr. Charles A. Wall, Buffalo. The society adopted resolutions urging the city of Buffalo to build a new isolation hospital at the earliest possible moment.

OHIO

Cocain Sellers Fined.—G. W. Reese and Manie Strauss, druggists of Cleveland, charged with the illegal sale of cocain, are said to have been found guilty and fined $700 each. The prosecution was undertaken by the State Board of Pharmacy.

Sanatorium Notes.—The commissioners of Clark, Champaign, Madison and Greene counties met in Springfield, August 27, and purchased for $35,000 the Hazelwood Place as a site for a joint tuberculosis hospital. The formal transfer was made on September 4.——The Ohio Sanatorium Company has sold its Columbus property known as Park View Sanatorium for $27,500 to the Protestant Hospital Company.

Personal.—Dr. Joseph C. Placak, for several years medical director of the Tuberculosis Sanatorium of the Department of Charities of the City of Cleveland, Warrensville, has resigned, to take effect October 1.——Dr. Charles H. Browning, Oberlin, who has been ill in the Cleveland Hospital, has returned much improved in health.——Dr. Frank C. Chvatal has been appointed city physician for the sixteenth district of Cleveland, vice Dr. John A. Hurt, resigned.

Elections.—At the annual election of the Stark County Medical Club at New Berlin, Dr. James Fraunfelter, Canton, was elected president, and Dr. Olivia G. Ricksecker, Wilmot, secretary-treasurer.——A Medical Library Club has been organized at Columbus, which will install and maintain a medical library in the public library. The following officers were elected: Dr. David N. Kinsman, president; Dr. Charles J. Shepard, vice-president; Dr. T. O. Fred Fletcher, secretary-treasurer, and Drs. Francis W. Blake, James F. Baldwin, John H. J. Upham, and William J. Means, members of the executive committee.

OREGON

Case Not Bubonic Plague.—After careful examination to determine the disease from which John McCarthy died at Portland, August 8, Dr. Ralph C. Matson, who has conducted the investigation, announces that he had found no positive signs of plague. He believes the case was one of septicemia.

Dedicatory Services.—The Bishop Morris Memorial Chapel in the new addition to the Good Samaritan Hospital, Portland, erected at a cost of $115,000, has been formally dedicated by Bishop Scadding. The addition to the hospital is a memorial to the late Right Rev. B. Wistar Morris, formerly Bishop of Oregon.

Personal.—Dr. Henry C. Jefferds, Portland, is reported to be critically ill with cerebral hemorrhage in the Good Samaritan Hospital.——Dr. Esther C. Pohl, Portland, is reported to be ill in St. Vincent's Hospital.——Dr. William Kuykendall, Eugene, has been elected grand physician by the executive council of the Women of Woodcraft.——Dr. Calvin S. White, who has been seriously ill in St. Vincent's Hospital, is reported to be convalescent.

PENNSYLVANIA

Memorial Tablet Unveiled.—A mural bronze tablet in memory of the late Dr. John Fay was presented and unveiled at the Altoona Hospital, September 16. Dr. William H. Howell presided and Dr. William S. Ross made the presentation of the tablet. The tablet was accepted by H. J. Cornman on behalf of the board of trustees of the hospital.

Personal.—Dr. William J. Davidson, physician to the Pressed Steel Car Company's works, McKee's Rocks, was severely wounded in the neck and arm during the recent labor riots.——Dr. George W. Carr has been appointed associate ophthalmologist to the Wilkes-Barre City Hospital.——Drs. Thomas G. Jenny and Henry Klinzling have been reappointed members of the Pittsburg Typhoid Fever Commission.

Unused Hospital to Be Opened.—St. Margaret's Memorial Hospital, Pittsburg, which was completed ten years ago, but remained unused because no funds had been provided for its maintenance, will be opened early next year, as the interest on the bequest now amounts to a sufficient sum to justify the opening of the institution. The building was originally erected by money from the Shoenberger estate, but as a provision of the will required that it be operated as a strictly sectarian institution, it was thus cut off from state aid.

Aids for the Decrease of Infant Mortality.—In the bulletin of the Department of Health and Charities of September 5, attention is drawn to the small number of deaths of children under 5 years of age, as compared with that of one year ago, namely, 2,004 children during the summer of 1909, or 14 per cent. less than during the summer of 1908. In 1908 the mortality was 2,341 children during the summer months. As many of these deaths were due to improper feeding and poor ventilation, Director Neff is anxious that the Philadelphia Alliance for the Care of Babies, the Board of Education, Home School League and allied societies who commenced in the late spring to educate the young mother in the care of the baby in hot weather through lectures and home visitations should continue these demonstrations during the winter, and ask for volunteers in this life-saving work. There are many private schools in the city in which a smaller allowance per cubic feet of air space for each pupil is provided than is required in the tenement houses in the slum districts.

Philadelphia

College of Physicians Nearly Completed.—The new building for the College of Physicians at Twenty-second and Ludlow streets, which is practically completed, is to be formally opened November 10. The library of 300,000 volumes has already been installed, and the lecture, reading and reception rooms are receiving their finishing touches.

Personal.—Drs. Ross H. Skillern, Milton B. Hartzell, Theodore H. Weisenburg, R. R. Sinclair, Henry W. Cattell and Edward Martin have returned from Europe.——Dr. Paul G. Weston has been appointed pathologist at the Municipal Hospital.——Dr. Frank N. Yeager has been appointed physician to the health department and detailed by Dr. Neff to study infantile mortality and its causes.

Medical Colleges Open.—The annual opening of the Medico-Chirurgical College was held September 23.——The eighty-fifth annual opening of Jefferson Medical College was held September 24, and the annual address was delivered by Dr. J. W. Holland, dean of the faculty.——The exercises introductory to the session of 1909 and 1910 of the Woman's Medical College of Pennsylvania were held at the college September 22.

Class Reunion.—The class of 1885 of Jefferson Medical College announces its intention of holding a reunion in Philadelphia about April 2, 1910, on the occasion of the twenty-fifth anniversary of the graduation of the class. Members of the class are requested to communicate with Dr. Joseph D. Orr, class president, 215 Second street, Leechburg, Pa., and thereby facilitate the necessary arrangements for this social function.

Patients Benefited at the City's Farm for the Insane.—The result of the first year's work at the city's farm for the mildly insane has been highly satisfactory. More than a year ago the Byberry farm of 878 acres was purchased and a large number of the mildly insane patients formerly housed in the insane department of the Philadelphia Hospital were transferred to Byberry. The work on the farm has been executed by the insane patients and the receipts from vegetables and crops raised on the farm will aggregate $10,000. The principal object sought, namely, the improvement of the patients, and the pure air and steady exercise has brought about most excellent results. In some instances patients have been restored to mental health. Fifty patients are being treated at the farm at the present time and accommodations will be made later on for all those who can be trusted in outdoor work. Dr. Howard E. Bricker is in charge.

TENNESSEE

Pellagra Contagious.—At a meeting of the Tennessee State Board of Health, September 14, it is reported that it was decided to order the isolation of all cases of pellagra, the board expressing the opinion that the disease is communicable.

Tuberculosis Ward to Be Built.—It is proposed to erect a separate tuberculosis ward to be known as "The Boyd Memorial Tuberculosis Ward," in connection with the Knoxville General Hospital, in memory of the late Dr. John Mason Boyd.

Personal.—Dr. Frank S. Raymond, Memphis, is reported to be critically ill at the Ranch Sanatorium in Lincoln, N. M.——Dr. Ebb C. Johnston, Chattanooga, who had a cerebral hemorrhage at Hot Springs, Ark., August 16, has been brought home and taken to Erlanger Hospital.

Medical Schools Open.—Vanderbilt University, Nashville, opened for its annual session September 22.——The new medical college formed by the union of the medical departments of the University of Tennessee and the University of Nashville opened for its initial session September 12. Dr. Henry S. Morris has been elected to the chair of genitourinary diseases in the college.——Chattanooga Medical College opened for its twentieth annual session September 23.——The medical department of Lincoln Memorial University, formerly known as the Knoxville Medical College, will open for the year, October 1.

WASHINGTON

Hospital Annex.—The addition to St. Joseph's Hospital, Bellingham, the foundation of which has already been completed, is to be two stories in height and will cost $45,000.

Sanitaria Burn.—Two upper floors of the Kearney Sanitarium, Spokane, were burned September 4. The nine patients in the building were removed without injury.——The private sanitarium of Dr. Charles B. Alexander, Malton, was totally destroyed by fire, September 8, with a loss of about $5,000.

Rush Alumni in Washington.—At the recent meeting of the Medical Association of the Pacific Northwest, the Rush Medical College Alumni Association of the State of Washington was organized, and the following officers were elected: President, Dr. Samuel J. Holmes; secretary, Dr. Frederick Bentley; and treasurer, Dr. Edward P. Fick.

Tuberculosis.—King County Antituberculosis League appeared before the Seattle council finance committee, September 3, asking an appropriation of $30,000 for the carrying on of the additional antituberculosis campaign during the coming year.——King county has given up the attempt to establish a camp for tuberculosis in the suburb of Tukwila, as the mayor protested and threatened arrest to any one who attempted to install a camp in that place.

WISCONSIN

To Erect Sanatorium.—The Wisconsin Council of the Improved Order of Red Men, at its annual convention in Galesville, August 12, decided to build a tuberculosis sanatorium in Douglas county, to cost $7,000.

Personal.—Dr. John F. Brown, physician at the state penitentiary, Waupun, has been appointed superintendent of the State School for the Blind, Janesville.——Dr. Louis Breitzmann, Menasha, is said to have been declared insane, and committed to the Northern Hospital for the Insane, Oshkosh.——Dr. J. P. Williams, formerly of Dodgeville, who was arrested at Janesville on the charge of practicing medicine without a license, is said to have been discharged on proving his registration.

Women Physicians Organize.—The Wisconsin Medical Women's Society was organized at Oshkosh recently, and the following officers were elected: President, Dr. M. Adeline Riddle, Oshkosh; vice-president, Dr. Anna S. B. Corr, Juneau; secretary, Dr. Minnie M. C. Hopkins, Oconto; and treasurer, Dr. Johanna M. Droppers, Milwaukee, and board of censors, Drs. Luella E. Axtell, Marinette, Belle Painter Nair, Port Atkinson, and Ella Chaffee-Fay, Whitewater. The next annual meeting will be held in Milwaukee.

GENERAL NEWS AND COMMENT

New Medical Journal.—The latest aspirant for honors in the field of medical journalism is the *Journal of the National Medical Association*, an association with a membership limited to colored physicians, dentists and pharmacists. The journal is published quarterly at the Tuskegee Institute, Alabama, and is creditable in every way.

Personal.—Dr. Juan Guiteras has consented to remain as director of sanitation and chairman of the National Board of Health for Cuba, as the government has now appropriated sufficient funds for the work of a department of sanitation.——Dr. Charles E. Ruth, Ponce, Porto Rico, formerly of Keokuk, Iowa, is said to have been mulcted in damages of $20,000 recently, for leaving a piece of gauze in the abdomen after abdominal section.

Mississippi Valley Medical Association.—The thirty-fifth annual meeting of the Mississippi Valley Medical Association will be held in the Southern Hotel, St. Louis, October 12-14, under the presidency of Dr. John A. Witherspoon, Nashville, Tenn., and gives promise of exceptional excellence, both from a scientific and a social view-point. Dr. Sherman G. Bonney, Denver, will deliver the oration in medicine, and Dr. John B. Deaver, Philadelphia, the oration in surgery. Among the interesting topics for discussion at this meeting are exophthalmic goiter, pellagra, and uncinariasis. The St. Louis Medical Society is the host of the association, and has made extensive plans for the entertainment of its visitors.

Individual Drinking Cups.—The Illinois Central Railroad is making arrangements to place individual drinking cups in all coaches of every description over the entire system. These cups will be placed in slot machines beside the water cooler, but will not displace the glass or free cups heretofore in use.——The Chicago and Northwestern Railroad has acceded to the request of the Iowa State Board of Health to abolish public drinking cups on all their trains in the state. The company has informed the secretary that it will place sanitary paper cups on sale in its cars.

BUDAPEST LETTER

(From Our Special Correspondent)

Budapest, Sept. 7, 1909.

International Medical Congress

[An account of the scientific proceedings of the Congress will be found in the Department of Society Proceedings.]

The eventful week is over. No longer are Congress badges to be seen on the breasts of thousands of strangers hurrying to and fro. Budapest has returned to its normal state of existence. It was with some apprehension that I returned to the capital of Hungary for another congress; but to-day it is a satisfaction to be able to record the solid progress that has been accomplished. When last at Budapest the press representatives had to threaten to go on strike before any sort of facilities could be obtained; while, on the present occasion, all they asked was immediately granted. But in the interval the medical press has been organized into an international association. The demands now made are no longer the sometimes querulous and divergent exigencies of isolated individuals; they embody what the authorized representatives of the medical press, after meeting and discussing, agree to be necessary.

Modern Hungary and Scientific Progress

The Congress of 1894 was the first attempt made on a large scale to show that Hungary desired to join the comity of self-governed nations and was now attempting to play its part in the advance of universal science. For this reason it seems to be of the greatest interest to hark back and compare the Congress of 1894 with that of 1909, and see what has been accomplished by the childhood of a new nation.

In one sense, Hungary may claim to be an old nation. It is old enough to have been conquered and overrun by the Mongols in 1241. After recovering from this invasion, and till the all-conquering Turk came in 1541, there may be said to have been a kingdom of Hungary. That kingdom was shattered by the Turkish domination, which lasted 150 years. Finally the Germans helped to drive the Turks away and Hungary became attached to the Hapsburg dynasty and had no regular existence of its own till the restoration of a separate Hungarian constitution in 1867. Hungary then ceased to be a part of the Austrian Empire and the Austrian Emperor was solemnly crowned king of Hungary. Consequently, whatever shortcomings there may be, there is a tendency to plead, as an excuse, that Hungary has only been an independent nation for a very short time. Hungary, however, was more free before the constitution was proclaimed than is generally admitted, and is not so free, since 1867, as the patriotic Hungarian would make believe. In any case, it is hard to place much faith in the freedom of a country where only a very small proportion of the inhabitants have the right to vote. It is true, however, that modern methods of existence are spreading to Hungary. It is no longer an exclusively agricultural country. In 1869 the proportion of the population engaged in industrial pursuits only amounted to 4.19 per cent. of the total. This proportion had increased to 13.5 per cent. in 1900. In 1880 there were only 1,197 workshops, factories, etc., employing more than 20 workmen, and in 1900 there were 2,474 such establishments. The railway lines in 1869 measured 2,736 kilometers, while in 1901 their length amounted to 17,274 kilometers. This rapid economical development, rather than mere political modification, better explains the awakening interest of Hungary in all that relates to the progress of science, whether it be medicine, hygiene or chemistry.

Congress Rivalries

The question now naturally arises whether the difference between the Budapest Congress of 1909, when compared with the Congress of 1894, corresponds in due ratio to the growth of the nation as illustrated by the statistics given above. To imagine that such congresses are purely scientific meetings is of course a complete illusion. A government and a municipality do not spend large sums of money merely for the abstract love of science. Though the Congress was organized only for medical men, many of its members are official delegates of the governments of their respective countries, act under direct instructions from the minister of foreign affairs of their country, or are officials holding high positions in administrative services. This indeed complicates the situation. Thus, at Budapest, instead of planning to organize a congress where the discussions should be of the greatest possible use, therefore limiting the number of papers and members so as to secure the highest quality of contributions, the object, on the contrary, was to attract the largest possible crowd and to produce a dazzling effect. There were eighteen sections of the last Congress which met at Lisbon three years ago; then there must be twenty-one sections at Budapest. There were close on 3,000 members inscribed for the Lisbon Congress; then there must be 4,000 or 5,000 members for the Budapest Congress. Brilliant receptions and festivities were held at Lisbon; then something far more vast and extravagant must be done at Budapest. It is all very well to talk of medicine and of science, but first of all the world must be taught to admire Magyar magnificence and be made to realize that henceforth Hungary is worthy of a more important place in the comity of nations. Of course the Congress is not political, but all the same the above were the predominating considerations. Now, in such endeavors, it must be admitted that, in 1894, the Hungarians were not altogether successful. There were, on that occasion, about 2,500 members. The sections were very badly attended, though they contrived to carry more than a hundred different resolutions. But what marred the effect of the Congress was the admittance of a great number of irresponsible individuals. It would be better if local individuals should be made to pay an entrance fee four or five times higher than the members who come from abroad, as the former have but slight or no traveling expenses to bear. In 1894, a great crowd, who had little or nothing to do with hygiene, paid the $4 entrance fee, and in exchange participated in banquets, excursions, etc. On the other side must be placed the abundant hospitality shown, the excellent deportment and refined manners prevailing at some of the private receptions, the wonderful and pleasurable excursions organized, and the great cordiality displayed on every occasion by the Hungarian hosts towards their foreign guests.

The Present Congress

To-day there is a distinct improvement. Either things have been better managed, greater care has been taken regarding people admitted to the Congress, or better manners have been acquired in the lapse of fifteen years. In any case, during the Congress just terminated, while difficulties arose, mainly due to the fact that visitors were too numerous, there was no behavior of a character likely to compromise the dignity of the Congress. There is another important step forward to be recorded. The Hungarians have recognized that this is above all the century of social legislature. The creation at the universities and faculties of a chair of medical social science was urged by more than one speaker. The literature distributed by the local organizing committee was all intended to show that Hungary feared to be thought backward in this good cause. There was one volume describing the poor relief and the hospitals of Hungary. Another volume dealt with the sanitary services of the country, a third with the care of childhood, and a fourth with the treatment of the insane. Then the minister of public worship and public education, Count Albert Apponyi, sanctioned the issue, at the public expense, of a large and elaborately illustrated volume describing the faculties of medicine of Budapest and of Kolozsvar. A copy of this ponderous volume was given to all the members of the Congress. Like the other smaller books, it is printed in French, so that the great majority of the members will be able to read and understand this very notable effort to show that Hungary desires to take rank in regard to higher education and the social legislation. Unfortunately, much remains to be done. Misery is widespread among the people. Medical relief is not so readily forthcoming as a perusal of these books might lead a casual observer to imagine. For a population of 19,900,000 there were in 1906 only 5,370 physicians, 12,800 midwives, and 2,204 dispensing chemists. This was equal to 26.4 doctors, 62.9 midwives, and 11.3 dispensing chemists for every 10,000 inhabitants. There were during the same year 443 hospitals containing 37,545 beds where 366,200 patients had been treated or 815 patients per hospital. Altogether, there had been 11,182,000 days of treatment, which equals 2.2 hospitals and 1,789 days of treatment for every 100,000 inhabitants. Thus Hungary only stands in regard to hospital accommodation on a level with Galicia, Bukovina, Dalmatia and the most backward provinces of the Austrian Empire. But it is improving. For instance the statistics of the year 1902 show that there were 21.4 doctors, 40.5 midwives, and 9.7 dispensing chemists per 10,000 inhabitants. Comparing these with the similar figures just given for the year 1906 it will be seen that the increase is very considerable for so short a period as four years. But if the figures as to the wages earned by the population are investigated, then we shall wonder how and by whom these medical practitioners can be paid. In the rural districts the agricultural laborers earn $60, $80 and $100 per annum. In the United States I have seen these same men merely working as day laborers and yet earning as much in a day as they were able to obtain in their own country as the reward of a whole week's work.

The Archduke and the Right to Happiness and Health

Bearing these facts in mind, I was not a little startled by the speech with which the Archduke Joseph inaugurated the Congress. He said: "To be at the service of humanity, to consecrate all the physical forces and intellectual faculties that God has given us, to the well-being of our fellow-men, remains always the ideal object of our existence. We cannot do without the help of others, and the individual value of each man augments in due measure as his work is more profitable to other individuals or to humanity at large."

Therefore a man is to be estimated not according to the fortune he amasses for himself, but in accordance to his usefulness to others. The Archduke went on to say:

"What is true in regard to a person is still more true in regard to an entire profession. In this respect all equitably minded people must recognize that there are few professions exercising on the individual, or on the family, and, as a last consequence, on the whole life of states, an influence so profound and so widespread as that of the medical profession.

"Every living being has the desire and the right to be happy, and this for as long a time as possible. And it is no new truth that the fundamental condition of happiness on this earth is a healthy, satisfied and long life."

I could not help asking myself how were the toilers of Hungary to be satisfied and live a long healthy life on $2 a week. But the Archduke had said they had a "right" to be happy. Therefore they have a right to work and to receive a minimum wage which shall be high enough to provide what is necessary for health and happiness. An agitator proclaiming these principles at a street-corner meeting would run the risk of being roughly treated by the police. At the ceremonial opening of the congress a ready response was given to the Archduke by Professor Landouzy, dean of the Paris Faculty of Medicine, president of the French delegation and representative of the ministry of public instruction and fine arts of the French Republic. The most perfect silence prevailed, for Professor Landouzy's oratory is justly popular. I will endeavor to translate the passage which may be taken as a reply to the Archduke's remarks:

"Numerous are the reasons which have attracted so many colleagues to Transleithania. It is not only the renown of your thinkers, of your artists, of your scientists. It is not only the peaceful beauty and then the torrent force of your Danube, or the wealth of your Tisza, from whose banks flow your wines which are of gold in color and in value. Nor were we attracted by the souvenirs and the monuments of your glorious city. We came to see what you show with justifiable pride: the palaces, the libraries, the schools, the museums, the institutions which you have consecrated to the worship of the Arts, the Sciences and Charity. You are proud and rightly so of your institutions for the relief of the poor, for the spread of education and the spirit of human solidarity by which you desire that throughout Hungary the practise of medicine, having henceforth become as much the art of preventing as of of curing illnesses of the mind and of the body, shall be exercised with more justice so that, to promote the psychical and physical health of the people, there shall be a better distribution of material and moral well-being among individuals and collectivities."

Professor Landouzy proceeded to allude in terms perhaps more flattering than the facts justify to the fall in the death rate of Budapest and how the working class were better housed. In this respect considerable improvement has been effected; but terrible conditions still prevail and much yet remains to be done.

From Budapest to Washington

Thus it will be seen that in spite of all efforts to help these congresses on the neutral ground of pure science, there is no preventing the overlapping, I will not say of party politics, but of the higher considerations of policy bearing at least indirectly on practical legislation. If this is so for a medical congress, this must be more emphatically the case at the hygiene congresses. Therefore, all these details and explanations will, I trust, be of use in view of the next great international assembly which is to be held next year in the United States. The Fifteenth International Congress of Hygiene and Demography is to meet at Washington a year hence, and there many questions of social reform must be discussed. There will be great debates on what the French call the "laws of human solidarity;" and it is to be hoped that the description of the congress just terminated at Budapest will give suggestions that may help in preparing for next year's gathering at Washington.

(*To be continued*)

PARIS LETTER

(From Our Regular Correspondent)

Paris, Sept. 4, 1909.

Men of Feeble Constitution in the Army

According to the law of 1905, men summoned to military service are divided into three classes: (1) those fit to bear arms; (2) those who have good constitutions, but are excluded from the armed service because of some infirmity (excessive myopia, deformed feet, etc.), and who cannot possibly be used except in the auxiliary clerical service; (3) those who are sometimes called semi-fit; that is to say, those who have no definite physical defect, but whose feebleness of constitution is a bar to their bearing arms. The law was passed in the belief that regimental life might assist many of this last class to perfecting their physical development; therefore these men, at the end of a year of service, undergo a second examination as to their fitness to bear arms. The medical statistics of the army show that in regard to almost all affections the morbidity of the recruits is often twice, and sometimes more than twice, the morbidity of the soldiers who have undergone twelve months of service.

Now, to confine these "doubtful recruits," whose number is more than 20,000 a year, to clerical work, as is frequently done, is not to favor their physical development at all, but to destroy their usefulness for the defense of the country. What again would be realized, on the contrary, if these enfeebled men, instead of being treated as supernumerary clerks, were developed into real soldiers! With this idea in mind, some officers have constituted in the regiments platoons of the weaker recruits, who are put under a special regimen of work and of food, under the joint direction of officers and of the physicians of the corps. Serious difficulties, however, were encountered from the first, and the results were far from meeting expectations. The regimental medical service, already overworked, has not sufficient time to give to the weaker men; and their presence in the regiments is detrimental to the healthy men. At present, physicians and colonels are agreed in condemning the system of regimental platoons of weaklings.

An army physician, Dr. Solmon, has had the happy idea of withdrawing these soldier candidates from their regiments and of bringing them together at special points on the seacoast or in the mountains, chosen solely for hygienic reasons. The objections to the regimental platoons do not apply to these formations. They do not require much extra expenditure—a slight increase in nourishment and perhaps some expense for hygiene—and in return they permit much economy in respect to hospital treatment. No doubt only part of these semi-fit recruits will become sufficiently strong at the end of a year to become real soldiers, but even if only a half or only a quarter are so much improved, that would be 5,000 or 10,000 more men a year for the defense of the country. Even if the result is not completely attained from the military point of view, still the men will be returned to their families more vigorous than at their arrival in the regiment, and will have learned good habits in these schools of hygiene, which they will be ready to disseminate. The idea of platoons of invigoration (*pelotons de robusticité*), then, has a much higher purpose than merely the increase of our effective military forces. Its application would result in the marked physical regeneration of a large part of the population.

Illegal Practise of Pharmacy

Not all pharmacists practise their profession personally. There are, in fact, large pharmacies whose proprietors employ a great number of non-pharmacist clerks, who are engaged in the preparation of medicines. This being the case, the Paris medical society (*Syndicat Médical de Paris*) has just passed a resolution that the inspectors should exact that in conformity to the law, the preparation of medicines be carried out exclusively by graduate pharmacists in all the laboratories and manufactories of pharmaceutical products, and that all infractions of the law be severely repressed.

The society also has called attention to the anomaly in pharmaceutical studies, in that the pharmaceutical student, before entering on his theoretical studies, undergoes an apprenticeship in a laboratory, being entrusted with the preparation of medicines; while in all the other professions, the practical stage in general follows the theoretical studies, and is, so to speak, their consummation. The society, therefore, has passed a resolution that the apprenticeship ought to be at the end of the pharmaceutical course.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Sept. 1, 1909.

Naunyn's Seventieth Birthday

September 2 Professor Naunyn celebrates his seventieth birthday. Considering the great eminence in medical science of this renowned investigator, both at home and abroad, his birthday without doubt will be observed by many of his former pupils and colleagues. In his scientific success and in his entire personality, Naunyn may be reckoned among the classicals of medicine. In his keen criticism, his incorruptible love of truth and his excellent disposition, he is excelled by no one. Naunyn was born in Berlin. He was for a long time an assistant of Frerich, and in 1869 became professor of internal medicine at Dorpat, later at Bern and at Königsberg, and in 1888 went to the newly founded Kaiser Wilhelm University of Strasburg. His principal investigations are in the field of metabolic diseases. His work on diabetes mellitus and on the clinical relations of cholelithiasis are standards in medical literature. He was one of the founders of the *Archiv für experimentelle Pathologie und Pharmakologie* and of the *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie* (Communications from the Borderland of Medicine and Surgery). Five years ago he retired from the faculty of the university and betook himself to his villa near Baden-Baden. He has, however, not taken leave of his scientific work. Not only does he take part in medical congresses, but since his retirement he has published several works, among others a new edition of his monograph on diabetes. His last work is a spirited treatise on the general pathology and therapy of old age in the "Text-Book of Diseases of Old Age," published by Professor Schwalbe.

International Exhibition of Hygiene in Dresden in 1911

In 1911 there will occur a great exhibition of hygiene in Dresden, for which preparations are even now being energetically pushed forward. The king of Saxony will assume the protectorate of the exhibition. At the head of the honorary presidents are Prince Bülow and the present imperial chancellor. Koch, Behring, Ehrlich, Rubner and others belong to the honorary committee. The scientific management is in the hands of Weber, a member of the imperial board of health.

Left-Handedness in the Army

A short time ago a military surgeon presented to the army medical society the results of his studies on the occurrence of left-handedness in the army. He examined 300 left-handed soldiers. At least half of these came from families in which this peculiarity also occurred in other members; it appears to be twice as frequent among males as among females. Enuresis, feeble-mindedness, stuttering and other disturbances of speech occur much more frequently among left-handed than among right-handed people. The frequency of left-handedness is greatest among the recruits and diminishes with the length of service. The speaker reaches the conclusion that the left-handed are both physically and mentally less suited to military service than the right-handed.

Assistance of Physicians in Prussia

The arrangements existing in Prussia in previous decades for the assistance by physicians of their colleagues who are in want were considerably extended by a law passed in 1899. By this law each medical council, or *Aerztekammer*, was authorized to exact a yearly contribution to cover the expenses of the assistance bureau from the physicians in the district who are entitled to a vote. If the contribution was not voluntarily paid, compulsory collection could be enforced. From the contributions obtained in this way, most councils appropriate a sum for the assistance of physicians in need, and such aid has of late years become quite extensive. In 1908 the Berlin-Brandenburg medical council appropriated $12,000 (50.000 marks) for purposes of aid, and of this sum about $11,000 (46.000 marks) were expended; the assets of the assistance bureau at the end of 1908 were about $95.000 (395,000 marks). The bureau collects from every physician entitled to vote a fundamental tax of $2.50 (10 marks), and from all with a total income above $12,000 (50,000 marks) an additional sum of 5 per cent. of the state income tax. Besides these assistance bureaus of the medical councils, there are in Prussia a number of private aid societies which annually pay large sums to colleagues who are without means. For widows and orphans there are special funds provided; that of the *Leipziger Verband* is especially extensive and receives annually many voluntary contributions from the members.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Sept. 9, 1909.

The International Association of the Medical Press

The occasion of the International Congress was utilized for two other congresses. The one was the otologic congress, the other a convention of the International Association of the Medical Press. The latter discussed a project, prepared by the British section, which is thought will bring order into the present chaotic conditions of modern congresses. It is proposed to select an international committee to arrange everything in regard to congresses and to secure by proper payment the services of a reliable permanent international secretary, who would have to devote all his time to this work. Then the press could also obtain within a very short space the abstracts of all papers read in English, French and German, perhaps also in Italian, which was officially recognized at this congress as one of the congress languages. Dr. Dawson Williams (London) seconded this motion which was adopted, and London was selected as the place of the next congress, to be held in 1913.

The Otologic Congress

The Otologic Congress held its sittings on three days, and some good work was done. Of the papers read the following may be mentioned: Alexander (Vienna) read a report on "Suppurative Labyrinthitis" in which he recommended great care before deciding to operate; he does not operate unless the acute stage is over or when there is indicatio vitalis. Barany (Vienna) read a paper on "New Methods of Examination of the Hearing." Neumann (Vienna) spoke on the bacteriology and pathology of brain abscess and meningitis. Professor Denker (Erlangen) discussed the "Pathologic Changes in the Inner Ear of Deaf-Mutes." The Lenvall prize for the best work in otology was awarded to Drs. Neumann (Vienna) and Gray (Glasgow) together. Dr. Neumann's prize-winning work was on "Local Anesthesia in Otology," and the monograph "Suppurative Labyrinthitis." The next otologic congress takes place in 1912 in Boston.

Reform of Midwifery

Dr. von Haberter, who was appointed a short time ago to the post of chief inspector of health, is directing his main efforts toward a reform of the midwifery act now in force. The most important of the features of a bill prepared by his advice is the lengthening of the curriculum of the midwives from six months to two years. Of these twenty-four months, six are to be devoted to preliminary and theoretical, eighteen to practical instruction. The present regulations in many places permit any woman to call herself a midwife without having obtained any proper teaching at all. The want of midwives, especially in the poorer mountainous districts, is very keen; especially as medical help in such places is still less available, and therefore, the authorities have not been very strict. But now it is intended to put into each village inhabited by at least 200 families a midwife with full qualifications, unless there is a doctor in the place. The study of midwifery must be conducted in one of the special midwifery clinics (five proposed, of which three are already present). An examination must be passed, which will entitle the woman who has reached the required number of marks to a diploma in midwifery. Frequent surprise visits by the district officers of health are also planned, in order to see that all sanitary regulations are followed out by the midwives. Puerperal fever among the cases in the charge of one woman is to incapacitate her for a period of eight days after her last visit there, and special stress is laid on the necessity of the quarantine in the instruction given to them. Every year at least one "midwives'-day" or local congress will be held by the chief officer of health of the district, to inform them of any important facts dealing with midwifery. Meanwhile the necessity of instructing the present working midwives in modern asepsis and antisepsis, the nursing of infants, the value of breast-feeding, and the routine use of Credé's instillations of silver nitrate or another silver preparation into the eyes of the new-born is urgent, and instructors are few. The women without diplomas are, therefore, offered an opportunity to obtain at least the fundamental principles of this work through so-called *Wanderlehrer* (migrating teachers) sent out to the smaller places. After a certain time (two years are considered too short) only qualified matrons will be allowed to take up this kind of work. It is estimated that, while the costs of these reforms will not amount to more than $150.000 a year, the saving to the public will be more than treble this figure.

Pharmacology

Canadian Act Respecting Proprietary or Patent Medicines

The act passed by the Canadian government regulating the sale of proprietary or "patent medicines" requires that every manufacturer or importer of such medicines shall, before offering them for sale, procure from the Department of Inland Revenue a certificate of registration. The application for this certificate must be accompanied by a list of the medicines to be covered and also by the fee of one dollar. The following are important sections of the law:

"All proprietary or patent medicines shall be put up in packages or bottles, and every one of these, intended for sale or distribution in Canada, shall have placed on it, in conspicuous characters forming an inseparable part of the general label and wrapper, the name and number under which the medicine is registered, with the words, 'The Proprietary or Patent Medicine Act,' and also the manufacturer's name and address. . . .

"No proprietary or patent medicine shall be manufactured, imported, exposed, sold or offered for sale (a) If it contains cocain or any of its salts or preparations; (b) if it contains alcohol in excess of the amount required as a solvent or preservative, or does not contain sufficient medication to prevent its use as an alcoholic beverage; (c) if it contains any drug which is included in the schedule to this act but the name of which is not conspicuously printed on, and an inseparable part of, the label and wrapper of the bottle, box or other container: Provided that every manufacturer or importer of or agent for the sale of any medicine containing any of the drugs mentioned in the schedule may, when applying for a certificate of registration for any medicine, transmit to the minister an affidavit specifying such drug and the proportion of it contained in the mixture and dose, and the minister may thereupon grant a certificate of registration for such medicine without the printing of the name of the said drug on the label and wrapper if it appears to the minister that the proportion of the drug used is not dangerous to health.

"No person, firm or corporation shall distribute or cause or permit to be distributed from door to door, or on a public place or highway, or through the mail, any sample of a proprietary or patent medicine: Provided this section shall not prevent manufacturers or wholesale dealers distributing samples to the trade.

"No manufacturer, importer or vendor shall in any advertisement or in any other manner, assert or indicate that the certificate of registration issued by the minister passes on the merits of any proprietary or patent medicine, and no reference to such certificate, or to any other certificate or guarantee, other than by this act specially provided, shall be made in any advertisement, on any label on the package or bottle in which such medicine is contained, or in any other manner. No proprietary or patent medicine shall be imported, exposed, sold or offered for sale in Canada which bears any representations as respects certificates issued under any Canadian or foreign governments different from that allowed under this Act.

"The Governor in Council may . . . add to or remove from the schedule to this Act any poisons or potent drugs, as from time to time he deems expedient, and notice thereof shall be given in the *Canada Gazette*."

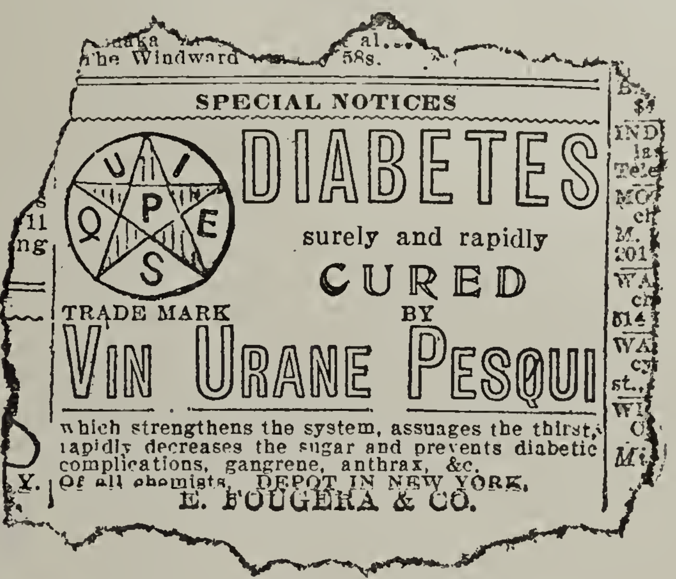
The schedule of drugs previously referred to includes the following remedies: Acetanilid and other coal-tar products; aconite and its preparations, arsenical preparations, atropin, belladonna and its preparations, cantharides, carbolic acid, chloral hydrate, chloroform, conium and compounds thereof, corrosive sublimate, cotton root, croton oil, digitalis and derivatives, ergot, essential oil of mustard, ether, hellebore, heroin, hyoscyamin and its preparations, Indian hemp, morphin and its preparations; nux vomica and derivatives; opium, its preparations and derivatives; pennyroyal, phenacetin, prussic acid, savin and preparation thereof, strychnin and its preparations, sulphonal, tansy, tartrate of antimony and veratrum. It is announced by the authorities that provision prohibiting sale of medicines containing cocain will be rigidly enforced.

A proprietary or "patent medicine" is defined in the act as follows: "'Proprietary or patent medicine' means every artificial remedy or prescription manufactured for the internal use of man, the name, composition or definition of which is not to be found in the British Pharmacopeia, the Codex Medicamentarius of France, the Pharmacopeia of the United States or any foreign pharmacopeia approved by the minister, or any formulary adopted by any properly constituted pharmaceutical association representing the Dominion of Canada, approved by the minister; or on which is not printed in a conspicuous manner, and forming an inseparable part of the label and wrapper, the true formula or list of medicinal ingredients, which must not contain cocain or any of its derivatives or preparations."

"Patent" versus "Ethical Proprietary" Medicines

To the Editor:—The enclosed clipping appears on page 11 of the *New York Herald* for Sept. 9, 1909. The ludicrousness of the paper appeals to my sense of humor. It assails so-called vivisection with a venom equaled only by its ignorance of the facts of animal experimentation, yet it submits its readers to such obviously dangerous and untrue statements as appear in the enclosed advertisement. Such inconsistency makes one distrust the self-vaunting publication in which it appears.

Harold S. Arnold, M.D., New Haven, Conn.



SPECIAL NOTICES

DIABETES

surely and rapidly

CURED

BY

TRADE MARK

VIN URANE PESQUI

which strengthens the system, assuages the thirst, rapidly decreases the sugar and prevents diabetic complications, gangrene, anthrax, &c.

Of all chemists. DEPOT IN NEW YORK,

E. FOUGERA & CO.

Comment: The advertisement to which Dr. Arnold refers is here reproduced. It will be noticed that this particular nostrum is another of the "cures" handled by Messrs. E. Fougera & Co. Fougera & Co. was one of the firms that put themselves on record as being opposed to the work of the Council on Pharmacy and Chemistry when that body was first created. One of the preparations which this firm advertises to the public is "Santal Midy." "Cures in 48 hours," the advertisements used to read, but since The Journal called attention to the fact that promising to cure gonorrhea in two days was rather a large order, this has been modified—in American advertisements—to "relieved in 24 hours." We find in Australian newspapers, however, that "Santal Midy" still "cures in 48 hours."

Deterioration of Galenicals

Notwithstanding the general belief that drugs deteriorate readily it is true that the ordinary alcoholic preparations of alkaloid-containing drugs are fairly stable. Dr. A. R. L. Dohme (*American Druggist and Pharmaceutical Record*, July 26, 1909), has investigated the rate of deterioration for a number of galenical preparations by assays made at specified intervals. The stock was exposed to light and from it small amounts were repeatedly taken, so as to imitate the conditions prevailing in the ordinary retail drug store. Practically none of the products examined had deteriorated to any appreciable extent, while in such as had, the deterioration came well within the limit of experimental error. The exceptions to this are powdered extract of physostigma, fluidextract of coca, fluidextract of aconite root, and the tincture of aconite root, after a half-year's standing.

The deterioration in the case of tincture of aconite root was not great enough to affect its therapeutic value markedly. Strange to say tincture of coca was found not to deteriorate, in which respect it differed from the fluidextract. Contrary to general belief nitroglycerin tablets were found to be quite stable.

Correspondence

Purification of Water by Ozone

To the Editor:—An interesting editorial on the purification of water by ozone appears in The Journal, August 21. In the closing paragraph appears the following:

"To justify the introduction of any new system of water purification, even though it be one of recognized efficiency, the question of comparative cost should be presented in such a way as to convince reasonable inquirers. This has not yet been done with the ozonization process."

May I be permitted to draw your attention to the fact that in America data are available covering the comparative costs of ozonization and sand infiltration. The Murphy Cold Storage & Ice Company of Detroit have for over two years been sterilizing water by ozone, and they have found that it cost 4 cents for electric energy for 50 tons of water sterilized.

At Lindsay, Ontario, an ozone purification plant has been in operation since last October purifying the entire water supply of the town, amounting to about one million gallons a day. The entire cost of purification, including pre-filtration, is 44 cents a million gallons. The plant has proved so efficient that the town has decided to double its capacity in order that all the water entering the mains, even during the time of conflagration, may be ozonized. When this change is made the cost of operation will probably be under 44 cents a million gallons.

At Lindsay, Ontario, electricity is fairly cheap—$35 a horsepower year. Electricity, however, can be made in any part of the United States for 1 cent a K. W. hour. This includes interest charges and maintenance. The cost of ozonizing a million gallons of water, stated in electric units, is 100 K. W. hours per million gallons. These costs, which have been obtained in actual practice, are far below those of any European system of ozonization.

Concerning costs of installing a municipal water purification plant, these will naturally vary with local conditions, but, generally speaking, an ozonizing plant, including rough filters for straining out the suspended matter from the water prior to ozonization, will be about $15,000 per million gallons daily capacity.

The comparative cost, then, of ozonization and filtration may be roughly set forth as follows:

INSTALLATION COST

Slow sand filter plants, average for the United States, $30,000 per million gallons daily capacity.

Ozonization plants with pre-filters, $15,000 per million gallons daily capacity.

OPERATING COST

Average of slow sand filters in the United States, $5 per million gallons.

Average of ozonization at one cent per K. W. hour, including prefiltration, $1.40.

In neither of these cases are interest and maintenance charged. The 40 cents added to the cost for ozonization is the cost of pre-filtration, and ordinarily this cost is less than 20 cents per million gallons.

It may interest you to know that ozonizing plants are now in process of construction at Baltimore, to have a capacity of ten million gallons a day, and at Ann Arbor, with a capacity of three million gallons a day. These plants will be in operation, the former during the present month, and the Ann Arbor plant in October. James Howard Bridge.

The Section on Pharmacology and Therapeutics

To the Editor:—We naturally expect the American Medical Association always to set the best example to the profession, and to uphold the modern and scientific conception of medicine. Yet it has now a Section bearing the antiquated, injurious and unscientific title of "Section on Pharmacology and Therapeutics." Why not drop "and Therapeutics" and term it "Section on Pharmacology" simply, as the Section on Surgery dropped "Anatomy"?

In the case of the Section on Pharmacology, there are stronger reasons for omitting "Therapeutics," as this is misleading and inaccurate.

1. Therapeutics, in medical parlance, implies something more than the administration of drugs. It includes all remedial measures used with patients—surgical, psychic and mechanical—as well as pharmacal. Yet the present title of the Section is so slip-shod and unscientific as to create the impression that there is no other therapy than pharmacotherapy.

2. The justification for all the new-fangled, non-professional systems of healing is found in this erroneous use of the term "therapeutics." All these healers want to escape the incidence of the medical registration laws by claiming that, as they do not use drugs, they do not require to be licensed to practise. And even some judges have been so ill-informed as to declare from the bench that the practise of medicine is the administration of drugs, or so-called medicine, and that those who use no drugs are not medical practitioners! Hence the correct definition of medical practise is obstructed by the perpetuation of the incorrect use of the term "therapeutics" by certain colleges and the public. This confusion of words and ideas is extremely detrimental to legitimate medical practitioners; and therefore it should not be endorsed, upheld and perpetuated by the American Medical Association.

3. There is no proper connection—and this is most important—between pharmacology and therapeutics in modern and scientific medical teaching. The logical relation of therapeutics is to internal medicine or to surgery, as the case may be, but not to materia medica. A scientific teacher holding the chair of pharmacology will not imitate the herbalists and dispensatories by telling his class that such a drug is good for this and that disease. He has nothing to do with diseases or pharmacotherapy. His business is to teach all about the drug in question and its physiologic action—its pharmacodynamics; and he should leave the student who is well informed in regard to the physiologic action of drugs to exercise his own reasoning powers in judging of the cases in which they should be selected for administration. This is the method of that most praiseworthy institution, the Council on Pharmacy and Chemistry. And, if pharmacology were taught thus, we should get rid of a whole host of useless and ineffective drugs, while the list stored in the new graduates' minds would be compact and valuable and the action of every article would be fully understood.

If the Section's name means "Section on Drug Therapeutics," it should say so. But the term "pharmacology" is description enough; for, in fact, the Section has no business to enter the field of therapy at all, if its true function be to discuss pharmacology in a scientific spirit.

W. P. Whery, M.D., Fort Wayne, Ind.

Binocular Spacial Pole

To the Editor:—I wish to announce that on September 4 I discovered the binocular spacial pole, a discovery of much importance in the study of binocular single vision and binocular rotations. In the near future I hope to report fully on the matter. G. C. Savage, Nashville, Tenn.

Use of Appendix to Splice the Ureter

To the Editor:—The article on splicing the ureter, by Dr. Harvey P. Jack in The Journal (Aug. 28, 1909, liii, 717) prompts me to report the results of some experiments of my own, carried on in the experimental laboratory of Tulane University during 1908.

In a series of experiments undertaken on dogs to find some satisfactory method to splice or graft a damaged or diseased ureter, the appendix was used in a limited number with the following results: While the transplantation and anastomosing could be easily done, infection of the kidney invariably followed in from one to three weeks and ultimately caused the loss of the animals. Various means were resorted to to clean the inside of the appendix; it was swung out of the cavity and copiously flushed, but, as was to be expected, cleansing by this method was impossible.

Some of the transplantations were done with the appendix attached to its mesentery, others with division. In these latter some of the appendices sloughed. In all cases in which leaking at points of suture did not occur or no sloughing occurred the appendix invariably became converted into a pus sac and infection of the kidney followed. Certain anatomic differences exist between the appendix of the dog and that of the human being; in the dog it is nearly the size of the small intestine, but that this would make any difference in causing the infection is doubtful. An organ more likely to succeed in being used to replace sections of the ureter is the Fallopian tube; this has been suggested by several workers in this line but as yet not demonstrated practically.

Carroll W. Allen.
Clinical Instructor in Surgery, Tulane University, New Orleans.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HYDROGEN PEROXID CONSIDERED AN ACID

To the Editor:—Under New and Nonofficial Remedies, in The Journal, Aug. 7, 1909, liii,, 460, sodium peroxid is mentioned as "the sodium salt of hydrogen peroxid." From this it is evident that hydrogen peroxid is considered an acid. If so, for the sake of right and scientific nomenclature, H_2O_2 should be called "hydrogen acid" and Na_2O_2 "sodium hydrogenate" (?), but this is, of course, nonsense. Therefore it seems to me hardly possible to consider Na_2O_2 as a salt.

I must confess that I studied inorganic chemistry more than twenty years ago, but I have studied it under direction of the famous Professor Mendelejeff of St. Petersburg, who impressed on his students thorough understanding of the fundamental principles of chemistry and, as far as I can remember, he never mentioned even a possibility of such a compound as peroxid of sodium.

Therefore, I take the liberty of asking if Na_2O_2 is really a chemical compound and, if so, whether it is properly classified as a salt.

G. N. Pinegin, M.D., Yonkers, N. Y.

Answer.—While hydrogen peroxid does not turn litmus paper blue, does not appear to neutralize aqueous solutions of alkaline hydroxids, nor does it liberate hydrogen when its aqeous solution is treated with zinc as will ordinary acids, it nevertheless does possess certain properties which characterize it as an acid and which justify the statement that sodium peroxid is the "salt" of hydrogen peroxid. Elaborate researches demonstrating the acidic nature of hydrogen peroxid have been made by Bredig (Ztschr. f. Elektrochem., vii, 622). Marcuse and Wolffenstein (Ber. d. deutsch. chem. Gesellsch, xxxiv, 2430) and others, have also studied the question. Alexander Smith, professor of chemistry at the University of Chicago, in his "General Chemistry for Colleges," says: "Hydrogen peroxid, in solution in water, is a feeble acid. As an acid it enters into double decomposition readily, and the peroxids are really salts in which the negative radicle is O_2''. Thus, when hydrogen peroxid is added to solutions of barium and strontium hydroxids, the hydrated peroxids appear as "crystalline precipitates." Modern chemistry prefers, instead of the terms nitric acid, sulphuric acid, hydrochloric acid and hydrosulphuric acid, the terms hydrogen nitrate, hydrogen sulphate, hydrogen chlorid and hydrogen sulphid; hence the term hydrogen peroxid is in accord with chemical nomenclature.

THE USE OF "OUGHT" AND "SHOULD"

To the Editor:—I much regret that, in my criticism (The Journal, Sept. 11, 1909, liii, 883) of the word "ought," as used by Dr. Keen, I appeared to you "somewhat hypercritical," for to be so was far from my intention.

I certainly agree with you that the derivation of a word should have some weight in determining its meaning; but, for modern literary purposes, there is no more reason why we should go back five centuries to Chaucer's time for our most approved diction than there is why we should draw on him for our spelling. In view of what you say of Dr. Harbin's criticism, I think you will agree with me that very few words exist that have exactly the same practical application; for it must be remembered that every word has a life-history, and that its meaning, in virtue of the law of utility and of definite expression, and not for the sake of convenience, as you seem to think, has been so modified in many instances, as by this time to bear little or no resemblance to what it originally was. If this were not so, we should actually be facing the uncomfortable dilemma, which you suggest, of having on our hands two such frequently used words as "should" and "ought" with the very same meaning.

It strikes me that if every public writer would strive to follow the plain advice which is said to have been given by the polished literary artist, Flaubert, to Maupassant, namely, that "whatever may be the thing one wishes to say, there is but one word for expressing it, only one verb to animate it, and only one adjective to qualify it," there would be less indiscriminate use of words like "ought" and "should," and fewer offenses against good style.

Thomas J. Mays, Philadelphia.

The Public Service

Medical Department of the Army

Changes for the week ended Sept. 18, 1909:

Freeman, C. E., capt., ordered to accompany troops from San Francisco, to Fort Niagara, N. Y.

Hollester, R. H., cont. surgeon, ordered to Fort Omaha, Nebr., for duty.

Morse, A. W., major., now on leave of absence, ordered to accompany 29th Inf., from San Francisco, to Fort Jay, N. Y., on completion of this duty to resume leave status.

Ewing, C. B., Kendall, W. P., Banister, W. B., Bradley, A. E., Willeox, Chas., Frick, E. B., Keefer, F. R., and Raymond, T. U., majors, ordered to report on Oct. 11, 1909, to Lieut. Col. H. P. Birmingham, president examing board, Army Medical Museum Bldg., Washington, D. C., for examination to determine their fitness for promotion.

Jones, E. C., M. R. C., granted leave of absence for 10 days.

Cook, G. W., M. R. C., granted leave of absence for 10 days.

Marvin, M. F., M. R. C., relieved from duty at Fort Mansfield, R. I., and ordered to proceed to his home and report to The Adjutant General of the Army for further orders.

Slater, E. F., M. R. C., relieved from duty at Fort Adams, R. I., and ordered to Fort Mansfield, R. I., for duty.

Shillock, Paul, major., having been found physically incapacitated for active duty, is relieved from duty at Fort Sheridan, Ill., and will proceed to his home to await retirement.

Wall, F. M., M. R. C., relieved from duty at Fort Oglethorpe, Ga., and ordered to Fort Michie, N. Y., for duty.

Brechemin, Louis, Jr., capt., granted leave of absence for 4 months, on arrival in the United States.

Stuckey, H. W., M. R. C., ordered to Fort Hamilton, N. Y., for duty; granted leave of absence for 2 months.

Purviance, W. E., major, Bosley, J. R., capt., and Waring, J. B. H., lieut., will proceed to San Francisco, in time to take the transport sailing for the Philippine Islands about Nov. 5, 1909.

LaGarde, L. A., lieut. col., detailed as member of examining board at the Army Medical Museum Building, Washington, D. C., vice Crosby, W. D., lieut. col., relieved from duty on this board.

Waring, J. B. H., lieut., will accompany troops en route from transport *Thomas*, to Fort Porter, N. Y., and return to his proper station; on completion of this duty granted leave of absence for 10 days.

Duncan, L. C., capt., granted leave of absence for 1 month.

Freeman, C. E., lieut., will accompany troops en route from the transport *Thomas*, to Fort Porter, N. Y., and return to his proper station; granted leave of absence for 20 days.

Bowman, M. D., M. R. C., will report to the C. O., Fort Miley, Cal., for temporary duty during absence of Lieut. Freeman.

Truby, A. E., major, will accompany insane patients from San Francisco, to Washington, D. C., and report to the Adjutant General for orders to return.

Suggs, Frank, M. R. C., ordered to Fort Hamilton, N. Y., for duty.

Freeman, Paul, capt., granted leave of absence for 4 months.

Jenkins, F. E., M. R. C., granted leave of absence for 3 months, with permission to go beyond the sea.

Gentry, E. R., Edwards, G. M., Heflebower, R. C., Welles, E. M., Jr., Thearle, W. H., McAfee, L. B., Michie, H. C., Jr., Holmberg, C. E., Schlanser, A. E., Beeuwkes, H., Carr, W. B., Aydelotte, J. T., Allen, W. H., Reynolds, Royal, Kremers, E. D., Weed, M. D., Darby, T. E., Ferenbaugh, T. L., Lamb, W. P., Davis, A. O., Klotz, S. P., Cooper, W. E., Davis, W. C., DeVoe, R. G., Woodson, T. D., Sheep, W. L., Gillespie, J. M., Beery, H. R., Cooper, A. T., Shugerman, H. P., Haverkampf, C. W., Kramer, Floyd, Hill, F. R., Casper, Joseph, M. R. C., ordered to report to Col. Valery Havard, president, Army Medical School, on Oct. 1, 1909, for a course of instruction at that school.

Geddings, E. F., major, granted leave of absence for 4 months, about Oct. 1, 1909.

Raymond, H. I., lieut. col., granted leave of absence for 1 month, about Sept. 16, 1909.

Laflamme, F. L. K., dental surgeon, will proceed to Fort Wayne, Mich., Fort Brady, Mich., and Fort Benjamin Harrison, Ind.

Medical Corps of the Navy

Changes for the week ended Sept. 18, 1909:

Robbins, I. W., acting asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., September 25, and ordered to instructions at the Naval Medical School, Washington, D. C.

Rose, M. E., asst.-surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Celtic*.

Thompson, F. W., acting asst.-surgeon, detached from the *Celtic*, and ordered to instruction at the Naval Medical School, Washington, D. C.

Payne, J. H., P. A. surgeon, detached from the Naval Recruiting Station, Hartford, Conn., and ordered to the Naval Hospital, Navy Yard, New York.

Kuder, W. S., asst.-surgeon, unexpired portion of sick leave revoked, ordered to the Naval Recruiting Station, Hartford, Conn.

Stuart, M. A., asst.-surgeon, detached from duty with the Marine Detachment, Camp Elliott, Canal Zone, Panama, and ordered to duty at Ancon, Canal Zone.

Ziegler, J. G., asst.-surgeon, detached from duty at the Naval Hospital, Navy Yard, Pensacola, Fla., and ordered to duty with the Marine Detachment, Camp Elliott, Canal Zone, Panama.

Public Health and Marine-Hospital Service

List of changes for the seven days ended September 15, 1909.

Glennan, A. H., asst. surgeon-general, detailed to represent the Service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5-8, 1909.

Kerr, J. W., asst. surgeon-general, directed to proceed to Chicago and Springfield, Ill., on special temporary duty.

Carter, H. R., surgeon, Bureau order of July 20, 1909, revoked. Directed to proceed to Louisville, Ky., and assume command of the Service.

Banks, Charles E., surgeon, granted three days' leave of absence from September 14, 1909.

McIntosh, W. P., surgeon, leave of absence granted August 11, 1909, for 21 days from September 1, 1909, amended to read 10 days from September 1, 1909, and 11 days from September 27, 1909.

Wertenbaker, C. P., surgeon, detailed to represent the Service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5-8, 1909.

Young, G. B., surgeon, detailed to represent the Service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5-8, 1909.

Lumsden, L. L., P. A. surgeon, detailed to represent the Service at the annual meeting of the Medical Society of the State of Virginia, to be held in Roanoke, Va., October 5-8, 1909.

Fricks, L. D., P. A. surgeon, granted three months' leave of absence from September 24, 1909.

Creel, R. H., P. A. surgeon, on the arrival of Surgeon H. R. Carter, relieved from duty at Louisville, Ky., and directed to proceed to Philadelphia and assume temporary charge.

Robertson, H. McG., P. A. surgeon, granted two months' leave of absence from October 1, 1909.

Sweet, E. A., P. A. surgeon, granted 21 days' leave of absence from September 9, 1909.

Ridlon, Joseph R., P. A. surgeon, granted six days' leave of absence from September 11, 1909.

Elfers, J. C., acting asst.-surgeon, granted twenty days' leave of absence from September 11, 1909.

Hamilton, H. J., acting asst.-surgeon, granted three days' leave of absence from September 14, 1909.

Hough, J. S., acting asst.-surgeon, leave of absence, granted April 1, 1909, amended to read 3 months and 25 days from April 1, 1909.

Nute, A. J., acting asst.-surgeon, granted 25 days' leave of absence from September 10, 1909.

Tappan, J. W., acting asst.-surgeon, leave of absence for 30 days from August 2, 1909, amended to read 26 days from August 2, 1909.

Tarbell, B. C., acting asst.-surgeon, leave of absence granted July 9, 1909, amended to read 30 days from August 1, 1909, with pay, and 13 days from September 1, 1909, without pay.

Stevenson, J. W., acting asst.-surgeon, leave of absence for 30 days from August 29, 1909, without pay, revoked.

Villoldo, P., acting asst.-surgeon, granted 21 days' leave of absence from September 20, 1909.

Health Reports

The following have been reported to the Public Health and Marine-Hospital Service, during the week ended Sept. 17, 1909:

SMALLPOX—UNITED STATES

Indiana: Fort Wayne, Aug. 21-Sept. 4, 6 cases.
Kentucky: Lexington, Aug. 7-21, 2 cases.
Minnesota: Duluth, Aug. 20-27, 1 case.
Ohio: Dayton, Aug. 28-Sept. 4, 2 cases, 1 death.
Oregon: (8 counties), June 1-30, 27 cases.

SMALLPOX—FOREIGN

Arabia: Aden, Aug. 2-9, 1 death.
Brazil: Bahia, July 16-Aug. 6, 15 cases, 6 deaths; Rio de Janeiro, July 11-24, 9 cases, 7 deaths, July 31-Aug. 8, 8 cases, 1 death.
Chile: Valparaiso, Aug. 7-14, present.
Egypt: Cairo, July 15-22, 3 cases.
France, Paris, Aug. 3-9, 1 case.
Germany: Konigsburg District, Aug. 7-14, 3 cases.
India: Bombay, July 20-27, 5 deaths, Aug. 3-10, 4 deaths; Madras, July 17-23, 1 death, July 31-Aug. 6, 1 death; Rangoon, July 24-31, 1 death.
Italy: General, Aug. 8-19, 26 cases; Naples, Aug. 15-22, 5 cases, 2 deaths.
Mexico: Guadalajara, Aug. 12-19, 1 death; Mexico, July 10-17, 8 deaths.
Persia: Meshed-i-Ser, June 1-30, epidemic; Khorassan, epidemic; Kurdistan, epidemic.
Portugal: Lisbon, Aug. 7-14, 7 cases.
Russia: Moscow, July 24-Aug. 7, 32 cases, 18 deaths; Riga, July 24-31, 5 cases, Aug. 14-21, 1 case; St. Petersburg, July 24-31, 6 cases, 8 deaths.
Spain: Barcelona, Aug. 14-21, 6 deaths; Valencia, 12 cases.
Turkey: Smyrna, July 1-Aug. 6, 36 deaths.

YELLOW FEVER

Barbados: St. Joseph, Parish, Aug. 9-14, 1 case, 1 death.
Brazil: Bahia, July 23-Aug. 6, 3 cases, 2 deaths; Manaos, July 24-Aug. 7, 2 deaths; Para, July 31-Aug. 7, 2 cases, 2 deaths.
Ecuador: Guayaquil, July 23-Aug. 14, 8 deaths.
Mexico: Merida, Aug. 21-28, 4 cases, 2 deaths.

CHOLERA—INSULAR

Philippine Islands: Provinces, July 18-24, 295 cases, 192 deaths.

CHOLERA

China: Amoy, July 24-31, 20 deaths.
India: Bombay, July 20-27, 25 deaths, Aug. 3-10, 39 deaths; Calcutta, July 24-31, 28 deaths; Rangoon, 5 deaths.
Indo-China: Saigon, July 17-24, 3 cases, 3 deaths.
Japan: Kobe, Sept. 13, present in vicinity, July 31, 1 case.
Netherlands: Breda, Aug. 31, present; Dordrecht, present; Gorinchem, present; Rotterdam, Aug. 20-30, 21 cases, 8 deaths; Uithorn, Aug. 31, present.
Sumatra: Djambi, July 18-24, present.

PLAGUE

Chile: Iquique, Aug. 10, 6 cases, in lazaretto.
China: Amoy, July 24-31, 52 deaths.
Ecuador: Guayaquil, July 24-Aug. 14, 9 deaths.
Formosa: July 17-24, 3 deaths.
India: General, July 24-31, 926 cases, 709 deaths; Bombay, July 20-27, 15 deaths, Aug. 3-10, 27 deaths; Calcutta, July 24-31, 18 deaths.
Indo-China: Salgon, July 17-31, 37 cases, 37 deaths.
Peru: General, Aug. 14-21, 19 cases, 9 deaths.

Society Proceedings

COMING MEETINGS

Amer. Academy of Ophth. and Oto-Laryngology, New York, Oct. 4-6.
Amer. Association of Railway Surgeons, Chicago, October 20-22.
Assn. of Military Surgeons of U. S., Washington, D. C., October 5-8.
Delaware State Medical Association, Dover, October 8.
Indiana State Medical Association, Terre Haute, October 7-8.
Kentucky State Medical Association, Louisville, October 19-21.
Minnesota State Medical Association, Winona, October 13-14.
Mississippi Valley Medical Association, St. Louis, October 12-14.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
South Dakota State Medical Association, Aberdeen, October 6-8.
Vermont State Medical Assn., White River Junction, Oct. 14-15.
Virginia, Medical Society of, Roanoke, October 5-8.
West Virginia State Medical Association, Elkins, October 6-8.

SIXTEENTH INTERNATIONAL MEDICAL CONGRESS

Held at Budapest, Aug. 29-Sept. 4, 1909

(Continued from page 966)

The Treatment of Contracted Pelves

Dr. Veit, Halle, Saxony, urged that operative interference should only be undertaken when absolutely necessary, and that in all cases perforation of the living child must be avoided. In the highest grades of pelvic contraction Cesarean section should be performed. In pelves with a moderate degree of contraction, when danger existed to the life of the mother and the child was dead, perforation was the last thing to do. In similar cases with a living child forceps should be tried with care and only for a short time, and if they failed then Cesarean section should be resorted to. Hebosteotomy should only be done when fever and signs of septic infection were present. In cases in which the life of the child was threatened version should be attempted, and if this failed forceps should be applied and, as a last resort, Cesarean section. Whenever possible no operative interference at all should be carried out, but any one of these operations might be necessary in certain cases.

Myoma and Fertility

Dr. A. Martin, Berlin, said that as a result of the great number of observed cases of pregnancy in myomatous uteri it was no longer possible to maintain the old opinion that myomata prevented intrauterine development of the ovum. Modern views as to the causes of sterility were also incompatible with this doctrine. The abundant hyperplasia of the ovaries in myoma was probably responsible, in the first place, for the remarkable fact that elderly women suffering from myoma and marrying late in life soon became pregnant, and, in the second place, for the delay in the occurrence of the climacteric in myomatous subjects. The observed cases of married women who conceived after removal of myomata, although they had previously been barren, were not sufficiently numerous to decide the question; there were, moreover, many associated conditions which could not be definitely ascertained.

Rapid Dilatation of the Cervix

Dr. G. Winter, Königsberg, Prussia: The ideal method of dilating the cervix must be one which involves no danger of excessive bleeding, of unavoidable lacerations of the cervix, or of the risk of infection, which will permit of the passage of a full-term child and of complete restoration of the functions of the cervix. Two methods are available—stretching or cutting of the tissues. The former can be carried out manually by means of a hydrostatic dilator, by a dilator such as that of Bossi, or by the body of the child. Manual dilatation possesses the advantage of requiring no special apparatus, but there is danger of slight tears of the cervix and of septic infection. Dilatation with a hydrostatic dilator guarantees complete dilatation and can be carried out aseptically; it possesses the disadvantage, however, of the likelihood of reclosure of the canal from elastic recoil. Bossi's dilator is a certain method and without danger when the cervix is unfolded, and entails but slight danger of infection. The risk of bad tears is considerable, however, and interference with the third stage of labor is not rare. Dilatation by means of the child's body after version is a simple and certain method, but usually entails death of the child. Of the cutting operations, superficial incisions are of limited practicability. Vaginal Cesarean section is the easiest of all the methods of dilatation. Dührssen's method is best; with this procedure injuries of the neighboring structures are not infrequent and the maternal mortality is about 1 per cent. The child is usually delivered alive. Vaginal Cesarean section when practised early in eclampsia gives excellent results; in 20 cases the fits at once ceased after performance of the operation. In accidental hemorrhage, if immediate delivery is necessary, vaginal Cesarean section gives good results. In placenta prævia all methods of rapid dilatation are best avoided because of the risk of rupture of the cervix. In septic infection any method likely to produce tears of the cervix should not be practised. In cases in which death of the child is threatened only those operations should be performed which entail no risk to the life of the mother. Of general conditions, eclampsia, heart failure, impending suffocation from acute lung affections, and at times tumors of the genitalia, stenosis of the cervix, and impending death of the mother, are all indications for performance of vaginal Cesarean section, which is by far the best of the various methods available for rapid dilatation of the cervix, and for which eclampsia is the strongest and most important indication.

Recent Researches on the Hygienic Importance of Alcohol

Prof. T. Laitinen, Helsingfors, Finland, summarized his conclusions under the four following heads: 1. The importance of alcohol as an article of food is rendered very questionable by recent researches. 2. These researches prove that alcohol diminishes the natural power of the tissues to resist injury, promotes degeneration, and has a disastrous effect on future generations. 3. The questions of relation of alcoholic liquor to crime and of the manufacture and sale of such beverages deserve the serious consideration of the legislature. 4. It is the duty of medical men to direct more attention than formerly to the alcohol question, and by careful study to decide whether recent researches are justified or not in regarding alcohol and alcoholic beverages as a poison and one of the principal causes of degeneration in the human family; they ought also to consider whether it would not be advisable in medical practice, and especially in hospitals, either to banish it altogether or at least to prescribe it with the same care as other poisonous drugs. In this matter the attitude taken up by medical men as representatives of public hygiene was of quite exceptional importance, and afforded an illustration of the passage in Homer, quoted by Bornstein, to the effect that one medical man was of more consequence than a number of other men.

The Sanitary Uses of Ozone

Dr. Gilbert J. Fowler, Manchester, England, discussed the application of ozone to the purification of water and air in the light of the most recent developments. The purification of water he considered in reference to: organic matter in solution and suspension; color, smell, taste; organisms—e.g., algæ, infusoria, bacteria; metallic impurities. He concluded that ozone treatment of water was to be recommended (a) when adequate sand filters were costly to erect and difficult of supervision; (b) when the amount of organic matter in solution in the water was limited; (c) when the pollution was mainly bacterial and of an intermittent character; and (d) when electrical power could be cheaply obtained. It must be understood, however, that some preliminary treatment for the removal of suspended matter, whether consisting of ordinary mud or algæ and infusoria, should always be provided. He referred to successful experiments on the purification by ozone of air polluted by human respiration, and to various miscellaneous applications. Finally, he said, a stage had now been reached when the use of ozone for sanitary purposes deserved the careful attention of those engaged in public health problems.

The Chronic Form of Pancreatitis

Mr. Mayo Robson, London, England, directed attention to chronic pancreatitis as a clinical entity, apart from gall-stone trouble, and he also described how frequently inflammatory enlargement of the pancreas accompanies cholelithiasis, especially if the concretions are in the common duct. He pointed out that chronic pancreatitis may persist long after the original cause has disappeared and may simulate cancer of the head of the pancreas, and so terminate fatally, the impression being that the condition is incurable, when as a matter of fact suitable surgical treatment is capable of curing it. His observations were based on a large series of cases in which he had operated, the first operation having been performed by him in June, 1890; this patient was in good health 14 years later, a second in 1891, and a third in 1892. In the latter case death occurred two days after operation and a microscopic examination of the pancreas showed the case to be one of interstitial pancreatitis. In 1895, he operated on two patients who were in good health several years later, and in 1896 on another who was well some time subsequently. In this year (1896), Riedel published a paper on inflammatory enlargement of the head of the pancreas in which he described two cases of pancreatitis (in the first of which operation was done in 1893) associated with malignant disease. Another paper appeared in the same year by the same author on cases caused by gall-stones. Mr. Mayo Robson described the symptoms, the pathologic condition, the causes and the treatment of chronic pancreatitis and showed that the anatomic variations in the relations of the common bile duct to the pancreas and in the termination of the ducts had an important bearing on the etiology of the condition. He urged the importance of preventive treatment such as the removal of gall-stones before they had produced complications, and the treatment of duodenal ulceration by gastroenterostomy. If, after a fair trial of general treatment, not too long continued, the symptoms persisted, and the signs of failure in pancreatic digestion and metabolism were manifesting themselves, the question of surgical treatment, he said, ought to be seriously considered, especially when the disease was associated with jaundice. Rational treatment should aim at the cause, whether that was gall-stones, pancreatic calculi, duodenal catarrh, duodenal ulcer, alcoholism, or syphilis. Even in the absence of obvious removable causes he advocated efficient drainage of the infected bile and pancreatic ducts, either by cholecystotomy or cholecystenterostomy, preferably the latter. His experience had taught him that if the cause can be removed at an early stage an absolute cure is possible; and though complete restoration of the damaged gland in more advanced cases cannot always be promised, yet an arrest of the morbid process may be looked for, and the remaining portion of the pancreas will be able to carry on the metabolic, and, even if completely, the digestive functions of the gland.

Arthrodesis

Mr. R. Jones, Liverpool, England: The operation should never be performed on children under 8 years, not until all deformity has been corrected by wrench and tenotomy. It must not be performed if any hope exists of muscular recovery. It should be planned so as to avoid injury of the epiphysis and so that the bones lie in good apposition. Splints should be worn until consolidation is complete.

(To be continued)

INTERNATIONAL CONFERENCE ON LEPROSY

Held in Bergen, Norway, August 16-19, 1909

(From Our Special Correspondent)

The conference has been a great success, and it will be registered as one of the greatest efforts of medical science to stamp out a scourge which for centuries has afflicted humanity.

Description of Bergen

No better place for such an interesting meeting could have been selected than Bergen, a beautiful city, which is considered as a shining pearl which has risen from the sea. From all sides the city gazes out to sea from the mountain sides, from the headland and far in from the sheltered bays. Seven hills are in the background surrounding the city wall and covered with pines and mountain ash. Bergen is a city of a little over

80,000, and has enormous warehouses. Steamships leave every day in different directions carrying large quantities of merchandise, fish, hides, etc. The inhabitants are so exceedingly kind and courteous that every foreigner must admire their high degree of refinement.

Meeting Place

The congress met in the magnificent building, *"Den gode Hensigt."* Everything possible was done for the comfort of the members of the conference. The bureau of registration, post-office and information department were in one large room. The hall, a spacious and magnificent one, with a stage and pulpit for speakers, was magnificently decorated with palms and the flags of every nation represented to the conference. A gallery was reserved for ladies and guests where they could hear the reading of the papers and the discussion.

Reason for Selecting Bergen as Place of Meeting

Bergen was selected as the seat of the conference because the city has done much in the investigation of leprosy to deserve this distinction. In the thirteenth century in Europe were many hospitals for leprosy, which were supported by the churches and managed by charitable monks; such a hospital was known as the "House of Lazarus."

History of Leprosy in Norway

Leprosy was introduced in Norway, very likely, by the Vikings in their peregrinations, coming back from the coasts of Ireland, England, Iceland. At any rate, in the year 1000 leprosy is mentioned in the laws of Norway, which exempted leprous people from doing service in war. The first hospital for the disease in Norway was built in Bergen, in the thirteenth century. It was called the Hospital of St. Katherina; later it was changed to a general hospital. In 1410 was founded St. Jorgen's Hospital for Leprosy, which in 1702 burned down and in the same year was rebuilt as it is at the present time. Small hospitals for leprosy were established in the eastern parts of the country; the more important being those of Trondhjem, Bergen and Molde. The disease recently has decreased considerably in Norway and most of these hospitals have been discontinued or have been changed to general hospitals. Originally these hospitals were a matter of charity. There was no knowledge of the disease and no effort for a rational treatment. Scientific investigations began only in the nineteenth century. The first name to be mentioned is that of D. C. Danielsen and C. W. Boek, who in 1847, published a book on leprosy, which became of the greatest importance and opened a new era in the history of medicine. The theories advanced in this book have become the foundation of the treatment and of the prophylaxis of contagious diseases. Although the two-mentioned authors did not know the micro-organism, which is the cause of leprosy, yet they opened the way for the explanation of the essence of this disease. It was but natural that the scientific work was continued by another man from Bergen, G. Armauer Hansen, who in 1872 discovered the *Bacillus lepræ*, giving to the world the true cause and the treatment of the disease.

Opening of the Congress

Monday morning, August 16, the congress was formally opened by the King of Norway, who made a brief address in French.

President's Address

Dr. G. A. Hansen referred to the ravages of leprosy in the middle ages, and to the present condition as it is found to-day:

The first conference on leprosy was called in 1897 on account of the dreaded scourge making its way into Germany from Russia. From that time we have still to know how far the disease has extended and how dangerous is yet its spreading. Such an old and deep-rooted disease that develops in such an obscure manner cannot be stamped out in one day. The conference has before it a work, which extends over the history of humanity. Norway has invited scientists to attend this conference for several reasons. In the first place, Norway, together with some other countries, has the doubtful honor of still having leprosy in its hospitals, but this has been the cause of careful and scientific investigations of the disease by Danielsen and Boek, and on account of the studies of these two scientists, Norway has taken decided public measures against the disease. The entire study and development of these prophylactic measures have been continued until we have obtained most satisfactory results. We are glad for that which we have contributed for this international work of combating leprosy. In spite of all this diligent study, there are yet many unsolved problems opened for discussion. Many of these points of disagreement will be treated here, as, for instance, the mode of dissemination of the disease, hereditary transmission, etc. Many obscure points are connected with the symptomatology: For instance, we do not yet know the first symptoms of the disease; the relation of leprosy to syringomyelia, etc. The result of treatment is a matter of the greatest importance.

The Reports of Delegates

The delegates representing the various nations were represented by Professor Kirchner, delegate from Germany.

The following-named countries sent official delegates: Argentine Republic, Belgium, Bulgaria, China, Cuba, Denmark, Great Britain, France, Holland, Italy, Japan, Portugal, Russia, Spain, Sweden, Germany, Egypt, Austria-Hungary and the United States of America. Besides these, there were many representatives of institutions of learning and others who attended in a private capacity.

Following the opening of the conference, certain official delegates presented their reports on the status of leprosy and the measures adopted against it in the countries they represented. Such reports were made from the following countries: Germany, France, Russia, Austria-Hungary, Italy, Japan, Belgium, United States of America and Argentine Republic.

Dr. V. Petersen, St. Petersburg, spoke of the isolation leprosy colony established by the Russian government. Since the establishment of this colony, the cases of leprosy in Russia have somewhat diminished. Private establishments cannot fight this disease successfully and it is the duty of the government to stamp out this scourge. The leprosarium has to be a true colony where the lepers can find occupation and at the same time they must be treated. Special care has to be given to the children of lepers, who have to be taken in a special institution, separated from the colony.

Dr. Kobler, Sarayevo, Bosnia, spoke of the condition of the leper in Bosnia and Herzegovina; since 1897 the disease has constantly diminished, so much so, that now entire districts which used to be infected with lepers are entirely free. This he attributed to the enforced hygienical rules, to the increased instruction of these populations, to the bettered sanitary conditions and to the better class of physicians who are now practising in those regions.

Dr. Bordoni Uffreduzi of Italy spoke of the conditions of the leper in Italy; Professor Babes of Bucharest spoke of the actual condition of the leper in Roumania; Dohi of Tokyo gave a summary of conditions in Japan; Dubois-Havenith of Brussels told of leprosy in the Belgian Congo, and Sommer of Buenos Aires spoke for Argentina.

Dr. Brinckerhoff of U. S. Public Health and Marine-Hospital Service spoke of the status of leprosy in the United States and its dependencies and the measures now being taken by the government for the study and prevention of the disease.

Dr. Raynaud of Algeria referred to the conditions in Algeria, where there are now 109 cases of leprosy—39 natives and 70 Europeans, 62 being Spaniards from the provinces of Alicante and Valencia. He found leprosy very rare among the Arabs, but the greatest danger is from foreign importation. As a consequence, they have adopted the following rules: centralization of all information concerning lepers, sanitary surveillance of them and frequent disinfection. Lepers are not allowed to land in the country, and when discovered are sent back to the place from which they came. The lepers of the country have to be confined in hospitals at the expense of the state. Lepers who are apparently well are not allowed to be milkmen, bakers, grocers, etc.

(*To be continued*)

MICHIGAN STATE MEDICAL SOCIETY

Forty-Fourth Annual Meeting, held at Kalamazoo, Sept. 15-16, 1909

The President, Dr. A. I. Lawbaugh, Calumet, in the chair.

Addresses of Welcome

Mr. Fitzgerald welcomed the society on behalf of the city, and Dr. A. I. Noble, superintendent of the Michigan Asylum, spoke on behalf of the medical profession.

Resolutions of Confidence in Dr. Cook

Resolutions were adopted unanimously extending to Dr. Frederick A. Cook the heartiest congratulations of the society on his dignified bearing in a trying situation and expressing confidence that Dr. Cook had attained the much-coveted goal, and believing that additional luster and honor would come to him as the details of his tremendous achievement shall be better made known to the public.

Officers Elected

The following officers were elected for the ensuing year: President, Dr. J. H. Carstens, Detroit; first vice-president, Dr. V. Tupper, Bay City; second vice-president, Dr. E. H. Webster, Sault Ste. Marie; third vice-president, Dr. J. F. Breakey, Ann Arbor; fourth vice-president, Dr. E. M. Eccles, Blissfield; secretary, B. R. Schenck, Detroit (reelected); treasurer, Dr. W. S. Anderson, Detroit. Bay City was selected as the place for holding the next annual meeting.

President's Address: The Physician, His Duties and Relations to the Profession and the Public

Dr. A. I. Lawbaugh, Calumet, said in part:

With the passing of the ages there developed the physician, the man set apart for the healing and cure of the ills of the flesh, devoting his life to the battle against disease, either in the treatment of the sick individual or in the combating of epidemics. He goes further than this. He is not satisfied merely with fighting existent disease in the patient or in the community; he looks to the prevention of future ills by outlining broad plans for the conservation of human life and energy, by educating and inspiring the public to the enactment of pure food laws, the protection of water supplies, the extermination of parasites and disease-bearing insects, the conquest of the tropics, the regulation of child labor, the protection of sex relations, the fight against tuberculosis and the venereal diseases, and the enforcement of general hygienic measures.

The modern physician must know life in all its phases; he must have the knowledge of the main springs of human action. He cannot content himself with a knowledge of anatomy, a little pathology, more symptomatology and still more materia medica and surgery. To fulfill his function, to be of best use to the community, he must possess a knowledge of all things that may benefit the community, aside from the mere matter of treating sick individuals. He must lead men to right living, because it is the way to long life and health. He must have the knowledge of human nature as revealed in history and the world's great literature. He must know psychology, sociology and political economy and he must be a past-master in the province of hygiene and sanitation. He must be able to understand the spiritual requirements of his clients, and in this way to offset their inclination to turn to false gods, such as Christian science, the Emmanuel movement, and other forms of so-called mind cure.

For medical men to be of the greatest value, not only to the profession, but to the community at large, there must be organization and cooperation as manifested in organization cannot be too strongly emphasized. The first and chief essential in the organization of a medical society is the laying of the cornerstone of unity and friendship. In the great movements affecting the nation as a whole, the physicians may find a proper field of action. Already, through the united stand and efforts of the profession, as exemplified in the acts of the American Medical Association, much useful and judicious legislation has been put in force by both federal and state legislative bodies. The physician has come also to be a maker of laws. In all matters concerning the physical health of the nation, his expert knowledge and specialized training becomes necessary to the proper and intelligent framing of health laws and their enforcement. In municipal affairs, the physician must also take his part as a citizen on whom certain peculiar responsibility rests. The public must be taught the value of hospitals in the restriction of disease. The conquest of disease depends on the education of the public, and the most important question of the day is that concerning the best method of inculcating such education; aside from the instruction of children in the public schools, the press is beyond doubt an invaluable avenue of education through which the lay public may be reached.

Stomach Lavage

Dr. Charles D. Aaron, Detroit: Lavage of the stomach seems to be the best means for modifying and counteracting functional changes; but only when it is learned that the mechanical function plays the principal rôle in digestion, can the indications for irrigation be more precisely determined. Experience has taught the great usefulness of lavage in most cases of intoxication and autointoxication. It is of benefit in the vomiting of patients suffering from uremia and eclampsia and in urinary intoxications generally. I have used the stomach tube for diagnostic purposes in old people without feeling uneasy about the theoretical contraindication enumerated with much detail in the text-books; but in each case I have given due weight to the question of whether or not the procedure was one of absolute necessity. Autolavage is a form of stomach irrigation, which has been called physiologic, in order to distinguish it from the kind spoken of; for here the use of the stomach tube is not necessary. It is sufficient that the patient drink from four to eight ounces of the irrigation fluid and then lie down on his abdomen, supported on a somewhat hard resisting surface across the bed, or on the floor. In this position let him breathe as deeply as possible. From fifteen to twenty deep respirations are sufficient to drive the contents of the stomach through the pylorus. This procedure may be repeated as often as necessary. Autolavage may be applied two or three hours after a light breakfast, four or five hours after the midday meal or evening meal, and sometimes also in the morning before breakfast. In this way the stomach will be effectively cleansed after each period of digestive work.

DISCUSSION

Dr. E. L. Eggleston, Battle Creek: I think in the experience of all of us there is a time when it is easier to use a stomach tube than to study the case, make a proper diagnosis, and outline the proper system of therapeutics. A few years ago most of my patients with gastric disorders needed lavage frequently. To-day I seldom use it except to aid in making a diagnosis. There are a number of conditions in which it is of value, but its indiscriminate use is unfortunate. A certain number of patients will come to us in which there is a question as to whether the condition is surgical or not. I have seen a number of patients in whom there has been an ulcer at the pylorus which had healed, left a cicatrix which mechanically interfered with the emptying of the stomach, and those individuals have been carried along for months on lavage, gradually losing weight, being so reduced at the time of operation that it was impossible for them to recover after operation. This is unfortunate. There are a number of conditions in which there is an atonic condition of the stomach secondary to the general disorder, but in which gastric lavage, while it may not be curative in itself, is certainly a necessary proceeding. I have not been successful with autolavage, because in a certain number of neurotic individuals I have been afraid to institute it. I have found that a great many such patients have practised some sort of autolavage greatly to their detriment, as they had become so fearful of continued distress after each meal, that they would empty the stomach, in this way greatly interfering with nutrition. A patient with an atonic condition of the stomach, who is not able to eat more than two meals a day, at bedtime will have several ounces of undigested material in the stomach. Such a patient will have a restless night. During the night the changes which have taken place in the food have been such that a certain amount of poisoning results. The patient's rest has been greatly disturbed, and in the morning there is an unsatisfactory condition. In these cases I have always made it a rule to relieve the stomach of its contents previous to the patient retiring; this is more beneficial than to leave the material in the stomach until morning. Another point which has guided me somewhat in the use of lavage is nausea. This paper has strengthened my belief in the fact that the lavage tube has been used too frequently, and, aside from its use as a means of diagnosis, I believe it will be used less frequently in the future.

Dr. Frank Smithies, Ann Arbor: I cannot agree with Dr. Aaron as to the quantity of material used for the lavage. From a somewhat extensive experience in washing out stomachs, I have come to the conclusion that large quantities of water may be used, if such quantities of water are regulated at the time of entrance into the stomach. This is done by means of the common-glass irrigator, marked off in liters, half-liters or quarts, as the case may be. Large quantities are frequently necessary, provided they are removed, and the stomach is not tested to its limit. It has been a common experience of people who have washed their stomachs that small quantities of liquid introduced into the stomach frequently empty the stomach only partially, as in the case of hour-glass stomach. It is only at the end of lavage, and with large quantities of solution, that it is possible to wash out the material from the second chamber, as it were, and send the patient home with a comparatively clean stomach. Again, in cases of marked dilatation, with retention, whether the retention is due to a new growth or to a stricture of the pylorus, by the use of small quantities of lavage liquid one only washes the top off. The most important part of lavage is the end lavage, because frequently retained contents, such as mucus, are obtained, and frequently tissue bits and things which are important bacteriologically and otherwise. The whole question of gastric lavage as a therapeutic measure rests on diagnosis. I have not found autolavage successful.

Dr. B. A. Shepard, Plainwell: I want to emphasize the point brought out with regard to the use of the stomach pump in neurotic cases. It is sometimes amusing to see the mental effect of leaving a stomach pump in the room. I have known of several patients who had had excessive vomiting for several weeks having been cured simply by the physician exhibiting the stomach pump in the sick-room; or by washing out the stomach of neurotics when the stomach was involved. Autolavage is important. Its effects are the stimulation of the musculature of the stomach forcing the contents into the bowel.

Dr. Johann Flinterman, Detroit: Many cases of dilatation of the stomach after surgical operations can be relieved by lavage. I have applied it in cases of ileum, in which there was fecal vomiting, and in which after the application of the stomach tube relief was afforded. Again, the symptoms of strangulation in cases of hernia are sometimes relieved by lavage. It is a valuable remedy in actual dilatation of the stomach, as well as in cases of strangulated hernia or intestinal incarceration, or obstruction in which operation is sometimes refused.

Dr. Charles D. Aaron, Detroit: If a patient who has stenosis of the pylorus is not improving, but constantly losing weight, is not turned over to a surgeon for operation we are likely to lose him. I cannot agree with Dr. Smithies in the use of large quantities of water in cases of dilatation of the stomach; I do not think it necessary to use large quantities of water at any time. In a case of dilatation one will usually find a pint or more of fluid in the stomach to begin with, and it is necessary to remove the liquid contents from the stomach, and to use from 6 to 8 ounces of water at a time, which will be found sufficient. That obtains also in cases before operation. It is certainly harmful to put water into the stomach, overdistend the musculature and expect Nature to contract the muscle perfectly, or at the time one wishes to feed the patient again. Dr. Flinterman's remarks on acute dilatation are well taken. It is the only method we have of bringing about recovery in cases of acute dilatation of the stomach following operations, but even then there is a transudation of the liquid elements of the blood into the stomach, and it is necessary at first to remove the liquid in the stomach, and then add small quantities and wash it out.

(*To be continued*)

MEDICAL SOCIETY OF THE MISSOURI VALLEY

Twenty-second Annual Meeting, held at Council Bluffs, Iowa, Sept. 9-10, 1909

The president, Dr. C. B. Hardin, Kansas City, Mo. in the chair.

Officers Elected

The following officers were elected for the ensuing year: President, Dr. A. B. Somers, Omaha, Nebr.; first vice-president, Dr. C. R. Woodson, St. Joseph, Mo.; second vice-president, Dr. Flavel B. Tiffany, Kansas City, Mo.; secretary, Dr. Charles Wood Fassett, St. Joseph, Mo., re-elected; treasurer, Dr. T. B. Lacey, Council Bluffs, Iowa, re-elected.

Omaha, Nebr., was selected as the place for holding the semiannual meeting in March, 1910.

Dr. Hardin in his presidential address, offered suggestions with reference to the future conduct and improvement of the society.

Diagnosis and Treatment of Gastric Ulcer with Especial Reference to the Lenhartz Diet

Dr. Leroy Crummer, Omaha: We can claim the following advantages for the Lenhartz treatment: First, it is more comfortable for the patient. Second, there is less loss of weight and nutrition. Third, the period of return to normal diet is shorter. Fourth, the tendency to relapse is less. Till the last few years, the treatment has always been medical, but recently surgical treatment has slipped into the foreground to a great extent. The most conservative surgeons have generally advised operation only after medical means have failed, but that even these restrictions are not enough is now recognized. I have had the opportunity to carry out the Lenhartz treatment in eight cases of gastric ulcer, five of which were comparatively simple cases, and the treatment was successful without modifying any of the details. One patient went through the treatment with seeming complete success and left the hospital greatly improved in weight and strength, but died suddenly one month later with some acute abdominal trouble, probably perforative peritonitis. The other two patients, in addition to the clear ulcer condition, presented severe anemia and signs of pyloric obstruction. For the results of pyloric ulcer, surgical treatment is often demanded, and in general the opinion has been that operation is indicated in: First, chronic ulcer *per se;* second, acute hemorrhage; third, perforation; fourth, pyloric stenosis. The statement is often made that when medical treatment fails in chronic ulcer, a gastroenterostomy or other operation should be done. This indication, I think, should be revised and stated as follows: No operation should be done in chronic ulcer till the patient has had the benefit of a careful trial with the Lenhartz treatment.

DISCUSSION

Dr. John P. Lord, Omaha: I recall several cases of gastric ulcer in men who are now doing well without having undergone surgical intervention. I speak of this to emphasize the success which attends the expectant treatment of these cases. However, when an operation is indicated in gastric ulcer, it should be performed.

Dr. W B. Deffenbaugh, St. Joseph Mo.: In the medical treatment of gastric ulcer it is important to prescribe a diet which is free from irritating material. The average diet contains many things that are imperfectly masticated; they pass over the inflamed area, or through the pylorus, and keep up a mechanical disturbance.

Dr. R. C. Moore, Omaha: In my experience, comparatively few cases present the classical symptoms of gastric ulcer, but when we have one of these cases, diet is the main thing to consider. I do not resort to feeding by the rectum. I keep the patient as quiet as possible, maintain the action of the different secretory organs as best I can and place the patient on such food as can be digested. Milk should be the main article of diet. When the case takes on a surgical aspect, operation should be considered, and performed if necessary.

Dr. W. L. Ross, Omaha: Gastric troubles are functional and not organic, and we should not be in too great haste in saying that this or that patient has ulcer of the stomach, simply because he or she complains of pain. The whole symptomatology should be gone over in order to determine whether the cause is really located in the stomach or not.

Splenectomy

Dr. W. B. Deffenbaugh, St. Joseph, reported a case of traumatic rupture of the spleen, in which he resorted to splenectomy, with a successful result.

DISCUSSION

Dr. I. U. Parsons, Malvern, Iowa: Several years ago a boy ten years old fell across a wash-tub, striking himself in the region of the spleen. Several physicians saw the child, but were unable to make a correct diagnosis. Two months after the injury a tumor developed in that region. The abdomen was opened, and a large cyst of the spleen was found and drained. The boy recovered.

Dr. A. C. Stokes, Omaha: The spleen, according to German authority, has a physiologic function. It has to do with infections in the production of immunity, or the swallowing up of infections. This is illustrated by the fact that so many patients who have had infectious diseases have enlargement of the spleen. Embryologically, and from the standpoint of comparative anatomy, the spleen seems to be more of a remnant than anything else, for in animals it is much larger in comparison with the body-weight than it is in man. The blood supply seems to be about the same.

Cancer: A Constitutional Disease; Its Rational Treatment

Dr. John E. Summers, Omaha, delivered the address on Surgery, selecting this subject. He referred to recent investigations concerning the medical and surgical treatment in cases of cancer of the genitalia, etc., and said:

Technic. First, curette thoroughly and dry carefully, then pour one-half ounce of acetone through a Ferguson speculum (with patient in the Trendelenburg position). Leave this in for fifteen or twenty minutes, then let the acetone run out and pack the cavity with gauze soaked in acetone. Wash the vulva and vagina; insert tampon. In rectal cancer, follow a like practice only first introduce tampon above growth before using acetone. Repeat the use of acetone two or three times a week in office practice. Protect the vulva with vaselin. By this treatment, the oozing is checked, and the wound surface is covered with a thin white film. The odor is remarkably reduced. The discharge is at first watery and then disappears. The wound shrinks and tends to heal. The health improves. The opsonic index is raised.

Acetone bisulphite is a white powder which, dissolving in the wound, gives off pure acetone, and may be used in place of acetone; its method of application is after the same fashion. Besides escharotics, the *x*-ray and radium, which, when the cancer or sarcoma can be reached tend to destroy or inhibit its growth, there are certain drugs of great value in the internal treatment of cancer. They are mostly of the alterative type, and usually are best given hypodermically. Certain preparations of arsenic, mercury and iron are to be commended. Iodin, I have not found so useful, but it has its friends. Having noted the fact that cancer never begins primarily in bone, that sarcomas in which the bone element predominates are least malignant, it occurred to me that if, in any way, I could increase or overload the blood with lime, it would be a rational therapeutic measure in the treatment of malignant disease as a postoperative measure of prophylaxis and as a remedial agent in conjunction with the hypodermic use of alteratives. So far, I have reason to believe there is value in the remedy—so much do I think so, that I hope my friends will try it. I use the lactate of calcium given, to begin with, in a hypodermoclysis, from 30 grains to 1 dram in a pint of warm sterile water; later I continue the drug in doses of from 10 to 30 grains given by the stomach in hot water, thrice daily; it may be continued indefinitely, but at the beginning is apt to cause nausea. Thirty grains of the lactate in a pint of warm water may be given directly into a vein. In a bad hopeless case of cancer of the throat I found that this drug materially lessened the pain.

(*To be continued*)

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

An Official Tri-State Journal

An experiment in medical society journal publication has been inaugurated by the state medical associations of Oregon, Washington and Idaho, a composite board representing the three associations having taken over the publication of *Northwest Medicine*. The first number issued by the new management has recently appeared. As this is the first journal to be published by a combination of state associations, its progress will be watched with interest. If the experiment is successful (and from the appearance of the first number there is no reason why it should not be) a solution will have been found of the problem of providing official medical journals, owned and published by physicians, for the smaller state associations which are not able on account of lack of numbers to publish separate journals of their own.

This number of *Northwest Medicine* is well prepared and printed and the size (12x8½) is commendable, the larger pages and wider columns being much more attractive both to the reader and the advertiser. The leading article on "The Relations of the Internal Secretions to Surgical Conditions," by Dr. Roswell Park of Buffalo, is the oration on surgery read before the joint meeting of the medical associations of the three states recently held at Seattle. Addresses by Dr. C. J. Fagan, president of the British Columbia Medical Association, Dr. J. L. Stewart, president of the Idaho State Medical Association, and Dr. Clarence A. Smith, president of the Washington State Medical Association, together with a well illustrated contribution on "The Complement Deviation Test in Syphilis," by Dr. Ralph C. Matson, of Portland, completes the original matter in the first issue. Half-tone portraits of the newly-elected presidents of the state associations, five pages of editorials, with the transactions of the house of delegates, news items and book reviews, complete the matter in the first number.

International Conference on Vital Statistics

The International Commission for the Revision of the Classification of Diseases and Causes of Death met at Paris, July 1 to 3. In order that the United States might be properly represented, a section was added to the act appropriating funds for the thirteenth U. S. census, authorizing the director of the census to appoint three commissioners with the standing of special agents of the government, one of whom was to be chosen from the United States Census Office, one from the medical profession, and one from the organized registration officials of the United States. Twenty-five hundred dollars was appropriated to defray their expenses. In accordance with this law, Hon. E. Dana Durand, Director of the Census, appointed Dr. Cressy L. Wilbur, chief statistician for vital statistics of the Census Bureau; Dr. Frank P. Foster, chairman of the Committee on Nomenclature and Classification of Diseases of the American Medical Association; and Dr. Wilmer R. Batt, of Pennsylvania, chairman of the Committee on Classification of Causes of Death of the Section on Vital Statistics of the American Public Health Association. Unfortunately, Dr. Foster, who was appointed to represent the medical profession, was unable to attend the conference. Drs. Wilbur and Batt were present, also Dr. Frank L. Pleadwell, U. S. N., Dr. H. D. Geddings, Asst. Surgeon-General U. S. P. H. and M.-H. S., Prof. Walter F. Willcox of Cornell University, and Dr. William H. Guilfoy, registrar of records of the City of New York.

The commission met July 1 to 3 in the Ministry of the Interior. Twenty-three countries were represented. The utmost harmony was manifested, the desire being to subordinate the individual views of the delegates to the general good. A number of recommendations presented by the American delegates were approved, especially one providing for a reclassification of deaths from violent causes.

The proceedings of the commission, as well as the revised nomenclature, is now being printed, it being anticipated that a revised version will be available for the use of officials in compiling the decennial Federal census for 1910. An official version is to be prepared in the language of each country represented, the English translation being in the hands of Dr. Wilbur and Dr. G. W. Knibbs, statistician for Australia. In recognition of the work of the American delegates, Dr. Wilbur was made vice-president of the international commission and presided over one of the sessions.

On July 4, the delegates were received by the President of France, the week following they also participated in the session of the International Statistical Institute. The next session of the commission will be held under the auspices of the French government unless, in view of the great progress of American vital statistics in the past decade and the important rôle played in revision by the American delegates, it is possible to arrange for the meeting of the third decennial conference at Washington.

In the absence of Dr. Frank P. Foster, the following resolutions were adopted by the American representatives:

Resolved, That the official delegates of the United States to the Second Decennial Revision of the International Classification of Causes of Death desire to express their sincere regret that Dr. Frank P. Foster, chairman of the Committee on Nomenclature of the American Medical Association, was unable to be personally present during the session of the commission at Paris, July 1-3, 1909, and their high sense of appreciation of the services rendered by his and associated committees in the preliminary suggestions,[1] which have so greatly facilitated the work of the American delegates.

F. L. Pleadwell,
Wilmer R. Batt,
H. D. Geddings,
Wm. H. Guilfoy,
Walter F. Willcox,
Cressy L. Wilbur.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

First Month—Fourth Weekly Meeting

Diseases of Cerebral Veins and Sinuses

Primary, Marantic, Thrombosis: Etiology.—Age, prolonged illness, cachexiæ. Symptoms.—Preceding disease, venous stasis, local edema, mental symptoms.

Secondary, Infective, Thrombosis: Etiology.—Middle-ear disease, fractures, infections in nose, mouth and pharynx, erysipelas, anthrax. Symptoms.—Preceding infection, local symptoms, brain symptoms, septicemia.

Cerebral Palsies of Children

Etiology: (a) Prenatal conditions, lack of development, prematurity, porencephalia; (b) accidents at birth, protracted labors, vertex and breech presentations, abuse of forceps; (c) postnatal causes, age, infectious diseases, injuries.

Symptoms: Hemiplegic cases. Sudden onset, convulsions, loss of consciousness, development of hemiplegia, spasticity, exaggerated reflexes, contractures, attitude and gait. Atrophy of affected side. Athetosis. Tendency to epilepsy. Diplegic cases, may be paraplegic. Usually of prenatal or birth origin. Slow development of cranium, convulsive seizures, rigidity and contractions, upper and lower limbs involved. Lack of mental development, tendency to epilepsy and idiocy.

Monthly Meeting

Varieties of Aphasia and Significance of Each.
The Localization of the Lesion in Intracerebral Hemorrhage.
Early Diagnosis and Treatment of Cerebral Palsies of Children.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phœnix, October 4-5. Sec., Dr. Ancil Martin.
Colorado: Capitol, Denver, October 5. Sec., Dr. S. D. VanMeter, 1723 Tremont St.
Georgia: Regular, Capitol Bldg., Atlanta, October 12. Sec., Dr. E. R. Anthony, Griffin. Homeopathic: Atlanta, October 4. Sec., Dr. R. E. Hinman, 153 Whitehall St.
Idaho: Boise, October 5-6. Sec., Dr. W. F. Howard, Pocatello.
Illinois: Coliseum Annex, Chicago, October 20-22. Sec., Dr. J. A. Egan, Springfield.
Kansas: Topeka, October 12. Sec., Dr. F. P. Hatfield, Olathe.
Louisiana: New Orleans, October 1-2. Sec., Dr. Felix A. Larue, 211 Camp St.
Michigan: Lansing, October 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
Minnesota: State University, October 5. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.
Mississippi: Jackson, October 12. Sec., Dr. S. H. McLean.
Montana: Capitol, Helena, October 5. Sec., Dr. W. C. Riddell.
New Jersey: State House, Trenton, October 19-20. Sec., Dr. E. L. B. Godfrey, Camden.
New Mexico: Santa Fe, October 11-12. Sec., Dr. J. A. Massie.
North Dakota: Grand Forks, Oct. 5-7. Sec., Dr. H. M. Wheeler.
Oklahoma: Ione Hotel, Guthrie, October 13. Sec., Dr. Frank P. Davis, Enid.
Rhode Island: Room 313, State House, Providence, October 7-8. Sec., Dr. Gardner T. Swarts.
Utah: Room 207, City and County Bldg., Salt Lake City, October 4-5. Sec., Dr. G. F. Harding, 310 Templeton Bldg.
Wyoming: Laramie, October 20-22. Sec., Dr. S. B. Miller.

Illinois April and May Reports

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examinations held at Chicago, April 15-17, and at East St. Louis, May, 1909. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75.

At the examination held in April, the total number of candidates examined was 126, of whom 111 passed, 12 failed and 1 withdrew. Two candidates did not complete the examination. The following colleges were represented:

College.	Year Grad.	Total No. Exam'd.
PASSED		
George Washington University	(1908)	1
Bennett Medical College	(1909)	2
Chicago College of Medicine and Surgery	(1909)	33
Illinois Medical College	(1905) (1908) (2, 1909)	4
National Medical University, Chicago	(1906)	1
Northwestern Univ. Med. School	(1901) (1908) (10, 1909)	12
Coll. of Phys. and Surg., Chicago	(1905) (1908) (27, 1909)	29
Rush Medical College	(1909)	19
Jenner Medical College	(1909)	2
Medical College of Indiana	(1898)	1
Johns Hopkins University	(1906)	1
Tulane University of Louisiana	(1899)	1
St. Louis College of Physicians and Surgeons	(1908)	1
Jefferson Medical College	(1892) (1908)	2
University of Pennsylvania	(1908)	1
Trinity Medical College, Toronto, Canada	(1903)	1
FAILED		
Hahnemann Medical College and Hospital	(1884)	1
College of Med. and Surg., Physiomedical, Chicago	(1908)	1*
Illinois Medical College	(1908)* (1909)	2
National Medical University, Chicago	(1907)	1*
College of Physicians and Surgeons, Chicago	(1901)	1
Keokuk Med. College, Coll. of Phys. and Surg.	(1908)	1
Hospital College of Medicine, Louisville	(1904)	1†
Barnes Medical College	(1908)	1*
St. Louis College of Physicians and Surgeons	(1906)	1†
Meharry Medical College	(1907)	1*
Queen's University, Kingston, Ontario	(1886)	1

At the examination held in May, the total number of candidates examined was 133, of whom 115 passed and 18 failed. The following colleges were represented:

College.	Year Grad.	Total No. Exam'd.
PASSED		
Hahnemann Med. College and Hospital, Chicago	(1909)	1
College of Physicians and Surgeons, Chicago	(1909)	1
Northwestern University Medical School	(1909)	2
University of Louisville	(1909)	1
Barnes Medical College	(1909)	25
Homeopathic Medical College of Missouri	(1909)	1
St. Louis University	(1909)	28
St. Louis College of Physicians and Surgeons	(1909)	24
University of Missouri	(1909)	1
Washington University, St. Louis	(1909)	28
Eclectic Medical Institute, Cincinnati	(1900)	1
University of Nashville	(1909)	[illegible]
University of Toronto, Ontario	(1905)	1
FAILED		
Barnes Medical College	(1908)* (4, 1909)	5
St. Louis College of Physicians and Surgeons	(1906)† (1908)* (1908)† (9, 1909)	12
Washington University, St. Louis	(1909)	1

* Third examination.
† Second examination.

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[1] Those who desire to read the report presented to the American Medical Association by its Committee on Nomenclature and Classification of Diseases, of which Dr. Foster was chairman, will find it in The Journal, June 19, 1909, page 2058.

Rhode Island July Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, July 1-2, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 8, of whom 7 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Maryland	(1909)	83.
Baltimore Medical College	(1908)	80, 80.3
College of Physicians and Surgeons Baltimore	(1908)	93.1
Boston University	(1909)	89.4
Cornell University Medical College	(1909)	90.1
Jefferson Medical College	(1909)	80.8
FAILED		
Baltimore Medical College	(1907)	74.7

Marriages

Ruth Vail, M.D., and Albert Taylor Snow, both of Chicago, September 7.

Herman J. Derger, M.D., to Miss Margaret Ziegler, at Baltimore, September 7.

Ralph Tousey, M.D., to Miss Clara S. Briner, both of New York City, September 7.

Henry C. Watt, M.D., to Miss Marjorie Palmer, both of Colorado Springs, September 14.

William Hope Smith, M.D., U. S. Army, to Miss Helen Davidson, at San Francisco, August 3.

Roswell C. Sartell. M.D., Eldred, Pa., to Miss Jeannette M. Lockard, of Philadelphia, April 21.

William Vincent Pascual, M.D., Brooklyn, to Miss Beatrice Roche, of Deal, N. J., September 10.

Charles Edward Conduff, M.D., to Miss Annie Childress, both of Riner, Va., at Bristol, Tenn., September 11.

Victor Mackay Daly, M.D., to Miss Violette Berry Helm, both of Pontiac, Ill., at St. Paul, Minn., September 8.

Byron G. R. Williams, M.D., Paris, Ill., to Miss Margaret Elizabeth Mahoney, of Lexington, Ky., September 8.

Francis Alphonso Mantz, M.D., Philadelphia, to Miss Martha Mabel Yule, of Owen Sound, Ont., September 9.

Paul S. Morrison, M.D., Rushville, Mo., to Miss Bertha Chapman, of St. Joseph, Mo., at Atchison, Kan., August 25.

Samuel Sayre Rodman, M.D., U. S. Navy, to Miss Marjorie Drayton Memminger, at Flat Rock, N. C., August 27.

William T. Owen, M.D., Clarksburg, W. Va., to Miss Nellie Virginia Martin, of Bridgeport, W. Va., at Parkersburg, W. Va., September 4.

Deaths

Bernard Douglas Eastman, M.D. College of Physicians and Surgeons, New York City, 1862; a member of the Kansas Medical Society and the American Medico-Psychological Association; founder of the New England Psychological Society; from 1862 to 1865 assistant at the New Hampshire Hospital for the Insane, Concord; from 1865 to 1872, assistant physician at the Government Hospital for the Insane, Washington, D. C.; from 1872 to 1879, superintendent of the Worcester (Mass.) Lunatic Hospital, Lake Quinsigamond; for seventeen years superintendent of the Topeka State Hospital; professor of materia medica and therapeutics, and psychiatry in Kansas Medical College; an authority on insanity and the building and management of hospitals for the insane; died at his home in Topeka, September 11, from heart disease, aged 73.

William Thayer Smith, M.D. Dartmouth Medical School, Hanover, N. H., 1878; New York University, New York City, 1879; LL.D. Dartmouth, 1897; a member of the American Medical Association, American Academy of Medicine and American Association for the Advancement of Science; dean, professor emeritus of physiology and professor of clinical surgery in Dartmouth Medical School; surgeon to the Mary Hitchcock Memorial Hospital, Hanover, and author of textbooks on physiology and hygiene; died at his home in Hanover, N. H., September 17, from cerebral hemorrhage, aged 70.

David Finney Stuart, M.D. Jefferson Medical College, Philadelphia. 1859; chief surgeon of the Houston and Texas Central and Houston East and West Texas railroads from 1878-1895; president of the Houston Infirmary Sanitarium; formerly president of the board of trustees of Texas Medical College; assistant surgeon of the Tenth Texas Infantry and senior surgeon of Granberry's Texas Brigade in the Civil War; in 1871 vice-president and two years later president of the State Medical Association of Texas; died at his home in Houston, September 8, aged 76.

William Francis Mitchell, M.D. University of Michigan, Ann Arbor, 1868; a member of the American Medical Association; formerly president of the Schuyler County (Mo.) Medical Society; a member of the American Public Health Association, American Association for the Advancement of Science, and Northeast Missouri Medical Association; local surgeon at Lancaster for the Burlington System, and a member of the local board of U. S. pension examining surgeons; died at his home September 11, aged 67.

Howell Emolyn Davies, M.D. Rush Medical College, Chicago, 1902; a member of the American Medical Association; fellow in bacteriology, University of Chicago, 1897-1900; and instructor in gynecology in his alma mater in 1902 and 1903; died at his home in Emporia, Kan., August 26, from typhoid fever, aged 38.

Walter B. Batcheller, M.D. Northwestern University Medical School, Chicago, 1900; a member of the State Medical Society of Wisconsin; for four years a medical missionary in Corea and China, and since his return a practitioner of Madison and Cable, Wis., died in the Madison General Hospital, September 10, aged 41.

William Thomas Gardner, M.D. Physio-Medical Institute, Cincinnati, 1871; for five years superintendent of the Oddfellows Orphans' Home, Checotah, Okla.; a member of the city council and afterward mayor of Ardmore, Okla.; died at his home in that city, September 4, from nephritis, aged 60.

John Holmes Hand, M.D. Eclectic Medical College of Pennsylvania; Philadelphia, 1870; of Dias Creek, N. J.; while driving across the tracks of the West Jersey and Seashore Railroad at Cape May Court House, N. J., September 8, was struck by a train and instantly killed, aged 64.

Stephen Neal, M.D. Atlanta (Ga.) Medical College, 1886; of Cordele, Ga.; formerly of Talbotton, Ga.; who invented a new process of extracting turpentine which has said to have revolutionized that industry; died in the Cordele Sanitarium, September 10, after an operation for appendicitis, aged 48.

Gustave McFadden, M.D. Albany (N. Y.) Medical College, 1864; assistant city assessor of Chanute, Kan.; clerk of Neosho county from 1878 to 1880, and deputy register of deeds from 1882 to 1884; died suddenly in Manitou, Colo., August 19, from acute gastritis, aged 71.

Charles Timothy Newkirk, M.D. University of the Victoria College, Coburg, Ont., 1864; a member of the Michigan State Medical Society, and a surgeon of volunteers during the Spanish-American War, died at his home in Bay City, September 16, from heart disease, aged 68.

James Tampson Valliant, M.D. Texas Medical College, Galveston, 1874; of Killeen, Texas; a member of the State Medical Association of Texas; died at the home of his daughter in Santa Ana. Cal., July 17, from the effects of a carbuncle on the neck, aged 69.

Pierson C. Curtis, M.D. Albany (N. Y.) Medical College, 1884; a member of the American Medical Association; of Round Lake, N. Y.; was killed in a collision between his automobile and an electric car at Round Lake, September 6, aged 53.

Levin Clarke Royster, M.D. Louisville (Ky.) Medical College, 1884; a member of the American Medical Association; died at his home in Smith's Mills, Ky., August 14, from the effects of a fall from a hayloft, in which he fractured the cervical spine, aged 49.

William Henry Russell, M.D. College of Physicians and Surgeons, Boston, 1891; Tufts Medical School, Boston, 1895; a member of the Massachusetts Eclectic Medical Society; died at his home in Ipswich, Mass., June 6, from cerebral hemorrhage, aged 49.

James Brown Burnet, M.D. New York University, New York City, 1866; a member of the board of trustees of the New Jersey Historical Society and a medical cadet during the Civil War; died at his home in Newark, N. J.. September 7, aged 66.

Henry Ziesing, M.D. University of Giessen, Germany, 1851; Illinois Army Board. 1865; a surgeon of volunteers during the Civil War; for many years a practitioner of Peru, Ill.; died at his home in that city, September 11, from paralysis, aged 80.

William A. Briant, M.D. Missouri Medical College, St. Louis, 1883; a member of the Arkansas Medical Society; for several terms a member of the Arkansas legislature; died at his home in Hope, September 4, from cancer of the kidney, aged 47.

Urban P. Stair, M.D. Northwestern University Medical School, Chicago, 1862; a member of the Wisconsin State Medical Society; surgeon of volunteers during the Civil War; died at his home in Fort Atkinson, Wis., September 6, aged 71.

Henry H. Cheatham, M.D. Barnes Medical College, St. Louis, 1895; formerly of Bainbridge, Ga.; for two years a practitioner of Havana, Fla.; while hunting near that place, August 26, was accidentally shot in the leg, and bled to death.

Oliver Dwight Paine, M.D. American College of Medicine in Pennsylvania and Eclectic Medical College of Philadelphia, 1860; a practitioner of Youngstown, Ohio since 1848; died at his home, September 1, from senile debility, aged 90.

John James Alexander Smith, M.D. Atlanta (Ga.) Medical College, 1858; a Confederate veteran, and at one time a member of the legislature from Greene county, Ala., died at his home in Union, September 9, aged 81.

William E. Haines, M.D. University of Pennsylvania, Philadelphia, 1868; a member of the American Medical Association, and a veteran of the Civil War, died at his home in Bushnell, Ill., September 12, aged 60.

Henry Taylor Barstow, M.D. Harvard Medical School, Boston, 1884; a member of the American Medical Association and the Harvard Medical Club; died at his home in Boston, recently, aged 50.

Mary Pradt-Harper, formerly a medical missionary among the Navajo Indians in Arizona, died in the State Hospital for the Insane, Mendota, Wis., Dec. 16, 1908, from cerebral hemorrhage, aged 56.

Erasmus S. Dodd, M.D. Eclectic Medical Institute, Cincinnati, 1849; for sixty-five years a practitioner of Michigan; died at his home in Buchanan, September 13, from senile debility, aged 90.

Joseph Fryer Bazill, M.D. University of Nashville, Tenn., 1894; Vanderbilt University, Nashville, 1894; of Crayon, Ohio; died in the State Hospital for the Insane, Columbus, September 1, aged 58.

Philip E. Hepler, M.D. University of the South, Sewanee, Tenn., 1895; of Bridgeport, Ohio, died at the home of his brother in Bethlehem, Pa., September 6, from tuberculosis, aged 37.

Edward P. Gould, M.D. Medical College of Ohio, Cincinnati, 1868; a member of the Ohio State Medical Association; died at his home in Sheridan, September 5, from nephritis, aged 65.

Joshua C. Boullee, M.D. Trinty Medical College, Toronto, 1875; of New York City; died in St. Vincent's Hospital, September 8, from the effects of a fall from his porch, aged 57.

William M. Barnes, M.D. Baltimore Medical College, 1882; a member of the Medical and Chirurgical Faculty of Maryland; died at his home in Baltimore, September 11, aged 85.

Amelia Wilkes Lines, M.D. Hygeio-Therapeutic College of New York, New York City, 1851; died at her home in Brooklyn, N. Y., September 11, from senile debility, aged 85.

Mary F. Stryker, M.D. Woman's Medical College of Georgia, Atlanta, 1890; died at her home in New York City, September 12, from cerebral hemorrhage, aged 40.

Hugh Thomas Adams, M.D. School of Physic, Trinity College, Dublin, Ireland, 1869; died at his home in Jersey City, September 8, aged 63.

Richard M. Johnson, M.D. University of Michigan, Ann Arbor, 1871; died at his home in Northville, Mich., September 9, from uremia, aged 66.

Roy Welch, M.D. St. Louis University, 1907; died at his home in Lincoln, Ill., from malignant endocarditis, September 7, aged 30.

Charles Edward Louth, M.D. American Eclectic College, Cincinnati, 1886; died at his home in Cleveland, Ohio, August 25, aged 66.

Charles M. Snyder (license, Mich.); died at his home in Lake Odessa, Mich., September 5, from pernicious anemia, aged 58.

Jesse Longfield, M.D. Bennett Medical College, Chicago, 1833; died at his home in Turney, Mo., September 2, aged 78.

Axel Otto Lindfors, M.D. professor of gynecology and obstetrics in the University of Upsala, Sweden; an able writer in his specialties; a man of letters and a lyric poet; died suddenly August 18, at Düren, Rhine Provinces, Germany, aged 57.

Book Notices

EPOCH-MAKING CONTRIBUTIONS TO MEDICINE, SURGERY AND THE ALLIED SCIENCES. Collected by C. N. B. Camac, A.B., M.D. Cloth. Pp. 435, with illustrations. Price, $4. Philadelphia: W. B. Saunders Co., 1909.

This work consists mainly of reprints of those articles which first brought to the notice of the scientific world the epoch-making observations of such men as Lister, Harvey, Auenbrugger, Laennec, Jenner, Morton and Holmes. There are also given brief biographic sketches of the observers themselves. The collector of these papers calls attention to the fact that the teachings of the original observers are by no means obsolete, a point that will forcibly impress itself on the reader. Such a resurrection of communications that have in many cases been buried in a mass of more or less indifferent literature is an achievement for which Dr. Camac deserves the thanks of the medical profession. The teachings of great authorities in other branches of science and art have long been accessible; that the same has not been true in medicine is of no great credit to the profession. The selection and arrangement of the material is all that could be wished. The physician who is interested in the "scientific side of the investigator's mind" will not be willing to be without the book.

GENERAL SURGERY. By Ehrich Lexer, M.D., Professor of Surgery, University of Berlin. Translated from Second German Edition by Dean Lewis, M.D., Instructor in Surgery, Rush Medical College. Edited by Arthur Dean Bevan, M.D., Professor of Surgery, Rush Medical College. Cloth. Pp. 1041, with illustrations. Price, $6.00. New York: D. Appleton & Co., 1908.

This volume is an English translation from the German of that part of Lexer's work which treats of the general principles underlying the practice of surgery. The chief object in presenting this translation was to furnish the English-reading student with the most authoritative volume, containing latest additions to the very essential subjects usually grouped under the title of general surgery; and in the selection of Lexer's work the translators have made no mistake. Every practitioner must always remain a student and there are no subjects in medicine about which any one man's knowledge is so complete and so perfect that it is unnecessary to review constantly in order to keep well informed. Hence a work like this on so-called principles while primarily intended for students, is of just as much value to the practitioner. The work has been considerably improved by numerous additions made by the American editor, notable among which are the chapters on nitrous oxid gas anesthesia, on blood examinations, on blastomycosis, etc. The work is a creditable one and ought to be welcomed by the practitioner as well as the undergraduate.

SURGERY, ITS PRINCIPLES AND PRACTICE. By various authors. Edited by William Williams Keen, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, and John Chalmers DaCosta, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Vol iv. Cloth. Pp. 1194, with illustrations. Price, $7.00. Philadelphia: W. B. Saunders Co., 1908.

In this volume of Keen's system are discussed the surgery of the intestines, including the rectum and anus and hernia; surgery of the genitourinary organs; surgery of the eye and of the ear; military, naval and tropical surgery and the influence of race, sex and age in surgical affections. The author selected to write on each particular subject in question is recognized as one eminently qualified for the task.

It is impossible to review each chapter *in extenso,* but attention is directed to a few special features. The absence of any mention of the injection treatment of hernia is to be regretted, not because of any merit which it may possess, but because its great popularity with a certain class makes it desirable that its demerits should be exposed.

The chapter on examination of the urine in relation to kidney disease will be a shock to many enthusiasts in that line, but it is a practical exposition of the subject by a thoroughly practical man. Under surgery of the genitourinary organs, the chapters on the bladder and the prostate deserve special mention, while under surgery of the intestines, of special interest are the remarks on inflammation of the various diverticula and the chapter on the appendix. As might be expected from the subjects, this volume is perhaps thus far the most interesting of this very excellent system.

Introduction a l'Etude Clinique et a la Pratique des Accouchements: Anatomie—Présentations et Positions—Mécanisme—Toucher—Manœuvres—Extraction du Siège—Version—Forceps. Par L. H. Farabeuf et Henri Varnier. Paper. Pp. 488, with illustrations. Price, $3.00. Paris: Georges Steinheil.

This book was out of print for some time, though a reprint was published in 1904. One of the authors, Varnier, has died, and this new edition has been prepared by Farabeuf. The defective illustrations have been redrawn, though Farabeuf states that there are still some with which he is dissatisfied. It is unfortunate that there is no English translation of this work, but in any case the book will probably be of more value to teachers of obstetrics than to general practitioners. Farabeuf says that the work is largely the result of experiments in the dissecting room on the bodies of women and infants preserved in gelatin to keep the tissues supple. Chapter 1 takes up the pelvo-genital canal, measurements of the fetal head and the various presentations. Chapter 2 discusses the mechanism of labor in vertex, breech and face presentations and positions. Chapters 3, 4 and 5 take up in turn vaginal measurements and various presentations, manual extraction and podalic version. A great deal of space, almost half the book, details the use of forceps.

Hints in Practical Urinalysis with Etiology and Symptoms of Some Important Genitourinary Diseases. Third Edition. By Charles C. Yarbrough, M.D., Therapist, Scientific Department, Frederick Stearns & Co. Paper. Pp. 77. Detroit, Mich.: Press of Frederick Stearns & Co.

Although this pamphlet is issued as an advertisement for the firm and is sent gratuitously to physicians who ask for it, the advertising of the firm is confined to a few pages in the back. The text is good and the pamphlet worth having. It summarizes well the principles and methods of urinalysis.

Miscellany

TUBERCULOSIS NOMENCLATURE AND CLASSIFICATION

A Committtee Report Approved by the American Sanatorium Association

By H. L. BARNES, Wallum Lake, R. I.; LAWRASON BROWN, Trudeau, N. Y.; H. S. GOODALL, Lake Kushaqua, N. Y.; ESTES NICHOLS, Hebron, Me.; and L. ROSENBERG, Bedford Station, N. Y.

The committee appointed to consider carefully the classification adopted by the National Association for the Study and Prevention of Tuberculosis, to define exactly the terms employed therein, to formulate rules to insure a uniform method of examination; in short, to add to or to subtract from this classification, as the committee thought best, and finally to report its conclusions at this meeting of the society, begs leave to submit the following report.

This report is divided into several separate parts which deal with the various subjects assigned to the committee. The first section deals with the definition of terms employed in the classification; the second with the methods of examination that the committee would advise; the third with statistical reports of the sanatorium, a subject which alone renders this report of interest; the fourth discusses several mooted points; and the fifth includes the classification that we feel should be adopted by the sanatorium workers of America.

Inasmuch as many may not clearly hold in mind the classification adopted by the National Association for the Study and Prevention of Tuberculosis, it was thought best to include it in this report. It is as follows:

Classification

Incipient.—Slight initial lesion in the form of infiltration limited to the apex of one or both lungs or a small part of one lobe.

No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight).

Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest.

Expectoration usually small in amount or absent.

Tubercle bacilli may be present or absent.

Moderately Advanced.—No marked impairment of function, either local or constitutional. Localized consolidation moderate in extent with little or no evidence of destruction of tissue or disseminated fibroid deposits. No serious complications.

Far Advanced.—Marked impairment of function, local and constitutional. Localized consolidation intense, or disseminated areas of softening, or serious complications.

Acute Miliary Tuberculosis.—

Unimproved.—All essential symptoms and signs unabated or increased.

Improved.—Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration usually present.

Arrested.—Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least two months.[1]

Apparently Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion.

Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

Definition of Terms

TERMS USED IN DEFINITION OF "INCIPIENT"

1. *Slight Constitutional Disturbance.*—Slight loss of appetite, of strength, of weight; lassitude; possibly slight acceleration of pulse or possibly slight elevation of temperature. The impairment of health may be so slight that the patient does not look or feel sick in the ordinary sense of the word.
2. *Slight Elevation of Temperature.*—Maximum temperature after rest for one hour, never over 99.5 to 100° F. by mouth (or 100.5 per rectum).
3. *Slight Acceleration of Pulse.*—Maximum pulse rate not over 90 after rest for one hour, sitting or lying, except when due to causes other than tuberculosis.
4. *Absence of Tubercle Bacilli.*—Each monthly examination (if the sputum be negative) to consist of a careful microscopic examination, with a mechanical stage, of two smears, devoting at least three minutes to each smear, made from selected particles (at least six from different parts) of the sputum on each of three successive days. The morning sputum should always be obtained, or, better, the minute bits that some arrested patients raise at very infrequent intervals. It is not yet deemed wise to insist on digestion and centrifugalization or on inoculation of guinea-pigs.
5. *Infiltration.*—Physical signs of, slight prominence of the clavicle, lessened movement of chest, narrowing of apical resonance with lessened movement of base of lung, slight or no change in resonance, distant or loud and harsh breathing, with or without some change in the rhythm (i. e., prolonged expiration), vocal resonance possibly slightly increased; or fine or moderately coarse râles present or absent. If sputum contain tubercle bacilli, any one of these.
6. *Apex.*—That portion of the lung situated above the clavicle and the third vertebral spine.
7. *A Small Part of One Lobe.*—An area of one or two intercostal spaces, or an area not exceeding 60 to 80 sq. cm. in extent, according to the size of the patient.

TERMS USED IN DEFINITION OF "MODERATELY ADVANCED"

8. *Marked Impairment of Function, Either Local or Constitutional.*—Local: Marked dyspnea on exertion, limiting seriously the patient's activity.
   Constitutional: Marked weakness, anorexia, tachycardia.
9. *Moderate Extent of Localized Consolidation.*—An area of one-half lobe or less, but may involve both apices; marked dulness, bronchial or decidedly broncho-vesicular

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[1] The length of time mentioned is, of course, somewhat arbitrary, but is intended to cover the cases which frequently occur, where the patients leave a sanatorium for various reasons, contrary to advise, after a stay of a few weeks, although all active symptoms may have ceased completely soon after entrance.

breathing; markedly increased vocal resonance; râles usually present. These signs are to be sharply limited as to area instead of gradually shading into normal physical signs.

10. *Evidence of Destruction of Tissue.*—Presence of tubercle bacilli or elastic fibers in the sputum or the presence of the physical signs of a cavity. There are no absolutely certain physical signs of cavity but a combination of any four of the following signs is to be taken as indicative of a cavity: (1) cracked-pot note; (2) amphoric breathing; (3) intense whispering pectoriloquy; (4) a veiled puff or post-tussive suction; (5) bubbling or resonant râles. "Physical signs of softening" do not admit of any definition apart from that of cavity formation, and the term should not be used.
11. *Disseminated Fibroid Deposits.*—More or less localized areas of fibrous tissue, producing on physical examination, some change or dulness in the percussion note, more or less increase of vocal resonance, harsh, suppressed or broncho-vesicular breathing, râles sibilant or sonorous usually, but at times fine and moderately coarse.
12. *Serious Complications.*—These should be limited to tuberculous complications, such as meningitis, pharyngitis, laryngitis (except slight thickening in the posterior interarytenoid space, and superficial ulceration of a vocal cord), enteritis, peritonitis, nephritis, cystitis, orchitis, adenitis (unless very slight), etc.

TERMS USED IN DEFINITION OF "FAR ADVANCED"

13. *Intense Localized Consolidation.*—This term should be replaced by "marked consolidation of an entire lobe." "Marked consolidation" indicates dulness merging into flatness, bronchial or tubular breathing and other signs of consolidation as defined in Paragraph 10.

TERMS USED IN DEFINITION OF "APPARENTLY CURED"

14. *Constitutional Symptoms.*—These include elevation of temperature, loss of weight, loss of strength, night sweats, chills, tachycardia, cyanosis, loss of appetite, amenorrhea, etc.
15. *Physical Signs of a Healed Lesion.*—These may embrace every physical sign of infiltration or consolidation (see paragraphs 6, 10), with the exception of râles, which must be permanently absent, except possibly a few fine râles at the base, probably atelectatic in origin, and at one apex or over a small part of one lobe. Râles in the latter two places are to be heard only during the cough, at the end of a prolonged expiration, or during the inspiration which follows the cough.

TERMS USED IN DEFINITION OF "IMPROVED"

16. *Constitutional Symptoms Lessened or Entirely Absent.*—By this is meant an improvement in the general condition as shown either by a gain in *both* weight and strength or by reduction of previous febrile temperature to normal without loss of strength.

TERMS USED IN DEFINITION OF "UNIMPROVED OR PROGRESSIVE"

17. *Essential Symptoms and Signs.*—These include, among others, weight, strength, appetite, night sweats, hemoptysis, pleurisy, dyspnea, temperature, pulse-rate, dulness, changes in vocal resonance and respiratory movement, râles.

TABLE 1.—MODIFIED TURBAN SCHEME

Number.		Condition.	Extent of Physical Signs (Turban).		Duration of Disease.	General Condition.	Digestion.	Range of Pulse, 7 Days on Admission, 2 Days on Discharge.	Av. Max. Temp., 7 Days on Admission, 2 Days on Discharge.	T. B.			Complications.	Tuberculin. Variety, No. of Days and Doses. Highest Dose in Grams.
			Both Lungs.	Each Lung.							Previous.	Residence.		
2437	On admission.	Incipient...	I	R	6 months..	Favorable....	Impaired	80-102	98.9	O	....	O	....	....
	At discharge..	Ap. cured..	O	......	12 months..	Favorable....	Unimpaired..	78- 90	99.0	O	....	....	....	....
2439	On admission.	Mod. Adv...	I	R L	16 months..	Favorable....	Unimpaired..	80-100	99.6	+	....	+	....	....
	At discharge..	Arrested....	II	R	23 months..	Favorable....	Unimpaired .	80- 92	98.9	O	....	....	....	....
2440	On admission.	Mod. Adv ..	II	R^1 L^2	4 months..	Unfavorable.	Unimpaired .	88-108	99.1	O	O	+	....	....
	At discharge..	Unimprv'd.	II	R^1 L^2	11 months..	Unfavorable.	Unimpaired .	72-130	99.4	+	....	....	....	....
2442	On admission.	Mod. Adv...	II	R^1 L^2	9 months..	Favorable....	Unimpaired .	80-100	99.3	O	....	O	....	....
	At discharge..	Ap. cured..	I	R	20 months..	Favorable....	Unimpaired .	80- 88	98.8	O	....	....	....	....
2443	On admission.	Mod. Adv..	II	R^1 L^1	4 months..	Favorable....	Unimpaired .	80-100	99.4	O	O	+	....	....
	At discharge..	Failed......	III	R^3 L^2	12 months..	Favorable....	Unimpaired .	78-102	99.0	O	....	....	....	....

TABLE 2.—SUMMARY

Class.	Extent of Physical Signs According to Turban.	T. B. Found at Any Time.	Hygienic-dietetic Treatment Without Tuberculin. Patients Who Stayed Over 90 days. Average Residence, 200 Days.										
			Cases.		Appar. Cured.		Arrested.		Improved.		Progressive.		Died.
			No.	%	No.	%	No.	%	No.	%	No.	%	
Incipient.........	I	O	15	20	10	67	4	27	1	7	....	....	..
Incipient.........	I	+	16	21	3	19	12	75	1	6	....	....	..
Mod. advanced..	I	O	4	5	1	25	2	50	....	....	1	25	..
Mod. advanced..	I	+	7	9	....	....	7	100	....	....	....	....	..
Mod. advanced..	II	O	5	7	2	40	2	40	1	20	....	....	..
Mod. advanced..	II	+	22	29	....	....	13	59	5	23	4	18	..
Mod. advanced..	III	O	2	2	....	....	2	100	....	....	....	....	..
Mod. advanced..	III	+	5	7	....	....	5	100	....	....	....	....	..
Far advanced....	III	+	....	....	....	....	....	....	....	....	....	....	..

Class.	Extent of Physical Signs According to Turban.	T. B. Found at Any Time.	Hygienic-dietetic Treatment With Tuberculin. Patients Who Took Tuberculin More Than 90 Days. Average Residence 250 Days.										
			Cases.		Appar. Cured.		Arrested.		Improved.		Progressive.		Died.
			No.	%	No.	%	No.	%	No.	%	No.	%	
Incipient.........	I	O	9	15	5	56	1	11	3	33	....	....	..
Incipient.........	I	+	14	24	4	29	8	57	1	7	1	7	..
Mod. advanced..	I	O	2	3	....	....	2	100	....	....	....	....	..
Mod. advanced..	I	+	7	12	....	....	6	86	1	14	....	....	..
Mod. advanced..	II	O	1	2	....	....	1	100	....	....	....	....	..
Mod. advanced..	II	+	15	25	....	....	11	73	3	20	1	7	..
Mod. advanced..	III	O	1	2	....	....	1	100	....	....	....	....	..
Mod. advanced..	III	+	9	15	....	....	4	44	3	33	2	22	..
Far advanced....	III	+	1	2	....	....	....	....	1	100	....	....	..

TERMS USED IN DEFINITION OF "CURED"

18. *Ordinary Condition of Life.*—This term as used implies that the patient is able to live in an environment where he is able to support himself without the assitance of others, or to live in his former surroundings and pursue his former occupation.

2. The Method of Physical Examination

Any classification must necessarily depend in part on physical signs, and, as long as different examiners follow different methods of examination the exent of the physical signs will vary and the usefulness of any classification, intended for comparison, will be greatly limited. To overcome this difficulty the committee suggests that the patient should be stripped to the waist and that râles should be said to be absent only when they are absent after the patient exhales, coughs at the end of exhalation and then takes a full, deep, fairly quick breath through his mouth. A stethoscope must be used for this examination.

3. Statistical Reports of Sanatoriums

The committee feels that much might be done to improve the statistical reports of American sanatoriums and would urge those institutions that have not done so to publish certain details about each patient on admission and on discharge. Turban of Davos has devised a scheme for this purpose which the committee has modified somewhat. Every sanatorium is urged to use this scheme for reporting its individual cases. The modified scheme is given in Table 1.

TABLE 3.—RESULTS OF SPUTUM EXAMINATIONS OF ABOVE PATIENTS.

Class.	Extent of Physical Signs According to Turban.	Treatment.	A R D + + +		A R D + + O		A R D + O O		A R D O + +		A R D O O +		A R D O + O		A R D O O O		P A R D + O O O	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Incipient..	I	Without Tu..	......	......	4	13	4	13	......	....	......	....	3	10	15	48	5	16
Incipient..	I	With Tu......	5	22	4	17	1	4	......	....	......	....	1	4	9	39	3	13
Moderately advanced.	I	Without Tu..	1	9	4	36	1	9	......	....	......	....	......	....	4	36	1	9
Moderately advanced.	I	With Tu......	4	44	3	33	......	......	......	....	......	....	......	....	2	22		
Moderately advanced.	II	Without Tu..	6	22	6	22	3	11	3	11	......	....	1	4	6	22	2	7
Moderately advanced.	II	With Tu......	6	37	4	25	3	19	......	....	1	6	1	6	1	6		
Moderately advanced.	III	Without Tu..	1	14	3	43	2	29	......	....	......	....	......	....	1	14		
Moderately advanced.	III	With Tu......	6	60	1	10	......	......	......	....	......	....	......	....	1	10	2	20
Far advanced........	III	With Tu......	1	100	......	......	......	......										

Note.—O=Tubercle bacilli absent. + =Present. A=Admission. R= During residence. D=On discharge. P=Previous to admission.
When T. B. were present on admission, no note is made with regard to previous examinations.
When T. B. were present previous to admission and also at any time during residence, they are marked as present on admission.

The extent of the physical signs in each lung has been noted as well as the presence or absence of tubercle bacilli before admission and during residence. The committee believes that the presence or absence of signs of cavity formation should be noted in the scheme. This datum can easily be indicated by a small (lower case) c after the letter R or L in the second column under "Extent of Physical Signs," e. g., "Rc.^{3}" This would not necessitate another column.

The summary of the results of this tabulation in the reports of many sanatoriums are far from satisfactory, and your committee would suggest that the form of summary given in Table 2 be adopted:

This summary divides all patients into the three classes advised by the National Association for the Study and Prevention of Tuberculosis, and, further, each of these is divided into the different classes according to the extent of phyical signs. Turban's classification has been used for this purpose, and attention is called to the fact that the three original classes, incipient, moderately advanced and far advanced, have nothing in common with Turban's classification which deals only with the extent of physical signs. Finally, each of these stages is divided into two classes, according to whether the lesion has ever been open (tubercle bacilli present at any time) or has always been closed.

This summary, it is believed, will remove several criticisms of the classification adopted by the National Association. Both "moderately advanced" and "far advanced" classes are too broad, it is urged, and rightly, and as much difference, if not more, exists within these groups than between them or between the "moderately advanced" and "incipient" classes. This summary divides the "moderately advanced" group into six divisions, all of which should be reported on separately. It also divides the "far advanced" group into two or more divisions.

The results of the sputum examinations recorded in most reports is also far from satisfactory and the scheme given in Table 3 is suggested. When tuberculin has not been used it is, of course, unnecessary to divide the cases into those who have and those who have not received tuberculin.

It has been suggested by the International Conference at Vienna that the Turban classification of the extent of physical signs should be so modified as to include in the third group all cases with physical signs greater in extent than one lobe. The objection to this classification, known as the Turban-Gerhardt, is the unevenness of the distribution, and, while it divides the first group, which really needs division, the adoption of the summary, discussed elsewhere in this report, divides that group in a very satisfactory manner and the enlargement of the third group makes the Turban-Gerhardt classification of less value.

Mooted Points

The "temperature" is still a vexed question and the committee all hold individual opinions which vary greatly. These recommendations do not meet the entire approval of any member. The temperature should be taken by mouth with a reliable thermometer. Thermometers bought in quantity from any firm should be guaranteed by the firm and a certain number tested by the Bureau of Estimates in Washington as a control.

The thermometer should be left in the mouth, which has been kept closed for at least five minutes, for five to ten minutes to detect the slighter rises of temperature. When the rectal temperature has been taken this fact should be noted.

Two members believe that the temperature should be taken immediately after meals, because, they assert, (1) a rise to 99 to 100 may occur only at this time, and (2) the mouth temperature rises for one hour when the patient comes indoors during cold weather. One insists on a two-hour record. Two members of the committee oppose this time and would suggest either before meals or on awaking, at 4 and 8 p. m., believing that the temperature of the mouth in normal individuals may be affected after eating (as that of the rectum after horseback riding, which has risen to 101 in a healthy person), and further, that heat or cold, which affect the temperature of the mouth through the cheeks, may also raise it much more readily when taken in the mouth in the form of hot drinks or cold or iced foods.

The "normal" temperature is still a mooted point, but far more is known in regard to the oral than in regard to the rectal temperature. The range for each patient varies somewhat, but it is unwise to consider any patient "arrested" or "apparently cured" when the temperature for three or more days averages over 99 F. Absorption from an old focus may cause rise of temperature when the disease is quiescent, but no one can separate such a condition from a slow advance of the disease, imperceptible by our present methods of examination. A rise for a single day to 99.5 F. or even higher when some definite factor (coryza, tonsillitis, etc.) is unquestionably the cause, should be disregarded in making up the average on discharge. It would undoubtedly be wise to insist on a two-hourly temperature record, were this possible, but in any case the temperature should be taken whenever possible after rest (that is, complete relaxation, mental and physical, in a sitting or reclining posture) for at least one hour. Quiet reading or conversation need not be forbidden some patients.

Classification

With these definitions and modifications the committee would suggest that the following classifications be used on admission, on discharge, and for ultimate records:

1. On Admission

These definitions indicate the furthest extent of disease and the greatest severity of symptoms that a patient can present and still belong to the stage defined. All patients beyond the incipient stage fall under the moderately advanced stage unless the physical signs and symptoms exceed those of the moderately advanced stage, when they should be classified as far advanced.

Incipient.—Slight or no constitutional symptoms (including particularly gastric or intestinal disturbance or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours.

Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.

Slight infiltration limited to the apex of one or both lungs or a small part of one lobe.

No tuberculous complications.

Moderately Advanced.—No marked impairment of function, either local or constitutional.

Localized consolidation moderate in extent with little or no evidence of cavity formation; or infiltration more extensive than under incipient.

No serious complications.

Far Advanced.—Marked impairment of function, local and constitutional.

Marked consolidation of an entire lobe.

Or disseminated areas of beginning cavity formation.

Or serious complications.

Miliary Tuberculosis.

2. On Discharge

Apparently Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion.

Arrested.—Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least two months.[2]

Improved.—Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration with bacilli usually present.

Unimproved or Progressive.—All essential symptoms and signs unabated or increased.

Died.

3. Ultimate Results

Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

Well.—Patients who fulfil all the conditions required under "cured" but about whose sputum no definite information can be obtained.

Arrested.—See above.

Improved.—See above.

Progressive.—See above.

Dead.

Medicolegal

Newspaper Articles Concerning Professional Conduct of Physicians Not Privileged

The Supreme Court of South Dakota considers, in the libel case of Rood vs. Dutcher, the question of whether newspaper articles concerning the professional conduct of a practicing physician should be regarded as privileged communications merely because of the relation of the physician as such to the general public in the territory to which his practice extends.

So far as applicable to this question a privileged communication is defined by the civil code of South Dakota, the court says, to be one "made, without malice, to a person interested therein, by one who is also interested, or by one who stands in such relation to the person interested as to afford a reasonable ground for supposing the motive for the communication innocent." This court has held that this definition embraces newspaper articles relating to the official conduct of public officers and candidates for public office. Does it also embrace newspaper articles relating to the professional conduct of physicians? The court thinks not.

The relation of a public officer to the public is substantially different from that of the physician. All are or may be affected by the official conduct of the former, and therefore are interested in any communication in relation thereto, while only such persons as desire to employ the latter are interested in communications relating to his professional conduct. Hence neither the proprietor of a newspaper nor any other person owes any duty to give information concerning the same unless requested to do so by some one desiring to employ the physician. Indeed, no reason exists for extending the presumption of innocent motive to false statements regarding a physician which would not apply with equal force to a minister of the gospel, an attorney at law, a banker, merchant, or other person whose vocation involves voluntary transactions with people generally in the community in which such person resides.

Admissibility of Evidence as to Character of Prior Childbirths and Pains

The Supreme Court of Iowa says that in the personal injury case of Etzkorn vs. City of Oelwein the plaintiff claimed that while passing over a defective sidewalk she was tripped by the loose boards, thrown forward and down on the walk, displacing an unborn child which she was then carrying from its natural position, causing delayed, prolonged and more difficult labor and greatly injuring and impairing her health. It appeared that she had been delivered of four other children prior to the time the one in question was born. She was asked as to how these other children were born, whether in a normal or abnormal position; and as to whether or not she suffered any pains or inconvenience from the birth of her other children. To the first question she responded that they were born in a normal position, and to the second that she had not suffered pains. The court is constrained to hold that these questions were improper, and the answers decidedly prejudicial.

The court knows of no authority which holds that because a woman is delivered of one or more children in a normal position that others are likely to and will be born in the same position. It was shown in the record in this case, and it is well known, that unborn children assume various positions while in the mother's womb, changing their position from time to time, and that whenever there is no movement there is danger not only to the child but to the mother. The plaintiff claimed that by reason of her fall her unborn child was forced in a transverse and unnatural position, where it remained until birth, when it had to be changed by means of instruments and manipulations into a proper position for delivery. In order to demonstrate this, she was permitted to testify that her other children were born in a normal position. There was no logical connection between these facts.

Moreover, the plaintiff's testimony that she suffered no pain when her prior children were born might be true, although contrary to all human experience; but, even if true, it had no tendency to show that the pain she suffered from the delivery of her last child was due to the injury she received when she fell on the sidewalk.

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[2] The length of time mentioned is, of course, somewhat arbitrary, but is intended to cover the cases which frequently occur, where the patients leave a sanatorium for various reasons, contrary to advice, after a stay of a few weeks, although all active symptoms may have ceased completely soon after entrance.

The only legitimate inference to be derived from the plaintiff's testimony as to prior childbirths was that these deliveries did not rupture any of her organs, and that she had not suffered any lesions which were found after the birth of her last child. Direct testimony was admissible on this point.

The effort undoubtedly was to have the jury believe that, as she had not previously suffered from childbirth, her suffering which she had described as accompanying the birth of her last child must have been due to the accident on the walk. For reasons already suggested, the court does not think this true, either as a logical or gynecologic proposition.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

September 11

1 Inflammation of the Knee-Joint. C. Ogilvy, New York.
2 *Laryngeal Tuberculosis. R. Levy, Denver.
3 Treatment of Pruritus Ani. W. M. Beach, Pittsburg, Pa.
4 Physiology and the Second Law of Thermodynamics. F. H. Garrison, Washington, D. C.
5 Blood Examination in the Presence of Gangrene. I. S. Wile, New York.
6 *Fracture of the Neck of the Femur in a Multipara. S. A. Savitz, Philadelphia.
7 *Do the Saprophytes Produce Toxins which have Elective Attraction for the Brain and Nerve Tissue and thus Cause the Idiopathic Diseases of These Structures? B. R. Le Roy, Athens, Ohio.
8 Is Tuberculosis Decreasing in Cities of Between 300,000 and 500,000 Inhabitants? L. Irwell, Buffalo.

2. **Laryngeal Tuberculosis.**—Levy summarizes his paper as follows:

1. Pathologic conditions of the laryngeal mucosa, especially chronic catarrhal laryngitis, are important factors in the etiology of tuberculosis of the larynx.

2. Pain is not always present in laryngeal tuberculosis. When present it is not always conclusive that the lesion is tuberculous. It may exist without ulceration.

3. The beneficial effect of mercurial treatment in laryngeal lesions of tuberculous patients should not be accepted as positive proof of the value of this treatment in tuberculosis. It must be recognized that the differential diagnosis between syphilis and tuberculosis of the larynx is at times extremely difficult especially when the former exists in tuberculous patients.

4. Bacteriologic confirmation of the diagnosis is often obtainable by examination of smears made directly from the laryngeal lesion.

5. It is necessary to again impress on the general profession the curability of laryngeal tuberculosis. It is especially important that the prognosis be determined by a careful study of the lesion in all its characteristics.

6. Local treatment to be effective must be well selected both as to time of applications and method of procedure.

6. **Fracture of Femur During Labor.**—The third day after delivery the patient experienced a transferred pain in the right hip joint radiating to the knee, which was very excruciating on the slightest disturbance of the limb, thus rendering change of posture impossible with the single exception of extension of the limb, which lessened the pain to a considerable extent. As a result of her suffering, the attending physician, together with others, treated her internally for some nervous affection, but her pain still persisted. About two months after delivery Savitz saw the patient and made a diagnosis of impacted fracture of the neck of the femur, which was confirmed by operation. Savitz emphasizes particularly that this fracture must have been caused at the time of delivery by the unforeseen negligence of the attending physician by causing a slight twist of the thigh, or endeavoring to manipulate the instruments, flexed the leg more than the normal capacity could endure, and, as a result, fracture of the neck of the femur followed. In addition thereto, it is plausible to believe that it may have been caused after delivery, but the patient positively states that she was not out of bed, but rather rested herself, and knowing there would be exaggerated pain on the slightest movement, it is fair to assume that she remained in bed, and, consequently, there was no disturbance to cause any such fracture. On the other hand, it would be ridiculous to conclude that the fractured neck of the femur was caused by a previous disease of the hip joint when the pain was experienced but two days after labor.

7. **Saprophytes and Nerve Tissue.**—Le Roy holds that to the absorbed toxins and endotoxins, generated by the so-called spore-bearing saprophytes of the human body are due the varying degrees of mental and nerve disorders, from simple absent-mindedness to asymbolia, from the simple nervousness to the most intractable disease of the brain or nerves, heredity, like traumatism, only playing the part of a weakening agent, at which time the toxins produced by the spore-bearing saprophytes get in their work. Le Roy claims to have positive knowledge that these saprophytes produce toxins and endotoxins, which, when injected into the living animal, produce varying degrees of paralysis; and, also that the action is slow and insidious under ordinary circumstances. There is one point on which he is most certain of his position; that is, that these toxins have a selective attraction for the brain and nerve tissue.

Boston Medical and Surgical Journal

September 9

9 *Simple Inspection of the Eyes as an Aid in General Diagnosis. H. B. Stevens, Boston.
10 Importance of Distinguishing Simple Round Ulcers of the Duodenum from Those Ulcers which Involve the Pylorus or are Above it. E. A. Codman, Boston.
11 Studies in Psychopathology (concluded). B. Sidis, Brookline, Mass.
12 Sudden Deaths in a Synopsis of Twenty Years' Medicolegal Work. F. H. Canedy, Shelburne Falls, Mass.
13 *The Queen's Closet Opened. G. W. Myers, Boston.
14 Gunshot Wound of the Head. C. W. Bartlett, Marshfield, Mass.

9. **Inspection of Eyes in General Diagnosis.**—Stevens points out that the eyes from the vantage ground of their wonderfully perfect anatomic and physiologic position are especially adapted to reflect many of the most important changes of the system, and a large majority of those signs may be revealed by simple inspection merely. Moreover, the eyes, more than other organs, are at all times most easily and conveniently inspected, and simple but intelligent inspection may give important information concerning various physical and functional body processes.

13. **The Queen's Closet Opened.**—Myers gives a brief review of this volume published in 1656, and containing formulas and recipes originally collected for Henrietta Marie, the wife of Charles I of England.

Medical Record, New York

September 11

15 Rôle of Visual Function in Animal and Human Evolution. G. M. Gould, Ithaca, N. Y.
16 Medical Management of Degenerate Children. R. H. Porter, Chicago.
17 *Surgical Treatment of Diarrhea. S. G. Gant, New York.
18 Village Treatment of Nervous Invalids. L. P. Clark, New York.
19 The Liquor Problem: Some Suggestions for its Solution. C. A. Rosenwasser, Newark, N. J.
20 Amount of Lung Involvement at the Onset of Pulmonary Tuberculosis. H. L. Barnes, Wallum Lake, R. I.

17. **Surgical Treatment of Diarrhea.**—Gant doubts if more than 10 per cent. of the persons suffering from chronic diarrhea are curable by means other than through bowel irrigation, as practised through the anus, or from above through the appendix or cecum. Of those who do not respond to direct treatment of the colon, the cause of the trouble in a number of cases is located in the small intestine, stomach, liver or pancreas. Gant says he has cured many persons suffering from chronic diarrhea without an operation, by the daily irrigation of the bowel with different solutions. The following procedures have been resorted to with more or less success in the treatment of simple and other ulcerative colitis inducing chronic diarrhea: (1) Resection; (2) intestinal exclusion; (3) colostomy; (4) appendicostomy, and (5) Gant's cecostomy with irrigation of the small intestine. The latter procedure is carried out as follows: Through a two-inch muscular incision made directly over the cecum, it and the lowermost part of the ileum are withdrawn and the edges of the wound covered with sterile gauze handkerchiefs. The cecum is scarified and clamped with rubber-covered forceps to prevent soiling of the wound when the bowel is opened. Four linen or silk seromuscular purse-string sutures are inserted in the anterior wall of the cecum at or outside the longitudinal band directly opposite the ileocecal valve, when the bowel is quickly opened inside the suture line by using the knife for the outer coats and the scissors for the mucosa. The bowel is grasped at the juncture of the large and small intestine and held in such a

way that the ileocecal valve rests between the thumb and the fingers of the left hand. A Gant catheter guide is then introduced through the incision and carried directly across the cecum, and then suddenly guided through the ileocecal valve into the small intestine by the aid of the thumb and fingers, placed there for this purpose. The guide is then held by an assistant while the obturator is removed and a catheter, No. 12, is introduced into the small bowel. The guide is then removed and the catheter is held by an assistant until it has been anchored to the cecum by a catgut silk suture to prevent its slipping out. A short piece of catheter three inches long is then introduced into the cecum, beside the one which enters the small bowel, for an inch or more, when both catheters are fastened together by a narrow band of adhesive plaster placed around them, on a level with the skin. The clamp is now removed from the cecum and the purse-string sutures are tied; this inverts the edges of the bowel about the tubes, each stitch in its turn causing a still further circular infolding of the bowel, all together forming a cone-shaped valvular projection all around the catheters which effectually prevents the escape of the feces. The cecum is scarified and anchored to the abdominal wall by through-and-through suspension suture or by chromicized catgut stitches which include the peritoneum and fascia. The wound in the abdomen is closed by the layer method, after which the catheters are stitched to the skin or preferably retained in place by a narrow strip of adhesive plaster between them and attached to the skin. Ordinary five-cent cravat clamps are snapped over the ends of the catheters to prevent leakage, after which the operation is completed, applying the ordinary dry dressings, which are held in place by adhesive strips.

Lancet-Clinic, Cincinnati

September 4

21 Ectopic Pregnancy. A. Haarlammert, Loveland, Ohio.
22 Certain Antagonism for Opium Narcosis. T. H. Williams, Germantown, Tenn.
23 Advancement of Paralyzed Muscle for Cosmetic Purpose. V. Ray, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

August 27

24 Should Virginia Impose a License Tax on Physicians? G. A. Stover, South Boston.
25 *Treatment of Acute Diarrhea in Infancy. J. B. Nowlin, Richmond.
26 Uncinariasis. J. R. Perkins, Spencer.
27 Musings of a Medical Man. R. H. Garthwright, Vinton.
28 Relation of the Pharmacist to the Practise of Medicine. W. C. Marshall, Staunton.

25. **Acute Diarrhea in Infants.**—In cases of diarrhea due to fermentation, Nowlin uses mercury bichlorid in a solution of one grain to four ounces of water, giving ten to fifteen drops every four hours until the stools become yellow in color and remain so. This is usually the case in from twenty-four to forty-eight hours. Then the dose is decreased, the aim being to give just enough mercury to keep the stools in this state. Food is withheld for the first twenty-four hours, at the beginning of which the usual purge of castor oil is given. At the expiration of this time, the usual food is resumed, but the mercury is kept up for a week or more. Irrigation is done in some cases, but Nowlin thinks that in this form of diarrhea, irrigation is generally overdone.

Southern California Practitioner, Los Angeles

August

29 *Surgery in Infancy. S. Stillman, San Francisco.
30 Pelvic Infection Following Labor. F. M. Bruner, Santa Ana.
31 *Diet Regulation for Dyspeptics. W. P. Millspaugh, Los Angeles.
32 *The Physician's Duty to the Public. J. W. Foss, Phoenix, Ariz.
33 Medical Treatment of Disease of the Biliary Tract. E. W. Hanlon, Los Angeles.
34 *Straw Mattress Urticaria. J. Goldberger, U. S. P. H. and M.-H. Service, and J. F. Schamberg, Philadelphia.
35 Gastric and Duodenal Ulcer. E. J. Claypole, Pasadena.

29 and 32. Abstracted in The Journal, July 17, 1909, p. 228.

31. **Diet Regulation.**—Millspaugh makes a very good point by saying that the regulation of diet for dyspeptics is not a simple thing. It will not do to tear off a printed diet-list for "ulcer" or "gastritis," or "hyperchlorhydria," and hand it to the patient. We must feed the whole patient, not his stomach or his liver or his intestines alone. To do it intelligently we must know the patient from head to foot, inside and outside; and we must know what the different foods will do.

34. Abstracted in The Journal, Aug. 14, 1909, p. 573.

Annals of Otology, Rhinology and Laryngology, St. Louis

June

36 Treatment of Cancer of the Larynx. O. Chiari, Vienna.
37 Study of the Anatomic Relations of the Optic Nerve to the Accessory Cavities of the Nose. H. W. Loeb, St. Louis.
38 Diseases of the Eye and Orbit Secondary to Pathologic Changes in the Nose and Accessory Sinuses. C. R. Holmes, Cincinnati.
39 Orbital Complications of Disease of the Frontal Sinus. H. F. Hansell, Philadelphia.
40 Ocular Symptoms of Diseases of the Nasal Sinuses. W. C. Posey, Philadelphia.
41 Extralaryngeal Causes of Laryngeal Symptoms. F. Smithies, Ann Arbor.
42 Clinical and Microscopic Diagnosis of Tuberculosis of Tonsils. L. M. Hurd, and J. Wright, New York.
43 Diagnosis and Surgical Treatment of Abscess of the Temporosphenoidal Lobe. W. S. Bryant, New York.
44 Removal of Tonsil (complete) in its Capsule. F. C. Todd, Minneapolis.
45 Method of Precision for Inflating the Tube and Tympanum. T. Hubbard, Toledo, Ohio.
46 Methods of Opening the Maxillary Antrum, with Presentation of New Instrument. J. O. Roe, Rochester, Minn.
47 Probable Case of Sarcoma of the Sphenoid Sinus. D. Roy, Atlanta, Ga.

Old Dominion Journal of Medicine and Surgery, Richmond

August

48 The Dead Body. W. H. Taylor, Richmond.
49 Extraperitoneal Implantation of the Ureters into the Rectum in Exstrophy of the Bladder. S. McGuire, Richmond.
50 The Cardiovascular Changes in Lithemia. M. Call, Richmond.
51 *Localization of Foreign Bodies: An Unusual Case. D. D. Talley, Richmond.
52 *Tincture of White Soap. F. P. Dunnington, Charlottesville.

51. **Localization of Foreign Bodies.**—Talley reports a case of needle in the buttock in which previous attempts at extraction were unsuccessful. The needle was localized by the *x*-ray, and was found to be imbedded in the sciatic nerve. It was removed by operation.

52. **Tincture of White Soap.**—The formula proposed by Dunnington for this preparation is as follows:

℞.	gm. or c.c. For 1 gallon.
White Castile soap (Conti's)	1,200
Ammonia stronger	100
Alcohol	1,400
Water, dist.............................	1,300

The specific gravity of this mixture is 0.97, which is identical with that of tincture of green soap. To make one gallon: Mix the liquids for it in a one-gallon jar and then add the soap, previously cut into coarse shavings. Crowd all the soap into the jar and cover it with a glass plate. After 12 hours stir, and again stir after some hours. Allow to settle 12 hours and then filter, decant or syphon off the clear liquid into a can which may be kept closed. There will remain a few ounces retaining the impurities of the soap, which may be used for less particular washing. If this liquid is exposed to evaporation for a few hours, ammonia and alcohol escape, and a mass of the consistency of green soap will be obtained. While this preparation is said to be free from the objections to tincture of green soap, it presents the additional advantage of costing but $1.50 a gallon, and, if the alcohol is obtained tax free, the cost will be about 60 cents a gallon, while tincture of green soap will cost $1 or more.

Wisconsin Medical Journal, Milwaukee

August

53 *Operations on Handicapped Patients. G. W. Crile, Cleveland, Ohio.
54 The State University, the Medical Profession, and the Public. C. R. Bardeen, Madison.
55 Treatment of Tuberculosis in Those who have to Work Indoors. T. Willett, West Allis.
56 Relation of Ocular Defects to Diseases of the Nose and Accessory Sinuses. J. M. Cooke, Darlington.
57 Toxicity of Human Sweat. C. A. Baer, Milwaukee.

53. Abstracted in The Journal, Aug. 21, 1909, p. 647.

Chicago Medical Recorder

August

58 Contemporary Workmen's Compensation. W. H. Allport, Chicago.
59 *Dietary Control of Gastrointestinal Disorders. R. W. Webster, Chicago.
60 *Purpura Hemorrhagica. A Neurotoxic Form Due to a Syphilitic Nerve Involvement Plus a Toxic Action from Potassium Iodid. W. F. Bernart, Chicago.

59. **Gastrointestinal Disorders.**—Webster tries to show that the dietary treatment of gastrointestinal diseases must be based on a definite knowledge of the normal gastroenteric functions rather than on the many empiric regulations which have been laid down in times when our knowledge was not so exact regarding the influences of the various ferments on the different types of food or of the interrelations of the activities of the stomach and bowels. Observing the perversions of function, which may not always be outlined clearly, is the only certain method which can lead to a scientific dietary control. More careful study of the patient, instead of the too frequent reliance on empiricism, will reward the practitioner with the gratitude of his patient, and the patient will have a much higher opinion of the physician, as well as a more nearly normal gastrointestinal tract.

60. **Purpura Hemorrhagica.**—Bernart's case of purpura hemorrhagica was a neurotoxic form due to a syphilitic nerve involvement, plus a toxic action from potassium iodid. The hemorrhagic spots were only and entirely confined to a portion of the body affected by a syphilitic process within the spinal canal; the long axis of the oblong lesions all ran horizontally. An examination of the scrotum showed a hemorrhagic infiltration into the skin of the scrotum, both thighs and legs. The upward extension of the eruption was definitely limited to a surface line drawn from trochanter to trochanter; a few scattered lesions on the posterior and lateral aspects of the buttocks extended above the line. Below, the eruption was definitely marked as far as the lower edges of the calves of the legs; below this it became scattered and disappeared at the ankles. Most of the spots were oblong in shape, the largest being about 1¼ by ¾, and all assumed a horizontal position. None of the spots showed a deep ecchymosis, but were of a mottled appearance due to an imperfect infiltration into the skin.

There being but little doubt that the spots were due to one of the drugs given, it was decided to discontinue the iodid to ascertain which produced the lesions. After the lapse of a week the spots disappeared, a slight mottling of the surface alone being visible. Twelve days after the beginning of the treatment, the patient was again placed on the potassium iodid. During this second course he was given larger doses, 2 grams, three times daily. Four days after readministering the iodid the eruption again occurred and was confined to the same regions as before and the long axis of the spots also ran transversely.

A third course of the iodid was started on the twenty-first day; this was followed in a few days by a recurrence of the purpura showing the same characteristics as its predecessors, with the exception that the spots were not so numerous or so clearly defined. Before the inauguration of this third course the patient showed a decided improvement in his general condition. Thirty-one days after the beginning of the treatment the fourth course of the iodid was given; this was followed by a few ill-defined spots confined to the thighs and buttocks. A few weeks later a fifth course was tried, but it failed to produce any lesions. The real interest in this case is that the iodid alone did not produce the purpura, neither did the lesions within the spinal canal; the phenomena occurred through the combined action of the two, namely, through the toxic action of the iodid on an area influenced by some syphilitic nerve involvement which undoubtedly was situated in the spinal canal between the first and fourth lumbar vetebræ and involved in the ilioinguinal, genitocrural, external cutaneous, obturator and anterior crural nerves. The peculiar arrangement of the spots remains unaccounted for.

Alabama Medical Journal, Birmingham

August

61 Gastric and Duodenal Ulcer Treated Surgically. J. M. Mason, Birmingham.
62 Appendicitis, with Pus and Peritonitis. W. T. Berry, Birmingham.
63 Surgical Treatment of Prostatic Abscess and Hypertrophy. G. Torrance, Birmingham.
64 Early Recognition of Pneumonia and the Differentiation from Abdominal Conditions. T. C. Donald, Bessemer.
65 An Interesting Case. H. L. Appleton, Birmingham.
66 Pellagra—Honor to whom Honor is Due. C. M. Rudolph, Birmingham.

Albany Medical Annals

September

67 Hypodermatic Medication in Modern Therapy. S. L. Dawes, Albany, N. Y.
68 Acute Diffuse Suppurative Peritonitis. J. E. Sadlier, Poughkeepsie, N. Y.
69 Personal Experience with Gastroenterostomy. E. A. Vander Veer, Albany, N. Y.
70 Spinal Anesthesia. F. E. Lettice, Ossining, N. Y.
71 Tuberculosis of the Breast. F. J. Resseguie, Saratoga Springs, N. Y.

Journal South Carolina Medical Association

August

72 *The Occidental-Oriental Health Problem. L. Cofer, U. S. P. H. and M.-H. Service.
73 Etiology, Prevention and Treatment of the More Common Tropical Diseases Encountered in the Canal Zone. J. A. Hayne, U. S. Army.
74 Local and Constitutional Treatment of Corneal Ulceration. C. W. Kollock, Charleston.
75 Preventable Blindness. E. F. Parker, Charleston.
76 Musca Domestica: The Common House Fly. F. A. Coward, Columbia.
77 *Prevalence of Pellagra in the United States. C. H. Lavinder, U. S. P. H. and M.-H. Service.
78 *Etiology of Pellagra. C. H. Lavinder, U. S. P. H. and M.-H. Service.

72. Abstracted in THE JOURNAL, June 5, 1909, pp. 1870, 1971.

77. **Pellagra in the United States.**—This is a statistical and geographic note, with an excellent American bibliography appended.

78. **Etiology of Pellagra.**—Lavinder holds that the cause of pellagra is essentially unknown; that the idea in one form or another, of an etiologic relation between pellagra and the use of maize as a food is held by the majority of students of the disease; that such an idea is almost as old as the history of the disease itself; that it rests to some extent on the observations and experimental work of many able men; and that it seems unwise to hold to such views so dogmatically as to exclude investigation along other suggestive lines.

Southern Medical Journal, Nashville

August

79 Laboratory Methods in Diagnosis of Typhoid. E. G. Wood, Nashville.
80 Bacteriology of Typhoid. W. Litterer, Nashville.
81 Diet and Prophylaxis in Typhoid. S. Harris, Mobile, Ala.
82 Treatment of Typhoid. J. G. Cecil, Louisville.
83 Surgical Complications of Typhoid. W. D. Haggard, Nashville.
84 *Metastases in Carcinoma of the Breast. C. A. Robertson, Nashville.
85 *Teaching of Pharmacology in the Smaller Medical School. W. deB. MacNider, Chapel Hill, N. C.
86 Differential Diagnosis and Treatment of Occupation and Other Parakinetisms of Organic and Psychic Origin. T. A. Williams, Washington, D. C.
87 Lung Puncture as a Therapeutic Measure. T. J. Coble, Shelbyville, Tenn.
88 *Treatment of Tetanus with Special Reference to the Use of Magnesium Sulphate. G. J. Winthrop, Mobile, Ala.

84. **Metastases in Carcinoma of the Breast.**—In June, 1908, Robertson amputated the right breast for adenosarcoma. Perfect coaptation of the wound was secured, and in ten days union was complete throughout. The patient made an uneventful recovery, but continued to suffer with difficult locomotion, muscular pains and soreness, which were supposed to be due to rheumatism. Nov. 26, 1908, while endeavoring to get out of bed, she sustained a fracture of the humerus at its middle, occasioned by the slightest muscular effort. Under appropriate treatment perfect union resulted. This patient came under observation again April 3, 1909, having been confined to her bed for about two months. She was now unable to move her body in any direction, there was marked kyphosis and evidence of mediastinal involvement. There was no paralysis of the lower extremities, nor interference with the bladder function. The patellar reflex was somewhat exaggerated. Fracture of the humerus occurred spontaneously, without traumatism.

85. **Teaching Pharmacology in Smaller Medical Schools.**—Macnider emphasizes that a laboratory course in pharmacology for 40 hours, which includes the use by the students of frogs, turtles and higher animals, can be given anywhere with an expenditure of not over $60 a year, provided the physiologic apparatus is used. The initial expenditure for other necessary apparatus and the construction of a simple dog house, need not be over $100. The value of such a laboratory course, simple as it is, is difficult to estimate. Short conferences with each group of men concerning experiments and results obtained gives the instructor a chance to study each individual

in the group and to aid in the development of the weaker members. The operative work gives the men an insight into operative technic. Lastly, it trains them to observe closely, to make accurate records, to seek for the reason, for results, and creates in them an enthusiasm for investigation and scientific medicine which must do much to direct them in their future work.

88. **Treatment of Tetanus.**—Winthrop reports a case of tetanus treated successfully by the injection of magnesium sulphate into the spinal canal.

Archives of Pediatrics, New York

August

89 *Urine in the Gastrointestinal Diseases of Infancy. J. L. Morse and B. Crothers, Boston.
90 The New-Born. H. E. Tuley, Louisville.
91 Treatment of Diphtheria, with Special Reference to the Prevention of Heart Failure. L. Porter, San Francisco.
92 Pathology of Thymic Hyperplasia and the Status Lymphaticus. A. S. Warthin, Ann Arbor, Mich.

89. **Urine in Gastrointestinal Diseases.**—The conclusions drawn by Morse and Crothers from a study of the urine in 300 cases are as follows: Albuminuria is found in from 8 to 10 per cent. of babies ill with various diseases of the gastroenteric tract. It is found somewhat more often in acute than in chronic diseases. Judging from the examination of the sediment, the pathologic condition in the kidneys almost never progresses beyond that of acute degenerative nephritis (often known as cloudy swelling or active hyperemia). Infection of the urinary tract, resulting in the symptom-complex commonly known as pyelitis or pyelonephritis, is far more common than acute parenchymatous or interstitial nephritis. In the chronic diseases there is no relation between the albuminuria and the mortality or symptomatology. The mortality is higher in the acute diseases when albuminuria is present than when it is not. The presence of albuminuria in an individual case does not, however, materially modify the prognosis in that case. Edema occurring in the course of diseases of the gastroenteric tract is not connected with the condition of the kidneys. There is nothing to suggest any causative relation between the affection of the kidneys and such symptoms as restlessness, convulsions and stupor. These are due to toxemia and not to uremia.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

August

93 Some Convenient Laboratory Apparatus. A. C. Crawford and H. V. Honn, Washington.
94 *Effects of Caffein and Sodium Bicarbonate on Toxicity of Acetanilid. W. Hale, U. S. P. H. and M.-H. Service.
95 Anesthesia by Intracerebral Injection of Magnesium Chlorid. V. E. Henderson, Toronto, Can.
96 *Ergot. W. H. Cronyn, and V. E. Henderson, Toronto, Can.
97 Pharmacologic Action of Some Phthaleins and their Derivatives, with Special Reference to their Behavior as Purgatives. J. J. Abel, and L. G. Rowntree, Baltimore.
98 Clavin, Vahlen's Active Constituent of Ergot. D. D. Vanslyke, New York.
99 Effect of Collodion on the Amanita Hemolysin. W. W. Ford, Baltimore.
100 Distribution of Poisons in the Amanitas. W. W. Ford, Baltimore.
101 Pharmacologic Action of Iodbenzoate, Iodosobenzoate and Oxyiodosobenzoic Acids. A. S. Loevenhart, and W. E. Grove, Madison, Wis.

94. **Toxicity of Acetanilid.**—Hale found by experimentation on the hearts of both warm and cold-blooded animals that caffein is of little or no benefit in acetanilid poisoning in so far as the energy is concerned, and in some cases apparently exerts a harmful effect. The same is also true in the case of blood-pressure. On the other hand, there appears, especially in the dog, to be a well-established antagonism on the heart rate. This antagonism, however, would probably be insufficient to be of any value in cases of poisoning in man. Feeding experiments demonstrated the absence of antagonism between acetanilid and caffein, in all cases the addition of the latter drug causing death more quickly or with a smaller dose. This, in connection with the imperfect antagonism to the heart action, makes the use of caffein in acetanilid mixtures especially questionable. Sodium bicarbonate, in contrast, lessens the toxicity of acetanilid, both in its action on the heart and on the intact animal, increasing the duration of life or making the use of a larger dose of acetanilid necessary to cause death.

96. **Ergot.**—The results obtained from experiments lead the authors to advise the use of ergot in certain emergencies, namely, in shock and postpartum hemorrhage. In both these cases Cronyn and Henderson would use the drug intravenously; but the effect should be watched carefully and care taken not to repeat the dose too frequently. They conclude also that: 1. Most galenical preparations of ergot contain a considerable amount of the active principles, but do not show any great or marked action when given by mouth. The usually recommended doses are much too small. 2. Ergotoxin is a highly active alkaloid and has the properties of ergot most desired in medicine. 3. Ergotoxin brings about a long-enduring contraction of the walls of arterioles, and increases the movements of the uterus. 4. This action is feeble when ergotoxin is given by mouth, but more marked in subcutaneous injections and much more marked when given intravenously. 5. In cases in which a rapid and certain action is wished, either in shock or in postpartum hemorrhage, they would recommend intravenous administration. They recommend, further, if the effect proved too evanescent to achieve the results desired, that suprarenal extract be administered subsequently in repeated small doses.

Woman's Medical Journal, Cincinnati

August

102 Progress of Hygiene. A. Eichelberger, Sioux City, Iowa.
103 Tuberculosis: Etiology and General Symptomatology. L. H. Branson, Iowa City.
104 Early Diagnosis of Tuberculosis. A. Safely, Cedar Rapids, Ia.
105 Tuberculin Test. M. K. Heard, Iowa City, Iowa.
106 Home Treatment of the Individual. C. Whitmore, Cedar Rapids, Iowa.
107 Sanatorium Treatment of Tuberculosis. J. B. Hudson, Iowa City, Iowa.
108 Treatment of Tuberculosis along the Line of Social Needs. S. H. Scott, Des Moines, Iowa.

Ophthalmic Record, Chicago

August

109 Case of Migraine Involving the Abducens Nerve. C. A. Veasey, Spokane, Wash.
110 *Should we Operate in High Degrees of Myopia? J. S. Wyler, Cincinnati.

110. **Operation in High-Grade Myopia.**—The following indications alone, according to Wyler, seem to warrant operation: (1) A myopia of at least 14 diopters; this is the minimum, for 18-20 D. give even better results; (2) the degeneration of the fundus must not be very far advanced or the vitreous greatly diseased, for under such circumstances good vision can hardly be expected; (3) if the patient can follow his daily occupation without discomfort, nothing should be done. It is in those cases in which the visual acuity is so diminished because of the decreasing size of the objects, that the interference is justified in order to allow the myope to continue at his trade; (4) patients over 40 years old should not be operated on, unless it is absolutely imperative, for after this age a needling and linear extraction will not meet the requirements, and a simple extraction in a high myope is not only exceedingly difficult, but hazardous. The extraction in capsule, after the method of Major Smith, is hardly applicable, because of the fluid vitreous present and its almost certain loss.

Laryngoscope, St. Louis

August

111 *An Abundant Meatal Flap for the Radical Operation. F. Whiting, New York.
112 The Heath Operation for Chronic Aural Suppuration. E. C. Ellet, Memphis.
113 Removal of a Bullet from the Inner Wall of the Middle Ear. T. V. Moore, Huntington, W. Va.
114 Importance of the Thorough Study of the Nasopharynx in the Treatment of Diseases of the Ear. F. R. Packard, Philadelphia.
115 Clinical Diagnosis and Operative Procedure in Intralaryngeal Carcinoma. C. Jackson, Pittsburg.
116 Microscopic Diagnosis of Intralaryngeal Growths from a Practical Standpoint. J. Wright, New York.
117 Orbital Route to the Accessory Sinuses. P. Fridenberg, New York.
118 Unusual Cases of Frontal Sinusitis. L. M. Hurd, New York.
119 Deep Cervical Abscess from Stricture of the Esophagus: Purpura Hemorrhagica, with Abscess of the Deep Cervical Lymphatics. J. J. Kyle, Indianapolis.

111. **Meatal Flap.**—For radical mastoid work the method of construction of the flap employed by Whiting is as follows: The helix of the auricle is firmly grasped between the thumb and finger and drawn upward, forward and somewhat away from the skull. A sharp-pointed narrow-bladed bistoury is then used

with which to transfix the auricle at the margin of the meatus in the ventricle meridian above, just where the meatus widens out into the concha. When the transfixion is completed, the knife, without being withdrawn from the wound, is made to follow the periphery of the margin of the meatus around its posterior half to the vertical meridian below, in the form of a semicircular or crescent-shaped incision. Caution should be observed when making this incision that the handle of the knife be held as close to the face of the patient as convenience of manipulation will permit, for the more nearly the handle of the knife is kept horizontal with the face, the more deeply will the blade traverse the tissue and the more abundant will be the resulting flap. The tragus should also be protected, lest if it be prominent—as it sometimes is—it may be wounded by the heel of the knife.

Having completed the incision around the posterior border of the meatus, the next step in the construction of the flap is to make a second incision at right angles to the first, extending the entire length of the fibrocartilaginous meatus along the floor. This incision is most easily and accurately completed by cutting from within the meatus outward. The blade of the knife is inserted into the meatus through the incision first made and at its lower angle; thence the cut extends directly downward, dividing the cartilaginous meatus throughout its entire length, and freeing the flap so that it may be drawn upward and backward into position for stitching. Before the flap is stitched in its permanent place, however, it should be divested of all unduly thick and redundant tissue, and of such fragments of cartilage as would in any wise interfere with its pliability and accurate adjustment. Having been thus prepared, the flap is drawn upward and backward, and applied in such a manner as to most advantageously cover the supero-posterior portion of the bone cavity, with the contour to which it naturally adapts itself. A single stitch of catgut carried through its upper margin and attached to the border of the temporal fascia just below the temporal ridge, serves as an efficient support to the flap, while the gauze packing with which the wound is dressed affords the necessary pressure to bring the adhering surface into firm contact with the bony wall which it is designed to cover.

Journal of Indiana State Medical Association, Fort Wayne

August

120 Early Diagnosis and Treatment of Superficial Malignant Growths. J. N. McCoy, Vincennes.
121 Use of the Giant Magnet in Removing Foreign Bodies from the Eye. C. W. Conger, Indianapolis.
122 Pathology of the Seminal Vesicles and Prostate with Suggestions of the Necessity for Surgical Treatment. C. E. Barnett, Fort Wayne.
123 Law and Medicine. C. A. de Bruler, Evansville.
124 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
125 Lymphatic Enlargement of the Neck. B. F. Kuhn, Elkhart.
126 Exophthalmic Goiter. F. O. Dorsey, Indianapolis.
127 Dermatitis Ditropenotus Aureoviridis. L. Y. Rawles, Huntertown.

American Medicine, New York

August

128 *Dangers of Tent Shelters for Consumptives in Summer. C. E. Woodruff, U. S. Army.
129 Timidity and Insanity (continued). M. K. Isham, Columbus, Ohio.
130 The Holmes Centenary. H. E. Lewis, New York.
131 *A New Kind of Gynecologic Massage and its Indications. R. Hogner, Boston.
132 Expert Chemistry in the Development of Life, and its Bearing on Medical Science. J. Clements, Wichita, Kansas.
133 Gun Deafness: A Danger. G. T. McMaster, New Haven, Conn.
134 The Spleen. E. H. Fiske, Brooklyn.
135 Deficient Excretion of Urinary Solids. W. F. Waugh, Chicago.
136 The Parisian Clinics. T. A. Williams, Washington, D. C.

128. **Tent Shelters for Consumptives.**—Woodruff warns against the use of tents in the hot light months. He says that there is no doubt that the tuberculosis mortality is unduly large, and that it is avoidable if we will only avoid tents and keep the patients cool and shaded.

131. **Gynecologic Massage.**—In the method employed by Hogner the patient is lying about eighteen inches above the floor, on a double incline plane, the head and chest comfortably elevated, the abdomen and the legs very much raised, thus getting the best relaxation of the abdomen and moving the intestines away from the massaging. The operator sits at the patient's left side, on the hard couch, his left hand and forearm in her median line, the elbow resting on the couch. He examines and gives the massage as does Thure Brandt, but uses mostly vibratory massage by means of a motor as introductory to the manual. The vibrations of the machine are transmitted through the abdominal wall and the massaged tissues to the fixating fingers, but pass only a little outside this area, as the vibratory massage is practically local. Hogner gives the massage centripetally, as Brandt did, but begins with the manual and finishes with the vibratory (instrumental). This "new kind of gynecologic massage" (the instrumental, vibratory one) has many times proved curative, he asserts, when other treatments, even surgical, have failed to get permanent, or, for the patient, satisfactory results.

Medical Herald, St. Joseph, Mo.

August

137 *Use of Carbon Dioxid Snow in Dermatology. R. L. Sutton, Kansas City, Mo.
138 Immunity: A Possible Means for Its Better Comprehension. J. Block, Kansas City, Mo.
139 A Department of Health, and its Relative Effect on Life Expectancy. L. H. Montgomery, Chicago.
140 Ophthalmologic Experience. B. Pitts, St. Joseph.
141 Some Reasons why I Dispense. G. B. Dorrell, Republic, Mo.

137. Published in *Dublin Journal of the Medical Sciences*, July, 1909.

St. Louis Medical Review

August

142 *Experimental Arteriosclerosis. L. K. Baldauf, St. Louis.
143 The Present-Day Problem of Tuberculosis. O. H. Brown, Mt. Vernon, Mo.
144 Chronic Myocarditis. W. P. Elmer, St. Louis.
145 *Stuttering in School Children—Its Prevalence and Treatment. E. B. McCready, Pittsburg, Pa.

142. **Arteriosclerosis.**—Baldauf reviews the literature on this subject but offers nothing new. He has examined carefully the aortas of a number of large rabbits used at the laboratory of the St. Louis city bacteriologist in the Pasteur treatment for hydrophobia. In none did he find a lesion in the aorta.

145. **Stuttering.**—McCready endorses the so-called melody cure devised by Scripture.

Western Medical Review, Omaha

August

146 Will as a Therapeutic Agent. J. M. Aikin, Omaha.
147 Extra-Gastric Lesions Simulating Gastric Ulcer. A. F. Jonas, Omaha.
148 Acute Anterior Poliomyelitis. F. E. Coulter, Omaha.
149 Helpful Hints to the Busy Practitioner. F. A. Wells, Kenesaw, Neb.

Detroit Medical Journal

August

150 Therapeutic Application of Ovarian Extract. W. H. Morley, Detroit.
151 Value of Reflexes in Diagnosis. J. S. Risien-Russell, London, Eng.
152 Fibroma of Anus and Rectum. S. Stevens, Battle Creek.
153 Extensive Lateral Sinus Thrombosis: Operation including Ligature of the Internal Jugular Vein: Recovery. E. Amberg, Detroit.

American Journal of Urology, New York

August

154 *New Aphrodisiacs. V. G. Vecki, San Francisco.
155 Hypertrophy of the Prostate and its Treatment. C. Ostermann, Braunschweig, Germany.
156 *Prostatic Calculi. J. L. Thomas, Cardiff, Wales.
157 Prostate Weighing Seventeen Ounces Removed by the Suprapubic Route. A. Fullerton, Belfast, Ireland.

154. **New Aphrodisiacs.**—Among the aphrodisiacs of old stands first, and most important, cantharides. No real physician would use these preparations, because, as Vecki points out, we know that if cantharides is an aphrodisiac, then acute gonorrhea with an inflammation, causing erections, is also one. Experience teaches that strychnin, phosphorus, quinin and iron have no special action on the sexual desire nor on the erective power, but may act indirectly. Cannabis indica, opium and other narcotics certainly are not aphrodisiacs in the sense of heightening sexual power, but may seem to do so by dulling the inhibitive centers which so often interfere untimely with the desired erections. We do not expect much of an action from damiana, musk or other spices, while alcohol and a rich, especially a prominently nitrogenous diet are like two-edged knives. They do only harm in all those high-livers who endeavor to stimulate the activity of their autointoxicated

organs by stuffing themselves with oysters, caviar, cheese, ale, porter, and many other exhilarating substances. While it is evident that there can be no such drug as an aphrodisiac, industrious fellows have tried to supply the ever-present demand. Innumerable preparations have been thrown on the market. Of some of them we are reminded at regular intervals by most alluring pamphlets and testimonials. One of the newer preparations for which powerful aphrodisiac properties are claimed is yohimbin. Vecki claims that yohimbin has no effect in healthy persons, and showed no effect with any of his impotent patients. In his opinion yohimbin has no value as an aphrodisiac. In fact, he warns against its use. Vecki has also used muiracithin in a number of cases. The patients were none the worse for using muiracithin, but none of them noticed the slightest effect on their sexual powers and feelings.

156. **Prostatic Calculi.**—Thomas reports three cases illustrating the advantages of his method for their successful removal by the combined suprapubic and perineal routes.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

August

158 Cholelithiasis: Gallstone Disease. J. C. Hemmeter, Baltimore.
159 The Therapeutics of Pain. L. F. Flick, Philadelphia.
160 *Present Knowledge of the Action of Cathartic Drugs. F. P. Underhill, New Haven, Conn.
161 *Diabetes Mellitus as an Infectious Disease. A. King, Portland, Maine.
162 *The Hypnoidal State in Psychotherapeutics. B. Sidis, Brookline, Mass.
163 Superficial Dermatitis of the External Auditory Canal. C. J. Blake, Boston.
164 Arthritic Muscular Atrophy. J. V. Shoemaker, Philadelphia.
165 Border of Success—Importance of Careful Attention to Details in Eye and Ear Work. L. H. Buxton, Oklahoma City, Okla.
166 Severe Type of Typhoid with Management and Treatment. B. L. Hale, Philadelphia.
167 Action of Glandular Extracts on the Pupil. I. Ott and J. C. Scott, Philadelphia.
168 Antidotal Effects of Alcohol on Phenol. H. J. Novak, Philadelphia.

160. Abstracted in THE JOURNAL, June 5, 1909, p. 1864.

161. Abstracted in THE JOURNAL, May 29, 1909, p. 1782.

162. Published in the *Journal of Abnormal Psychology*, June-July, 1909.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 28

1 Peripheral Circulation and its Treatment. Sir J. Barr.
2 The Crescendo Murmur of Mitral Stenosis. E. M. Brockbank.
3 *The Blood in Chorea and Rheumatism. C. J. Macalister.
4 *Enterospasm Simulating Acute Obstruction. F. E. Wynne, and F. P. Sturm.
5 Achondroplasia Occurring in a Chinaman. G. Moir.
6 *Dercum's Disease. G. McMullan.
7 Latent Infections by the Diphtheria Bacillus. P. W. Williams, R. M. Buchanan, D. Forbes, and R. V. Clark.
8 Endemicity of Influenza. A. W. Gilchrist.
9 Connection Between Cattle Fairs and Tuberculosis in Ireland J. D. Wynne.
10 Early Diagnosis of Tuberculosis. A. Calmette.
11 Influence of the Site of Inoculation. L. Noon.
12 *Inoculation Treatment of Tuberculosis. D. W. Carmalt-Jones.
13 *Bacteriology and Vaccine Treatment of Acne Vulgaris. A. Fleming.
14 Bacteriology of Common Colds. C. H. Benham.
15 Treatment of Edema. H. D. Rolleston.
16 Facts and Fancies in Pharmacology. W. E. Dixon.
17 Action of the Pressor Substances in Putrid Meat, Placenta, and Ergot on the Heart and Uterus. W. E. Dixon and H. H. Dale.
18 Effect on the Leucocyte Count Produced by Thiosinamin Injections. F. J. Charteris.
19 New Member of the Saponin-Digitalin Group of Glucosides. B. Moore, F. W. Baker-Young and S. C. M. Sowton.
20 Lesions of the Mucous Membranes in Cutaneous Disease. Sir M Morris.
21 *Acanthosis Nigricans. R. B. Wild.
22 *Idem. G. St. George, and G. M. Melville.
23 Preventive Treatment of Puerperal Eclampsia. A. M. Bankier.
24 *Continuous Proctoclysis. H. J. Paterson.
25 Soamin (Sodium Para-Aminophenylarsonate) in Syphilis. A. Fraser.

3. **The Blood in Chorea and Rheumatism.**—Macalister is of the opinion that there is less real association between chorea and rheumatism than is generally thought to be the case, and that chorea may be due to an infective toxemia of distinctive character. The results of his experiments show (1) that there appears to be in the blood plasma of patients suffering from chorea a poison which is toxic to the leucocytes of healthy persons, and (2) that in rheumatism the plasma does not appear to be so uniformly toxic; in fact, it seemed to be hardly at all poisonous to healthy leucocytes. In the first two cases of chorea which were investigated there was a marked eosinophilia. The counts showed 20 per cent. of eosinophiles in one, and 16 per cent. in the other. Macalister thought this might possibly have been due to some unsuspected intestinal parasites, but examination of the stools for eggs, etc., gave absolutely negative results. Six or eight chorea bloods have been examined since then, and, with one exception, they have all presented this peculiarity. There has been no eosinophilia in any of the numerous cases of acute rheumatism examined.

4. **Enterospasm Simulating Acute Obstruction.**—The case reported by Wynne and Sturm was one of association of an old appendicular trouble with enterospasm, suggesting a reflex origin of this curious condition, and a possible explanation of certain cases of fecal vomiting as the peristaltic action was reversed. The patient gave a history of repeated attacks of biliary colic, which was curious, since only one gall-stone was found, and that in the appendix. Many other gall-stones must have succeeded in passing the trap. A similar, though much less severe, attack of three years previously had been relieved by a natural action of the bowels. The case was a perfect clinical picture of acute abdominal mischief, but without the abdominal rigidity usually associated with such conditions. The unexpected collapse and death of the patient suggested that even a moderate amount of abdominal manipulation in these spastic conditions of the bowel involves an inordinate degree of shock.

6. **Dercum's Disease.**—The case reported by McMullan presented almost all the characteristic symptoms of adiposis dolorosa—the history of numbness and pain, followed by diffuse symmetrical fatty deposits, the associated hemorrhages; the presence of hyperesthetic areas; and the general debility and harsh, dry skin. The patient, a woman, aged 61, was fairly bright and intelligent, but complained of some loss of memory. There was nothing about the case, however, to suggest myxedema. McMullan gave her thyroidin, grs. v, t. i. d., and after scarcely two weeks the pains had almost disappeared, the numbness and tingling had been very much alleviated, and there was a distinct reduction in size of the right arm, of almost ½ inch. The woman felt very much better, and could sleep and do a little work better than she could for several months previously.

12. **Inoculation Treatment of Tuberculosis.**—The total number of patients with tuberculous disease treated by Carmalt-Jones is 367. They all attended as out-patients, and though they included more well-to-do persons than usual in such practice, there was a large preponderance of the poor. The number of each kind of case treated are as follows: Lymphatic glands 155, joints 70, ulcer, sinus and abscess 50, genitourinary tract 34, lupus 23, lungs and pleura 10, bone 8, dactylitis 7, peritonitis 5, eye 3, and larynx 2. In 8 of the 87 cases of tuberculous lymphatic glands inoculation was employed as an adjunct to removal by operation, in every case with satisfactory results and with no recorded recurrence. In 79 patients in whom inoculation was the chief method of treatment, 37 were males and 42 females. In 10 the affected glands were either in the axilla arm or groin; in all the rest they were in the neck. The treatment of these patients has consisted in inoculating them, subcutaneously, with Koch's emulsion of tubercle bacilli, generally known as B. E. The doses are minimal at the outset, and repeated at intervals of ten days, a dose not being increased till it has ceased to have a therapeutic effect. The minimal dose is usually 1/15,000 or 1/20,000 mg., the smaller dose being always used for children. The maximal dose for children under 5 is 1/10,000, for older children and adults it rarely exceeds 1/4,000; in a few instances 1/3,000 has been used and 1/2,000 is recorded. Of these 79 patients, 27 are cured, 22 are much better, 18 are better, 8 are unchanged and 4 are worse. The patients in whom the glands were involved were, on the whole, decidedly bad cases. An indication of this is the fact that of the 79, 43, or more than half, had been operated on previously, and 21, or one-quarter,

had had more than one operation; 5 of them had had ten operations or more. Of the patients cured, 9 out of 27 had been operated on; of those much better, 14 out of 22; of those better, 11 out of 18; and 9 out of 12 of those unchanged or worse. The second variety of tuberculous infection studied was a group in which are included ulcer, sinus and abscess, 50 cases in all. The results show 10 cures, 20 patients much better, 9 better, 8 unchanged and the rest doubtful. The dose employed among patients cured has averaged 1/15,000 mg. minimum and 1/7,000 mg. maximum for children and 1/15,000 minimum and 1/5,000 maximum for adults. Thirty-four patients with tuberculosis of the genitourinary tract have been treated, in 9 cases the testes were involved, in 8 the kidney, and in 17 the bladder. Of the testis cases three patients are cured, 2 are much better, 3 better and 1 is dead. The death occurred after childbirth, and at the time when the renal symptoms were improving. Of the cystitis cases, 2 patients are cured, 4 much better, 8 better, 1 is no better, 1 worse, and in 1 the condition is unknown. Relapse has occurred in 5 cases. The dose should be a very small one at the outset; in 10 out of 15 of the successful cases the initial dose has been less than 7/15,000 mg., often 1/25,000; it may in time be brought as high as 1/4,000, but very bad results may follow excessive initial doses. Treatment in the successful cases has averaged one year and two months, though 5 patients have been treated for six months or less. Lupus has been treated in 23 cases. Three patients are cured—this is agreed, 8 are much better, 9 better, 1 unchanged and 2 unknown. The doses employed are large, of the successful cases only 3 began with 1/15,000 mg. or less, and the average minimum is 1/9,000. Maximal doses vary between 1/2,000 and 1/5,000. Of 10 patients with phthisis or pleurisy, 4 are reported cured or much better, 4 are unchanged. The dose is very small; 1/25,000 to 1/50,000 mg. is the initial dose.

Of 8 patients with bone disease, 2 are cured and 3 are much better; the dose is the same as in cases of adenitis. Of 7 patients with dactylitis, 2 are cured, 2 are better, and 1 unchanged. One patient with peritonitis is cured, 2 are better and 1 is unchanged. Three patients with ocular tuberculosis in the cornea, chorioid and retina, respectively, are all described as much better. Both patients with laryngitis are unchanged. Carmalt-Jones says that tuberculosis of lymphatic glands is the form most amenable to inoculation treatment, nearly 1 in 3 being cured, and (including cures) 5 in 8 much improved. Next comes ulcer, with 1 in 5 cured and 3 in 5 much improved. In the genitourinary tract 1 in 5 are cured, and 3 in 7 much improved, and in lupus 1 in 8 are cured, and 1 in 2 much improved.

13. **Acne Vulgaris.**—Fleming has obtained better results in the treatment of acne vulgaris from the use of a combination of staphylococcus vaccine and acne bacillus vaccine than from either vaccine alone.

21. **Acanthosis Nigricans.**—There are several points of interest in Wild's case; one is the association of the skin changes with carcinoma of the left supraclavicular glands and the prior appearance of the latter. In the absence of any postmortem examination it is impossible to say what organ was involved in this case, as there were no symptoms of disease in any abdominal viscus, but the probabilities seem to be in favor of the cardiac end of the stomach, where carcinoma may exist for a considerable time without localizing symptoms. The pancreas, however, cannot be excluded, and suprarenal disease is possible, although the condition of the blood seemed to be against it. A second point of interest is the condition of the blood. At first sight any observer would have called the patient anemic, save for the redness of the lips and the mucous membranes. Closer examination of the skin showed this appearance of anemia to be due to the obscuration of the superficial blood-vessels by the opacity of the thickened skin. The blood-count showed only slight anemia, and beyond the deficiency of red corpuscles the blood was practically normal within a few weeks of death. There was no marked leucocytosis. Finally, should be pointed out the predominance of the lesions on the upper half of the body and hands and the freedom from any sign of disease on the feet and legs below the thighs.

22. **Idem.**—The authors supply a detailed review of the literature of this disease, and report a case.

24. **Continuous Proctoclysis.**—The apparatus employed by Paterson consists of an electroplated douche-can, which holds about five pints. In the front of the can is a thermometer and a gauge glass, and the can is graduated in half-pints, so that the amount of saline solution entering the rectum can readily be estimated. The solution leaves the can through a delivery tube with a half-inch bore, to which is attached three feet of rubber tubing connected with a large rectal tube. Under the bottom of the can is an electric heater, which can be connected with any electric supply of suitable voltage by means of a flexible cord and wall plug. The can is suspended on an adjustable stand mounted on castors so that it can readily be wheeled up to the bedside.

Lancet, London

August 28

26 *Students' Number.

26. This issue is devoted entirely to the discussion of topics of interest to medical students.

Medical Press and Circular, London

August 18

27 Acute Leukemia. A. Hertz.
28 Regulation of Marriage by the State. S. A. Bontor.
29 Etiology, Diagnosis, and Prophylaxis of Typhoid Fever in India. D. Semple.
30 Origin of Infectious Diseases. A. S. Ashmead.
31 Alcohol and its Effects on the Child. I. Doczi.

August 25

32 Feeble-Minded Children. A. F. Tredgold.
33 Treatment of Severe Cases of Chronic Colitis. J. P. L. Mummery.
34 *New Procedure for the Treatment of Diseases of the Nose. E. Sprenger.
35 Sleeping Sickness: A Study of the Tsetse Fly. E. D. W. Greig.

34. **Treatment of Diseases of the Nose.**—If the nasal mucous membrane becomes chronically affected from any cause, the nose does not act as under normal conditions; it does not receive the physiologic stimulus necessary to health; it changes still more into a condition of disease, for that reason again it does less work, etc. Spengler terms this a "*circulus vitiosus.*" To bring about an improvement in the diseased part we must provide for longer pauses for rest, that is, we must bring about a temporary state of rest, and for this the mechanical, thermic and chemical stimuli must be kept back as much as possible. To accomplish this Spengler constructed small, clear yellow balls or pellets of porous India rubber, the so-called sponge-rubber. They are about 12 mm. in diameter, and are furnished with a stalk for the purposes of easy handling and cleanliness. These little balls are inserted into the lower part of the nostril and retained there for from half to three-quarters of an hour several times a day. First, a feeling of fulness is felt in the nostril, but also one of increased warmth. Very soon, however, a feeling of great relief comes on. The sensation of dryness that is often so troublesome disappears as the increased blood supply increases the secretory action of the glands. When the pellet is removed the nostril that has carried it is free, just as after an application of a weak solution of cocain, and agreeably moist. It can now be cleansed easily. This condition of relief often lasts from one to two hours, and when it passes off can easily be brought about again by the same means. Wearing the pellets regularly for several months is said to cause a marked improvement, or even complete recovery.

Clinical Journal, London

August 25

36 Obscure Fractures. E. M. Corner.
37 Antepartum Hemorrhage. H. R. Andrews.

British Journal of Children's Diseases, London

July

38 Glioma of the Spinal Cord. G. Peacocke.
39 Fetal Rickets. J. R. Charles.
40 *Treatment of Cerebrospinal Meningitis in Children with Flexner and Joblin's Antiserum. N. P. Marsh, and O. T. Williams.
41 Irregular Uterine Hemorrhage in a Young Girl. G. Gibb.
42 *Intussusception. C. P. B. Clubbe.

40. **Treatment of Cerebrospinal Meningitis.**—As the result of clinical observations in 14 cases, Marsh and Williams believe that the use of Flexner's serum in cases of cerebrospinal meningitis which are diagnosed early promises extremely favorable results, and is worthy of the consideration of those who have to deal with this condition. Even in cases which are not diagnosed so early, the serum undoubtedly favors the prognosis, and it, or frequent lumbar puncture, or both combined, have a good deal to do with the prevention of the after-conditions.

42. **Intussusception.**—Clubbe has had under his care 173 cases of intussusception; in 157 laparotomy was done, and in 16 the intussusception was reduced by injection. Of the first 50 operated on, 25 died, a mortality of 50 per cent.; of the second 50, 12 died, a mortality of 25 per cent.; of the third 50, 4 died, a mortality of 8 per cent.; among the last 7 there were no deaths. In his opinion the correct and only treatment is laparotomy.

Obstétrique, Paris

July, II, N. S., No. 7, pp. 473-544

43 *Torsion of Uterine Fibromas in Pregnancy. G. Piquand and J. Lemeland.
44 *Suprasymphyseal Cervical Cesarean Section. F. Fraipont.

43. **Torsion of Uterine Fibroma During Pregnancy.**—Piquand and Lemeland review the history of this contingency and discuss the diagnosis which is always very difficult unless the presence of the fibroma is known beforehand. In one case on record, the disturbances were subacute and the tumor changed its consistency and grew hard as the uterus contracted under the exploring hand, permitting the exact diagnosis. It is necessary to exclude kidney colic, appendicitis and tubal rupture. An ovarian cyst is usually more elastic and more movable, and its displacement is not communicated to the uterus. The torsion of a uterine fibroma is one of the most serious complications of pregnancy. The irritation of the uterine muscle may entail expulsion of the ovum. The fibroma left to itself almost invariably becomes gangrenous. The details of 25 cases on record are tabulated, with 5 fatalities. In the 3 cases in which no operation was attempted, the patients all died, while only 2 died in the operative cases. In the 13 cases of torsion of the fibroma the pregnancy continued to term in 8 cases, while the children were still-born in the others, including 3 abortions. In the 12 cases in which the torsion involved the uterus, the pregnancy continued to term in only 3. In the other cases abortion occurred or the gravid uterus had to be removed. The vascularization of the gravid uterus renders hemostasis difficult, but it was accomplished in all the cases. To ward off abortion, the patient should be kept under the influence of opium before, during and several days after the operation. In Lepage's case, the pedunculated myoma was removed. after which the torsion of the uterus became spontaneously reduced and the pregnancy continued to term. The intervention should be as restricted as possible, safeguarding the mother while respecting the pregnancy, but not hesitating to remove the uterus and contents in case of necessity.

44. **Suprasymphyseal Cesarean Section.**—Fraipont reports eight cases in which he followed the Sellheim or modified Frank technic. There has been no tendency to retroversion in any of his cases; this has been suggested as a possible complication from fixation at the site of the wound in the front of the cervix. Recovery is more rapid than after pelvis-enlarging operations. He regards every woman as infected when labor has been under way for some time, the membranes prematurely ruptured, or the vagina examined several times. The microbes in these cases are as dangerous for the cellular tissue of the pelvis as for the peritoneum. If the child is living there is no other alternative in the infected cases than the Porro or the Sellheim operation.

Presse Médicale, Paris

August 14, XVII, No. 65, pp. 577-584

45 *Foreign Bodies in the Esophagus and Bronchi and False Foreign Bodies. (Corps étrangers et faux corps étrangers de l'oesophage et des bronches.) Guisez.
46 *The Effects of Lactic Bacilli on Intestinal Digestion. (Les effets de la bactériothérapie lactique sur la digestion intestinale.) H. Labbé and G. Vitry.
47 *Hemoptysis Supplementary to the Menses. (L'hémoptysie essentielle supplementaire des règles existe-t-elle?) A. Martinet.

August 18, No. 66, pp. 585-592

48 Instrumental Dilatation of Cervix for Rapid Delivery. (De l'accouchement méthodiquement rapide par dilatation instrumentale du col utérin.) E. Bonnaire.
49 Liver Disturbances in Psychosis with Polyneuritis. (Des troubles hépatiques dans les psychopolynévrites.) Arsimoles and Halberstadt.

August 21, No. 67, pp. 593-600

50 *Manual Dilatation of Cervix for Rapid Delivery. (L'accouchement méthodiquement rapide par dilatation manuelle du col utérin.) E. Bonnaire.
51 Radium Therapy in Concrete Sebaceous Acne or Senile Keratoma. Barcat.
52 *Fluctuations in Composition of Urine in Health and Disease. (L'indosé urinaire.) H. Labbé and G. Vitry.

45. **Foreign Bodies in the Esophagus or Bronchi.**—Guisez has had 42 cases of this kind in the last five years and here gives illustrations of the instruments which he has found most useful. He comments on the remarkable tolerance of the esophagus for foreign bodies; in one case a 10 centime piece was removed that had been in the esophagus for four years without causing much disturbance. The foreign body may have passed on, but pain in swallowing may persist for some time afterward. In 19 cases of foreign body in the esophagus Roentgen-ray examination gave positive results in only 10 cases. In 3 cases the dyspnea, cough and attacks of suffocation seemed to indicate that the foreign body was in the air passages. Even radiography may prove deceptive as the foreign body is found later in the esophagus. In 2 cases Guisez was able to remove a scrap of bone which had caused symptoms diagnosed as due to pulmonary tuberculosis, but all subsiding after removal of the foreign body. There is only one way to be sure as to the presence and nature of the foreign body, and that is by direct visual inspection, bronchoesophagoscopy.

46. **The Effect of Lactic Bacilli on Intestinal Digestion.**—Labbé and Vitry report the findings in normal subjects taking lactic bacilli on a test diet for periods of from four to fifteen days. The proportion between the ethereal sulphates and the nitrogen in the urine remained constant, showing that this proportion has no connection with intestinal fermentation. The findings demonstrated that the absorption of nitrogen is much reduced under the influence of lactic ferments. They are contraindicated therefore when it is desired to give the patient a diet rich in nitrogen.

47. **Hemoptysis Supplementary to the Menses.**—Martinet warns that hemoptysis may occur in the absence of pulmonary trouble as a supplement to the menses. Ventura has published a case in which periodical hemoptysis occurred at times in place of the menses through three generations in some members of the family free from tuberculosis, syphilis, hemophilia or a heart defect. Martinet reports one out of several in his own experience. His patient was a healthy young woman nursing her second child. After two days of menstrual flow it ceased abruptly and a severe hemoptysis was observed. This occurred only once, and there have been no symptoms on the part of the lungs during the eight years since. In other cases epistaxis has supplemented or taken the place of normal menstruation.

50. **Manual Dilatation for Rapid Delivery.**—Confidence, patience and perseverance are necessary for successful dilatation of the cervix with the hand alone without injury of the parts. The muscular effort is no more than that required for instrumental dilatation, and twenty minutes are usually sufficient for the task, although over an hour may be required in exceptional cases. Its great disadvantage is that the muscles of the hand are fatigued just at the moment when they should be relied on to manage the second stage of labor. In Bonnaire's 171 cases the cervix was lacerated a little in 20; in 5 the tear extended into the segment of the cervix above, and in 2 into the vaginal wall. There were lacerations thus in 15.78 per cent.; and 26 per cent. of women with lacerations succumbed, although the injury cannot be incriminated for the fatality except in 4 per cent.—a mortality about the same as with Cesarean section. The total mortality in the 171 cases was 31, that is, 18 per cent., this method of manual dilatation being applied only in what might be called emergency cases, in which Cesarean section was the only other resource.

52. **Fluctuations in the Organic Content of the Urine.**—Labbé and Vitry refer particularly to the organic elements in the urine outside of urea, uric acid, xanthin, creatinin and ammonia, which form, for example, 28 out of the total 42 grams of organic constituents of the urine. This proportion of constituents forms on an average from one-fifth to one-half of the total organic contents. The authors have found that this proportion varies with the ingestion of carbohydrates and parallels the albumin ingested. The formula showing the proportion of nitrogen ingested and that eliminated in the urine and the total elimination of organic matters gives a basis for comparison of findings in health and disease which they have found useful for better understanding and treatment of diabetes and glycosuria in general.

Semaine Médicale, Paris

August 25, XXIX, No. 34, pp. 397-408

53 *Measures to Reduce Infant Mortality in France. (Etat actuel des diverse œuvres publiques et privées pour la lutte contre la mortalité infantile en France.)
54 The Phenomenon of Life. (Le phénomène vital d'apres les récentes données de la biologie et de la médecine.) S. Jankelevitch.

53. **The Campaign Against Infant Mortality in France.**—In this special article the public and private institutions and organizations for reducing infant mortality throughout France are reviewed in detail, and their results. In this first installment the protection of the child before its birth and of the mother during confinement are especially considered.

Beiträge zur klinischen Chirurgie, Tübingen

June, LXIII, No. 3, pp. 447-812

55 Operations in Posterior Cranial Fossa. (Operationen in der hinteren Schädelgrube.) H. Rubritius.
56 *Treatment of Actinomycosis at Wölfler's Clinic (Prague) and Ultimate Results. R. Maier.
57 *Ileocecal Tuberculosis. H. Els.
58 *Gall-Bladder and Liver Surgery. (Erfahrungen über Cholecystitis-Operationen und Leberchirurgie.) O. Haist.
59 Traumatic Enlargement of Tendons. (Traumatische Sehnenverdickung.) F. Palla.
60 Sensibility in Abdomen. (Zur Frage der Sensibilität der Bauchhöhle.) Propping.
61 *Movable Cecum. (Klinische und anatomische Fragestellungen über das Coecum mobile.) H. Klose.
62 Primary Inflammation of the Cecum. (Ueber primäre Typhlitis.) F. Cordes.
63 Weight-Bearing Conditions in the Bones of the Legs. (Die Belastungsverhältnisse am normalen und am pathologisch deformierten Skelett der unteren Extremität.) W. Hagen.
64 Two Cases of Contusion Rupture of Spleen. (Beitrag zu den subkutanen Milzrupturen.) A. Hoffmann.
65 Roentgen-Ray Examination for Splinters of Glass. (Der radiographische Nachweis von Glassplittern.) G. v. Saar.

56. **Treatment of Actinomycosis at Prague.**—Maier states that no cases of actinomycosis in the thorax were encountered, but he gives the particulars of 30 cases of such lesions in the head and neck, 7 in the abdomen and 2 cutaneous lesions of peculiar malignancy. Only prompt amputation of the arm with the primary lesion could have saved one of these last two patients from the acute fatal sepsis. In conclusion, he tabulates the total experience with 56 cases in which treatment was by iodid alone, with 34 cures; 94 with operation alone, with 75 cures; 109 with excision plus iodid, with 60 cures, and 30 in which treatment was by other measures, with 25 cures. All but 46 of the cured patients have been re-examined recently. He calls attention to the fact that the deaths during the years since were in many cases reported as having been due to tuberculosis, while there is a possibility that the supposed tuberculosis may have been merely a metastasis in the lung from the old actinomycotic infection in some of these cases. His conclusions from a review of nearly 300 cases are that actinomycosis when circumscribed should be resected like any other tumor. If this is not possible or if the affection is diffuse he advocates administration of potassium iodid internally with partial resection. His experience in one case encourages further trials of tuberculin in actinomycosis, as the cure in this case can be ascribed, he thinks, only to the course of tuberculin treatment. The iodid does not require such large dosage as some advocate; his preference is for 1 gm. the first day, 2 gm. the second, 3 gm. the third (from 15 to 45 grs.), repeating the same succession after suspension for three days. Sometimes he gave from 2 to 5 gm. a day in powders, supplemented by local applications of a 10 per cent. solution of potassium iodid. To avoid the possibly deleterious effect of potassium iodid on the heart, he gives sodium iodid in preference and has found it equally effectual. In case of diffuse lesions in the abdominal cavity, tuberculin treatment may effect a cure as in the case reported; the affection had lasted for two years and the patient received 68 injections of "old" tuberculin, the total amount being nearly 100 c.c. injected between May, 1904, and January, 1906. At first there was a lively local reaction to the smallest amount injected, with general febrile reaction, but the reaction grew less and less until there was none at all, even when 6 gm. was injected at a dose. The patient was re-examined nearly nine months after he had been discharged cured, and no traces of recurrence could be detected. The first fistula in this case developed four weeks after the first signs of the tumor in the region of the umbilicus.

57. **Ileocecal Tuberculosis.**—Els reports ten cases of a tuberculous process in the ileocecal region; all the patients recovered after resection, with a single exception, and eight are still in good health, the interval ranging from seven months to nearly seven years. The report issues from Garrè's clinic at Bonn.

58. **Gall-Bladder and Liver Surgery.**—Haist analyzes 82 cases of gall-bladder and liver disease requiring operative treatment in Hofmeister's service at Stuttgart. In conclusion, he emphasizes the necessity for regarding every laparotomy as an exploratory operation; notwithstanding the immediate discovery of what seems ample cause for the symptoms, yet careful search should be made for unsuspected lesions, especially in gall-stone affections, as they are liable to induce numerous changes in the environment.

61. **Movable Cecum.**—It was formerly supposed that the study of the topography of the various loops of the intestines offered no practical results, but Klose and others are now calling attention to movability of the cecum as an index of defective development. It may cause no disturbances or may induce colics and inflammation, remedied by simple intraperitoneal cecopexy.

Berliner klinische Wochenschrift

August 23, XLVI, No. 34, pp. 1557-1596

66 Case of Traumatic Abdominal Hernia in Unusual Location. (Fall von traumatischer Bauchhernie.) H. Schmid.
67 *Monoplegic Syringomyelia. A. Wimmer.
68 *Throat Symptoms in Syringomyelia. (Rachen- und Kehlkopfsymptome bei der Syringomyelie.) E. Baumgarten.
69 Simulation and Exaggeration of Ear Affections in Social Medicine. (Vortäuschung und Uebertreibung von Ohrenleiden in der sozialen Medizin.) A. Peyser.
70 *Intravesical Dissolving of Fat-like Foreign Bodies. (Intravesikale Auflösung fettartiger Fremdkörper.) C. Posner.
71 "Antagonistic" Therapy of Tuberculosis and Reversible Phylogenesis. E. Klebs. Commenced in No. 33.
72 Vitalism and Teleology in the Natural Sciences. Thöle. Commenced in No 33.
73 *Abdominal Manifestations with Commencing Pneumonia. (Appendicitis und Pneumonie.) Schönstadt.

67. **Monoplegic Syringomyelia.**—Wimmer reports three cases of this rare condition. In one case considerable improvement was obtained by Roentgen-ray treatment.

68. **Throat Symptoms of Syringomyelia.**—Baumgarten reports a case of paralysis in the throat and palate, with sensibility and reflexes normal, in which further investigation revealed syringomyelia. There had been no other noticeable disturbances beyond the change in the voice, but the paralysis of the palate and atrophy of the right side of the tongue confirmed the diagnosis of syringomyelia. He cites 26 similar cases from the literature and points out that the symptoms in the throat may be the first sign of the affection. In 9 of the 27 cases there was atrophy of the tongue, and there was paresis of the palate in 17. In 3 cases the hoarseness came on suddenly.

70. **Benzin to Dissolve Fat as Foreign Body in Bladder.**—Posner's patient was an elderly woman who had recurring inflammation in the urethra after removal of polyps four years before. Medicated bougies were ordered which she introduced in the urethra herself, but with exaggeration of the previous symptoms, the serious disturbances now simulating a calculus in the bladder. Fat globules were found floating on the urine and the cystoscope revealed small lumps of fat, which were traced to the cocoa butter vehicle of the medicated bougies.

After rinsing out the bladder with salt solution, Posner injected 15 c.c. of pure benzin, which was retained for fifteen minutes. All disturbances ceased at once, as the bladder was thus completely cleaned out, without by-effects of any kind. The bougies used had been unusually long, fully 11 cm. in length.

73. **Abdominal Phenomena with Incipient Pneumonia.**—Schönstadt protests against Glaserfeld's communication on the "abdominal phenomena with incipient pneumonia," mentioned in The Journal, September 11, page 901. He interprets the syndrome described as cases of appendicitis with involvement of the lungs, and is convinced that appendicectomy in time might have warded off the lung trouble.

Deutsche medizinische Wochenschrift, Berlin

August 19, XXXV, No. 33, pp. 1417-1464

74 Conception of Disease. (Ueber den Krankheitsbegriff und verwandte Begriffe.) L. Aschoff.
75 Organotherapy of Incipient Senile Cataract. (Zur spezifischen Therapie des beginnenden Altersstarcs.) P. Römer.
76 Trachoma Bodies in Section Specimens. (Darstellung der Trachomkörper im Schnittpräparat.) H. Herzog.
77 *Injurious Action of Sun-Baths. (Schädliche Wirkungen der Sonnenbäder.) E. Grawitz.
78 Technic for Detection of Tubercle Bacilli in Sputum. (Verwendung von Antiformin und Ligroin für den Nachweis der Tuberkelbazillen im Sputum.) G. Bernhardt.
79 *Typhoid Bacilli not Found in Gall-Bladder in Bacillus-Carrier. (Typhusbazillenträger und Cholezystektomie.) W. Loele.
80 *Surgical Treatment of Peritonitis. Dege.
81 *Origin of Ileus after Appendicitis. (Zur Entstehung des Ileus nach Blinddarmentzündung.) Id.
82 Technic for Prostatectomy. (In welcher Gewebsschicht findet bei der sogenannten Prostatectomie, insbes. der suprapubischen, die Exstirpation der hypertrophischen Teile statt?) A. Rothschild.
83 Insignificant Disinfecting Properties of Ordinary Mouth Washes. (Die desinfizierende Wirkung einiger gebräuchlicher Zahn- und Mundwässer auf pathogene Bakterien.) R. Bassenge.
84 Anatomic Conditions that Favor Local Anesthesia in the Jaws. (Anatomische Untersuchungen im Ober- und Unterkiefer zum Zwecke der Lokalanästhesie bei zahnärztlichen Operationen.) Bunte.
85 Misleading Names of Certain Pharmaceutical Preparations. (Unrichtige Bezeichnungen einiger pharmazeutischer Präparate.) R. Sodemann.

77. **Injurious Action of Sun-Baths.**—Grawitz announces that he has witnessed the development of nervous disturbances in a number of persons after prolonged exposure to the sunlight. Some of the patients had been taking sun-baths, an institution in the vicinity offering men an opportunity for bathing in the river and taking sun-baths, naked for hours at a time, day after day. Aside from the sunburn he found the heart action accelerated, with systolic murmurs at the various valves, the dulness increased toward the right, decreased toward the left, pulse with much tension, accentuated second sound and, in a few cases, collapse of the heart with threatening general symptoms. The temperature was increased in some of the patients, but he never encountered albuminuria. The headache and general depression sometimes persisted for days; in other cases the nervous system was much excited. The connection between these nervous symptoms and the sun-baths was evidenced by their development in previously healthy men and their subsidence as soon as the individuals refrained from this excessive exposure to the sun. In some instances the family was much alarmed at the severity of these nervous attacks. Grawitz does not ascribe the effect to the heat so much as to the action of the sun on the unprotected head. The exciting action of the sunlight is particularly evident in children allowed to play on the beach for hours at a time. These children return home brown and ruddy, but with unstable nervous system, so that the desired benefit from the stay in the country has not been attained. He insists that children should not be allowed to play in the sun between noon and 4 p. m., but should always be sent into the shade to play during the heat of the day. He ascribes much of the prevalent general nervousness and heart irregularities to excessive exposure to sunlight. In treatment, cool applications to the head and heart, cool drinks, and, in the severer cases, analeptics, are indicated, but prophylaxis is of the greater importance, and he advises warning the parents and friends of persons who risk their health by these excessive exposures of the danger they incur.

79. **Typhoid Bacilli-Carriers and Cholecystectomy.**—Loele reports a case in which a patient with cholelithiasis required an operation three months after typhoid fever. Typhoid bacilli had been present in the stools constantly during the interval. The operation revealed that the typhoid bacilli had no foothold in the gall-bladder. No typhoid bacilli could be found in this organ or in the urine, blood, spleen and liver examined postmortem. The suggestion to remove the gall-bladder as the nidus of the typhoid bacilli in the chronic carriers would not have applied in this case.

80-81. **Treatment of Peritonitis.**—Dege discusses the arguments for and against flushing the abdominal cavity in treatment of perforative peritonitis, and describes a case in which ileus followed later from a band-like adhesion which had evidently formed around the drain and tampon. He argues that the proper course is between the two extremes, restricting the amount of tamponing and never inserting a tampon between loops of intestines. In his experience, the Fowler position has always had a favorable influence on the course of peritonitis.

Medizinische Klinik, Berlin

August 8, V, No 32, pp. 1181-1218

86 *Erysipelas in the Aged. (Erysipel im Greisenalter.) H. Schlesinger.
87 *Special Forms of Local Reaction in the Eye after Subcutaneous Injection of Tuberculin. J. Rupprecht.
88 *Polyneuritis and Korsakoff's Psychosis with Colon Bacillus Pyelitis in Pregnancy. M. Semon.
89 Electric Treatment of Bronchial Asthma. O. Gunzel.
90 Pulse Pressure in Arteriosclerosis. (Verhalten des Pulsdruckes bei Arteriosklerose.) F. Kisch, Jr.
91 Composition of Blood and Digestion. (Bestimmung der Blutbeschaffenheit in ihrem Bezug auf die Verdauung.) Marcus.
92 *Potato or Solanin Poisoning. (Die sogenannte Kartoffel- oder Solaninvergiftung.) v. Haselberg.

August 15, No. 33, pp. 1219-1254

93 *Heart Lesions in Infectious Diseases. (Herzaffektionen bei Infektionskrankheiten.) F. Meyer.
94 Normal Nutritional Condition of Adults. (Der "normale" Ernährungszustand des erwachsenen Menschen.) G. Oeder.
95 Objective Registration of Conditions in Circulation. (Ueber die Möglichkeit, die Druckkraft des Herzmuskels, die Grösse des Widerstandes im Gefässsystem und die Geschwindigkeit im menschlichen Kreislauf zu bestimmen—Amplitudenmessung und die Bestimmung des Schlagvolumens.) Gräpner.
96 *Constitutional Obesity. (Ueber konstitutionelle Fettsucht.) C. Pariser. Commenced in No. 32.
97 *The Wassermann Reaction. J. Bergmann.

86. **Erysipelas in the Elderly.**—Schlesinger states that 288 out of 2,664 cases of erysipelas in his service at Vienna were in persons over 60, that is, in 10.8 per cent. Only 91 of his elderly patients were men. He has been making a special study of the affection in the aged, and comments on the rarity of severe heart disturbances in the course of erysipelas; they are seldom observed from the direct action of the infection and its toxins, but after the subsidence of the disease the heart may be left extremely weak, so that the patient may be threatened by the consequences and complications of the erysipelas which he has apparently passed through without harm. Endocarditis is not frequent, but pericarditis and even the suppurative form may follow erysipelas in the elderly. He noticed in the majority of fifteen patients examined for the purpose that leucocytosis was high during the infection and rose still higher after its close. The blood formula was not much changed except for the total absence of eosinophiles. Complications on the part of the respiratory organs were no more common than after other infections, but kidney affections were repeatedly encountered with erysipelas in the elderly, especially an acute hemorrhagic process subsiding with the infection. Nervous symptoms were frequent, sometimes mental confusion or delirium, even with an afebrile course of the erysipelas, occasionally there were ideas of persecution, but meningitis was scarcely ever observed in the elderly. The erysipelas attacked the face almost invariably; none of his patients presented erysipelas of a mucous membrane, although he knows of one case on record in which the throat was primarily invaded. Unusually frequent were the complications or sequels in the form of suppurative processes in the subcutaneous cellular tissue, especially when the erysipelas was on the limbs. These lesions ranged from abscesses and phlegmons to suppurative venous thrombosis and gangrenous processes. Gangrene of the lids was observed in a few cases, but the eyeball did not suppurate in any instance, and he witnessed the healing in some cases of a deep, extensive gangrenous process, even in women over 80. In 25 per cent. of his 288 cases of erysipelas in the elderly, it terminated fatally, but only 2 succumbed of the

15 patients who were over 80. In treatment the flagging heart of the elderly must be borne in mind and digitalis given when there is suspicion of degeneration; caffein or sodium salicylate may be indicated when the blood pressure drops and the pulse grows slow or if arrhythmia is observed. Anointing the skin after subsidence of the erysipelas is useful in prophylaxis, and the patients should not be allowed to lie long on one spot. Local warmth relieves the disturbances, and even extensive infiltrations may retrogress under it. Compresses wet with Burrow's solution (5 parts alum and 25 parts lead acetate in 500 parts water) or 60 per cent. alcohol have given him better results than any other measures. In combating the frequent sleeplessness he warns against morphin, as weakened elderly patients sometimes cannot bear it. Notwithstanding an apparently desperate condition, the elderly patient with erysipelas may throw it off and recover.

87. **Local Reactions in the Eye After Tuberculin Subcutaneously.**—Rupprecht reports two cases, in women of 18 and 28, in which chorioiditis or serous cyclitis flared up and became severe after a single subcutaneous injection of 10 and 5 mg. old tuberculin. There is a possibility of actual injury from the tuberculin, and the cases further emphasize the necessity, he says, of having expert ophthalmologic examination of the eyes when tuberculin is injected for differentiation of an eye affection; otherwise some minute reaction might be overlooked, and harm result from repetition of the dose. His cases confirm the importance of tuberculosis as a factor in inflammatory affections of the chorioid.

88. **Psychosis and Colon Bacillus Pyelitis in Pregnancy.**—Semon reports the case of a woman of 27 who presented a typical Korsakoff psychosis with polyneuritis and hyperemesis early in her first pregnancy, with colon bacillus pyelitis. He regards the latter infection as probably responsible for the neuritis.

92. **Potato or Solanin Poisoning.**—Haselberg reviews forty-one cases of wholesale poisoning, involving 2,000 troops, and ascribed to solanin poisoning from potatoes, but which he shows were probably due to contamination of the potatoes after they had been cooked and were waiting to be warmed over or used in a salad, being kept in some warm place in the interim. He declares that potatoes never can be in themselves poisonous, and cites research with solanin to confirm the fact that solanin is not very toxic; its toxic dose has not yet been determined.

93. **Cardiac Disturbances with Infectious Diseases.**—Meyer discusses the literature, symptoms, etiology and treatment, remarking that the most promising measure to ward off heart trouble is by serotherapy. Personal research with diphtheria has demonstrated, he asserts, that a proper dosage of diphtheria antitoxin, given at the right time, will certainly ward off circulatory disturbances in animals. It protects against them, but cannot cure if they are already installed. He is convinced that his successful experimental prophylaxis in diphtheria opens bright prospects for serotherapy as a preventive of cardiac complications in other infections (streptococcus infections).

96. **Constitutional Obesity.**—Pariser has been steadily acting on his belief that endogenous obesity is of thyroid origin, and has been administering thyroid extract during the last ten years during all the ups and downs of thyroid treatment. He is rejoicing now that von Noorden has at last conceded that clinical observation compels the assumption of a constitutional obesity, notwithstanding that the laboratory metabolic findings are unable to explain it to date. Pariser describes the first case that opened his eyes to the participation of the thyroid: a woman of 25 with extreme obesity developing soon after panhysterectomy, had taken ovarian tablets perseveringly, but without the slightest effect, but a turn for the better was apparent at once when thyroid treatment was instituted. This and other experiences have convinced him that the thyroid is a secondary sexual organ, like the mammary gland, and that constitutional, endogenous obesity may result from thyroid incompetency. The lack of success from dietetic measures and palpation of the gland may suggest the presence of this form of obesity, and this assumption is confirmed by the efficacy of extremely mild thyroid treatment, increasing from 0.1 to 0.3 gm. of gland substance (in tablet form) in the course of three weeks and then reducing again, with a free interval of a week at the end of the month. His maximal dose is thus less than one-third of the average dosage of the last few years. With this technic he never has any by-effects; if polyuria should develop he would regard it as a sign that the individual dose was too high or the intervals too short. The most reliable index of cumulative action is the pulse. If the pulse runs up to 100 or 110 the thyroid extract should be suspended and rest imposed, not necessarily in bed. The pulse rate was increased in this way in 8 or 10 of his cases, but less frequently since he has perfected his technic. After two or three of these monthly thyroid courses he suspends the treatment for six or eight weeks, but as the aim is to supply a physiologic deficiency, the thyroid extract has to be constantly supplied anew as the deficiency makes itself felt. He insists that constitutional obesity is more than a mere accumulation of fat; it has many points in common with myxedema, even to the temperament and character. Myxedema may be regarded as the last offshoot, run wild, of constitutional obesity. He generally combines dietetic measures with the thyroid treatment, as the endogenous is frequently mixed more or less with the exogenous form. In the pure endogenous variety, however, the thyroid treatment alone will prove effectual.

97. **Seroreaction in Syphilis.**—Bergmann relates the results of application of the Wassermann test in 19 infants and their mothers, the findings sustaining the assumption that the mother of a new-born syphilitic child requires specific treatment even although she may be apparently free from signs of syphilis. The test applied to 75 wet-nurses gave positive findings in 7 and in 5 of this group nothing otherwise suggesting syphilis could be discovered. Signs of syphilis were found, however, in 4 of the women's infants. This proportion of one syphilitic in every 10 or 11 wet-nurses imposes the necessity for applying the test in selecting a wet-nurse. It even suggests the necessity for making the test compulsory before the laity can engage a wet-nurse. The question whether all syphilitic new-born infants give a positive response was answered in the affirmative by his experience with 19 infants with manifestations of syphilis, while it proved particularly valuable in excluding syphilis in some other dubious cases of eczema, eye affections, etc. Occasionally the reaction occurs when nothing to suggest syphilis can be detected. In other cases the reaction, negative at first, becomes positive later, suggesting the possibility of infection from the mother during delivery. In 2 cases a syphilitic mother gave birth to a child apparently free from the taint during the six months the child was under observation. But even when the test is negative he warns against giving the infant of a syphilitic woman to a healthy woman to nurse, but the mother can be allowed to nurse her own child. Close contact between them is unavoidable any way, sooner or later. It has long been the rule in his service that no child less than eight weeks old is given to another woman to nurse; the breast milk is drawn and fed to it.

Wiener klinische Wochenschrift, Vienna

August 19, XXII, No. 33, pp. 1145-1170

98 *Action of Digestive Ferments on Tuberculin. (Einwirkung von Verdauungsfermenten auf Tuberkulin.) T. Pfeiffer and R. Persch.
99 Nature of Antitrypsin in the Serum and Mechanism of its Action. O. Schwarz.
100 Multiple Neurofibromata. Three Cases. (Zur Kenntnis des Morbus Recklinghausen.) A. Hintz.

98. **Action of Digestive Ferments on Tuberculin.**—This article describes experiments with tuberculin mixed with the various digestive ferments and then applied to the skin for the v. Pirquet test and also in subcutaneous injection. The results testify to the destructive influence of the digestive ferments on the tuberculin. The specific action of tuberculin on the skin was almost completely abolished by mixture with pepsin, trypsin and erepsin.

Zentralblatt für Chirurgie, Leipsic

August 21, XXXVI, No. 34, pp. 1161-1192

101 Changes in the Viscosity of Blood after Operations. (Aenderungen in der Blutviskosität infolge von chirurgischen Operationen.) G. Bolognesi.

Zentralblatt für Gynäkologie, Leipsic

August 21, XXXIII, No. 34, pp. 1177-1216

102 *The Inflatable Bag in Placenta Prævia. (Metreuryse bei Placenta praevia.) B. Krönig.
103 *Vaginal Operative Treatment of Rupture of Uterus without Hysterectomy. (Operative Heilung der Uterusruptur auf vaginalem Wege unter Erhaltung der Gebärmutter.) E. Solms.
104 Measurement of Diagonal Conjugate. (Messung der Conjugata diagonalis in der praktischen Geburtshilfe.) S. Rebaudi.
105 Index Measure for Distance between Tuberosities of the Ischium. (Beckenmesser für die Abstände im Beckenausgang.) E. Hauch.
106 Radial Paralysis after Fracture of Arm during Delivery. Operative Isolation of Nerve. Recovery. (Radialislähmung nach Oberarmbruch bei der Armlösung.) R. Füth.

102. **The Inflatable Bag with Placenta Prævia.**—Krönig asserts that the metreurynter may reduce the mortality of the children a little, but it has not reduced that of the mothers. In his experience 19 women out of 28 with placenta prævia were treated with the inflatable bag and 4 died, while severe hemorrhage occurred in 6 with the expulsion of the bag, and in 8 there was severe hemorrhage after the birth. He has been compiling statistics of different methods of treatment for placenta prævia, the average being in 6,569 cases a maternal mortality of from 5 to 7 per cent. and of the children of from 50 to 70 per cent. He refers in conclusion to a recent discussion in America of the advantages of Cesarean section in placenta prævia, remarking that the results communicated there do not apply to his method of procedure. When Cesarean section is not done until the end of the period of dilatation, there is no security against fatal after-hemorrhage, for by that time the insertion of the placenta in the isthmus has already been stretched—which is what he expressly tries to avoid—and, with the defective contraction of this segment of the uterus, hemorrhage is likely to follow.

103. **Suture of Ruptured Uterus by Way of the Vagina.**—Solms refers only to the ruptures in the lower segment of the uterus, and reports three cases in which he applied this technic. A horseshoe incision is made around the vaginal portion of the uterus, thus permitting the drawing out of the cervix after the bladder has been separated from it. Dührssen has applied a similar technic, and Solms expatiates on the lessened shock and lessened danger of sepsis, peritonitis and hemorrhage.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 15, XXX, No. 97, pp. 1017-1032

107 The Blood Picture in Cancer. (Formola ematica nel cancro in generale, con speciale riguardo ai leucociti.) A. Poggiolini.

August 19, No. 99, pp. 1041-1048

108 Difference between the Temperature in the Two Axillæ in Tuberculosis. (Differenze fra le due temperature ascellari nei tubercolosi.) L. Casali.

August 22, No. 100, pp. 1049-1064

109 The Ocular Tuberculin Reaction. (Sul comportamento clinico della reazione congiuntivale di Calmette.) F. Nassetti.
110 Differentiation of Malta Fever. P. Bueri.

Riforma Medica, Naples

August 16, XXV, No. 33, pp. 897-924

111 Pathologic Anatomy of Central Nervous System in Chorea. (Sistema nervoso centrale nel cousidetto stato coreico.) R. Ciauri.
112 Experimental Research on Anastomosis of Stumps of Severed Vas Deferens. (Sopra alcuni particolari reperti ottenuti nell' anastomosi dei monconi del condotto deferente reciso.) A. Marassini.

August 23, No. 34, pp. 925-946

113 *Suprarenal Theory of Osteomalacia. Unilateral Capsulectomy and Pregnancy. (Teoria surrenale dell'osteomalacia; capsulectomia unilaterale, e gravidanza.) T. Silvestri and C. Tosatti.
114 *Advantages of Treating Hydatid Cyst by Injection of Silver Fluorid. (Cisti da echinococco dello spazio del Retzius guarita col metodo Biondi.) A. Gasbarrini.

113. **Suprarenal Theory of Osteomalacia.**—Silvestri has been repeating Bossi's experiments with removal of the suprarenal capsules in gravid animals to determine whether any tendency to osteomalacia could be detected afterward. He experimented on rabbits and guinea-pigs and was unable to discover evidences suggesting any such influence on the skeleton from unilateral capsulectomy. The animals all aborted, however, in from nine to thirty days; in 2 the abortion was internal, and the embryos were absorbed. This could not have been the result of the operative trauma, as the animals had all recovered completely from this before the abortion occurred. No appreciable morbid changes were found in the ovaries of the animals. It seems probable, he thinks, that osteomalacia is the result of hyperfunctioning of the ovaries which may be accompanied later by perverted functioning. Suprarenal treatment seems to have a rational basis, as the suprarenals possibly have an antagonistic action to that of the ovaries. This theory is confirmed by recent research, which has shown that while thyroidectomy prevents the development of adrenalin atheroma, castration, on the other hand, brings it on more rapidly and more severely. The abortion in the animals is probably the result of the insufficiency of the chromaffine tissue, similar to the constant abortion of gravid rabbits after thyroidectomy. In conclusion, he gives five arguments against the assumption of the infectious nature of osteomalacia: The fact that in 96 per cent. of the cases the patients are women and in more than 80 per cent. women who have borne children; the negative histopathologic and bacteriologic findings, and the fact that while the osteomalacic bones continue to soften in the cultures of the diplococcus incriminated by Arcangeli, normal bones are not affected in the slightest.

114. **Silver Fluorid Injection in Treatment of Hydatid Cyst.**—In the case described, excellent results were obtained by exposing the non-adherent cyst with a laparotomy and evacuating it by means of a cannula and then injecting about 20 c.c. of a 1 to 1,000 solution of silver fluorid.

Hygiea, Stockholm

July, LXXI, No. 7, pp. 641-767

115 First Medical Degrees Granted in Sweden. (De första doktorspromotionerna vid de svenska högskolorna.) C. Sundberg.
116 Treatment of Syphilis. (Till frågan om behandlingen af den syfilitiska sjukdomen.) E. Welander.
117 Seven Cases of Exophthalmic Goiter in the Insane. (Morbus Basedowi hos sinnessjuka.) V. Wiegert.

Ugeskrift for Læger, Copenhagen

August 5, LXXI, No. 31, pp. 881-910

118 Spring Brace for Deformity of the Spine. (Anvendelsen af et nyt Princip ved Behandlingen af Columnas Deformiteter.) E. Nyrop.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Transactions of the Mississippi State Medical Association, Forty-second Annual Session, 1909. Cloth. Pp., 368.

Proceedings of the Thirty-ninth Annual Meeting of the New Jersey Pharmaceutical Association, 1909. Cloth. Pp., 251.

Minor and Operative Surgery Including Bandaging. By Henry R. Wharton, M.D., Surgeon to the Presbyterian Hospital. Seventh Edition. Cloth. Pp. 657, with 555 illustrations. Price, $3. New York and Philadelphia: Lea & Febiger, 1909.

The Higher Fungi of the Chicago Region. Part 1.—The Hymenomycetes. By Dr. Will Sayer Moffatt. Bulletin No. VII. Part 1, Natural History Survey. Paper. Pp., 156, with illustrations. Chicago: Published by the Academy, June, 1909.

A Manual of Laboratory Methods By E. M. Perdue, A.M., M.D., Professor of Histology, Bacteriology and Clinical Diagnosis in Hahnemann Medical College. Kansas City, Mo. Cloth. Pp. 188, with illustrations. Price, $1.50. Kansas City: Burton Pub. Co., 1909.

The Secret of Sex. The Discovery of a New Law of Nature: How Sex is Caused. By E. Rumley Dawson, L.R.C.P., London; M.R.S.C., England, Fellow of the Royal Society of Medicine. Paper. Pp. 64. Price, 50 cts. New York: Cochrane Pub. Co., Tribune Building.

Care of Mother and Child. By Clarence M. Cheadle, M.D., Member American Medical Association. With an Introduction by Charles Edwin Ruth, M.D., formerly Professor of Surgery and Anatomy, Keokuk Medical College, now of Ponce, Porto Rico. Cloth. Pp., 354. Price, $2. Published by the Author, Ashton, Ill., 1909.

A Treatise on the Principles and Practice of Medicine. By Arthur R. Edwards, A.M., M.D., Professor of the Principles and Practice of Medicine and of Clinical Medicine and Dean of the Faculty in the Northwestern University Medical School, Chicago. Second Edition. Cloth. Pp. 1212, with 100 engravings and 21 plates. Price, $5.50. New York and Philadelphia: Lea & Febiger, 1909.

The Practical Medicine Series. Under the General Editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. VI., General Medicine, Edited by F. Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Illinois Postgraduate Medical School. Cloth. Pp. 345, with illustrations. Price, $1.50; or $10 the series of 10 volumes. Chicago: The Year-Book Publishers, 1909.

PROGRESSIVE THERAPEUTICS

A CASE OF PROTRACTED EMPLOYMENT OF PYRAMIDON

By **DR. G. DINTENFASS**, Throat, Nose and Ear Specialist.

(Oesterreichische Aerzte-Zeitung, No. 18, 1908.)

Some time ago I had occasion to observe a patient who consumed enormous quantities of Pyramidon, in order to guard herself against pain. The patient was suffering from an inoperable sarcoma of the pharyngeal vault, which had invaded the neighboring structures, and through pressure on the Gasserian ganglion gave rise to very severe pains in the area of the trigeminus. When the patient was seen for the first time she consulted me on account of an ear complication; she had made use of aspirin, quinin and morphin for the occasionally appearing tic-like pains. In the course of the treatment I prescribed Pyramidon, in doses of 0.3 grms. (4½ grains). The preparation had an extremely favorable effect upon the patient. The painful effect subsided for hours and in spite of various attempts to stop the remedy and substitute other narcotics for the nerves, the unfortunate patient begged again and again to be allowed to return to Pyramidon. She finally took 0.5 grm. (7½ grains) three times daily, at intervals of from four to five hours and a fourth powder at night. Meanwhile, the patient's strength and weight rapidly diminished, so that the dose of 2 grms. Pyramidon was relatively larger (in proportion to her weight) than it appeared to be. Strange to relate, there were no untoward side manifestations. Cardiac disturbances and nausea did not occur at all. The poor appetite may have been referable to the cachexia. Three weeks before her death the patient took five powders of 0.5 grm. (7½ grains each) or 2.5 grm. (37½ grains) in the course of the day; this dose procured euthanasia. She lay mostly in a semi-comatose condition, reacting to external impressions, and partaking of fluid food; she would ask for the bed pan, but had no pain for three or four hours together. Death occurred seven months after the patient was see for the first time. The quantity of Pyramidon used in this way was 310 grm. (450 grains) in seven months. For more than three months she was able to get along with about 1 grm. daily and to this fact I wish to call particular attention. There evidently was only a very slow habituation to the remedy, and I am even inclined to believe that the increase of the dose was required, not by the habituation, but as the result of the increasing attacks of pain, caused by the growth of the tumor. The absence of all disturbances on the part of the circulatory organs is noteworthy. The best mode of administration of the remedy was found to be in a little sweetened tea. This observation is published, as possibly useful for the practitioner, perhaps in analogous cases. Also in those cases in which no fatal prognosis has to be rendered, but pains must be controlled for a patient was seen for the first time. The quantity of Pyramidon, in large doses, may perhaps be found serviceable.

MY RESULTS WITH PYRAMIDON IN ODONTOLOGICAL PRACTICE

By **DR. CARL FUCHS**, Berlin.

In the first place, I tried the Pyramidon in several cases after the application of arsenic, for the devitalizing of the pulp. The usually severe pain, occurring soon afterwards in 80 per cent. of the cases subsided in *all* cases within ten minutes, twenty minutes being required in but two cases, after an average dose of 0.4 grm. (6 grains) Pyramidon.

Very well satisfied with these results, I tried it in dentin anesthesia, administering a dose of 0.5 grm. (7½ grains) Pyramidon twenty minutes before the excavation or boring operation in very sensitive, hysterical and neurasthenic patients. After careful drying, the gums locally entering into consideration were painted with a 20 per cent. solution of cocain, and five more minutes were allowed to elapse. It is true that no anesthesia was noted such as after an injection of 1 per cent. cocain solution, but the excavation pain had become tolerable, as the patient expressed it.

My investigations next extended to the pain following upon extraction of teeth, and in this respect, I consider Pyramidon as surpassing all other medical agents. Especially the frantic pains occurring after an extraction with preliminary injection, and either absolutely rebellious to all local remedies, such as Orthoform, opium tincture, Anæsthesin, etc., or yielding to these for a few minutes only—these after pains in women and children disappeared after a dose of 0.3 to 0.4 grm. (4½ to 6 grains) Pyramidon, in men after a dose of 0.5 to 0.6 grm. (7½ to 9 grains) within ten to twenty minutes, for four to five hours. In cases of this kind, the most brilliant success with Pyramidon was experienced, as I wish to point out very particularly.

Since the effect of the remedy often persists as long as four hours and over, the patients are enabled to continue rinsing the mouth during that time, and as a rule no further dose of Pyramidon is required. My last experiments, which are not as yet very numerous on account of the paucity of cases, concern the treatment of trigeminal neuralgia of all kinds. Here Pyramidon Salicylate was found useful in doses of 0.5 grm. (7½ grains). In two cases of rheumatic odontalgia and rheumatic periostitis, the remedy had an excellent effect, removing the attack within ten minutes.

Whenever Pyramidon is prescribed, however, the patient should be urgently cautioned to lie down after taking the remedy until the result has been obtained. With the exception of a single case, I was unable to observe an idiosyncrasy on the part of my patients towards the remedy. This single case concerned a chlorotic girl, who vomited the remedy, but later on readily tolerated it, with prompt and favorable results, after a preliminary dose of Anæsthesin. Any other after effects, such as vomiting and vertigo, were not noted in any case, only once perhaps a little "numbness."

Altogether, I am obliged to say that Pyramidon is certainly worthy of becoming most extensively employed in odontological practice.

PYRAMIDON IN TABES

By **DR. RICHTER**, Berlin.

(Medizinische klinik No. 28, 1908.)

Before resorting to the morphin syringe, in the lightning pains of tabetic patients, Pyramidon should be given a trial. Perfectly marvelous results were obtained with it in my experience with certain cases; Pyramidon almost invariably relieved, even after all the other modern anesthetics had failed.

Five of the tablets, which are very conveniently graded at a dose of 0.1, are administered at once, and promptly followed by one or two cups of hot milk or some other warm beverage. At the end of twenty minutes, the pain has usually become bearable, and after half an hour it has disappeared altogether.

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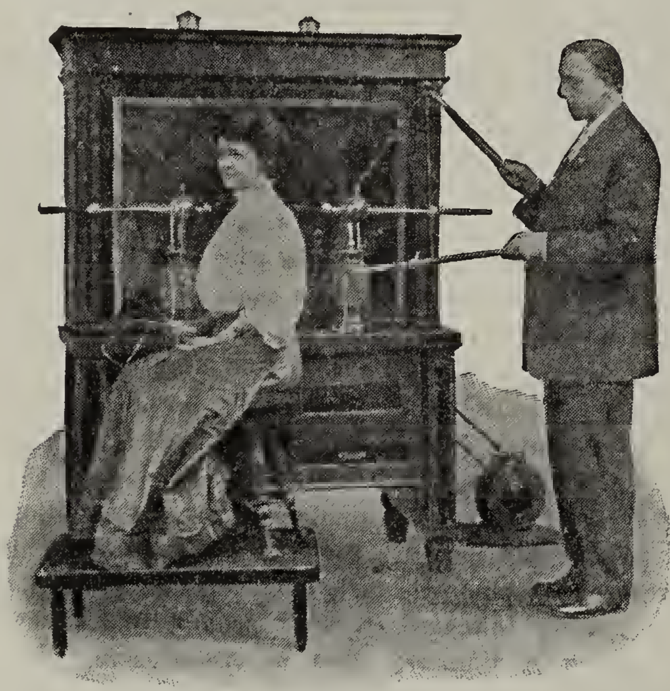
HIGH-TENSION CURRENTS IN ELECTROTHERAPY.

Extremely high voltage or high-tension currents, as produced from static machines, high-frequency apparatus or high-tension electric generators, owe their therapeutic value largely to the effect on the oxygen. Current passing through the air renders the oxygen nascent and more active in its combination with the blood and tissue. In such treatments as static breeze or spray, the nascent oxygen must combine with the blood and the tissue through contact with the skin, but when high-frequency induction electrodes properly excited are applied they act by induction on the oxygen already in the blood and tissue, so as to render it more active in the combustion of waste products. Thus we find that these high-frequency induction electrodes are remarkably effective in the treatment of all local, inflamed and congested conditions, and that the static breeze or spray is of great benefit for conditions in which the systemic effect of increased oxidation is beneficial, as in neurasthenia, autointoxication, nephritis, anemia, rheumatic and gouty conditions, tuberculosis, etc.



In view of these facts, the high-tension current to be used for therapeutic requirements should be the one most efficient in its effect on oxygen, and it is on this account that a perfectly constant, one-direction current is superior to the oscillatory or alternating currents obtained from various forms of coil apparatus.

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PROGRESSIVE THERAPEUTICS

ARSACETIN IN SYPHILIS

From the Dermato-Urological Department of the Dresden Friedrichstadt City Hospital. Medical Director: Chief Physician, Dr. Werther.

By DR. G. HEYMANN, Second Physician of the Department

Deutsche Medizinische Wochenschrift, No. 50, 1908.

ABSTRACTS

The importance of arsenic in the treatment of syphilis has been recognized in numerous quarters. Up to the present time, Atoxyl has been almost exclusively employed for this purpose, positive curative results being obtained under employment of large doses only—0.4 to 0.6 grm. at a dose every other day—while the administration of such large amounts soon gave rise to a series of toxic side effects, rendering precaution advisable. These side effects manifest themselves in the shape of:

1. Irritation of the mucous membranes of the intestinal tract: nausea, vomiting, diarrhea.
2. Irritation of the uropoietic system; nephritis, urinary tenesmus, and mild dysuria.
3. Nervous disturbances: attacks of vertigo, polyneuritis or optic neuritis, with outcome in blindness.

Ehrlich later on tested Arsacetin, among many other derivatives of Atoxyl, finding it far less poisonous, with at least the same curative power, for animals which had been infected with trypanosomes.

This remedy was then recommended by Neisser at the Frankfort Dermatological Congress, June, 1908, and later on in No. 35, 1908, of the *Deutsche medizinische Wochenschrift*. His method of treatment in human subjects, consisted in 20 injections at 0.6 grm. each, which were given every week on two successive days. With the exception of occasional gastric disturbances, in female patients, other side manifestations were not observed in any instance. He also states, however, that Arsacetin has not as yet been sufficiently tested as to its curative effect in human syphilis.

The remedy was systematically tested by us for some time in the Prostitute Department, and the experience hitherto obtained in 31 cases is entitled to a certain amount of interest. Arsacetin is a white powder, easily soluble in cold water up to 10 per cent., in hot water up to 30 per cent. It is the acetylarsanilate -p-sodium acetylamino-phenylarsinate, absolutely free from arsenious acid, and from the extremely poisonous arsenic acid, perfectly stable on boiling. Pharmacological experiments (Ehrlich, Browning and Salmon) have shown that Arsacetin possesses for numerous animal species a toxicity three times less, at most four to five times less than the arsanilate. The injections were always applied intramuscularly in the gluteal region, on two successive days of the week, using a 20 per cent. solution, namely 3 c.cm.—0.6 grm. Arsacetin at a dose. The solution is heated each time shortly before using, until the crystals have dissolved, but the syringe and cannula should also be heated, because the salts are at once precipitated in a cold syringe. The total dosage varied between 4.8 to 7.2 grms. according to the course of the affections. The injections themselves are absolutely painless, and local irritative phenomena were not observed in a single instance. The object of these experiments was to determine:

1. The curative efficiency possessed by Arsacetin in human syphilis.
2. Its possession of slighter toxic effects than the other known preparations of arsenic, or mercury; or its entire freedom from toxic properties.

These two questions will be briefly discussed individually. The thirty-one patients included two cases of sclerosis with swellings of the inguinal glands, in which the diagnosis was also ascertained by the demonstration of spirochetes; a case of bone gumma of the cranial vault, another of cerebral syphilis. The others were cases of pronounced secondary manifestations—elevated or weeping papules at the genitals, universal exanthemata of macular as well as papular type, papular or papulo ulcerative tonsillitis; these symptoms having appeared either separately or in combination, in cases of initial onset of syphilis, or in relapses. The most severe manifestations were presented by the following case, as seen by the excerpt from the clinical history:

The author points out particularly that no local treatment having any specific effect whatsoever was employed in this case nor in the other cases. Thus we find in this case the entire disappearance of broad condylomata, and papules of the buccal mucosa, after the dose of but 2.4 grm. Arsacetin, and even the absorption of a universal papular exanthema after 3.6 grm. Arsacetin—surely a prompt and specific action of the remedy. As in this patient, we succeeded in 20 further cases in obtaining temporary curative results. Almost invariably, a distinct subsidence of the mucous papules could be demonstrated after two injections. Elevated papules at the genitals began to be flattened at the end of the second week; erosions at the same time became covered over with skin; the subsidence of the exanthema occurred last of all, practically never before the end of the third week; a little sooner, perhaps, strangely enough, in the papular than in the macular type. In the gumma of the skull, not the slightest influence of the remedy could be demonstrated.

The case of cerebral syphilis concerned a very robust man forty years of age, who was infected twelve years ago. The patient had previously received an injection cure with calomel, with excellent results, for paralysis of the right leg, vesical crises and disturbances of consciousness. This treatment was followed by an intermittent course of 20 Arsacetin injections, which were tolerated without unpleasant side effects. At the end of this course of treatment, however, the patient's consciousness again became obscured, calling for the repeated administration of mercury. The two primary lesions will be referred to presently. Concerning the duration of the cure in the 21 patients, two unfavorable observations have been noted, although only a few weeks have elapsed: The patient whose history was reported above, returned a fortnight after her discharge, and was readmitted with a severe general recurrence; and another patient, who had received 7.2 grm. Arsacetin, on account of specific tonsillitis, came back only two days later, with a new set of papules in her mouth.

There still remain seven cases which lead to the second heading of this report. These cases likewise required an interruption of the treatment, but not on account of inefficiency on the part of the remedy; it was the appearance of certain not inconsiderable phenomena of intoxication, which rendered a continuation of the treatment apparently inadvisable. While the former patients had readily tolerated Arsacetin, only a few complaining of slight headache and nausea, the present cases presented a rather constant picture of associated manifestations: headache and nausea, beginning about three hours after the injection, and continuing in severity for the next following hours. The nausea increased to vomiting, which could be observed five to six times in the first 24 hours. On the second day appeared the symptomatic complex of nephritis: Oliguria down to 500 c.cm in 24 hours, a specific quantity of about 1030, albumin in previously non-albuminous urine never exceeding 1,000; epithelia, white blood corpuscles, hyaline cylinders in the sediment. The kidney symptoms subsided as a rule after three or four days; in only one instance the urine was not entirely free from albumin until the tenth day after the injection. These toxic side effects almost invariably appeared after the first or second injection, but in one instance, five injections were readily tolerated, the above-mentioned phenomena not appearing until after the sixth injection. It remains to be mentioned that in a male patient who was treated with Arsacetin—the second of the two sclerosis cases—there were complaints of vertigo, very severe attacks of abdominal pain, and sharp stabbing pains in the extremities, after the use of 2.4 grms. Although there were no sensory disturbances present, the case was one of incipient neuritis. Elevations of temperature were not noted.

Seeing that symptoms of intoxication occurred in 23.6 per cent. of our cases, which did not lead to serious results on account of timely interruption of the remedy, some caution would seem to be indicated also in the employment of this new arsenic preparation.

Summary: Arsacetin possesses a symptomatic curative effect for syphilis in the secondary stage, but not nearly as reliable and permanent as mercury. In primary syphilis, Arsacetin is unable to prevent the appearance of secondary manifestations; and in secondary syphilis, relapses occur even in the course of the treatment. In seven among thirty-one cases, it resulted in grave side manifestations, in a much higher percentage than mercury. In conclusion, the accidental observation may be of interest, that a chronic urticaria (associated findings), which for a long time had been treated by us without success, did not reappear after the second Arsacetin injection had been applied.

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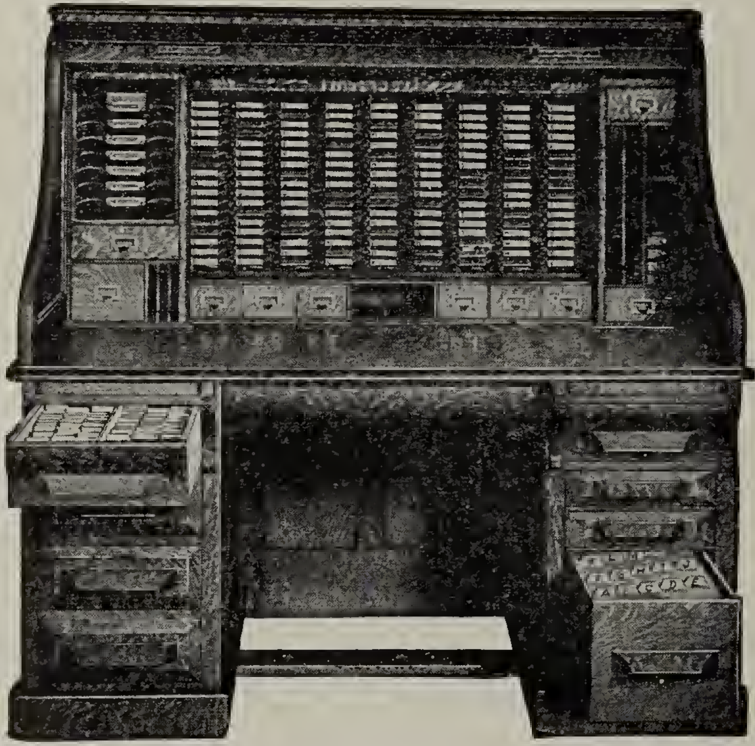

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PROGRESSIVE THERAPEUTICS

ONE HUNDRED AND FIFTY CASES OF LUMBAR ANALGESIA

By E. VEIT.

Reprinted from Beitrage zur klin. Chirurgie, Bd. LIII.

ABSTRACTS

For the past six months we have made use of lumbar anesthesia with Novocain in all suitable cases at the surgical division of the Deaconesses Hospital at Stuttgart. Without regard to locality—perineum, genitals, extremities, abdominal cavity—we employed the entire contents of an ampulla containing 3 c.cm. of a solution of 5 per cent. Novocain—suprarenal preparation. The individual dose was 15 cgm. Novocain. We operated thus in 131 cases. For the sake of comparison, we operated in 19 cases with Stovain. The series was not carried further because of the fatal ending of a case. The stovain was given in 2 c.cm. doses of a solution of stovain-suprarenal combination, equal to 8 cgm. stovain.

Novocain Injections.

(131 CASES.)

	Cases.
1. Lower extremities and pelvic girdle, 30 cases, viz.:	
Resection of exostosis of toe	1
Excochleation of foot	1
Pyrogoff amputation of foot	1
Amputation of leg	4
Chiselling of tibia	2
Excision of ulcus cruris	1
Extirpation of a fibrosarcoma of leg	1
Excision of hygroma of knee	1
Extension of contracture of knee	2
Excision and drainage of suppurating knee joint	1
Osteotomy of thigh for genu valgum	1
Amputation of thigh	1
Sequestrotomy of thigh	1
Partial resection of femur	1
Incision and curettage of large abscess of thigh	2
Extirpation and ligature, respectively, of varicose veins of leg	4
Extirpation of a sarcoma of the adductor region of the thigh	1
Excochleation of hip	1
Finger plastic from thigh	1
Excision of abscess of pubis	1
Excision of large lupus of gluteal region	1
2. Perineum, external genitals, vagina, 27, viz.:	
Thermocautery and excision of piles	2
Radical operation for hydrocele	4
Radical operation for hematocele	1
Radical operation for varicocele	1
Incision of abscess of scrotum	1
Ablation of inflamed testis	1
Perineal section for rupture of urethra	1
Circular suture, laceration of urethra	1
Roseis phimosis operation	1
Catheterism in cystoscopy	1
Rectoscopy	1
Lithotripsy	1
Excision of wen of labium majus	1
Perrineoplasty	2
Colporrhaphy, anterior and posterior	2
Removal of cervical polyp	2
Amputation in port for vaginal cancer	1
Extirpation of cancerous uteri	2
3. Trunk below navel, 38, viz.:	
Radical operation for incarcerated inguinal hernia	1
Radical operation for free inguinal hernia	8
Radical operation for free femoral hernia	2
Radical operation for replacing umbilical hernia	2
Radical operation abdominal hernia	2
Appendectomy during attack	2
Appendectomy during interval	9
Colostomy	3
Amputation, rectum	1
Resection, rectum	1
Entero anastomosis for tuberculosis stenosis	1
Laparotomy for peritoneal tuberculosis	1
Trial laparotomy for ovarian sarcoma	2
Relaparotomy for ileus	1
Removal of wire sutures from groin	1
4. Gynecological laparotomies, 16, viz.:	
Ventrofixation	2
Extirpation of ovarian cyst	8
Extirpation of twisted ovarian cyst	1
Extirpation of dermoid of ovary	1
Extirpation of purulent tube sac	2
Supravaginal amputation of uterine fibroid	2
5. Trunk above navel, 11, viz.:	
Secondary suture after gastroenterostomy	1
Secondary suture after extirpation of kidney	1
Gastroenterostomy	6
Nepropexy	1
Nephrectomy	1
Trial laparotomy in primary cancer of liver	1
6. Exploration in difficult abdominal palpation	9

Results of Preceding.

Of the 30 cases under Class I, 27 were successful and 3 unsuccessful. In but 2 cases were collateral phenomena present. Sequela present in 14.

Of the 27 cases under Class II, 24 were successful and 3 unsuccessful. Collateral phenomena in 1 case. Sequela in 19.

Of the 38 cases under Class III, 31 were successful, 7 unsuccessful. Collateral phenomena in 11, sequela in 16.

Of the 16 cases under Class IV, 13 were successful, 3 unsuccessful. Collateral phenomena in 5, sequela in 6.

Of the 11 cases under Class V, 7 were successes; collateral phenomena in 3, sequela in 2.

Of the 9 cases under Class VI, all were successful. No collateral effects. Sequela in 6.

It is apparent that Class I—lower extremities and pelvic girdle—gives the best results; Class II the next best, and so on in descending scale until Class V. The failures are those cases in which some pain was felt, although the operation was sometimes finished under spinal analgesia. In one of the unsuccessful cases in Group II, and 3 in Group III, it was necessary to resort to general narcosis. Among the painful operations were vaginal uterine extirpation for cancer, radical operation for hernia, resection of rectum, appendectomy, gastroenterostomy, etc. Collateral phenomena were pallor, sense of choking, malaise, nausea, weak pulse, etc. They were present in all but 3 laparotomies. Sequela was present in about 50 per cent. of all cases. In frequency they seem to vary inversely with the collateral phenomena. Backache was very common and required morphia in a third of all cases. This is not necessarily due to Novocain, for it may be seen after inhalation narcosis. Head and neck ache were rarely seen. Headache lasted for any considerable length of time (1 to 2 days) in but 4 cases. In oversensitive patients 1 cgm. of morphin was injected subcutaneously ¼ hour before making the spinal injection.

In summing up, two questions need to be answered. 1. Is spinal anesthesia a radically sound proposition, justified by experience? And 2. What position does it occupy compared with older methods?

In regard to Question 1, this has been answered affirmatively beyond all cavil by the work of Bier and his disciples. As far as Novocain is concerned, our experience shows that it is efficacious and harmless.

Advantages over inhalation narcosis are simplicity of technic, rapidity and completeness of anesthesia, applicability to cardiac and pulmonary subjects in which inhalation narcosis is contraindicated.

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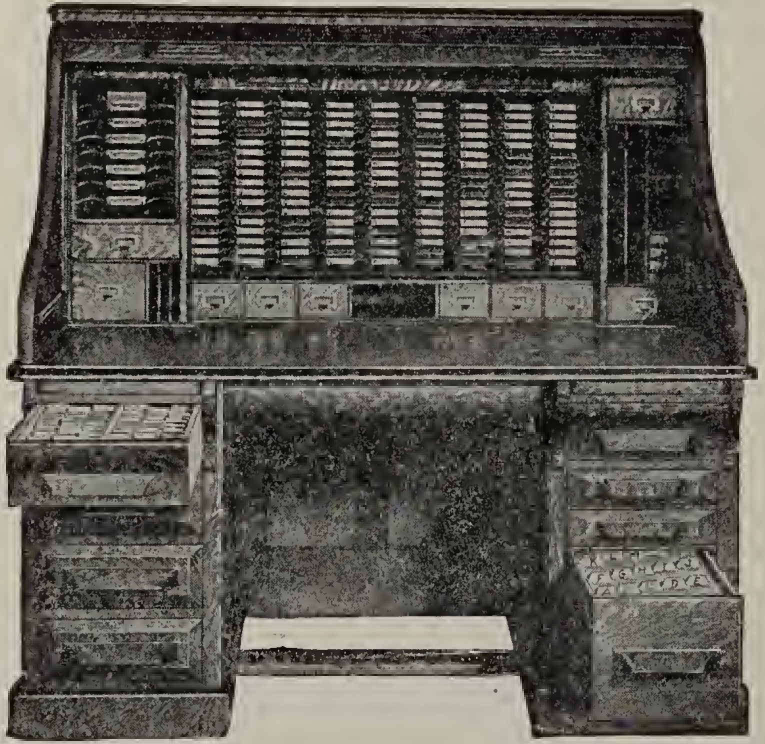

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CONTENTS AND DIGEST

ORIGINAL ARTICLES

The Relation Between Science and Art of Infant Feeding. Henry Dwight Chapin, M.D., New York..........907
The new-born infant not adapted for ordinary food. Study of milk. Differences of protein of different milk. Biologic methods requisite to determine amounts of proteids required. Practical applications of biologic standards.

Investigation of Blood for Tubercle Bacilli. Walter V. Brem, M.D., Cristobal, Canal Zone 909
An acid-fast bacillus found in distilled water. Possibility that these have been mistaken for tubercle bacilli.

Medical Versus Legal Responsibility. Alfred Gordon, M.D., Philadelphia.911
Importance of subject of responsibility. Legal tests of responsibility. Pathologic states of mentality influencing responsibility. Responsibility of imbeciles. Responsibility as influenced by intoxication. Epilepsy. Conclusions.
Discussed by Drs. Hitchcock and Brush.

The Stability of Type of the Tubercle Bacillus. Alfred F. Hess, M.D., New York 916
Main difficulty in studying this question is doubt as to nature of original infection. Reports of cases.

Syphilitic Pseudoparalysis. L. T. Royster, M.D., Norfolk, Va.................918
Definition of syphilitic pseudoparalysis. Symptoms. Diagnosis, especially from brachial birth paralysis. Report of case. Treatment.

Nodular Opacity of the Cornea. With Special Reference to Its Etiology. John Green, Jr., A.B., M.D., St. Louis..920
Rarity of the disease. Symptomatology. Differential diagnosis. Histology of the affection. Report of case. The condition probably an attenuated tuberculosis of cornea.
Discussed by Drs. Shumway and Zentmayer.

Osteomyelitis of the Lower Jaw. H. H. Germain, M.D., Boston............924
Anatomic conditions. Etiology. Symptoms in course. Diagnosis of treatment. Deformity from this cause. Summary of cases.
Discussed by Drs. Talbot, Brown, McCurdy and Germain.

The Wassermann Reaction in Its Relation to Diseases of the Central Nervous System. B. Sachs, M.D., New York.929
Value and defects of the Wassermann test. Class of cases in which it may be used. The reaction in tabes, paresis, multiple sclerosis, multiple cerebrospinal meningitis, tumor of the brain, hemiplegia and epilepsy. Its value as regards therapeutic indications.

The Serodiagnosis of Syphilis. Hideyo Noguchi, M.D., New York.........934
Results of analysis of blood serum by author's test. Differences between his methods and Wassermann's. Advantages. Tables showing results of test in different conditions. Results obtained by Wassermann method. Comparison of results.

The Wassermann Reaction. E. Castelli, M.D., New York..................936
Principle of fixation of complement. Noguchi's modification of Wassermann reaction. Reliability of reaction. Reaction of cerebrospinal fluid. Its value in general paralysis. Cases examined. Treatment of syphilis in relation to Wassermann reaction. Conclusions.
Discussion on Serodiagnosis of Syphilis by Drs. Butler, Fox, Wolf, Herzog, Sachs and Noguchi.

(Continued on next page)

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CONTENTS AND DIGEST—Concluded

CLINICAL NOTES

Two Cases of Tuberculous Infection of the Peritoneum. W. H. Allport, M.D., Chicago 943

Crural and Axillary Ringworm in the Canal Zone. Alfred G. Farmer, M.D., Gatun, Canal Zone 945

Case of Lymphatic Leukemia. H. H. Hazen, M.D., Washington, D. C. 946

Tuberculosis Exhibit and Cabinet. Frank B. Wynn, M.D., Indianapolis 946

A Case of Syphilis Resembling Pityriasis Rubra Pilaris. Howard Fox, M.D., New York City 947

An Operating Table. D. Tod Gilliam, M.D., Columbus, Ohio 948

A Protector for Use in the Cutaneous Test for Tuberculosis. R. L. Sutton, M.D., Kansas City, Mo 948

SPECIAL ARTICLE

Seventh Annual Summary of Fourth-of-July Injuries 948

More cases of tetanus. Tetanus from other than Fourth-of-July injuries. Deaths from fireworks aside from tetanus. Non-fatal injuries. Totals in chief cities. Results of restrictive legislation. Where the responsibility rests. Annual preparation for casualties. Radical action needed.

EDITORIALS

The Annual Fourth of July Record: Seventh annual compilation of statistics of Fourth-of-July injuries. Methods of preventing lockjaw. Efforts to provide sane amusements for Independence day 954

Still Temporizing with the Blank Cartridge Pistol: Preponderance of blank cartridge wounds. Cities which have prohibitory ordinances but do not enforce them 954

The Value of Tetanus Antitoxin: Physicians not using it enough. Its great value as a prophylactic agent. Valuable to a less degree as a curative treatment 955

Tubercle Bacilli in the Blood: Rosenberger's findings not corroborated. Brem's investigations. Possible laboratory contamination 956

Injustice to the Tuberculous by Sending Them West: The tuberculous are too often allowed to go away for climatic benefit without sufficient means 956

MEDICAL NEWS

Illinois: Personal—Medical Colleges Not Recognized 956

Indiana: Personal — Licenses Cancelled—Sanitary Convention 956

Kentucky: Antituberculosis Conference—School Inspection 957

Louisiana: Tulane Alumni at Mississippi Valley Meeting—Personal 957

Maryland: Medical Men Candidates—Address on Tuberculosis. Baltimore: Not Pellagra, Rheumatism — Personal — Steamer Has Clean Bill of Health—Failed to Report 957

Missouri: Outdoor Lectures on Tuberculosis—Personal 957

New York: State Hospitals—Vital Statistics. New York City: Off for Europe—Osteopaths Can Not Issue Death Certificates—Campaign Against Tuberculosis—Typhoid Increasing. Buffalo: New Hospital Needed—Temporary Isolation Hospital 957

Ohio: Physicians and Veterinarians Meet—Personal. Cincinnati: Faculty Increased—Personal 957

Pennsylvania: District Society Meeting—Dispensary Evil—State Society Meeting. Philadelphia: Personal—Degeneracy Due to Tenement Evils 958

Washington: Malpractice Suit Settled—Appeal to the Courts—Medical School Inspection 958

Wyoming: Society Organized—Hospital Notes—State Society Meeting 958

General News and Comment: Obstetricians and Gynecologists Meet—Cumberland Valley Physicians Meet — Fresh-Air Schools 958

Foreign: Austregesilo Made Professor of Clinical Medicine at Rio—British Association for the Advancement of Science—Death of Dr. Haffter of Switzerland .. 959

London Letter: Entomologic Research in Africa—Vaccine Therapy and Immunization—Physical Exercises in Elementary Schools—Paupers Object to a Hindu Doctor 959

Paris Letter: Institute of Colonial Medicine—First Aid to the Injured in the Streets—French Congress of Surgery. 960

Berlin Letter: A Convalescent Home for Officers in Taunus—XVI International Medical Congress at Budapest—Fifth International Dental Congress 960

Vienna Letter: Postgraduate Instruction and Other Inducements Offered to Army Doctors 961

Bergen Letter: The Second International Leprosy Congress 961

PHARMACOLOGY

Serums and Vaccines; Report to the Council on Pharmacy and Chemistry of the Committee on Serums and Vaccines 961

CORRESPONDENCE

Preservation of Historical Data: An Appeal 962

QUERIES AND MINOR NOTES

Immunifacient: A New Word—Literature on Delayed Chloroform Poisoning—Carrot Soup in Infant-Feeding — Estimation of Proteids in Milk 963

THE PUBLIC SERVICE

Medical Department of the Army—Medical Corps of the Navy—Health Reports—Public Health and Marine-Hospital Service. 963

SOCIETY PROCEEDINGS

Coming Meetings 964

Sixteenth International Medical Congress 964

DEATHS 966

MARRIAGES 966

MEDICAL ECONOMICS

Postgraduate Course for County Societies 967

MEDICOLEGAL

Death from Angina Pectoris After Injury—Expert Testimony and Framing Questions from Medical Works 968

CURRENT MEDICAL LITERATURE

American Medical Journals

Cancer in Man and Animals 968

Tubercle Bacilli in the Blood—Mayo's Modification of Gilliam's Operation — Test Meal in Diagnosis—Prolapse of Uterus—Astasia-Abasia — Treatment of Suppurative Bubo 969

Advance in Anesthetic Technic — Habitual Dislocation of Patella—Kraurosis—Colics of the Appendix—Treatment of Tetanus 970

Submucous Lipoma of Gastrointestinal Tract—Fractures of Patella—Umbilical Tumors of Uterine Origin—Plastic Tuberculous Peritonitis 971

Ophthalmia Neonatorum — Perithelioma of Brain 972

Suppurative Perforative Peritonitis—Glandular Fever—Tubercle Bacilli in Circulating Blood — Carcinoma of Chorioid — Transferred Ophthalmitis 973

Hyperchlorhydria and Amblyopia—Pruritus Ani—Pasteurized Milk—Lupus (?) of the Nose 974

Tuberculin Treatment Among Dispensary Patients—Employment in Arrested Cases 975

Foreign Medical Journals

Infection of Tuberculosis—Light Pigmentation 975

Pruritus Ani—Rheumatism of Heart—Tumor of Large Intestine Simulating Disease of Uterus—Unusual Case of Stomatitis—Appendicitis 976

Gastric Dilatation with Extreme Cyanosis—Syncopal Attacks—Paroxysmal Hemoglobinuria 977

Effect of Certain Drugs in Diabetes Mellitus—Blood Formula in Infectious Diseases—Differentiation of Eruptive Fevers by Blood Count—Typhoid and Paratyphoid Septicemia in Infants—Practical Treatment of Fractures of the Forearm—Orbital Puncture 978

Prophylaxis of Infectious Diseases—Practical Examination of Intestinal Functioning—Treatment of Exstrophy of the Bladder — "Circulatory" and "Respiratory" Hippus—Is There Peril in Exploratory, Disinfection and Palliative Interventions on Uterine Cancer?—Importance of Quantitative Renal Impermeability. 979

Surgical Treatment of Non-Malignant Gastric Disease—Suction Apparatus as Aid in Operating on Brain Tumors—Intravenous Adrenalin-Saline Infusion in Peritonitis—Exarticulation of Hip with Half of Pelvis 980

Preferable Measures for Isolation of the Incurable Tuberculous — Tuberculosis in Infants—Palpable Glands in the Supraclavicular Triangle a Sign of Tuberculosis — Polyserositis — Etiology of Congenital Torticollis—Cancer, Lupus or Syphilis? 981

Specific Substances in Diagnosis and Treatment of Tuberculosis—Causes of Increased Infantile Mortality in the Summer—Treatment of Ileus—Physical Measures in Edema of the Lungs—Examination of the Fundus of the Eye for Differentiation of Anemia—Operative Treatment of Congenital Dribbling of Urine—Organ Disturbances in Tapeworm Hosts—Creeping in Treatment of Scoliosis 982

Neurosis of Internal Organs—Local Treatment of Slight Inflammatory Processes in Parturients — Treatment of Extrauterine Pregnancy—Suture of the Heart—Frequency of Gastric Ulcer in Bavaria—Prevention of Anemia in Infants — Cancer and Suckling—Clinical Symptoms of Hypertrophy of the Left Ventricle 983

Relations Between Scleroderma and Tuberculosis — Treatment of Chlorosis — Septicemic Fevers—Local Tuberculin Reaction on the Mucosa Inside the Lip ... 984

BOOKS RECEIVED 984

NEW PATENTS 984

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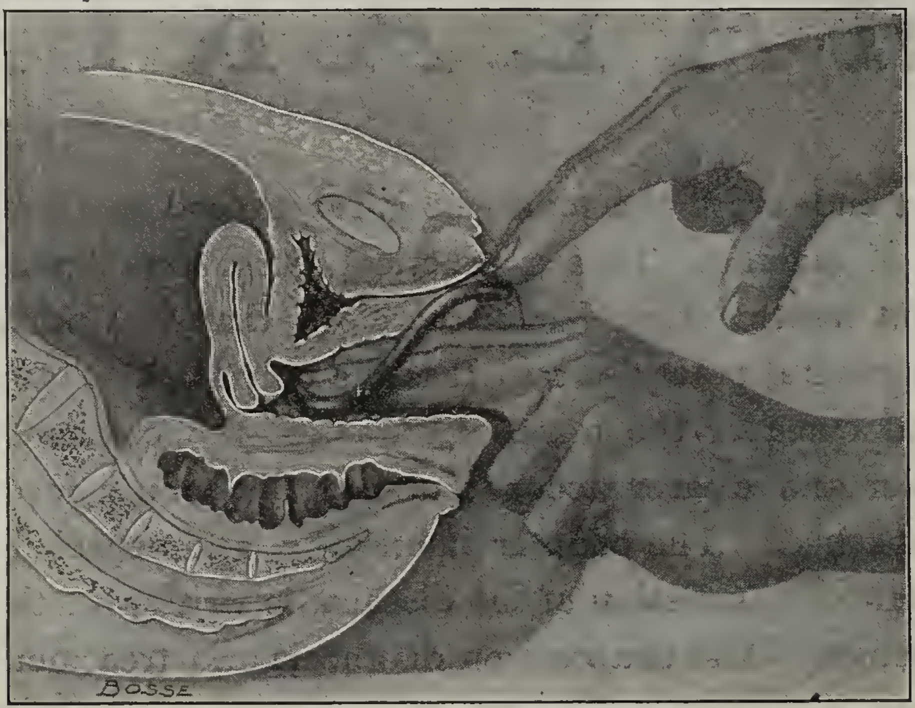

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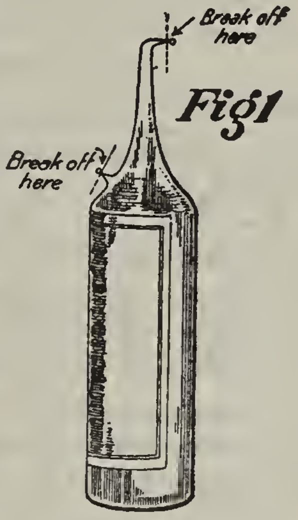

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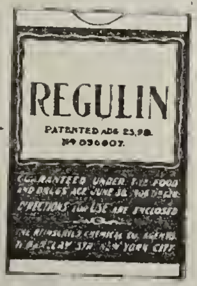

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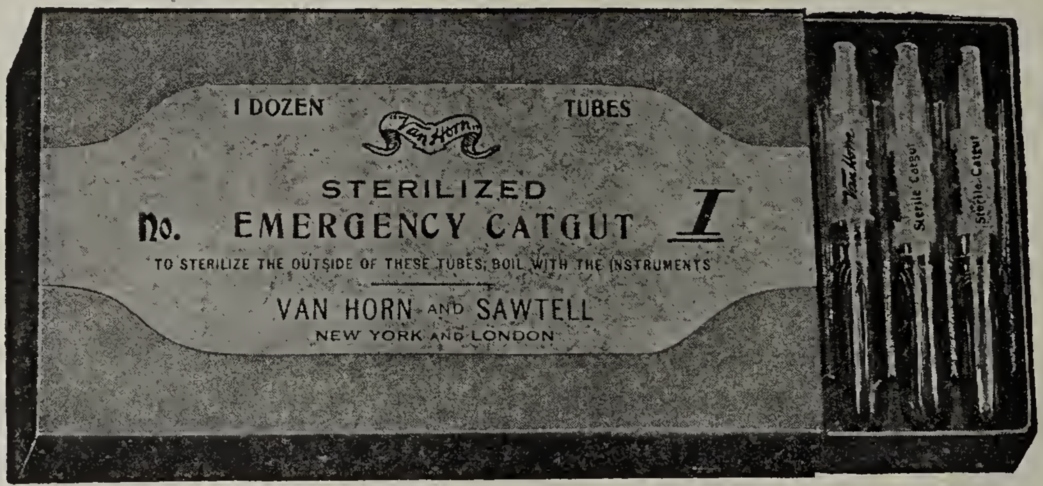

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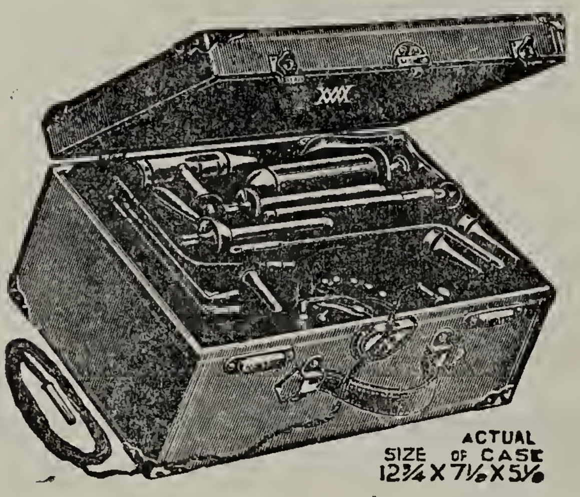

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(Continued in October 9th issue.)

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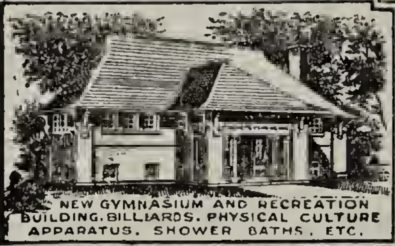

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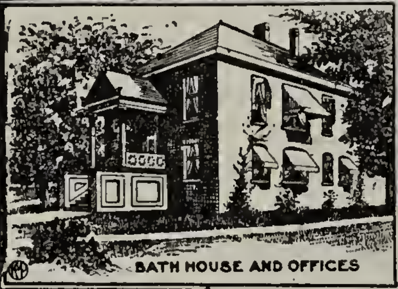

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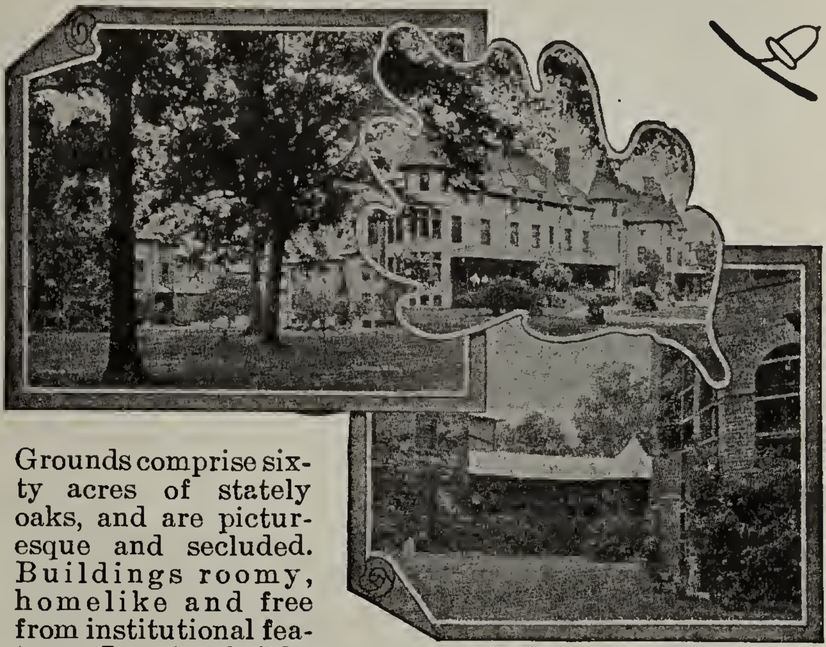

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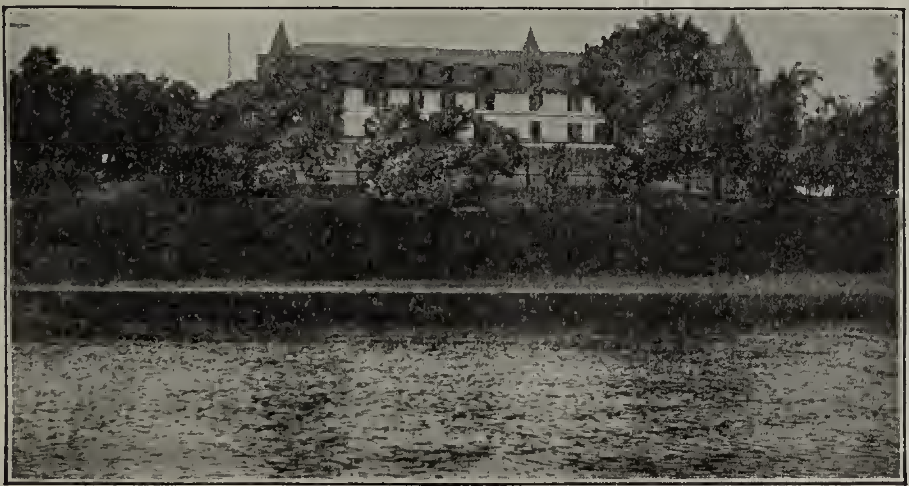

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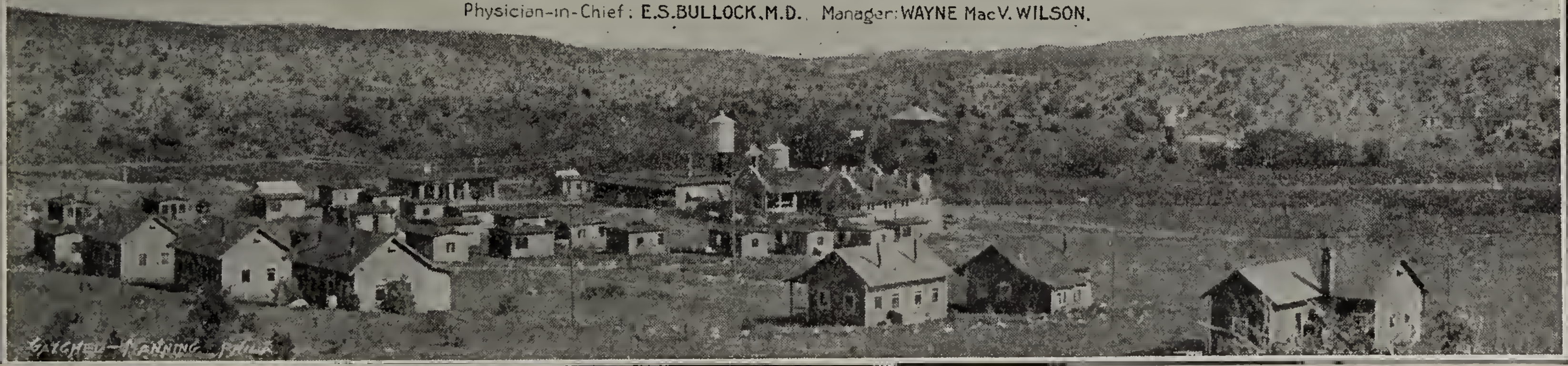

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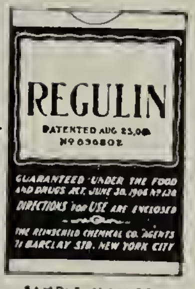
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LIST OF STATE MEDICAL SOCIETIES

SOCIETY.	PRESIDENT.	SECRETARY.	NEXT ANNUAL MEETING.
Alabama, Medical Assn. of the State of	W. M. Wilkerson, Montgomery	J. N. Baker, Montgomery	Mobile, 1910.
Arizona Medical Association	R. N. Looney, Prescott	John W. Flinn, Prescott	Phoenix, April 20-21, 1910.
Arkansas Medical Society	James H. Lenow, Little Rock	Morgan Smith, Little Rock	Little Rock, 1910.
California, Medical Soc. of the State of	James H. Parkinson, Sacramento	Philip M. Jones, Butler Bldg., San Francisco	Sacramento, 1910.
Colorado State Medical Society	P. J. McHugh, Fort Collins	Melville Black, Majestic Bldg., Denver	
Connecticut State Medical Society	Samuel D. Gilbert, New Haven	Walter R. Steiner, 4 Trinity St., Hartford	New Haven, 1910.
Delaware State Medical Society	Henry J. Stubbs, Wilmington	G. W. K. Forrest, 1000 Jackson St., Wilm'ton	Dover, Oct. 8, 1909.
District of Columbia, Medical Assn. of	Francis R. Hagner, Washington	L. H. Reichelderfer, The Burlington, Wash.	Washington, 1910.
Florida Medical Association	H. E. Palmer, Tallahassee	J. D. Fernandez, Jacksonville	Jacksonville, 1910.
Georgia, Medical Association of	T. J. McArthur, Cordele	Claude A. Smith, Atlanta	Athens, 1910.
Hawaiian Territorial Medical Society	Jas. R. Judd, Honolulu	W. G. Rogers, Honolulu	Honolulu, Nov. 19, 1909.
Idaho State Medical Association	J. L. Stewart, Boise	Ed. E. Maxey, Boise	
Illinois State Medical Society	J. Leaming Wiggins, East St. Louis	Edmund W. Weis, Ottawa	Danville, May 17-18, 1910.
Indiana State Medical Association	Geo. D. Kahlo, French Lick	F. C. Heath, Newton Clayp. Bldg., Indianap's.	Terre Haute, Oct. 7-8, 1909.
Iowa State Medical Society	George E. Crawford, Cedar Rapids	V. L. Treynor, Council Bluffs	Des Moines, 1910.
Kansas Medical Society	O. J. Furst, Peabody	Chas. S. Huffman, Columbus	Topeka, 1910.
Kentucky State Medical Association	John G. Cecil, Louisville	Arthur T. McCormack, Bowling Green	Louisville, Oct. 19-21, 1909.
Louisiana State Medical Society	Charles McVea, Baton Rouge	E. M. Hummel, 141 Elk Place, New Orleans.	New Orleans, May 3-5, 1910.
Maine Medical Association	Galen M. Woodcock, Bangor	W. Bean Moulton, 622 Congress St.. Portland	Bar Harbor, June 29-30. 1910.
Maryland, Medical and Chir. Faculty of	Brice W. Goldsborough, Cambridge	John Ruhräh, 1211 Cathedral St., Baltimore	
Massachusetts Medical Society	S. D. Presbrey, Taunton	Walter L. Burrage, 282 Newbury St., Boston	
Michigan State Medical Society	J. H. Carstens, Detroit	B. R. Schenck, 502 Wash. Arcade, Detroit	Bay City, 1910.
Minnesota State Medical Association	Cornelius Williams, St. Paul	Thomas McDavitt, St. Paul	Winona, Oct. 13-14, 1909.
Mississippi State Medical Association	D. W. Jones, Brookhaven	E. F. Howard, Vicksburg	Oxford, April, 1910.
Missouri State Medical Association	Tinsley Brown, Hamilton	A.W.McAlester,Jr., 702 Bryant Bldg.,Kan.City.	Hannibal, 1910.
Montana State Medical Association	Thomas D. Tuttle, Helena	Herbert D. Kistler, Butte	Hunter's Hot Spgs., May 11, '10.
Nebraska State Medical Association	P. Harold Salter, Norfolk	A. D. Wilkinson, Lincoln	Lincoln, May 3-5, 1910.
Nevada State Medical Association	John Lewis, Reno	S. K. Morrison, Reno	Goldfield, Nov. 2-3, 1909.
New Hampshire Medical Society	Frank Blaisdell, Goffstown	D. E. Sullivan, Concord	Concord, May 12-13, 1910.
New Jersey, Medical Society of	B. A. Waddington, Salem	William J. Chandler, South Orange	Atlantic City, May 12-12, 1910.
New Mexico Medical Society	G. K. Angle, Silver City	G.S.McLandress, Whiting Bldg., Albuquerque	Roswell, Sept. 15-16, 1909.
New York, Med. Soc. of the State of	Charles G. Stockton, Buffalo	Wisner R. Townsend, 17 West 43d St., N. Y.	Albany, Jan. 25, 1910.
North Carolina, Med. Soc. of the State of	James A. Burroughs, Asheville	David A. Stanton, High Point	Wrightsville Beach.
North Dakota State Medical Association	John E. Countryman, Grafton	H. J. Rowe, Casselton	Grand Forks, May 10-11, 1910.
Ohio State Medical Association	Walter H. Snyder, Toledo	J. H. J. Upham, 186 E. State St., Columbus	Toledo, 1910.
Oklahoma State Medical Association	Walter C. Bradford, Shawnee	Claude A. Thompson, Muskogee	Tulsa, 1910.
Oregon State Medical Association	E. A. Pierce, Portland	Wm. House, Oregonian Bldg., Portland	Portland, 1910.
Pennsylvania, Med. Soc. of the State of	George W. Wagoner, Johnstown	Cyrus Lee Stevens, Athens	Philadelphia, Sept.27-Oct.1,'09.
Philippine Islands Medical Association	W. E. Musgrave, Manila	Paul Clements, Manila	Manila.
Rhode Island Medical Society	Eugene Kingman, Providence	S. A. Welch, 253 Washington St., Providence	
South Carolina Medical Association	John L. Dawson, Charleston	Walter Cheyne, Sumter	Laurens, 1910.
South Dakota State Medical Association	S. A. Brown, Sioux Falls	R. D. Alway, Aberdeen	Aberdeen, Oct. 6-8, 1909.
Tennessee State Medical Association	Jere L. Crook, Jackson	Geo. H. Price, 146 N. 8th Ave., Nashville	Memphis, April, 1910.
Texas, State Medical Association of	W. B. Russ, San Antonio	I. C. Chase, Ft. Worth	Dallas, May 10-17, 1910.
Utah State Medical Association	E. C. Rich, Ogden	W. Brown Ewing, Salt Lake City	
Vermont State Medical Society	C. W. Peck, Brandon	C. H. Beecher, Burlington	White Riv. Jct., Oct. 14-15, '09.
Virginia, Medical Society of	Stuart McGuire, Richmond	Landon B. Edwards, Richmond	Roanoke, Oct. 5-8, 1909.
Washington State Medical Association	Wm. D. Kirkpatrick, Bellingham	C. H. Thomson, Seattle	
West Virginia State Medical Association	Fleming Howell, Clarksburg	T. W. Moore, 1048 3d Ave., Huntington	Elkins, Oct. 6-8, 1909.
Wisconsin, State Medical Society of	Edward Evans, La Crosse	Charles S. Sheldon, Madison	Milwaukee. June 22-24, 1910.
Wyoming State Medical Society	Neil D. Nelson, Shoshone	John D. Fossler, Sheridan	Casper, 1910.

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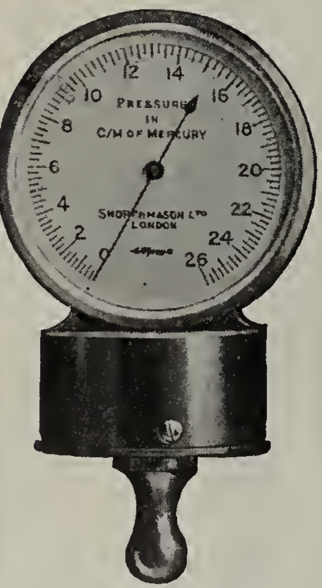
Price, complete with case
$25.00

(Patent Applied For)

The "Tycos" Sphygmo-manometer consists of a guage· an arm sleeve, an inflating bulb and two short pieces of rubber tubing. These when assembled and ready for use constitute a most simple and reliable instrument, so compact as to be contained in a leather case about the size of a physician's pocket case. There is no mercury to spill; no glass tubing to break; no buckles or straps to take time or get out of order. The instrument may be applied or removed almost instantly.



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The "Tycos" Sphygmomanometer may be applied or removed in less than fifteen seconds. The time required to apply the instrument, make a careful observation of the pressure, and remove it, is less than is required to even set in position any mercurial form of Sphygmo-manometer on the market.

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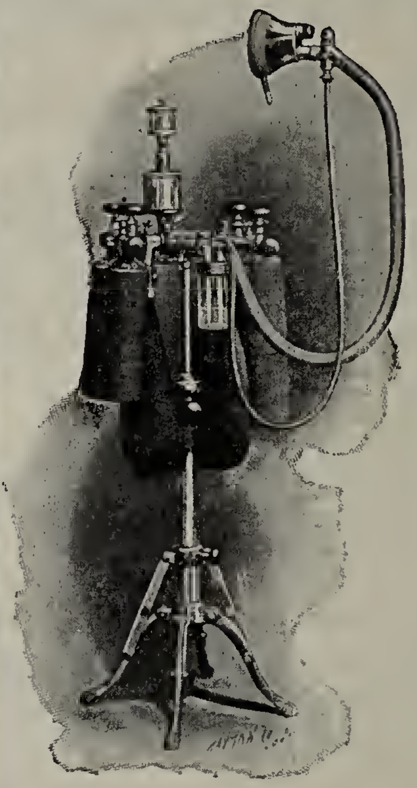
We offer THE TETER APPARATUS No. 1 as the most scientifically developed and thoroughly equipped apparatus for the administration of general anaesthetics in the world.



Primarily; A Nitrous Oxide and Oxygen Apparatus producing the safest and most free from shock anaesthesia known.

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This Apparatus is the development of eleven years of practical hospital experience.

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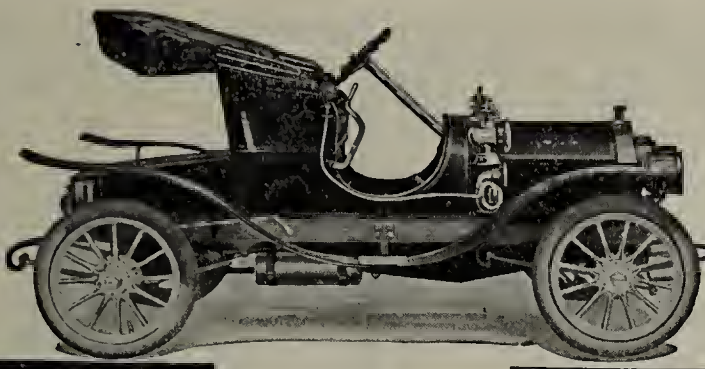

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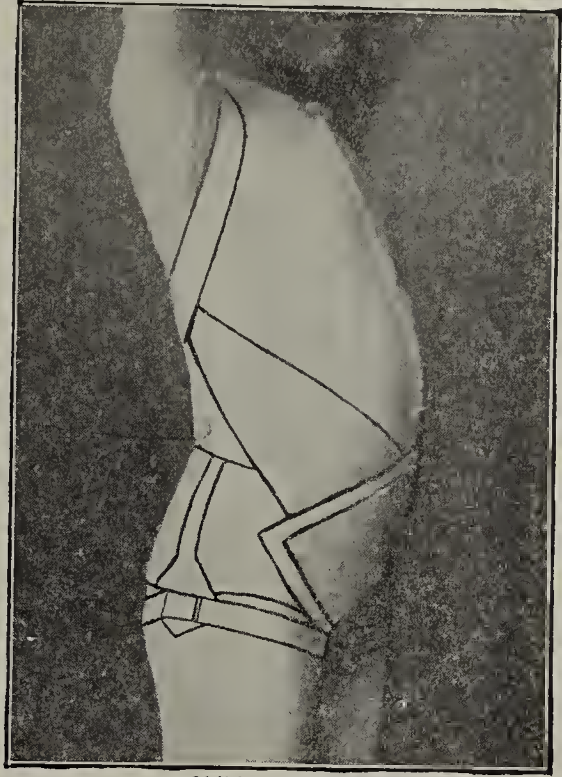
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IS specially designed for the correction of prolapsed kidneys, stomach, liver, intestines and uterus. In cases of hernia, an inside belt, holding the necessary pad or button, passes directly over the hernia region. This holds the hernia by a firm local pressure while the supporter lifts the weight of the abdomen off the hernia region. The *Fayette Abdominal Supporter* gets excellent results as a general support in cases of relaxation, pregnancy and obesity. Made of pure linen mesh. No rubber, leather, or whalebones. Cool and sanitary. Styles for men, women and children.

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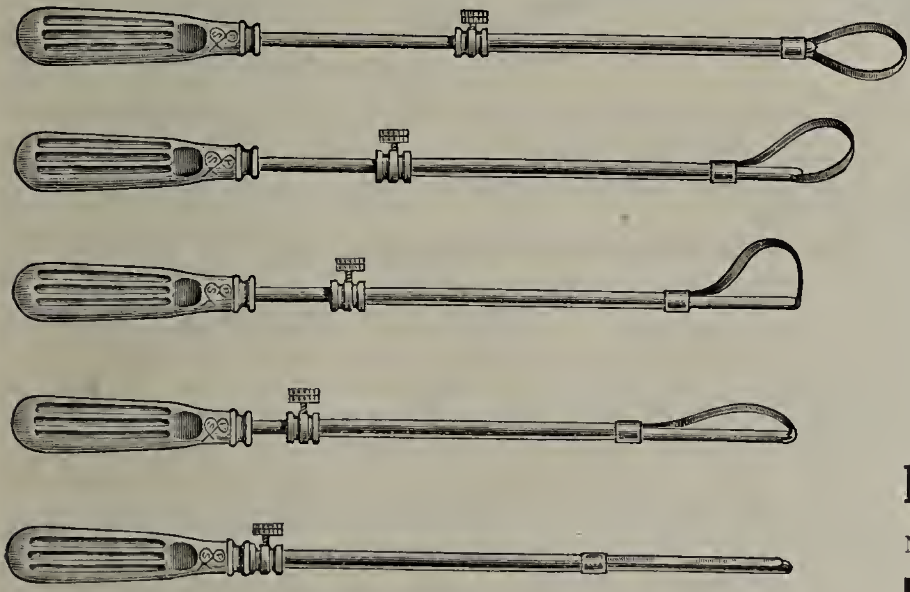

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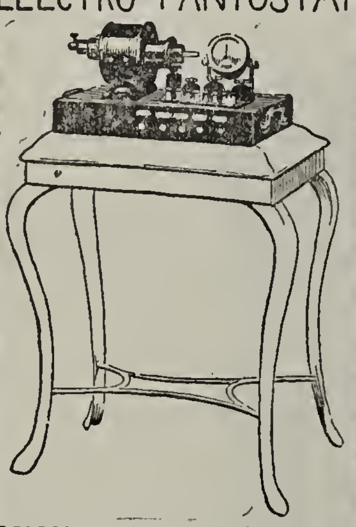

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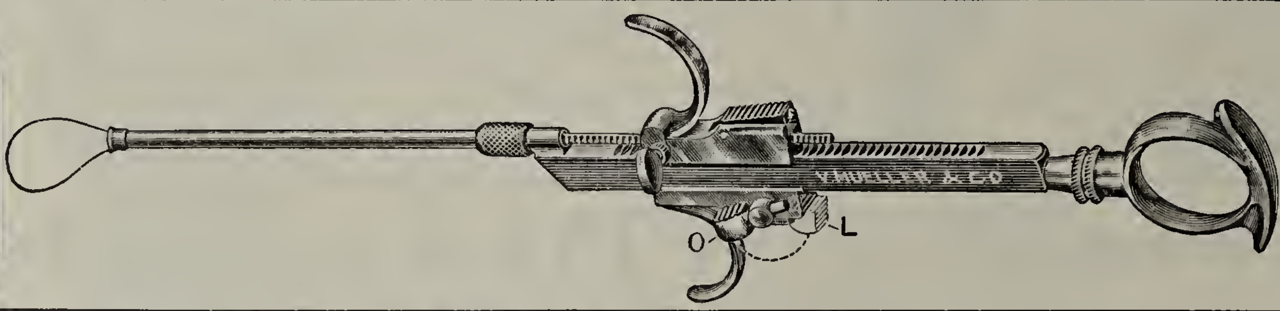

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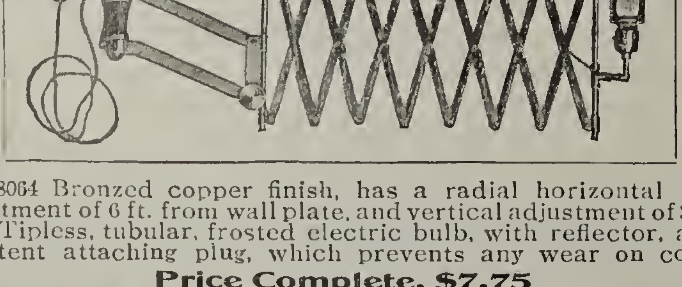

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WANTED LOCATION—LOCATION IN Florida or Tennessee, latter preferred; town of not less than 5,000; will buy real estate, etc., if satisfactory; highest references given and required. Add. 7810, % AMA. E

WANTED—LOCATION IN CHICAGO; experienced regular physician moving to Chicago, would buy equipment or pay moderate bonus for practice of physician retiring or leaving the city this winter or in spring; practice must be well established in good neighborhood; will buy residence if good proposition. Add. 7873, % AMA. E

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WANTED — PARTNERSHIP OR ASsistantship with busy oculist and aurist by married man, age 30, M.D. Northwestern; three years' experience in large eye and ear hospital; five years in general practice; prefer city in middle west; must bear strict investigation; references exchanged. Add. 7784, % AMA. H

PARTNERSHIP WANTED—BY REGUlar graduate holding the degree of M.D. from two different universities; just returned from two years study abroad; age 34, married, no children, strictly temperate; has been chief surgeon to large hospital; partnership must be high class and ethical; money to invest; will do active work, manager or superintendent, or silent partner; references given and required. Add. 7811, % AMA. H

(Continued on next page)

SITUATIONS WANTED

WANTED — ASSISTANTSHIP OR POSITION by graduate of U. C. of M., Richmond, Va., class 1905. Experienced in hospital work and general practice. W. Va. state license with reciprocity privilege in reciprocating states. Age 28 years. Ready for work after Sept. 25. Add. 7871, % AMA. I

WANTED — SITUATION — A WOMAN who has practised medicine many years and is also a trained social worker desires to do some kind of philanthropic work. Organized T. B. work preferred. Excellent references. Add. with full particulars 7854, % AMA. I

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WANTED—SITUATION AS ASSISTANT —A woman, trained as chemist and having familiarity also with biology and with physics, aged forty, would like to assist a physician in library and laboratory work. New England or New York preferred. References exchanged. Add. M. Helen Keith, 316 Argyle Road, Brooklyn, N. Y. I

WANTED — ASSISTANTSHIP TO PHYSICIAN or surgeon, or employment by company or corporation; had one-half year in laboratory work and one year in large general hospital; can furnish good references; would form partnership later if party desired; can start work immediately, and willing to go anywhere. Add. 7838, % AMA. I

WANTED — A SALARIED SITUATION with corporation, mining company, hospital or institution by graduate from one of the best colleges. Two years hospital experience with much surgery. Over one year in general practice; age 30; single; thoroughly competent for responsible position and a worker. Best of references. Add. 7771, % AMA. I

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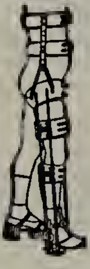

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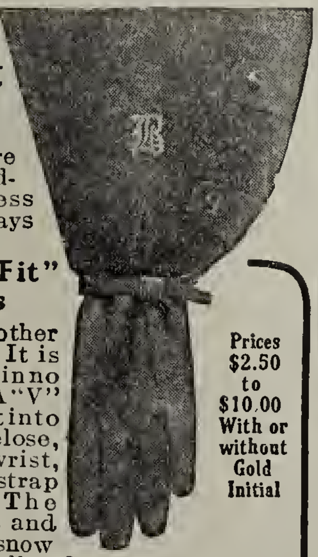

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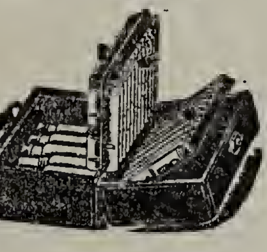

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A CLASSIFIED Advertisement inserted in THE JOURNAL will be read by about TWO-THIRDS of the medical profession.

FOR SALE — WISCONSIN, SOUTHERN Part—A $5,000 general practice in railroad town of 1,000; roads and collections good; one other M.D.; office equipment, drugs and driving outfit; price $1,500; an assured income from the start. Add. 7876, % AMA. N

FOR SALE—TEXAS, CENTRAL PART—A $3,000 practice in growing railroad town near Austin. Good English and German settlers, good schools and churches. Collections 95 per cent. Reason for selling, will take up special work. Add. 7851, % AMA. N

FOR SALE — KANSAS — PRACTICE, drug stock and building in best part of state; competition just right; $4,000 cash or equivalent. Good schools, wealthy community, excellent opening for good man. Want to retire. This appears but once. Add. 7848, % AMA. N

FOR SALE — CALIFORNIA — LEADING practice, near Los Angeles, in town of 2,000; pays $4,000 annually; horse, buggy, static machine, nebulizer, some books, instruments, drugs, *x*-ray tubes, etc.; no real estate; this is a good proposition; wish to leave for Europe; price $1,000. Add. 7840, % AMA. N

FOR SALE — INDIANA — PRACTISE, drugstore, invoice about $300. All for price of drug stock if sold at once. Low rent for building. Village of 200, good farming community; railroad, gravel roads. Six miles to nearest town. One doctor who wishes to retire. Add. I. J. Gill, M.D., New Lebanon, Ind. N

FOR SALE—INDIANA—MY PRACTISE and office equipment with or without residence, to a good honest and temperate physician able to do efficient laboratory work. The right kind of a man without money will have preference in this deal. I leave for Chicago about October 10, so reply at once. Jno. W. McMahan, Earl Park, Ind. N

FOR SALE — ILLINOIS, NORTHERN part, county seat town, population 2,000 —$1,800 practice, drugs and up-to-date office equipment, for $300. Valuable insurance appointment. Large territory to draw from. Short introduction. Good reason for selling. Competition moderate. Add. 7844, % AMA. N

FOR SALE — IOWA, NORTHERN COUNTY seat town of 3,000 population—My $3,000 general practice, office furniture and medicines. Will introduce successor. Price, the cost of furniture and medicines, about $400. Going to city. This appears but once. Good schools and railroads. Richest farming part of state. Add. 7857, % AMA. N

FOR SALE — KANSAS — $7,000 PRACTICE, office equipment for 3 rooms and driving outfit; collections No. 1; thorough introduction; good reasons for selling; price $1,750; don't bother me with unnecessary correspondence if you don't mean business; this is a snap; two other M.D.'s here; population 3,500. Add. 7752, % AMA. N

FOR SALE—WISCONSIN, N. E. PART—unopposed $2,500 practice, including drugs, office furniture, fixtures, spring cutter, robe and free use of barn for one year, all for $400 cash if taken at once. In village of 400 with large tributary territory. Good roads, fees and collections. Must leave for health. Add. 7870, % AMA. N

FOR SALE—IOWA—SOUTHERN PART, county seat, 2,500, growing. Good schools and churches. Territory large. Competition right; $2,000 practice; can be increased. Will sell office fixtures, drugs and give short introduction for $700 cash. Must sell soon. Cause, health. Add. 7878, % AMA. N

FOR SALE—A $2,000 PRACTICE, UNopposed, in town of 200 in west-central Illinois, to purchaser of my horse and buggy. Have been here twelve years but wish to move to city. Fine country. Good roads. Collections 95 per cent. If interested, investigate immediately. Add. H. O. Collins, M.D., Paloma, Ill. N

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(Continued on next page)

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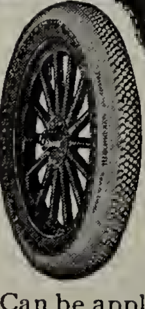

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FOR SALE — CALIFORNIA — GENeral practice in Long Beach, a beautiful growing city of 20,000, on the ocean near Los Angeles, for $200 (value of office furniture); office large, roomy and on best corner near ocean front. Rent $20 per month. Also stock in hospital. Will introduce buyer. Retiring on account of health. Add. 7639, % AMA. N

FOR SALE—WEST VIRGINIA, OIL AND gas region—28 years established village and country practise $2,500 to $3,000 annually; collections 98 per cent. Money from the start. Introduction. Will rent or sell dwelling containing office, reasonable. Price for practise, office furniture and drugs $300. Add. Dr. Elias Barg, Mannington, West Virginia. N

FOR SALE — CALIFORNIA CENTRAL part—Outfit and $2,500 practice in small town. Good schools. Churches. Fine climate. Examiner for five fraternal orders and several old line companies, and surgeon for interurban electric railroad. Collections 95 per cent. Easy competition. Price $300 cash. Am going to specialize. Add. 7821, % AMA. N

FOR SALE—NORTH DAKOTA — $3,500 practise turned over to physician buying office furniture, including McDonald chair and McIntosh wall-plate, at invoice price, in town of 1,400, having good hospital. Several appointments can be turned over. Office over only drug store. Must pay cash and come before January 1. Reason for selling, have accepted position with surgeon in city. Add. 7863, % AMA. N

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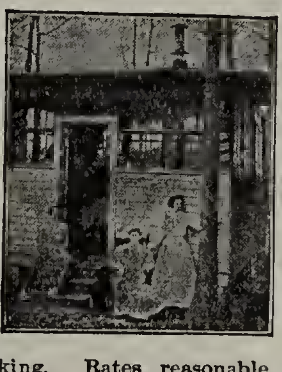

FOR SALE — NEW YORK, CENTRAL Part—Doctor's office, practice, drug store, combined; city 140,000; everything best; low rent, long lease; business good and growing. New corner building; six living apartments over store. No near competition for store or doctor. Owner has other pressing business. Cost $4,200. Sell $3,600 cash; $4,000, two-thirds cash. Add. 7800 % AMA. N

FOR SALE — NEW YORK STATE — Practice, in finest section of Adirondacks; including Clark and Roberts operating table, cabinet and stands, also large stock of drugs. Came here for my health and have collected $3,000 a year, with abundance of spare time. Health recovered; will move to city. An ideal place to recuperate or for a young man wishing experience. Price $700; possession in October. Add. 7607, % AMA. N

FOR SALE—ILLINOIS—TOWN OF 7,000 close to 2 smaller towns in which work is extended: a $6,000 cash practice in one of the most beautiful suburbs of Chicago; 30 minutes ride from city on the C. B. & Q. Practice established 19 years. Introduction. Collections excellent. Rent reasonable. Want to specialize. Price, including office equipment, $2,000; $500 cash, balance terms. Insurance appointments. Add. 7792, % AMA. N

FOR SALE — TEXAS, SOUTHWESTERN part—A general practice averaging $3,000 a year. County seat of 4,000. Two railroads with a third immediately to be constructed. Excellent farming community, mostly German. Exceptionally healthy climate. Pnblic hospital in town with good opening for surgeon. Excellent school affiliated with state university. Practice could be increased by an incumbent speaking German. Satisfactory reasons for leaving. Add. 7847, % AMA. N

FOR SALE—WASHINGTON — A WELL-established practice (no opposition) in a town of 500 in the richest part of state. Good schools, churches, etc. Receipts $2,500 to $3,000 yearly. Collections good. Will turn practice over to party who buys my holdings, which consist of 3 horses, 4-7-9 years, value $800; 2 buggies, fair condition; 2 sets double, 1 single harness; office furniture, library, surgical instruments, etc., all for $2,000. This is a snap for the right man. Reason for selling, going east. Add. 7829, % AMA. N

FOR SALE — INDIANA — $2,300 CASH buys only drug store in town 700 and physician's practice; good summer resort trade; only soda fountain in town; average daily sales $17; invoice $1,900 drugs, fixtures and office equipment; rent for store, office and flat, 9 rooms up stairs, $25; this includes C. & N. W. Ry. surgeonship; only one hour's ride from Chicago; practice $2,000 annually, 85 per cent. collectable. Add. C. H. Nare, % Fuller and Fuller Co., Randolph and Franklin Sts., Chicago, Ill. N

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(Continued on next page)

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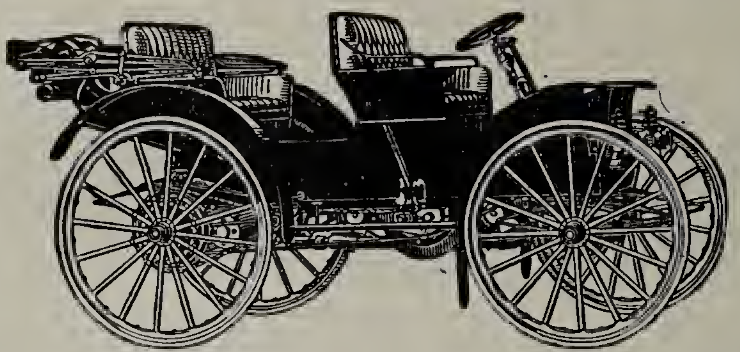

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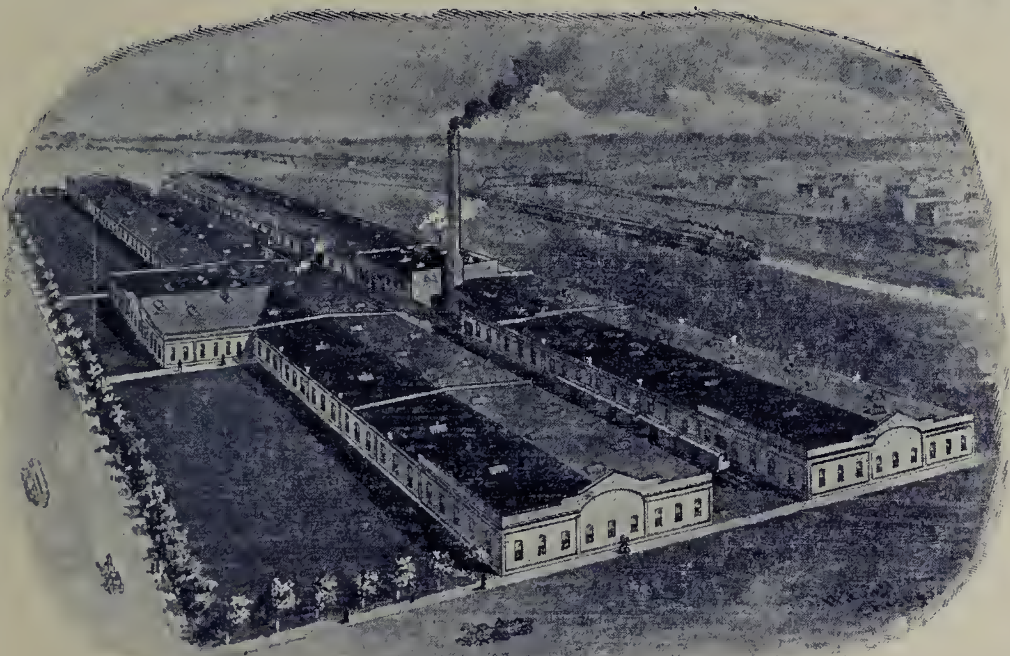

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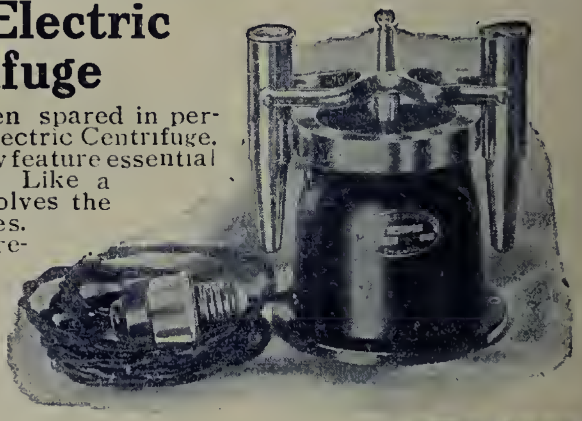

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